

Operating Instructions

DVD Recorder

Model No. **DMR-ES10EB/EBL**

(Model suffix: "EB" for UK model, "EBL" for Ireland model)



Web Site: <http://www.panasonic-europe.com>

DIGA

EB EBL

Region number supported by this unit

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

- The region number of this unit is "2".
- The unit will play DVD-Video marked with labels containing "2" or "ALL".

Example:



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 the instructions completely. Please keep this manual for future reference.

Note

"EB" on the packaging indicates the United Kingdom.

RQT8016-3B

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.

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.**

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.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.
 (→ page 41, Specifications—Others)

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.



(Back of 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 LASERSÄTEILYLLÄ. ÄLÄ KATSO SATEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÄR 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)

- For your safety, be sure not to connect or handle the equipment with wet hands.
- Your attention is drawn to the fact that the recording pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

Caution for AC Mains Lead

(For United Kingdom and Republic of Ireland)



(“EB” and “EBL” area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:


Blue: Neutral, Brown: Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE

LETTER E, BY THE EARTH SYMBOL  OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

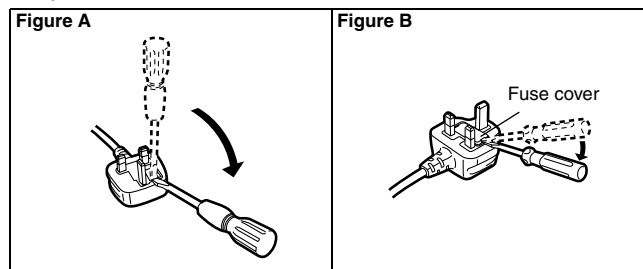
Remove the connector cover.

How to replace the fuse

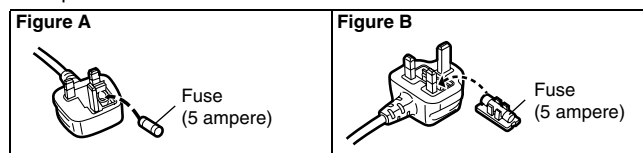
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



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Convenient functions


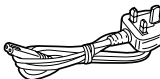



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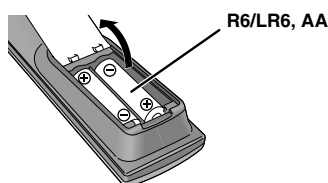
Accessories

 Please check and identify the supplied accessories. Use numbers when asking for replacement parts.
(Product numbers correct as of January 2005. These may be subject to change.)
To order accessories, refer to "Sales and Support Information" on page 44.

<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
1	Remote control (EUR7720KM0)	1	AC mains lead (RJA0053-3X)	1	RF coaxial lead (K1TWACC00001)	2	Batteries R6 Size for remote control	1	Audio/video cable (K2KA6CA00001)
			• For use with this unit only. Do not use it with other equipment. Also do not use the cords for other equipment with this unit.						

The remote control

Batteries



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

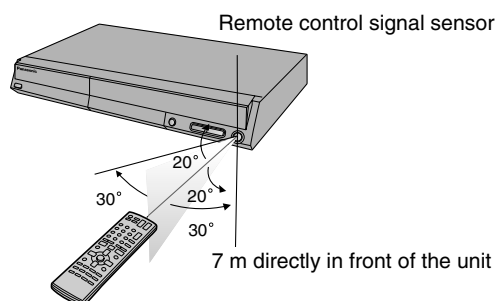
Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

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



Note

If you cannot operate the unit or television using the remote control after changing the batteries, please re-enter the codes (→ page 15).

Use







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

Disc type	DVD-RAM	DVD-R (DVD-Video format)
	<ul style="list-style-type: none"> 4.7 GB/9.4 GB, 12 cm 2.8 GB, 8 cm 	<ul style="list-style-type: none"> 4.7 GB, 12 cm 1.4 GB, 8 cm
Logo		
Indication in these instructions	RAM	Before finalizing -R After finalizing DVD-V
Main use	Re-writable discs	One time recording discs (recordable until the disc is full)
Maximum recording time (→ page 16, Recording modes and approximate recording times)	8 hours (16 hours in EP (8Hours) mode on double-sided disc*1)	8 hours
Play on other players	Only on DVD-RAM compatible players. It is not necessary to finalize the disc. (→ page 41)	Only after finalizing the disc. (→ page 33)
What you can do on this unit (✓ : Can do × : Cannot do)		
Chasing playback	✓	×
Recording broadcasts that allow one copy	✓ (CPRM (→ page 41) compatible discs only.)	×
Recording both M 1 and M 2 of bilingual broadcast	✓	×
Recording 16:9 aspect picture	✓	×
Enter programme (title) name	✓	✓
Erase programme (title)	✓ (Available space increases after erasing.)	✓ (Available space does not increase after erasing.)
Creating playlists	✓	×

- We recommend using Panasonic discs. We recommend using DVD-RAM discs with cartridges to protect them from scratches and dirt.
 - You may not be able to record to DVD-R, DVD-RW and +R discs on this unit or play them due to the condition of the recording.
 - You cannot record programmes that allow "One time only recording" to CPRM compatible DVD-R and DVD-RW on this unit.
 - You can use high speed recording compatible discs on this unit.
- *1 You cannot record or play continuously on two sides.

Play-only discs (12 cm/8 cm)

Disc type	DVD-Video	DVD-Audio	DVD-RW (DVD Video Recording format)	+RW
Logo	 			—
Indication in these instructions	DVD-V	DVD-A	-RW(VR)	DVD-V
Instructions	High quality movie and music discs	High fidelity music discs <ul style="list-style-type: none"> • Played on this unit in 2 channels. 	DVD-RW recorded on another DVD Recorder*3 <ul style="list-style-type: none"> • You can play programmes that allow "One time only recording" if they have been recorded to a CPRM compatible disc. • By formatting (→ page 33) the disc, you can record to it in DVD-Video format and play it on this unit. 	+RW recorded on another DVD Recorder*3
			<ul style="list-style-type: none"> • It may be necessary to finalize the disc on the equipment used for recording. 	


*3 Play may be impossible on some CD-R, CD-RW, DVD-RW or +RW discs due to the condition of the recording.

*4 You can play still pictures (JPEG/TIFF), CD-DA, Video CD and MP3 format data recorded on CD-R/RW.

- The producer of the disc 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.



Regarding DVD-Audio

Some multi-channel DVD-Audio will prevent down-mixing (→ page 41) of all or part of their contents if this is the manufacturer's intention. When playing such discs, or such parts of disc, unless the number of connected speakers is the same as the disc's channel specification, audio will not be output properly (e.g. part of the audio is missing, multi-channel audio cannot be selected and audio is played in two channels.) Refer to the disc's jacket for more information.

DVD-RW (DVD-Video format)		+R	
<ul style="list-style-type: none"> 4.7 GB, 12 cm 1.4 GB, 8 cm 		<ul style="list-style-type: none"> 4.7 GB, 12 cm 	
		—	
Before finalizing	-RW(V)	Before finalizing	+R
After finalizing	DVD-V	After finalizing	DVD-V
Re-writable discs		One time recording discs (recordable until the disc is full)	
8 hours		8 hours	
Only after finalizing the disc. (→ page 33)		Only after finalizing the disc. (→ page 33)	
×		×	
×		×	
×		×	
Only one is recorded (→ page 35, Bilingual Audio Selection)		Only one is recorded (→ page 35, Bilingual Audio Selection)	
×		×	
(The picture is recorded in 4:3 aspect.)		(The picture is recorded in 4:3 aspect.)	
✓		✓	
✓		✓	
(The available space on DVD-RW (DVD-Video format) increases only when the last recorded title is erased.)*2		(Available space does not increase after erasing.)	
×		×	

*2

Erase this to increase the available space.				
Title 1	Title 2	----	The last recorded title	The available space
				The available space does not increase if these are erased.

Audio CD		Video CD
		
CD		VCD
Music and audio recorded (including CD-R/RW*3 *4)	CD-R and CD-RW*3 *4 with music recorded in MP3 Still pictures (JPEG and TIFF) recorded on CD-R and CD-RW*3 *4	Music and video recorded (including CD-R/RW*3 *4)

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

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

DVD Video Recording format

This is a recording method which allows you to freely record and edit television broadcasts and so on.

- Digital broadcasts that allow "One time only recording" can be recorded to a CPRM compatible disc. You can record to CPRM compatible DVD-RAM on this unit.
 - Play is only possible on a compatible DVD player.
- Use a DVD-RAM to record by the DVD Video Recording format.**

DVD-Video format

This recording method is the same as commercially available DVD-Video.

- Digital broadcasts that allow "One time only recording" cannot be recorded.
 - These can be played on a DVD player. However programmes recorded on this unit must be finalized to be played on other DVD players.
- Use a DVD-R or DVD-RW to record by the DVD-Video format.**

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
- DVD-R recorded by DVD Video Recording format
- DVD-R (DVD-Video format), DVD-RW (DVD-Video format), +R recorded on another unit and not finalized (→ page 41).
- DVD-Video with a region number other than "2" or "ALL".
- Blu-ray
- DVD-ROM, DVD-R DL, +R DL, +R (8 cm), CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, Divx Video Disc, etc.

Disc handling

How to hold a disc

Do not touch the recorded surface.

Concerning non-cartridge discs

Be careful about scratches and dirt.

If there is dirt or condensation on the disc

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.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- 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 drop, stack, or impact discs. Do not place objects on them.
- 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.
 - Locations susceptible to significant differences in temperature (condensation can occur).
 - Where static electricity or electromagnetic waves occur.
- To protect discs from scratches and dirt, return them to their cases or cartridges when you are not using them.

Types of disc for the type of connected TV

When you use the discs recorded either PAL or NTSC, refer to this table.
 (✓: Possible to view, ×: Impossible to view)

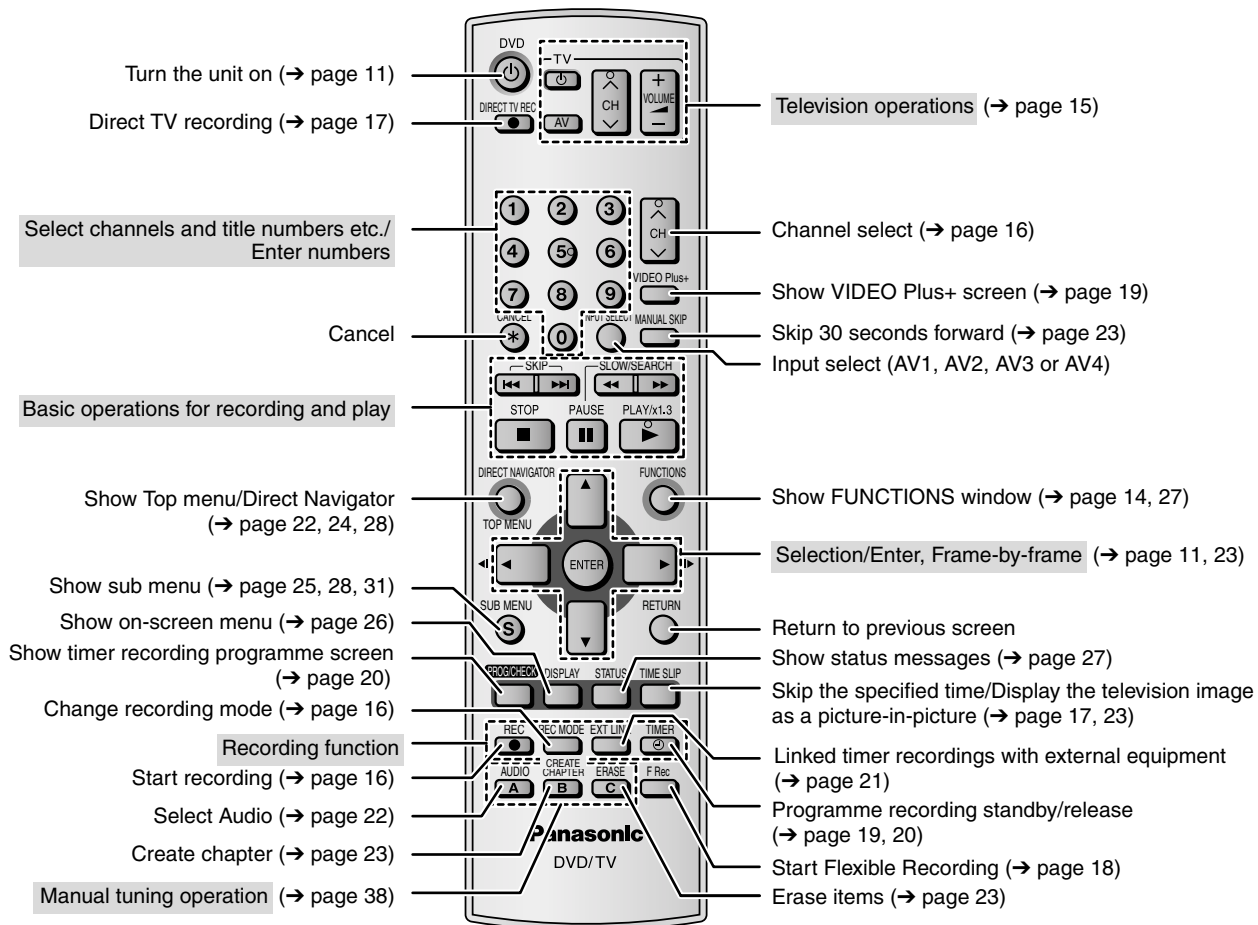
TV type	Disc	Yes/No
Multi-system TV	PAL	✓
	NTSC	✓*1
NTSC TV	PAL	×
	NTSC	✓*2
PAL TV	PAL	✓
	NTSC	✓*3 (PAL60)

*1 If you select "NTSC" in "TV System" (→ page 39), the picture may be clearer.

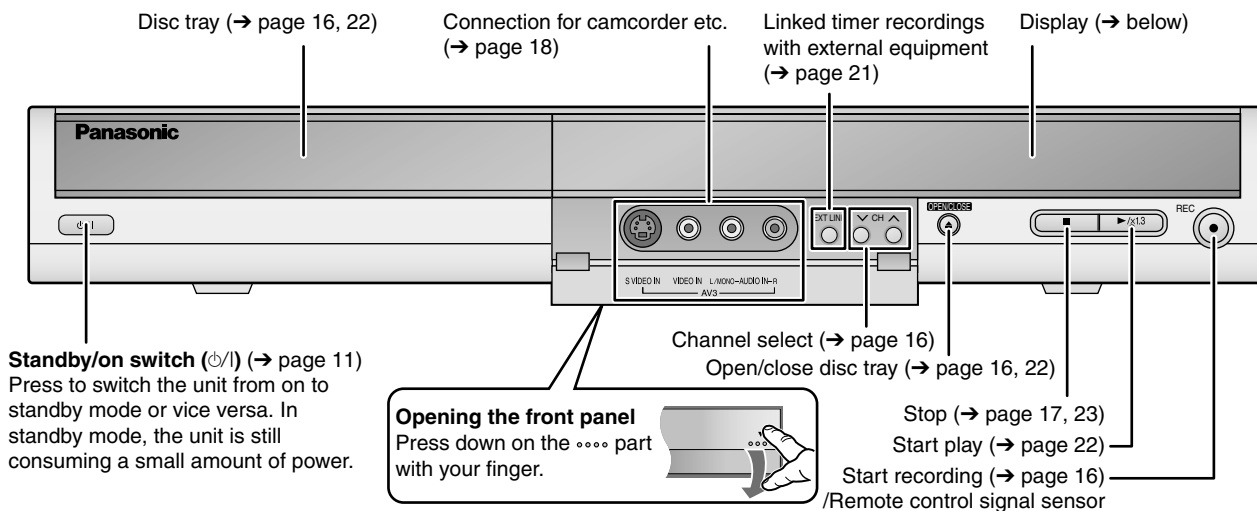
*2 Select "NTSC" in "TV System" (→ page 39).

*3 If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.

Remote control

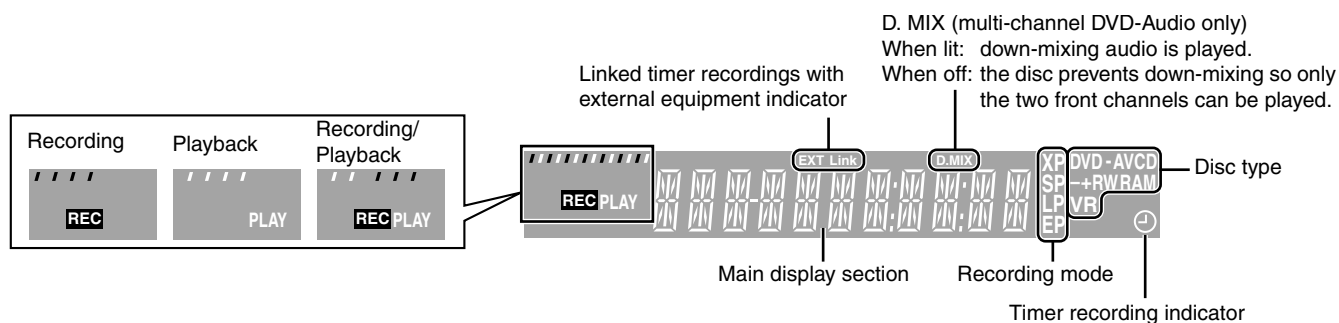


Main unit



Rear panel terminals (→ page 7, 8)

The unit's display



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 are sold separately unless otherwise indicated.

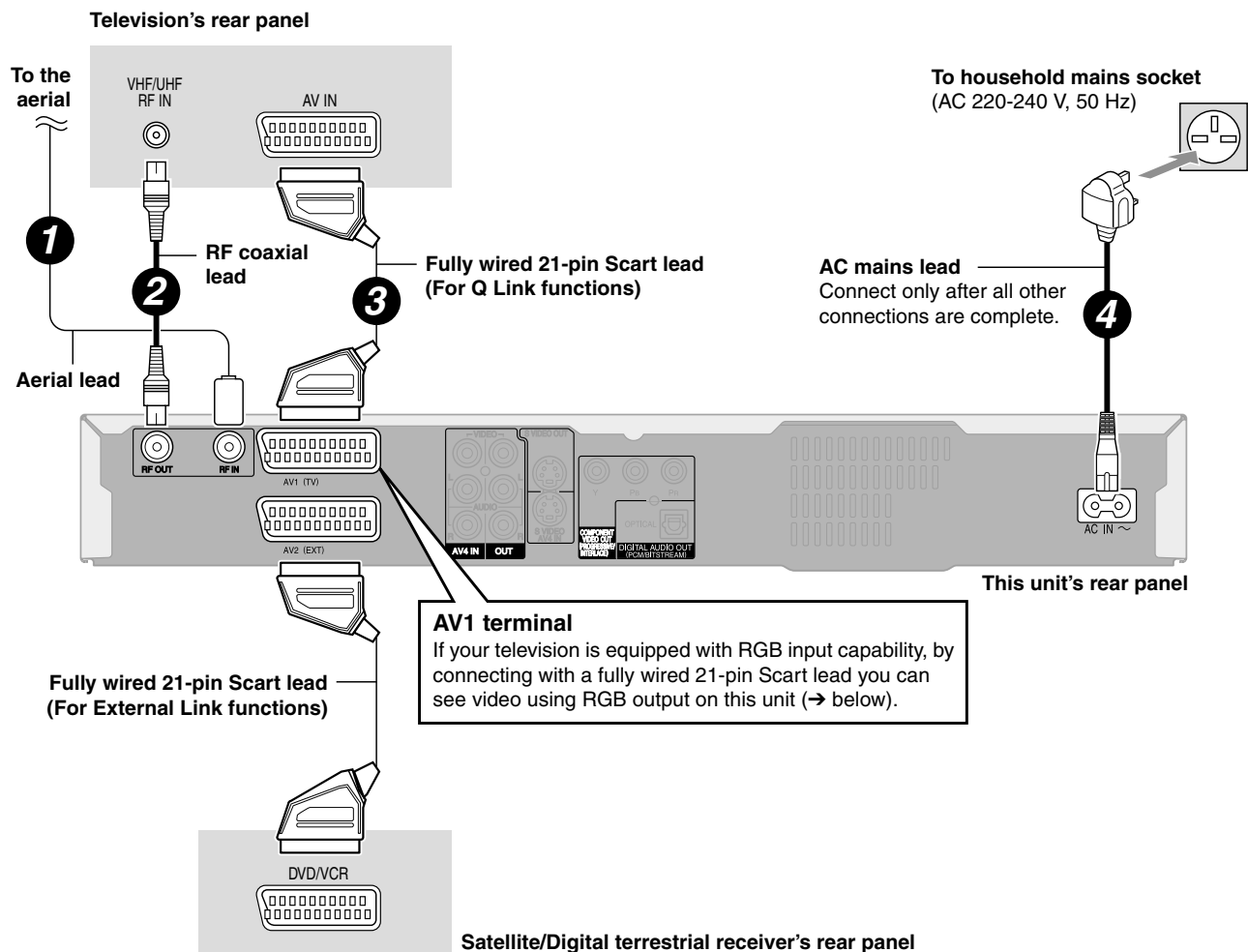
Connecting a television with 21-pin Scart terminal and Satellite/Digital terrestrial receiver

———— indicates included accessories.

———— indicates accessories not included.

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

BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.



■ To view satellite/digital terrestrial programmes

- Change the "AV2 Input" setting to match the output from a satellite/digital terrestrial receiver in the SETUP menu (→ page 36) after tuning is completed (→ page 11, 12).
- Press [INPUT SELECT] to select the input channel "A2" for the satellite/digital terrestrial receiver or put this unit in standby mode.

■ RGB

This 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.

■ Q Link functions

Connect to a compatible TV as shown above to use Q Link functions such as Direct TV Recording (→ page 17).

Q Link offers a range of convenient functions (For further details → page 42). Make sure to connect a fully wired 21-pin Scart lead to the television if using the Q Link function.

The following systems from other manufacturers have similar function to Q Link from Panasonic. For details, refer to your television's operating instructions or consult your dealer.

- Q Link (registered trademark of Panasonic)
- DATA LOGIC (registered trademark of Metz)
- Easy Link (registered trademark of Philips)
- Megalogic (registered trademark of Grundig)
- SMARTLINK (registered trademark of Sony)

■ Linked timer recordings (→ page 21)

Connect to a satellite/digital terrestrial receiver as shown above to control timer recording, e.g. External Link 1.

STEP 1 Connection

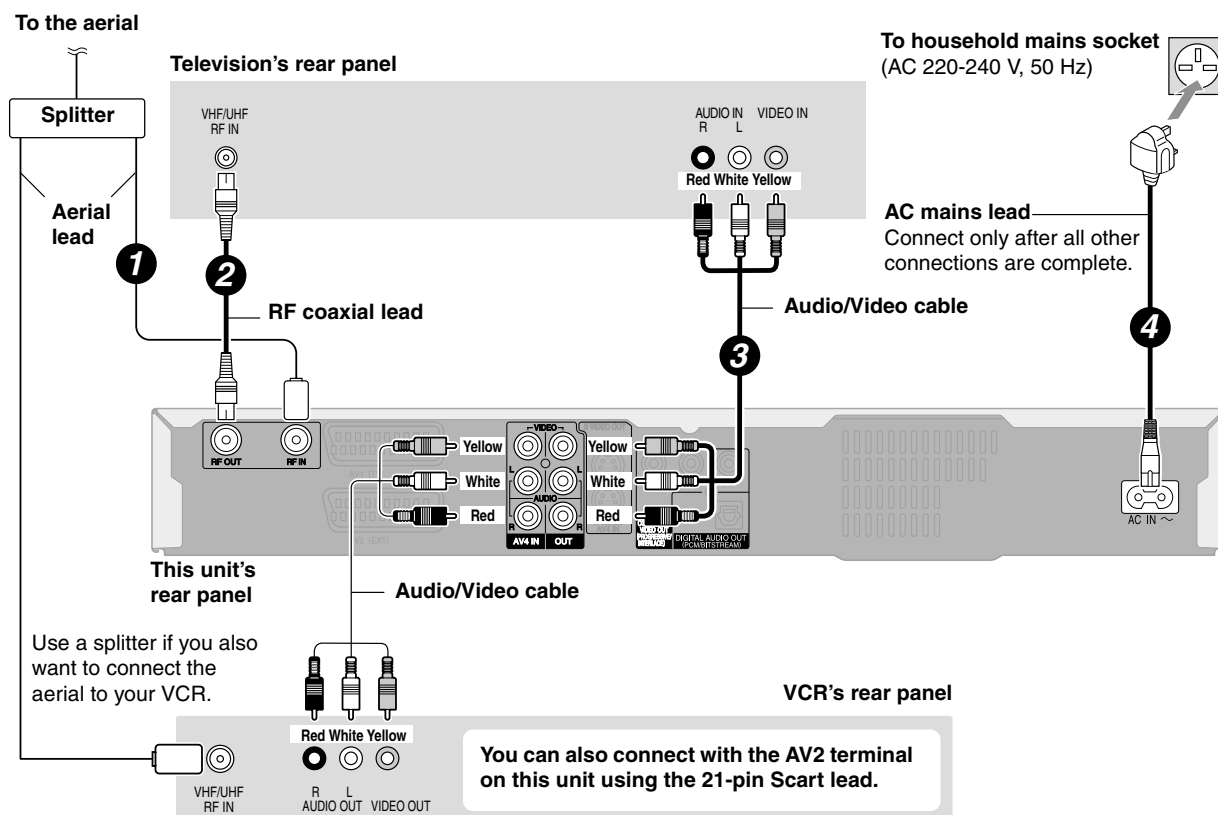
Connecting a television with AUDIO/VIDEO terminals and VCR

_____ indicates included accessories.

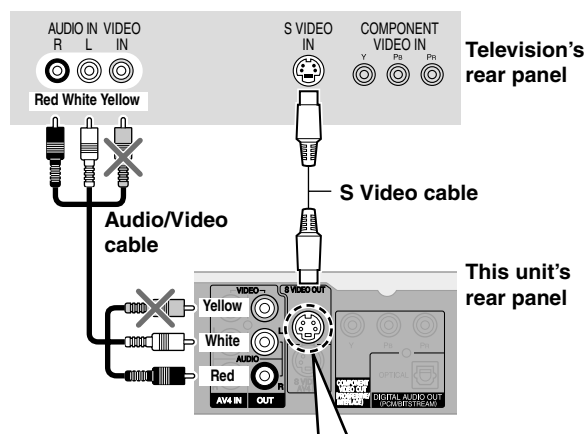
_____ indicates accessories not included.

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

BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.



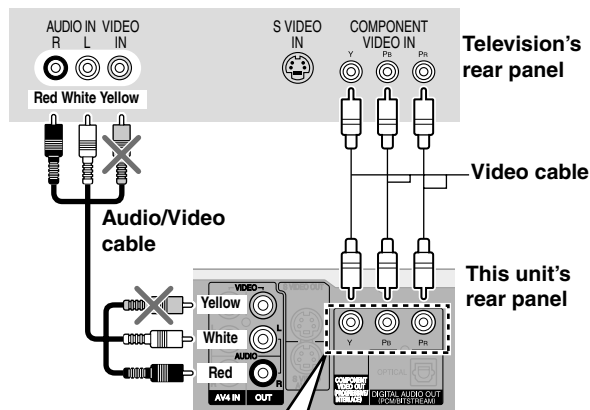
Connecting a television with S VIDEO or COMPONENT VIDEO terminals



S VIDEO OUT terminal

Connect to S VIDEO IN terminal on the television through a S Video cable.

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



COMPONENT VIDEO OUT terminal

Connect to COMPONENT VIDEO IN terminals on the television through a video cable. These terminals can be used for either interlace or progressive output (→ page 42) and provide a purer picture than the S VIDEO OUT terminal.

- Connect to terminals of the same colour.
- Video output from the component terminal will have no colour during EXT LINK recordings. Use a fully wired 21-pin Scart lead between the TV and the unit when viewing external equipment picture through the AV2 terminal.

(→ page 9, Note to owners of progressive compatible PAL system televisions)

■ Component video output

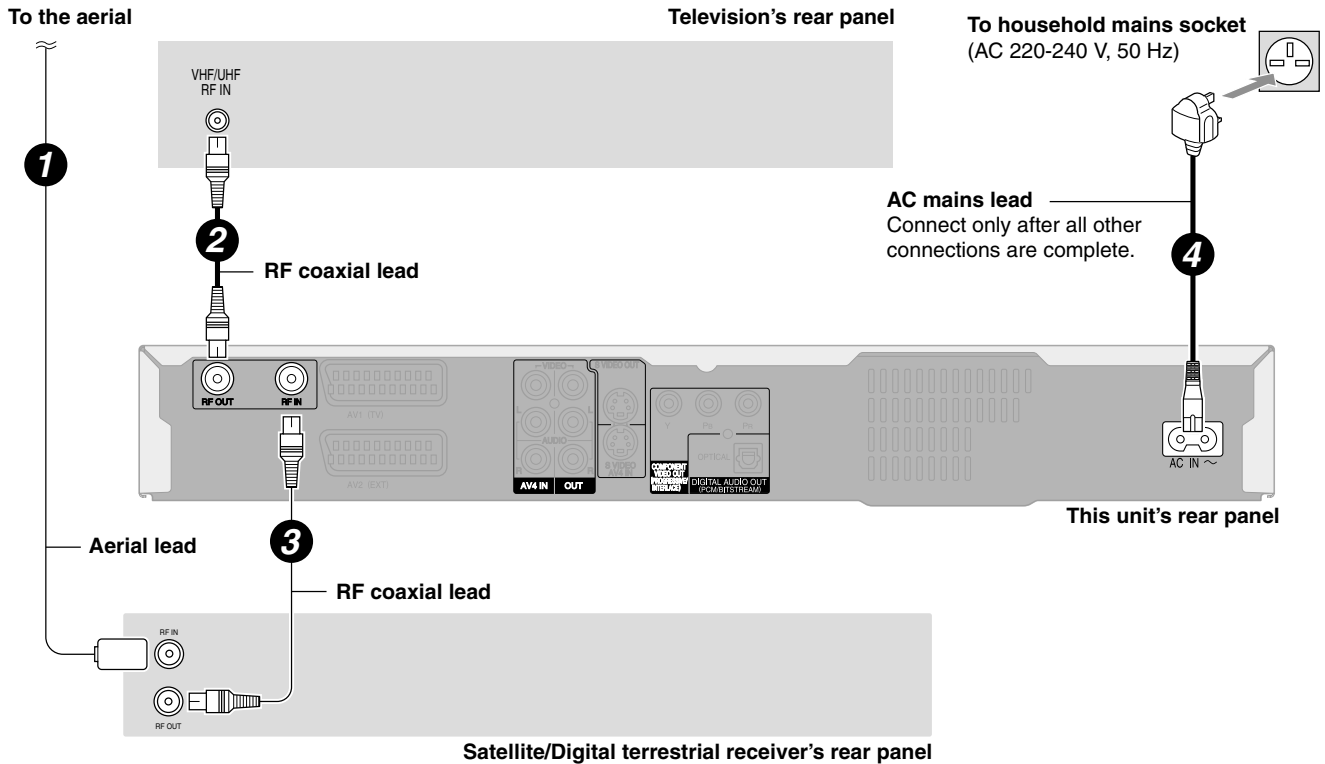
Component signal outputs the colour difference signals (Pb/Pb) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours. If the television is compatible with progressive output, a high quality picture can be output because this unit's component video output terminal outputs a progressive output signal (→ page 42).

Connecting a television with RF socket only and Satellite/Digital terrestrial receiver

Connect in the numbered order. If you do not have a Satellite/Digital terrestrial receiver, connect the aerial to RF IN socket of this unit and skip step 3.

- indicates included accessories.
 — indicates accessories not included.

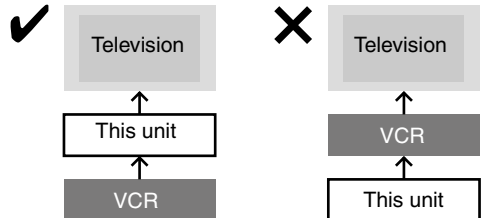
BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.



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.

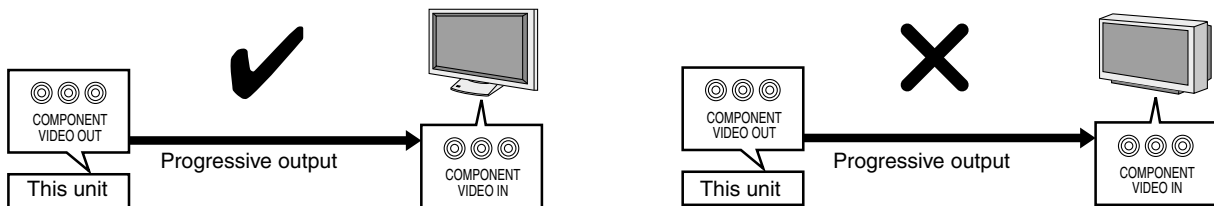


Before moving the unit, ensure the disc tray is empty.
 Failure to do so will risk severely damaging the disc and the unit.

Note to owners of progressive compatible PAL system televisions

- If you have an LCD/plasma television or LCD projector**
 Using progressive output, you can enjoy high-resolution video recorded on media such as DVD-Video. Connect this unit's component video output terminals to your television and turn on the progressive output setting (→ page 14).

- If you have a regular television (CRT: cathode ray tube)**
 Use component output with progressive "Off" (Factory setting, → page 36), even if it is progressive compatible, because progressive output can cause some flickering. This is the same for multi system televisions using PAL mode.



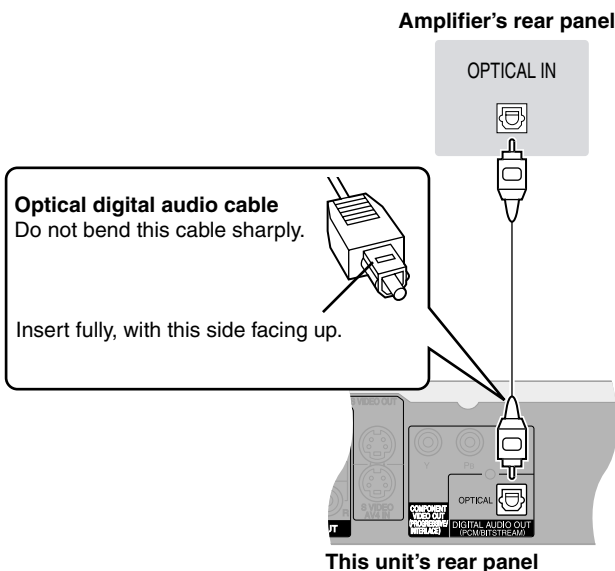
STEP 1 Connection

Connecting an amplifier or system component

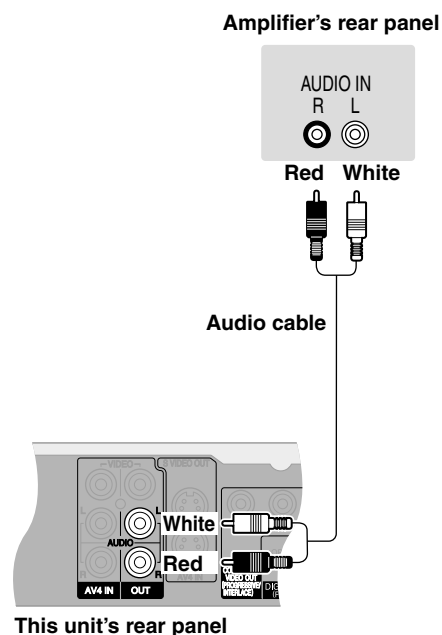
■ To enjoy multi-channel surround sound on DVD-Video

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 35).

- 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.

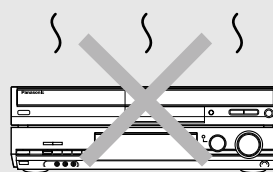


■ Connection to a stereo amplifier

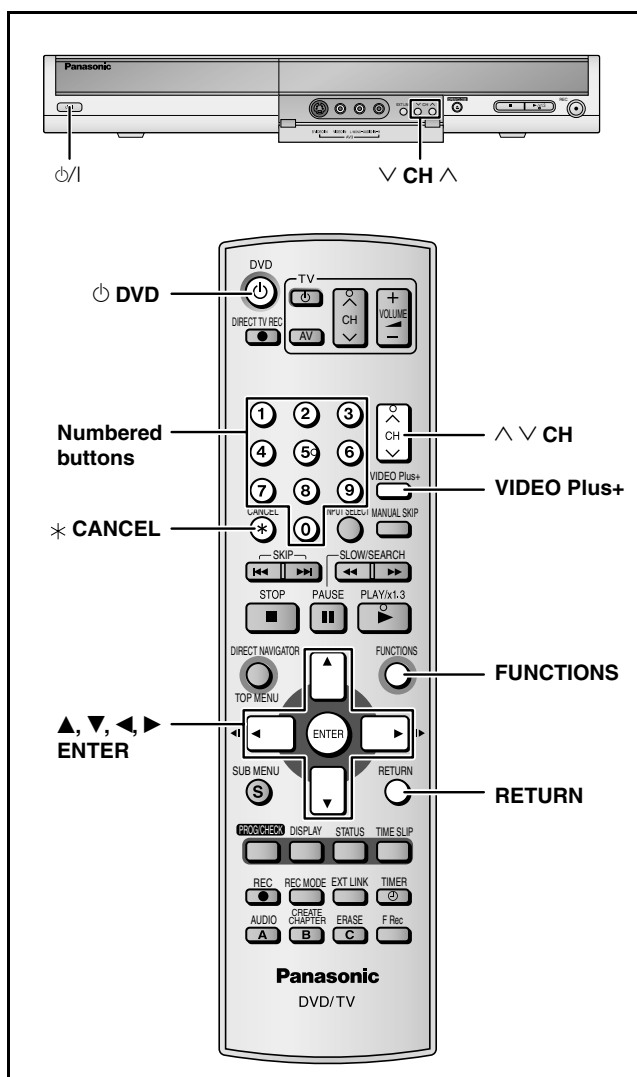


Do not place the unit on amplifiers or equipment that may become hot.

The heat can damage the unit.



STEP 2 TV Tuning



Tuning Preset Download (Setup with Q Link functions)

When connecting to a television that has the Q Link function (→ page 42) with a fully wired 21-pin Scart lead (→ page 7).

(The AV2 and AV4 Scart terminals on Panasonic televisions are compatible with the Q Link function.)

You can download the tuning positions from the television. This unit Auto Clock Setting function synchronizes the time when the TV channel that is broadcasting time and date information is tuned.

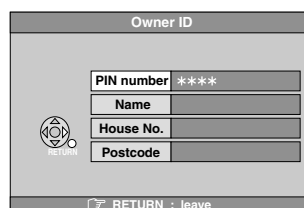
1 Turn on the television and select the appropriate AV input to suit the connections to this unit.

2 Press [DVD] to turn the unit on.

Tuning Preset Downloading starts.



3 When tuning preset downloading has completed, the Owner ID settings screen appears. Press [ENTER] and press the numbered buttons to enter a 4-digit PIN number.



• Make a note of the PIN number (don't forget), as it is not possible to return to the factory preset.

4 Press [ENTER] twice to store the PIN number.

The cursor moves to "Name".

5 Press [ENTER].

6 Press [▲, ▼] to select a letter and then press [ENTER].

Repeat this to enter the name.

7 Press [ENTER] to store the name.

8 Press [▼] and [ENTER], and then repeat steps 6, 7 to enter and store "House No." and "Postcode".

9 Press [RETURN].

The Owner ID settings screen disappears.

To stop partway
Press [RETURN].

■ If the clock setting menu appears

Set the clock manually (→ page 40).

■ To confirm that stations have been tuned correctly (→ page 38)

■ To restart Tuning Preset Download (→ page 39)

■ If you connect other equipment to AV2 terminal of this unit

Change the "AV2 Input" in the SETUP menu to match the connected equipment (→ page 36).

For the United Kingdom only

■ If there is interference or a very poor picture appears on the TV screen

Refer to "Removing Interference" on page 13, and perform steps 1, 2 and 4 to stop the RF output. In step 2, press [0] to select "--".

Note

If this unit is connected to a digital TV (IDTV), only the analogue station's tuning information will be downloaded.

Refer to the control reference on page 11.

STEP 2 TV Tuning

Auto-Setup (Setup without Q Link functions)

- When connecting to a television with the VIDEO OUT, S VIDEO OUT or COMPONENT VIDEO OUT terminal (→ page 8).

- When connecting to a television that does not have the Q Link function (→ page 42).

This unit's Auto-Setup function automatically tunes all available TV stations and synchronizes the time when the TV channel that is broadcasting time and date information is tuned.

- When connecting to a television with RF socket only (→ page 9).

- 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.

Auto-Setup starts. This takes about 5 minutes.



For the United Kingdom only

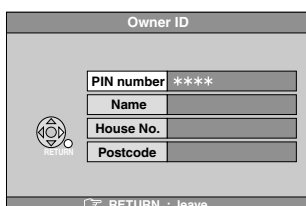
(When connecting to a television with RF socket only)

Set the new RF output channel to TV (refer to the instructions for your TV).

Select an unused channel preset on your TV and tune it to the RF output channel number shown on the unit's display. (When the Auto-Setup screen does not appear clearly even after performing the above operations, re-tune the channel until the Auto-Setup screen becomes clear.)

- 3 When Auto-Setup has completed, the Owner ID settings screen appears.

Press [▶] and press the numbered buttons to enter a 4-digit PIN number.



- Make a note of the PIN number (don't forget), as it is not possible to return to the factory preset.

- 4 Press [ENTER] twice to store the PIN number.

The cursor moves to "Name".

- 5 Press [▶].

- 6 Press [▲, ▼] to select a letter and then press [▶].

Repeat this to enter the name.

- 7 Press [ENTER] to store the name.

- 8 Press [▼] and [▶], and then repeat steps 6, 7 to enter and store "House No." and "Postcode".

- 9 Press [RETURN].

The Owner ID settings screen disappears.

To stop partway

Press [RETURN].

■ If the clock setting menu appears

Set the clock manually (→ page 40).

■ 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 [V CH] and [CH ^] on the main unit for about 5 seconds.

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

■ To enter the satellite station's name (→ page 38)

The name of the satellite station is not set automatically. ("-- ----" will appear under "Name" in the programme list). After Auto-Setup is completed, enter the name manually.

■ If you connect other equipment to AV2 terminal of this unit

Change the "AV2 Input" in the SETUP menu to match the connected equipment (→ page 36).

Removing Interference

- When connecting to a television with RF socket only
(→ page 9)

TV screen



Picture with interference

In some cases, interference (lines or patterning) or a very poor picture may appear on the TV screen when this unit is connected. Follow the steps below to change the video playback channel (RF output channel) to remove the interference.

- 1 Press [FUNCTIONS] for more than 5 seconds.

Unit's display



RF output channel number appears.

TV screen



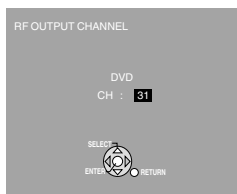
Test pattern screen appears.

- 2 Press [\wedge \vee CH] to select a channel number, which differs by 2 or 3 from the present channel number.
e.g. If the original channel number was 28, enter 31.



The test pattern screen disappears.

- 3 Re-tune your TV until you receive the test pattern screen.



If you can't see the test pattern screen clearly, repeat step 1 and 2 to select RF output channel again.

- 4 Press [ENTER] to finish this setting.



Clear picture

VIDEO Plus+ system for Satellite/Cable TV stations

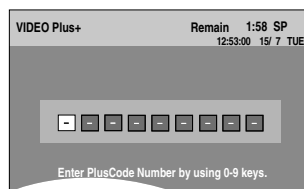
This unit doesn't recognize VIDEO Plus+ numbers for Satellite stations or Cable TV stations.

The following operation also allows you to use VIDEO Plus+ numbers to make timer recordings for satellite and cable TV stations. As the settings indicated below are dummy timer recordings, delete them in step 6.

Preparation

Turn on the Satellite receiver(s) or Cable TV box.
Select a correct station.

- 1 Press [VIDEO Plus+].

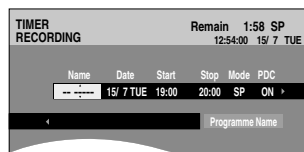


- 2 Press the numbered buttons to enter a VIDEO Plus+ number for a satellite station (e.g. Sky One) or Cable TV station.

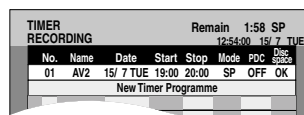
Press [\leftarrow] to move back to correct a digit.

- 3 Press [ENTER].

"-- ----" will appear under "Name".



- 4 Press [\blacktriangle , \blacktriangledown] to select the channel or AV input that is to be used for recording from the satellite station or Cable TV station.



- 5 Press [ENTER].

The channel or AV input corresponding to the VIDEO Plus+ number is memorised.

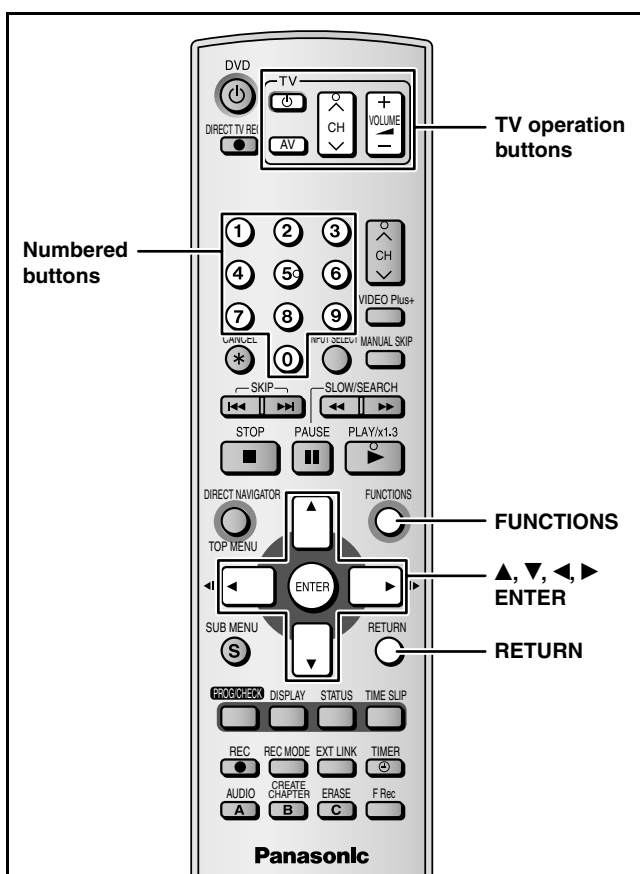
Repeat steps 1–5 above until you have set dummy timer recordings for each of the satellite stations or Cable TV stations that you will make VIDEO Plus+ recordings from.

- 6 Press [\blacktriangle] to select each programme that you have just set and press [\ast CANCEL] to delete it from the timer recording list.

To exit the screen

Press [RETURN].

STEP 3 Set up to match your television and remote control



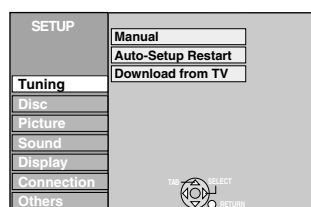
Selecting television type and aspect

Choose the setting to suit your television and preference.

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼] to select “To Others” and press [ENTER].

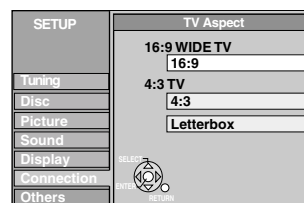


- 3 Press [▲, ▼] to select “SETUP” and press [ENTER].



- 4 Press [▲, ▼] to select “Connection” and press [▶].

- 5 Press [▲, ▼] to select “TV Aspect” and press [ENTER].
- 6 Press [▲, ▼] to select the TV aspect and press [ENTER].



- **16:9:** 16:9 widescreen television
- **4:3:** 4:3 standard aspect television
 - RAM** Even if it records and plays, the aspect does not change.
 - 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 “To Others” and press [ENTER].
- 3 Press [▲, ▼] to select “SETUP” and press [ENTER].
- 4 Press [▲, ▼] to select “Connection” and press [▶].
- 5 Press [▲, ▼] to select “AV1 Output” and press [ENTER].
- 6 Press [▲, ▼] to select “Video (with component)” or “S Video (with component)” and press [ENTER].
- 7 Press [▲, ▼] to select “Progressive” and press [ENTER].
- 8 Press [▲, ▼] to select “On” and press [ENTER].
Output becomes progressive.

Note

- When connected to a CRT (Cathode ray tube) television, even if it is progressive compatible, progressive output can cause some flickering. Turn off “Progressive” if this occurs (→ page 27).
- Picture will not be displayed correctly if connected to an incompatible television.
- 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.

To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

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	01, 02, 03, 04, 45
AIWA	35
AKAI	27, 30
BLAUPUNKT	09
BRANDT	10, 15
BUSH	05, 06
CURTIS	31
DESMET	05, 31, 33
DUAL	05, 06
ELEMIS	31
FERGUSON	10
GOLDSTAR/LG	31
GOODMANS	05, 06, 31
GRUNDIG	09
HITACHI	22, 23, 31, 40, 41, 42
INNO HIT	34
IRRADIO	30
ITT	25
JVC	17, 39
LOEWE	07
METZ	28, 31
MITSUBISHI	06, 19, 20
MIVAR	24
NEC	36
NOKIA	25, 26, 27
NORDMENDE	10
ORION	37
PHILIPS	05, 06
PHONOLA	31, 33
PIONEER	38
PYE	05, 06
RADIOLA	05, 06
SABA	10
SALORA	26
SAMSUNG	31, 32, 43
SANSUI	05, 31, 33
SANYO	21
SBR	06
SCHNEIDER	05, 06, 29, 30, 31
SELECO	06, 25
SHARP	18
SIEMENS	09
SINUDYNE	05, 06, 33
SONY	08
TELEFUNKEN	10, 11, 12, 13, 14
THOMSON	10, 15, 44
TOSHIBA	16
WHITE WESTINGHOUSE	05, 06

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

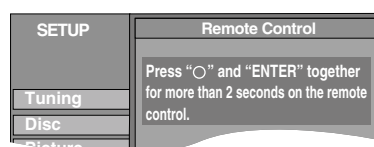
- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

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 "To Others" and press [ENTER].
- 3 Press [▲, ▼] to select "SETUP" and press [ENTER].
- 4 Press [▲, ▼] to select "Others" and press [▶].
- 5 Press [▲, ▼] to select "Remote Control" and press [ENTER].
- 6 Press [▲, ▼] to select the code ("DVD 1", "DVD 2" or "DVD 3") and press [ENTER].



To change the code on the remote control

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

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

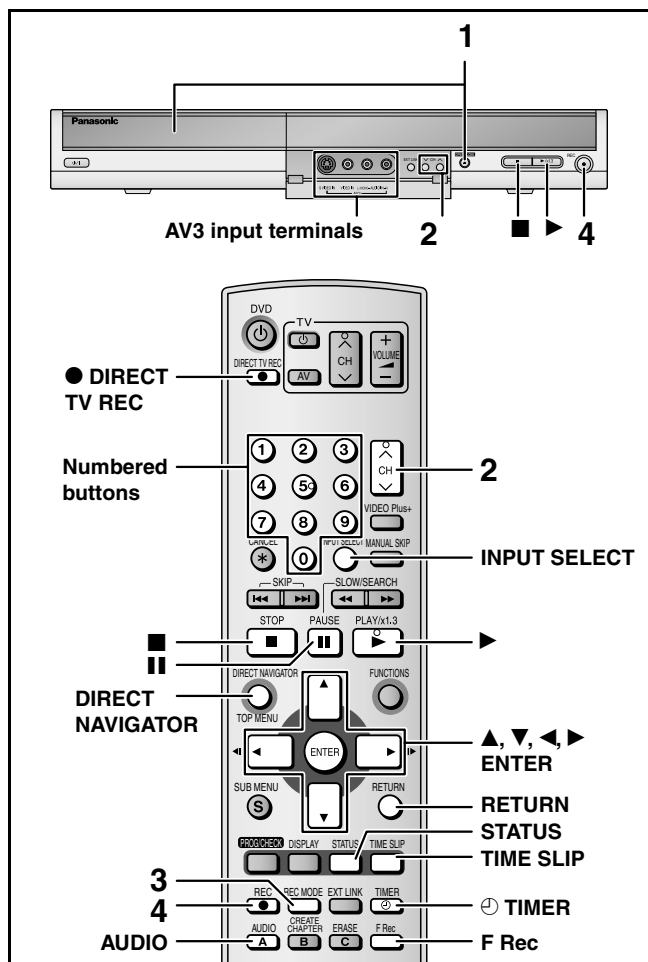


Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.

Note

Executing "Shipping Condition" in the SETUP menu returns the main unit code to "DVD 1". Change the remote control code to 1 (→ step 7).

Recording television programmes

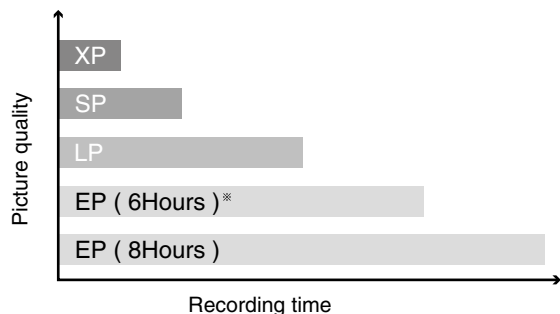


Recording modes and approximate recording times

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

(Unit: hour)

Mode	DVD-RAM		DVD-R DVD-RW +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 (Extended long play)	8 (6*)	16 (12*)	8 (6*)
FR (Automatic mode selection)	8 hours maximum	8 hours maximum for one side	8 hours maximum



* When "Recording time in EP Mode" is set to "EP (6Hours)" in the SETUP menu.

The sound quality is better when using "EP (6Hours)" than when using "EP (8Hours)".

Note

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

FR (Flexible Recording) Mode

The unit automatically selects a recording rate between XP and EP (8Hours) that will enable the recordings to fit in the remaining disc space 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.



Recording television programmes

Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Turn the unit on.

RAM -R -RW(V) +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 or 8 cm DVD-R, remove the disc from the cartridge.
- You can record up to 99 titles on one disc. (+R 49 titles)
- It is not possible to record digital broadcasts that allow "One time only recording" onto DVD-R, DVD-RW, +R or 8 cm DVD-RAM discs. Use a CPRM compatible DVD-RAM.

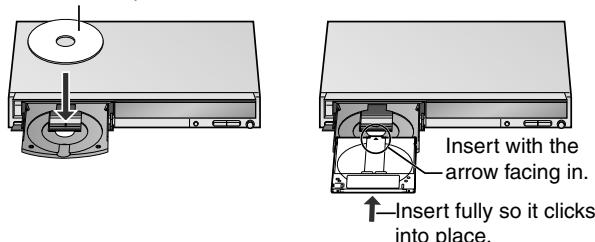
When recording to DVD-R, DVD-RW (DVD-Video format) or +R

- When recording bilingual TV broadcast onto DVD-R, DVD-RW or +R, only one of either "M 1" or "M 2" audio can be recorded. Select at "Bilingual Audio Selection" (→ page 35).
- The aspect ratio of the recorded images will be 4:3.
- In order to play a DVD-R, DVD-RW (DVD-Video format) or +R recorded using this unit on another playback source, the disc must first be finalized (→ page 33).

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.



2 Press [^ ∨ CH] to select the channel.



To select with the numbered buttons:

e.g., 5: [0] → [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.



The elapsed time is shown on the display. Recording will take place on open space on disc. Data will not be overwritten.

- You cannot change the channel or recording mode during recording. You can change the channel or recording mode while paused; however, the recording will then be as a separate title.
- RAM** You can change the audio being received by pressing [AUDIO] during recording. (This does not affect the actual recording of the audio.)

■ To stop recording

Press [■].

From the start to the end of the recording is called one recording title.

-R -RW(V) +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.

You can also press [● REC] to restart.

(Recorded title is not split into separate titles.)

Quick Start

The Quick Start feature enables this unit to start recording to a DVD-RAM that is already inserted soon after turning it on. It is set to "On" at the time of purchase (→ page 37).

Note

Startup takes more time when:

- You play a disc or start recording to discs other than DVD-RAM.
- The clock has not been set.

To specify a time to stop recording—One Touch 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 19) or while using Flexible Recording (→ page 18).

If a station also broadcasts Teletext information

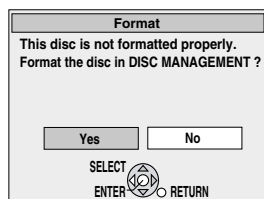
The unit automatically records the programme's and station's name if the station's Title Page is correctly set (→ page 38).

Note

The unit may take some time in retrieving titles (up to 30 minutes) and may fail in some cases.

When the format confirmation screen is displayed

When you insert a new DVD-RW or a DVD-RAM or DVD-RW (DVD-Video format) recorded on a computer or other equipment, a format confirmation screen is displayed. Format the disc to use it. However all the recorded contents are erased.



Press [◀] to select "Yes" and press [ENTER].

■ To format a disc

(Several steps are necessary to format a disc.)

"Erasing all the contents of a disc –Format Disc" (→ page 33)

Direct TV Recording

When connected to a television that has the Q Link function using a fully wired 21-pin Scart lead (→ page 7).

This function allows you to immediately start recording the programme that you are viewing on the TV.

- 1 Insert a disc. (→ page 16)
- 2 Press and hold [● DIRECT TV REC] for 1 second.

Recording starts.

To stop recording

Press [■].

Playing while you are recording

RAM

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

Press [▶] (PLAY).

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

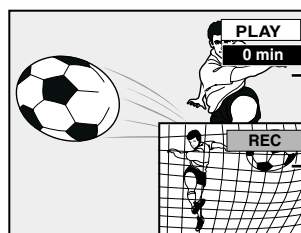
- 1 Press [DIRECT NAVIGATOR].
- 2 Press [▲, ▼, ◀, ▶] to select a title and press [ENTER].

To exit the Direct Navigator screen

Press [DIRECT NAVIGATOR].

Reviewing the recorded images while recording—Time Slip

- 1 Press [TIME SLIP].



- 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.

Refer to the control reference on page 16.

Flexible Recording

RAM -R -RW(V) +R

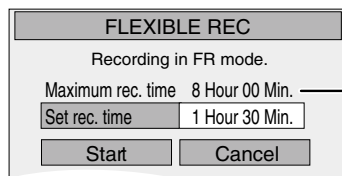
The unit sets the best possible picture quality that fits the recording within the remaining disc space.

Preparation

- Select the channel to record or the external input.

1

While stopped
Press [F Rec].



Maximum recording time
This is the maximum recording time in EP mode.

2

Press [◀, ▶] to select “Hour” and “Min.” and press [▲, ▼] to set the recording time.

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

3

When you want to start recording
Press [▲, ▼, ▶, ◀] to select “Start” and press [ENTER].

Recording starts.

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



To exit the screen without recording

Press [RETURN].

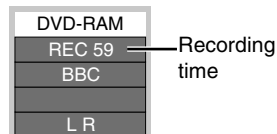
To stop recording partway

Press [■].

To show the recording time

Press [STATUS].

e.g., DVD-RAM



Note

When performing EXT LINK recording (→ page 21), the flexible recording function does not work.

Using “Flexible Recording” is convenient in these kind of situations

- When the amount of free space on the disc makes selecting an appropriate recording mode difficult
- When you want to record a long programme with the best picture quality possible

e.g., Recording a 90 minutes programme to disc

XP mode	
If you select XP mode, the programme will not fit one disc.	
If you try to record a 90 minutes programme in XP mode, only the first 60 minutes will fit on the disc and the 30 minutes balance will not get recorded.	
SP mode	
If you select SP mode, the programme will fit one disc.	
	However there will be 30 minutes remaining disc space.
FLEXIBLE REC	
If you select “FLEXIBLE REC”, the programme will fit one disc perfectly.	

■ : necessary space for recording

Recording from an external equipment

RAM -R -RW(V) +R

Preparation

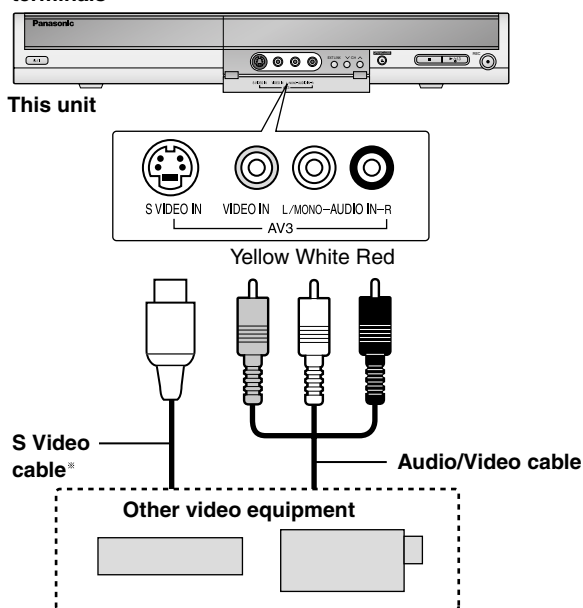
- Connect a video cassette recorder, etc. to this unit's input terminals.
- When recording bilingual programmes

RAM When both M 1 and M 2 is selected on the connected equipment, you can select the audio type in playback.

-R -RW(V) +R Select either M 1 or M 2 on the connected equipment. (The selected audio only is recorded.)

- 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 (e.g., video cassette recorder), set “AV-in NR” to “On” (→ page 27).
- Check the time on the unit is correct.

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



If the audio output of the other equipment is monaural, connect to L/MONO.

* The S VIDEO terminal achieves a more vivid picture than the VIDEO terminal.

1

While stopped

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

2

Press [REC MODE] to select the recording mode.

3

Start play on the other equipment.

4

Press [● REC].

Recording starts.

To skip unwanted parts

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

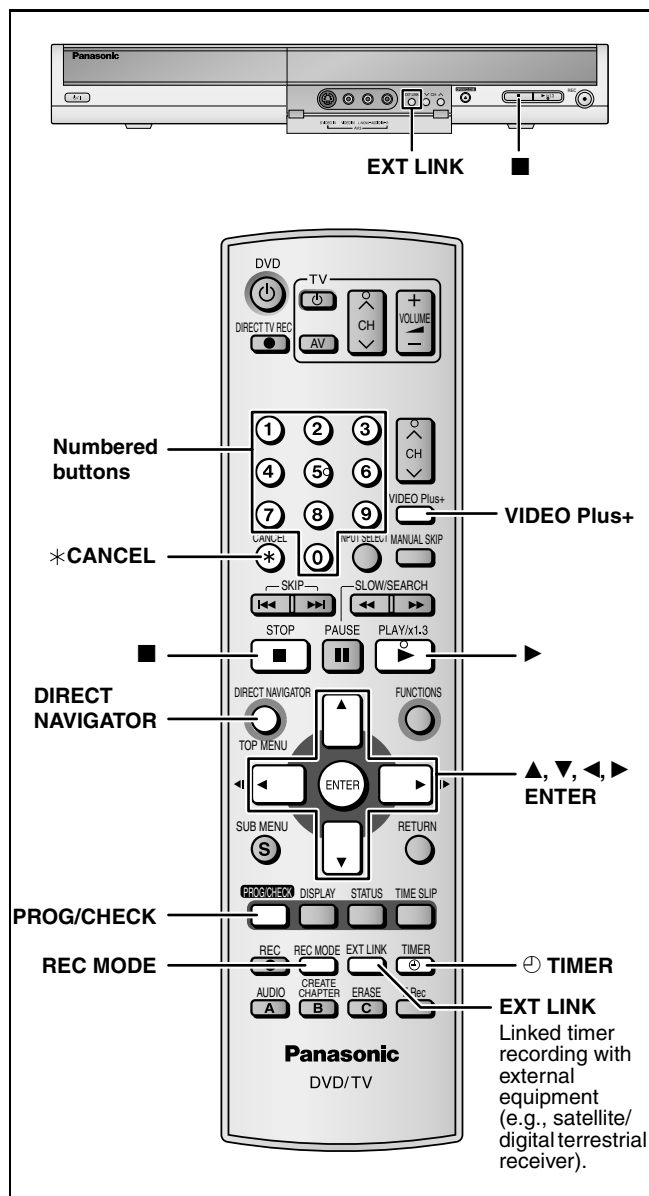
To stop recording

Press [■].

To record programmes to fill up the remaining space on the disc

→ Left, Flexible Recording

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



RAM -R -RW(V) +R

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

Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Check the time on the unit is correct.

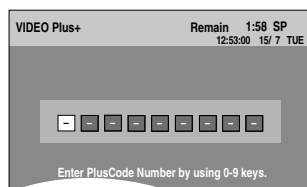
Using VIDEO Plus+ system to make timer recordings

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

• Using VIDEO Plus+ numbers for Satellite stations or Cable TV stations

Set this unit to recognise VIDEO Plus+ numbers for Satellite stations or Cable TV stations before you start the following operations (→ page 13, VIDEO Plus+ system for Satellite/Cable TV stations).

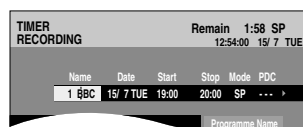
1 Press [VIDEO Plus+].



2 Press the numbered buttons to enter the VIDEO Plus+ number.

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

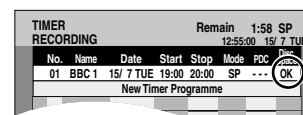
3 Press [ENTER].



- Confirm the programme and make corrections if necessary using [▲, ▼, ◀, ▶] (→ page 20, Manually programming timer recordings, 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.
- PDC (→ below)
ON ↔ OFF (---)
- Programme Name
Press [◀, ▶] to select "Programme Name" and press [ENTER] (→ page 34).

4 Press [ENTER].

The settings are stored.



Check to make sure "OK" is displayed.

Repeat steps 1–4 to 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, DVD-RW (DVD-Video format) or +R).

■ PDC function (→ page 42)

As long as a PDC signal is being broadcast by the TV station, even if the broadcast programme time changes, the recording time automatically changes to match the new broadcast time.

To activate the PDC function

In step 3 in the PDC column, press [▲, ▼] to select "ON".

Refer to the control reference on page 19.

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

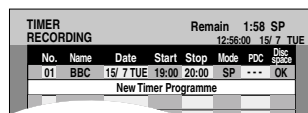
Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Check the time on the unit is correct.

Manually programming timer recordings

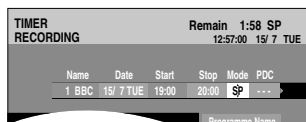
RAM -R -RW(V) +R

1 Press [PROG/CHECK].



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

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

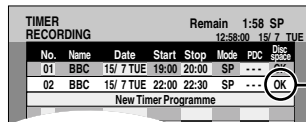


- Press and hold [▲, ▼] to alter Start (Start time) and Stop (Finish time) in 30-minute increments.
- You can also set Name (Programme position/TV Station Name), Date, Start (Start time), and Stop (Finish time) with the numbered buttons.
- You can also press [REC MODE] to change the recording mode.
-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

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

- **PDC** (→ page 19)
ON←→OFF (---)
- **Programme Name**
Press [◀, ▶] to select “Programme Name” and press [ENTER] (→ page 34).

4 Press [ENTER].



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, DVD-RW (DVD-Video format) and +R).

Making timer recordings on the television

(e.g., of digital broadcasts)

RAM -R -RW(V) +R

To make a timer recording with your television, connect to a television with a Q Link function (→ page 42) that you can use for setting timer recordings using a fully wired 21-pin Scart lead (→ page 7).

1 Make timer programming on the TV.

2 Insert a disc.

3 Turn off the unit.

The start and end of recording is controlled by TV.

To stop recording

Press [■].

Note

- When this unit is in timer recording standby or EXT LINK standby (“⏻” or “EXT Link” on the unit’s display), recording from TV does not start.
- Programmes are recorded as one title on this unit when the end time of the earlier timer recording and the start time of the later timer recording are close to each other.

RAM To divide the titles, go to “Divide Title” (→ page 29).

To record programmes from satellite receiver by RGB signals

RAM -R -RW(V) +R

Preparation

- Make sure you connect the AV2 input terminal of this unit to "VCR Scart Terminal" of a SKY Digital STB/digital terrestrial receiver with a 21-pin scart lead (→ page 7).
- Set the "AV2 Input" to "RGB/Video" in the SETUP menu (→ page 36).

Follow the steps indicated for manually programming timer recordings (→ page 20).

- Set your Sky Digital STB to output "RGB" signals.
- After setting the Personal Planner programmes as required, Sky Digital STB must be kept turning on (not set to standby) to ensure continuous output of RGB signals.

Check, change or delete a programme

RAM -R -RW(V) +R

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.
- W The times overlap those in another programme. Recording of the programme with the later start time starts when the earlier programme finishes recording.
- F 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	PDC	Disc space	
11	BBC	15/ 7 TUE	19:00	20:00	SP	---	OK	
New Timer 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 no more space left
 - the number of possible titles has reached its maximum.

■ To change a programme

Press [▲, ▼] to select the programme and press [ENTER].
(→ page 20, Manually programming timer recordings, 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.

Linked timer recordings with external equipment (SKY Digital STB/digital terrestrial receiver)–EXT LINK

RAM -R -RW(V) +R

To record programmes from a SKY Digital STB/digital terrestrial receiver using timer programming

Preparation

- Make sure you connect the AV2 input terminal of this unit to "VCR Scart Terminal" of a SKY Digital STB/digital terrestrial receiver with a 21-pin scart lead (→ page 7).
- Set the "AV2 Input" to match the connected equipment in the SETUP menu (→ page 36).
- Set the "Ext Link" to match the connected equipment in the SETUP menu (→ page 36).

Ext Link 1: Start and stop timings of recording are controlled by the control signal from the SKY Digital STB/digital terrestrial receiver using the "SKY Personal Planner" function.

Ext Link 2: When an external equipment with a timer function turns on, recording starts.
When it turns off, recording stops.

- 1 Make timer programming on SKY Digital STB/digital terrestrial receiver.
- 2 Insert a disc.
- 3 Press [EXT LINK].

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

Note

It is not possible to use EXT LINK function for timer recording of RGB signals from Sky Digital STB (→ left, To record programmes from satellite receiver by RGB signals).

To cancel the external control

Press [EXT LINK] to stop recording or to cancel linked timer recording standby.

- In order to prevent accidental operation, press [EXT LINK] to cancel the setting after recording is finished.

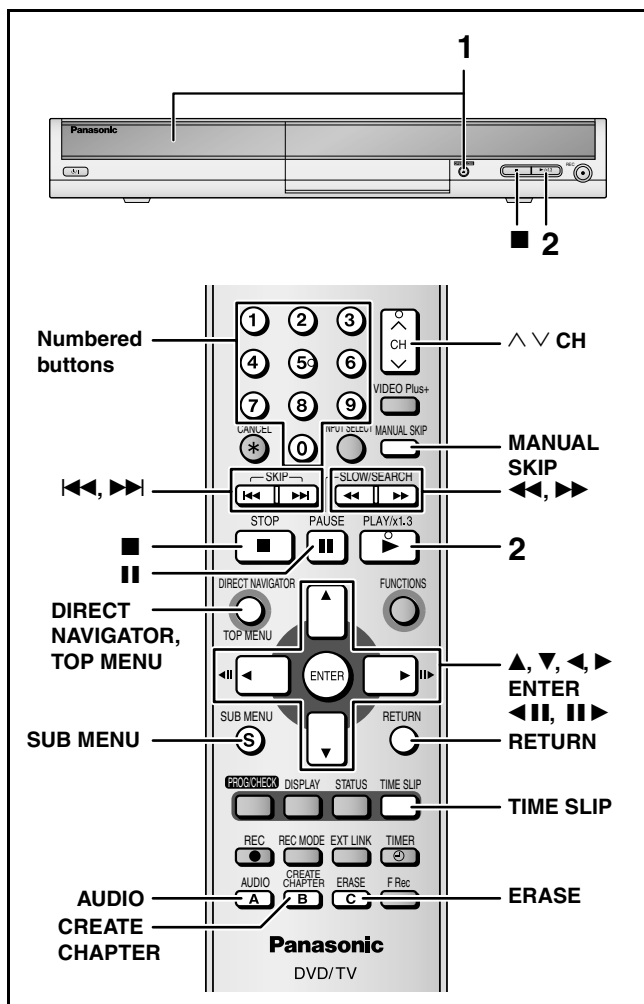
For your reference

- This function does not work with some equipment. Refer to the equipment's operating instructions.
- The beginnings of recordings may not be recorded correctly in some cases.
- When "Ext Link" is set to "Ext Link 2", this function does not work if the input signal is NTSC system.
- Programmes are recorded as one title on this unit when the end time of the earlier timer recording and the start time of the later timer recording are close to each other.

RAM To divide the titles, go to "Divide Title" (→ page 29).

- While the unit is in EXT LINK standby mode or recording, video picture is from the AV2 input terminal irrespective of "AV1 Output" setting.

- Programmes that failed to record are deleted from the timer recording list at 4 a.m. two days later.



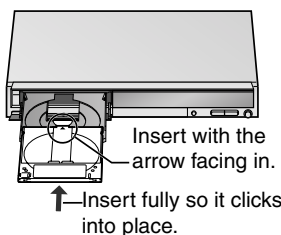
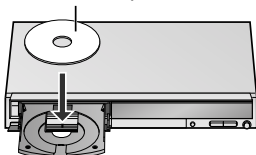
Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Turn on this unit.
- 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 or 8 cm DVD-R, remove the disc from the cartridge.
- For a DVD-RAM with a cartridge
With the write-protect tab in the protect position, play automatically starts when inserted in the unit.
- Depending on the disc, it may take time for the menu screen, pictures, sound etc. to start.

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.



2 Press [▶] (PLAY).

RAM -R -RW(V) +R -RW(VR)

Play starts from the most recently recorded title.

DVD-V DVD-A CD VCD

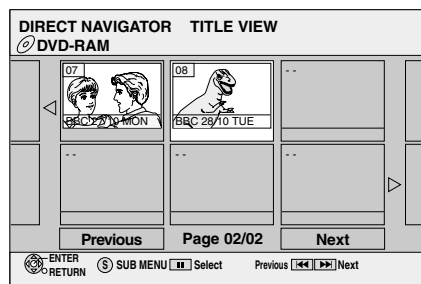
Play starts from the beginning of the disc.



Selecting recorded programmes (titles) to play

RAM -R -RW(V) +R -RW(VR)

1 Press [DIRECT NAVIGATOR].



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

You can also select titles with the numbered buttons.

e.g., 5: [0] → [5] 15: [1] → [5]

To show other pages

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

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

To exit the screen

Press [DIRECT NAVIGATOR].

Direct Navigator screen icons

- Currently recording.
- 🔒 Title protected.
- 📄 Title that was not recorded due to recording protection (Digital broadcasts etc.)
- ✗ Title cannot be played because data is damaged.
- 📁 Title with "One time only recording" restriction
- NTSC (NTSC) Title recorded using a different encoding system from that of the TV system currently selected on the unit.
- PAL (PAL)

When a menu screen appears on the television

DVD-V DVD-A

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

DVD-A Press [TOP MENU].

VCD Press [RETURN].

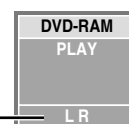
Changing audio during play

Press [AUDIO].

RAM -RW(VR) VCD

LR → L → R

e.g., "L R" is selected



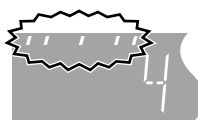


DVD-V DVD-A

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



e.g., **DVD-V** English is the selected language (→ page 26, Soundtrack).

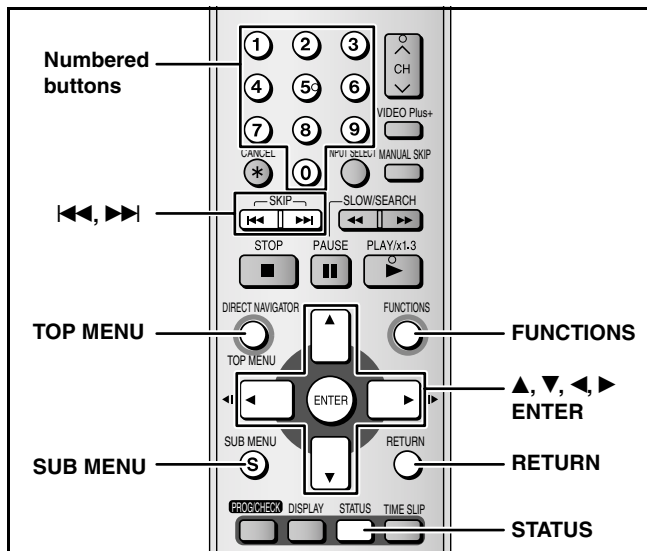
Operations during play

Stop	<p>Press [■]. The stopped position is memorized. When stopped position is memorized (resume), the indicator appears in the unit's display. (Excluding when playing from the Direct Navigator and when playing a playlist.) Resume play function Press [▶] (PLAY) to restart from this position. Stopped position</p> <ul style="list-style-type: none"> • If [■] is pressed several times, the indicator disappears and the position is cleared. • The position is cleared if the unit is turned off or the tray is opened. 	
Pause	<p>Press [⏸]. Press again or press [▶] (PLAY) to restart play.</p>	
Search	<p>Press [◀◀] or [▶▶].</p> <ul style="list-style-type: none"> • The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play. • Audio is heard during first level search forward. Audio is heard during all levels of search. DVD-A (excluding moving picture parts) CD • Depending on the disc, searching may not be possible. 	
Skip	<p>While playing or paused, press [◀◀] or [▶▶].</p> <ul style="list-style-type: none"> • Each press increases the number of skips. 	
Starting from a selected title	<p>Press the numbered buttons.</p> <ul style="list-style-type: none"> • This works only when stopped (screen saver is displayed on the television → right) with some discs. e.g., 5: [0] → [5] CD (MP3, JPEG and TIFF 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] 	
Quick View RAM The play speed can be increased without distorting the audio.	<p>Press and hold [▶] (PLAY/x1.3). Press again to return to normal speed.</p>	
Slow-motion RAM -R -RW(V) +R DVD-V DVD-A (Motion picture parts only) -RW(VR) VCD	<p>While paused, press [◀◀] or [▶▶].</p> <ul style="list-style-type: none"> • 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 approximately 5 minutes (excluding DVD-V DVD-A VCD). 	
Frame-by-frame RAM -R -RW(V) +R DVD-V DVD-A (Motion picture parts only) -RW(VR) VCD	<p>While paused, press [◀] (◀◀) or [▶] (▶▶).</p> <ul style="list-style-type: none"> • Each press shows the next frame. • Press and hold to change in succession forward or backward. • Press [▶] (PLAY) to restart play. • Forward direction only. VCD 	
Displaying the television image as a picture-in-picture	<p>Press [TIME SLIP]. The unit displays the television image as a picture-in-picture.</p> <ul style="list-style-type: none"> • 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. 	 <ul style="list-style-type: none"> • You can change the channel being received by pressing [^ v CH]. • You cannot change the channel being received while recording.
Skipping the specified time (Time Slip) RAM -R -RW(V) +R -RW(VR)	<p>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.</p>	
Manual Skip RAM -R -RW(V) +R -RW(VR) Play restarts from approximately 30 seconds later.	<p>Press [MANUAL SKIP].</p>	

Editing operations during play

Erase RAM -R -RW(V) +R Erase titles during play.	<p>1 Press [ERASE]. 2 Press [◀, ▶] to select "Erase" and press [ENTER].</p> <ul style="list-style-type: none"> • A title cannot be restored once it is erased. Make certain before proceeding. • You cannot erase when recording at the same time. • The available recording space on DVD-R or +R does not increase when you erase titles. • Available recording space on a DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased. 	
Create chapter RAM (→ page 28, Title/Chapter)	<p>Press [CREATE CHAPTER]. Chapters are divided at the point pressed.</p> <ul style="list-style-type: none"> • You cannot create chapters when the unit is in timer recording standby or EXT LINK standby. 	

Using menus to play MP3 and still pictures (JPEG/TIFF)



Regarding MP3 and still pictures (JPEG/TIFF)

- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- Maximum number of files (tracks) and folders (groups) recognizable: 999 files (tracks) and 99 folders (groups)
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (tracks) and/or folders (groups) and some may not display nor be playable.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording, some items may not be playable.

Regarding MP3

- File format: MP3
- Files must have the extension ".mp3" or ".MP3".
- Bit rates: 32 kbps to 320 kbps
- Sampling frequency: 16 kHz/22.05 kHz/24 kHz/32 kHz/44.1 kHz/48 kHz
- This unit is not compatible with ID3 tags.

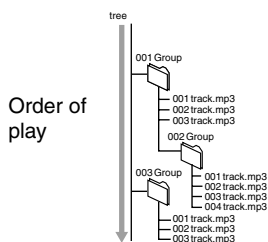
Regarding still pictures (JPEG/TIFF)

- File format: JPEG, TIFF (non-compressed RGB chunky format)
- Files must have the extension ".jpg", ".JPG", ".tif" and ".TIF".
- Number of pixels: 34 x 34 to 6144 x 4096 (Sub sampling is 4:2:2 or 4:2:0)
- Operation may take time to complete when playing TIFF format still pictures.
- MOTION JPEG is not supported.

- You can play MP3 and still pictures (JPEG/TIFF) on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.
- When the highest level folders are "DCIM" folders, they are displayed first on the tree.

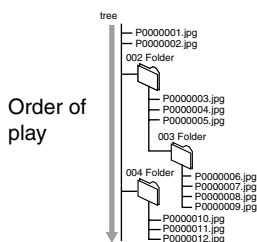
Structure of MP3 folders

Prefix with 3-digit numbers in the order you want to play them.



Structure of still pictures (JPEG/TIFF)

Files inside a folder are displayed in the order they were updated or taken.



Playing MP3

[CD]

This unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ page 41) on a computer.

The screen shown right is displayed when you insert a disc containing MP3 files and still pictures (JPEG/TIFF). Press [ENTER], and follow the steps below.

Playback mode is set to MP3. Select "JPEG" from MENU in FUNCTIONS if you play pictures (JPEG).

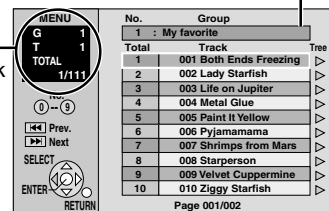


1 Press [TOP MENU].

G: Group no.

T: Track no. in the group

TOTAL: Track no./Total track no. in all groups



- Files are treated as tracks and folders are treated as groups.

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

Play starts on the selected track.

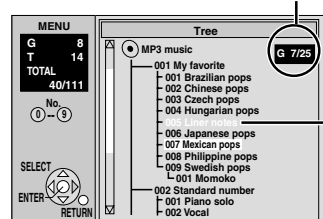
- "[]" indicates the track currently playing.
- You can also select the track with the numbered buttons.
e.g., 5: [0] → [0] → [5]
15: [0] → [1] → [5]

■ Using the tree screen to find a group

While the file list is displayed

1 Press [▶] while a track is highlighted to display the tree screen.

G: 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 show other pages

Press [◀, ▶].

To return to the previous screen

Press [RETURN].

To exit the screen

Press [TOP MENU].

Playing still pictures (JPEG/TIFF)

[CD]

You can play CD-R/CD-RW discs which contain still pictures (JPEG/TIFF) that have been recorded and finalized (→ page 41) on a computer.

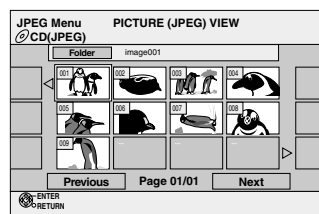
The screen shown right is displayed when you insert a disc containing MP3 files and still pictures (JPEG/TIFF).

Select JPEG menu before performing the steps below. (→ page 25, To select JPEG Menu)

Playback mode is set to MP3. Select "JPEG" from MENU in FUNCTIONS if you play pictures (JPEG).



1 Press [TOP MENU].



2 Press [▲, ▼, ◀, ▶] to select the still picture and press [ENTER].

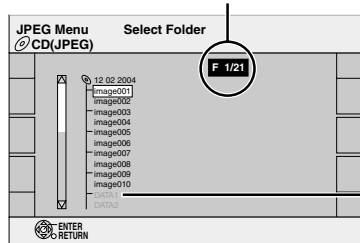
- The selected still picture is displayed on the screen.
You can also select still pictures with the number buttons.
e.g., 5: [0] → [0] → [5]
15: [0] → [1] → [5]

■ To select another folder

While the JPEG Menu is displayed

1 Press [▲, ▼, ◀, ▶] to select “Folder” and press [ENTER].

F: Selected folder no./Total folder no.



You cannot select folders that contain no compatible files.

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

To display the previous or next still picture during play
Press [◀, ▶].

To show other pages
Press [◀◀, ▶▶].

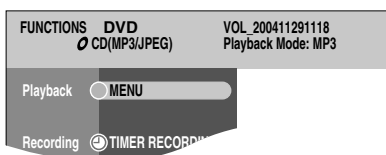
To return to the previous screen
Press [RETURN].

To exit the screen
Press [TOP MENU].

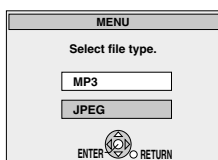
To select JPEG Menu

1 Press [ENTER].

2 Press [FUNCTIONS].



3 Press [▲, ▼] to select “MENU” and press [ENTER].

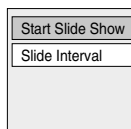


4 Press [▲, ▼] to select “JPEG” and press [ENTER].

To display still pictures one by one

After Step 1 (→ page 24, Playing still pictures (JPEG/TIFF))

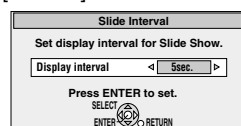
2 Press [▲, ▼, ◀, ▶] to select “Folder” and press [SUB MENU].



3 Press [▲, ▼] to select “Start Slide Show” and press [ENTER].

To change the slide interval

- ① In step 2 above, press [▲, ▼] to select “Slide Interval” and press [ENTER].

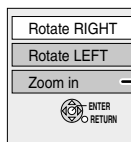


- ② Press [◀, ▶] to select the slide interval and press [ENTER].
 - You can select a slide interval between 0-30 seconds.

To rotate and zoom in / zoom out

1 While playing

Press [SUB MENU].



The “Zoom in / Zoom out” function is only available for still pictures smaller than 640 x 480 pixels.

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

To return the picture to its original size

- ① Press [SUB MENU].
- ② Press [▲, ▼] to select “Zoom out” and press [ENTER].

To return the rotated picture to its original position

- ① Press [SUB MENU].
- ② Press [▲, ▼] to select the opposite rotation button and press [ENTER].

Note

- The rotation and enlargement information will not be stored.
- When zooming in, the picture may be cut off.

To view the picture properties

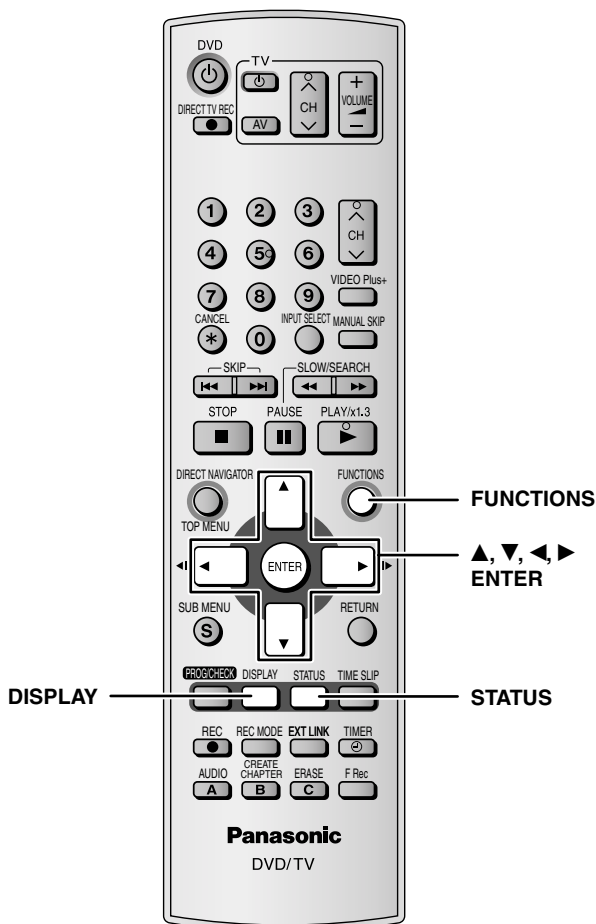
Press [STATUS] twice.



Shooting date

To exit the picture properties screen

Press [STATUS].



Common procedures

1 Press [DISPLAY].

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

- 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 -R -RW(V) +R -RW(VR)

The disc's audio attributes appear.

DVD-V DVD-A

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

Subtitle*

DVD-V DVD-A

Turn the subtitle on/off and select the language (→ below, Language).

RAM -R -RW(V) +R -RW(VR) (Only discs that contain subtitle on/off information)

- Subtitle on/off information cannot be recorded using this unit.

Audio channel RAM -RW(VR) VCD

→ page 22, Changing audio during play

Angle* DVD-V DVD-A

Change the number to select an angle.

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. (unchangeable)

* With some discs, you may only be able to make changes using the menus (→ page 22) on the disc.

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

Audio attribute

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

Language

ENG: English	SVE: Swedish	CHI: Chinese
FRA: French	NOR: Norwegian	KOR: Korean
DEU: German	DAN: Danish	MAL: Malay
ITA: Italian	POR: Portuguese	VIE: Vietnamese
ESP: Spanish	RUS: Russian	THA: Thai
NLD: Dutch	JPN: Japanese	*: Others

- Enter a code (→ page 37) when you select “*:Others”.

Play menu—Change the play sequence

This function works only when the elapsed play time is displayed. Select the item for repeat play. Depending on the disc, the items that can be selected will differ.

Repeat play

• All	CD (excluding MP3 discs) VCD
• Chapter	RAM -R -RW(V) +R DVD-V -RW(VR)
• Group	DVD-A CD (MP3 discs only)
• PL (Playlist)	RAM
• Title	RAM -R -RW(V) +R DVD-V -RW(VR)
• Track	DVD-A CD VCD

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 title being played (→ page 41, 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 (normal):** Detects 24 frame-per-second film content and 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.

AV-in NR (Only when AV1, AV2, AV3 or AV4 is selected)

Reduces video tape noise while dubbing.

- **Automatic:** Noise reduction only works on picture input from a video tape.
- **On:** Noise reduction works for any input video.
- **Off** Noise reduction is off. You can record the input signal as it is.

* Only when you have set “Progressive” to “On” in the SETUP menu (→ page 36).

Sound menu—Change the sound effect

V.S.S. **RAM** **-R** **-RW(V)** **+R** **DVD-V** **DVD-A** **-RW(VR)**
(Dolby Digital, 2-channel or over only)

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

- Turn V.S.S. off if it causes distortion.
- V.S.S. does not work for bilingual recordings.

Dialog Enhancer **RAM** **-RW(V)** **+R** **DVD-V** **DVD-A** **-RW(VR)**
(Dolby Digital, 3-channel or over only, including a center channel)

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

Other menu—Change the display position

Position

1 - 5: The higher the setting the lower the on-screen menu moves.

FUNCTIONS window and Status messages

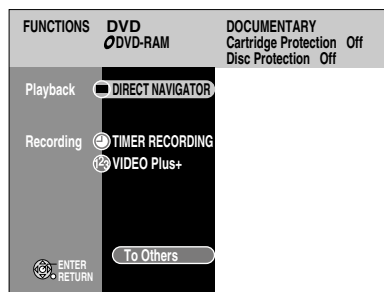
FUNCTIONS window

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

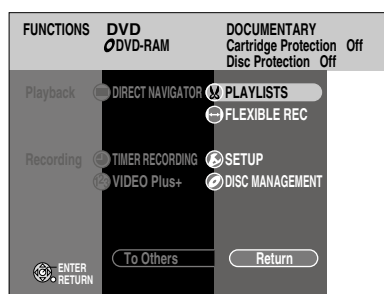
1 While stopped

Press [FUNCTIONS].

Functions displayed depend on the type of disc.



“To Others” ↓ ↑ “Return”



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

- If you select “To Others”, press [▲, ▼] to select an item (e.g., “SETUP” or “DISC MANAGEMENT”) and press [ENTER].
- If you select “Return”, press [▲, ▼] to select an item (e.g., “DIRECT NAVIGATOR” or “TIMER RECORDING”) and press [ENTER].

To exit the FUNCTIONS window

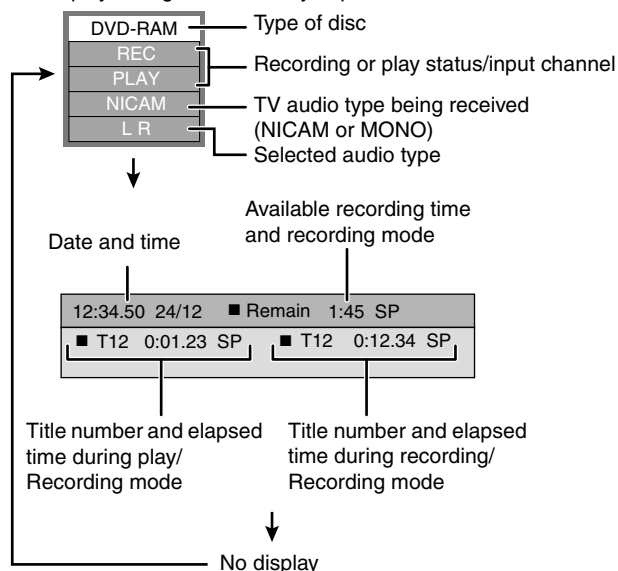
Press [FUNCTIONS].

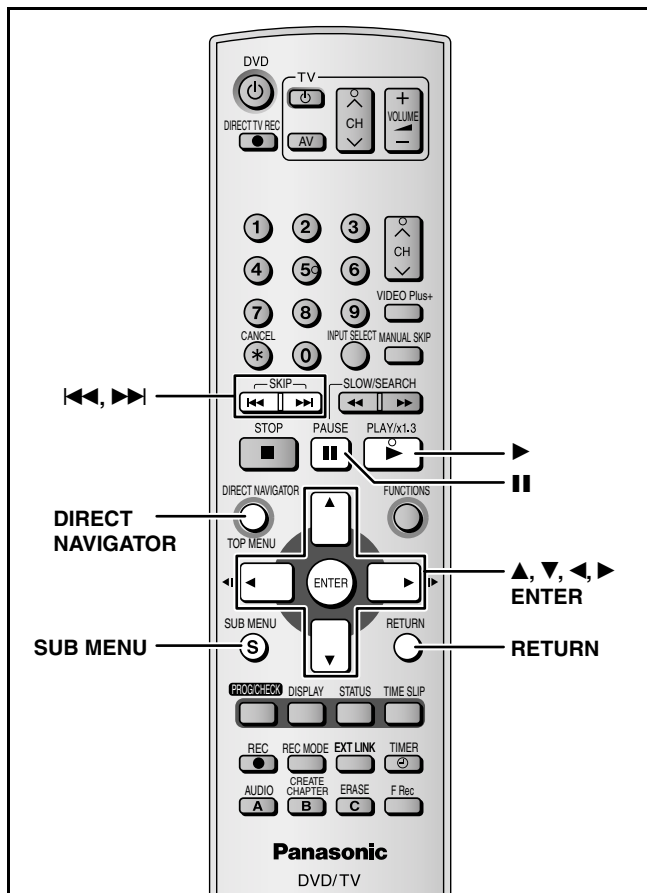
Status messages

Status messages appear on the television during operation to show the condition of the unit.

Press [STATUS].

The display changes each time you press the button.

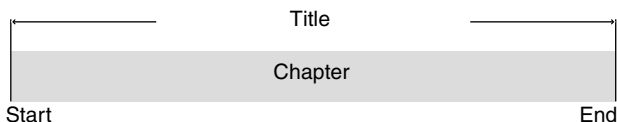




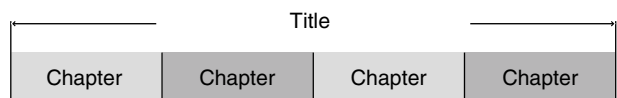
RAM -R -RW(V) +R

Title/Chapter

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



You can divide a title into multiple chapters. **RAM**
(→ page 23, 29, "Create Chapter")



You can change the order of chapters and create a playlist
(→ page 30). **RAM**

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

- The maximum number of items on a disc:
 - Titles: 99 (**+R** 49 titles)
 - Chapters: Approximately 1000 (**+R** Approximately 254)
(Depends on the state of recording.)

Note

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

Preparation

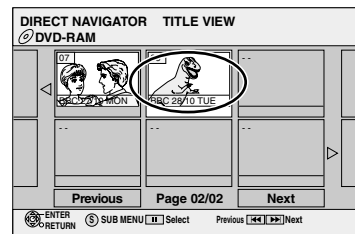
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Turn the unit on.
- Insert the disc with the title to edit.

Editing titles/chapters and playing chapters

Preparation

Release protection (→ page 32). **RAM**

- 1 During play or while stopped
Press **[DIRECT NAVIGATOR]**.
- 2 Press **[▲, ▼, ◀, ▶]** to select the title.



To show other pages

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

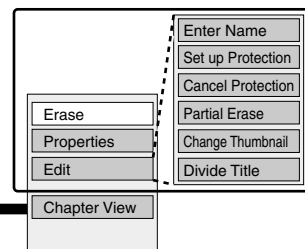
- You can also press **[◀◀, ▶▶]** to show other pages.

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]** (→ page 29).



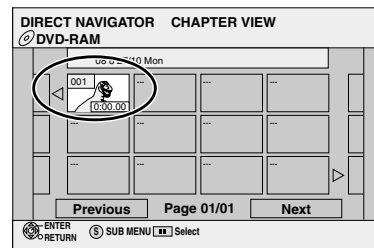
Refer to "Title operations".

If you select "Chapter View"

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

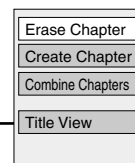
To start play → Press **[ENTER]**.

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 the Title View.

To exit the screen

Press **[DIRECT NAVIGATOR]**.

To return to the previous screen

Press **[RETURN]**.

Title operations

Erase [*] RAM -R -RW(V) +R	<p>Press [◀▶] to select “Erase” and press [ENTER].</p> <ul style="list-style-type: none"> Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding. The available recording time on DVD-R or +R does not increase when you erase titles. Available recording space on a DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased. 	
Properties RAM -R -RW(V) +R -RW(VR)	<p>Information (e.g., time and date) is shown.</p> <ul style="list-style-type: none"> Press [ENTER] to exit the screen. 	
Enter Name RAM -R -RW(V) +R	<p>You can give names to recorded titles. → page 34, Entering text</p>	
Set up Protection [*] Cancel Protection [*] RAM	<p>If set, this will protect the title from accidental erasure.</p> <p>Press [◀▶] to select “Yes” and press [ENTER].</p> <p>The lock symbol appears when the title is protected.</p>	
Partial Erase RAM (→ below, “For your reference”)	<p>You can remove unnecessary part of the recording.</p> <ol style="list-style-type: none"> Press [ENTER] at the start point and end point of the section you want to erase. Press [▲▼] to select “Exit” and press [ENTER]. <ul style="list-style-type: none"> Select “Next” and press [ENTER] to erase other sections. Press [◀▶] to select “Erase” and press [ENTER]. 	
Change Thumbnail RAM -R -RW(V) +R (→ below, “For your reference”)	<p>You can change the image to be shown as a thumbnail picture in the Title View.</p> <ol style="list-style-type: none"> Press [▶] (PLAY) to start play. Press [ENTER] when the image you want to use as a thumbnail is shown. <p>To change the thumbnail</p> Restart play and press [▲▼] to select “Change”, then press [ENTER] at the point you want to use as the thumbnail. Press [▲▼] to select “Exit” and press [ENTER]. 	
Divide Title RAM (→ below, “For your reference”)	<p>You can divide a title into two.</p> <ol style="list-style-type: none"> Press [ENTER] at the point you want to divide the title. Press [◀▶] to select “Exit” and press [ENTER]. Press [▲▼] to select “Divide” and press [ENTER]. <p>To confirm the division point</p> Press [▲▼] to select “Preview” and press [ENTER]. (The unit plays 10 seconds before and after the division point.) <p>To change the division point</p> Restart play and press [▲▼] to select “Divide”, then press [ENTER] at the point you want to change. <p>Note</p> <ul style="list-style-type: none"> The divided titles retain the name and CPRM property (→ page 41) of the original title. Video and audio just before and after the dividing point may momentarily cut out. 	

^{*} Multiple editing is possible.

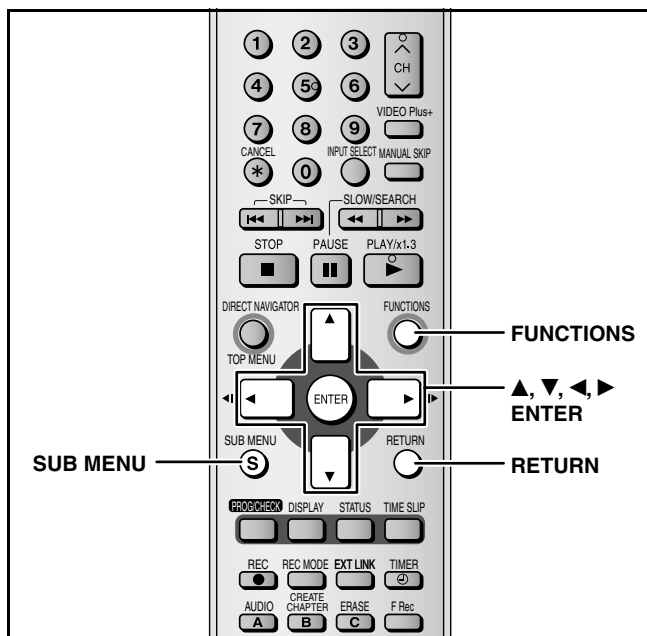
Chapter operations

Erase Chapter [*] RAM	<p>Press [◀▶] to select “Erase” and press [ENTER].</p> <ul style="list-style-type: none"> Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding. 	
Create Chapter RAM (→ below, “For your reference”)	<ol style="list-style-type: none"> Press [ENTER] at the point you want to divide. <ul style="list-style-type: none"> Repeat this step to divide at other points. Press [▲▼] to select “Exit” and press [ENTER]. 	
Combine Chapters RAM	<p>Press [◀▶] to select “Combine” and press [ENTER].</p> <ul style="list-style-type: none"> The selected chapter and next chapter are combined. 	

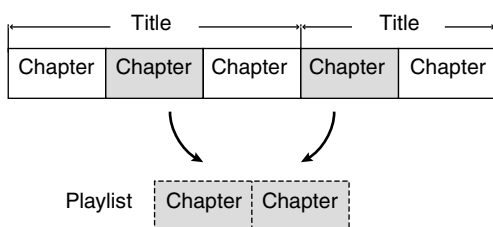
^{*} Multiple editing is possible.

For your reference

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



You can arrange the chapters (→ page 28) to create a playlist.



- Editing playlists doesn't modify the recorded data.
- Playlists are not recorded separately so this doesn't use much capacity.

RAM

- The maximum number of items on a disc:
 - Playlists: 99
 - Chapters in playlists: Approximately 1000 (Depends on the state of recording.)
- If you exceed the maximum numbers of items for a disc, all the items entered will not be recorded.
- You cannot create or edit a playlist while recording.

Creating playlists

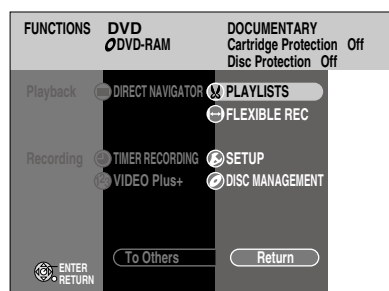
Preparation

- Turn the unit on.
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Insert the disc with the title to edit.
- Release protection (→ page 32).

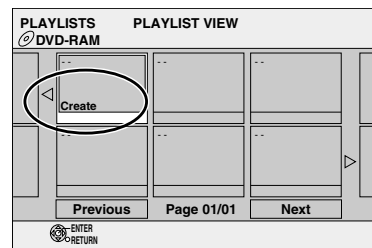
1 While stopped

Press [FUNCTIONS].

2 Press [▲, ▼] to select “To Others” and press [ENTER].



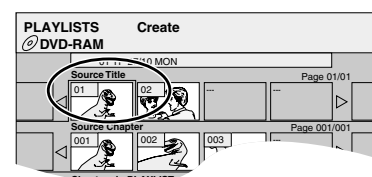
3 Press [▲, ▼] to select “PLAYLISTS” and press [ENTER].



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

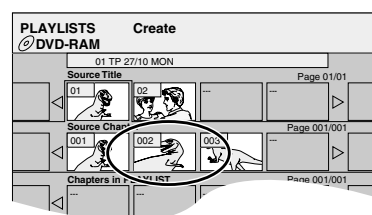
5 Press [◀, ▶] to select the source title and press [▼].

- Press [ENTER] to select all the chapters in the title, then skip to step 7.



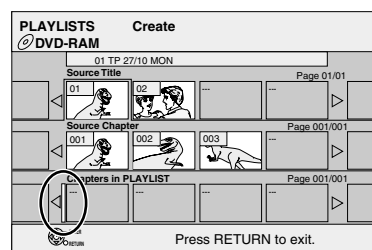
6 Press [◀, ▶] to select the chapter you want to add to a playlist and press [ENTER].

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 29, Create Chapter).

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



- Press [▲] to select other source titles.
- Repeat steps 6–7 to add other chapters.

8 Press [RETURN].

To exit the screen

Press [RETURN] several times.

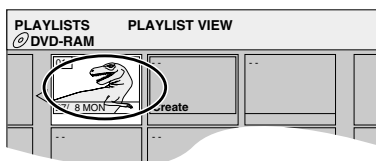
To return to the previous screen

Press [RETURN].

Editing and playing playlists/chapters

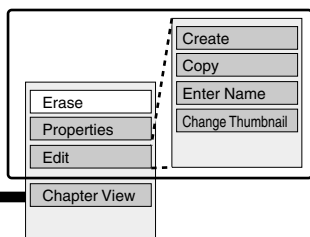
RAM **-RW(VR)** (play only)

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼] to select “To Others” and press [ENTER].
- 3 Press [▲, ▼] to select “PLAYLISTS” and press [ENTER].
- 4 Press [▲, ▼, ◀, ▶] to select the playlist.
To start play → Press [ENTER].
To edit → Step 5.



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

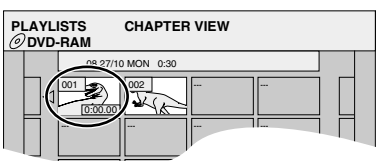
- 5 Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].
• If you select “Edit”, press [▲, ▼] to select the operation and press [ENTER].



Refer to “Playlist operations”.

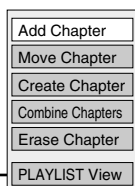
If you select “Chapter View”

- 6 Press [▲, ▼, ◀, ▶] to select the chapter.
To start play → Press [ENTER].
To edit → Step 7.



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

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



Refer to “Chapter operations”.

• You can go back to the PLAYLIST View.

Playlist operations

Erase [*] RAM	Press [◀, ▶] to select “Erase” and press [ENTER].
Properties RAM -RW(VR)	Playlist information (e.g., time and date) is shown. • Press [ENTER] to exit the screen. <div data-bbox="1212 318 1457 441" data-label="Image"> </div>
Create RAM	→ page 30, Creating playlists, Step 5-8
Copy [*] RAM	Press [◀, ▶] to select “Copy” and press [ENTER].
Enter Name RAM	→ page 34, Entering text
Change Thumbnail RAM	→ page 29, Change Thumbnail

^{*} Multiple editing is possible.

Chapter operations

RAM

- Editing chapters in a playlist does not modify the source titles and source chapters.

Add Chapter	→ page 30, Creating playlists, Step 5-7
Move Chapter	Press [▲, ▼, ◀, ▶] to select the position to insert the chapter and press [ENTER]. <div data-bbox="1077 1120 1457 1366" data-label="Image"> </div>
Create Chapter	→ page 29, Create Chapter
Combine Chapters	→ page 29, Combine Chapters
Erase Chapter [*]	→ page 29, Erase Chapter

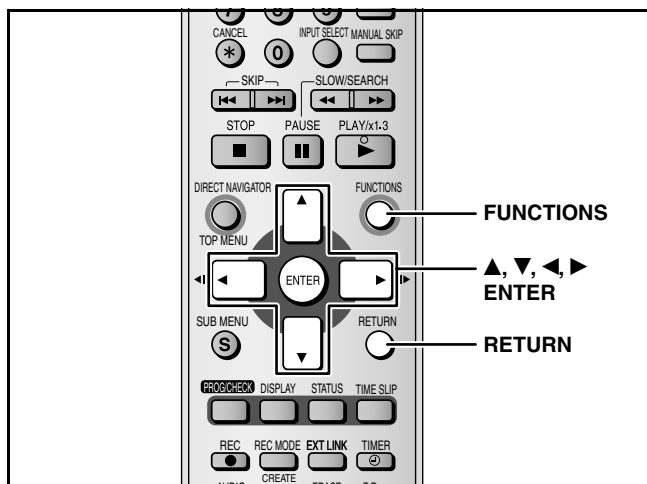
^{*} Multiple editing is possible.

To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].



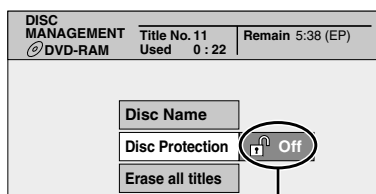
Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Turn the unit on.
- Insert the disc to be managed.

Setting the protection

RAM

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼] to select “To Others” and press [ENTER].
- 3 Press [▲, ▼] to select “DISC MANAGEMENT” and press [ENTER].
- 4 Press [▲, ▼] to select “Disc Protection” and press [ENTER].
- 5 Press [◀, ▶] to select “Yes” and press [ENTER].

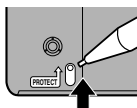


The lock symbol appears closed when the disc is write-protected.

Setting the protection for the whole disc

- For a DVD-RAM with a cartridge

With the write-protect tab in the protect position, play automatically starts when inserted in the unit.



To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

Providing a disc with a name

RAM -R -RW(V) +R

Preparation

- Release protection (→ left).

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼] to select “To Others” and press [ENTER].
- 3 Press [▲, ▼] to select “DISC MANAGEMENT” and press [ENTER].
- 4 Press [▲, ▼] to select “Disc Name” and press [ENTER].

→ page 34, Entering text

- The disc name is displayed in the FUNCTIONS window.
- With a finalized DVD-R, DVD-RW (DVD-Video format) and +R, the name is displayed on the Top Menu.



To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

Erasing all titles—Erase all titles

RAM

Preparation

- Release protection (→ left).

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼] to select “To Others” and press [ENTER].
- 3 Press [▲, ▼] to select “DISC MANAGEMENT” and press [ENTER].
- 4 Press [▲, ▼] to select “Erase all titles” and press [ENTER].
- 5 Press [◀, ▶] to select “Yes” and press [ENTER].
- 6 Press [◀, ▶] to select “Start” and press [ENTER].
A message appears when finished.
- 7 Press [ENTER].

Note

- Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.
- Erasing all video titles will result in all playlists also being erased.
- Erase does not work if one or more titles are protected.

To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

Erasing all the contents of a disc –Format Disc

RAM **-RW(V)** **-RW(VR)**

Note

- **Formatting erases all contents, and it cannot be restored. Check carefully before proceeding.** The contents are erased when you format it even if you have set protection.

Preparation

- **RAM** Release protection (→ page 32).

- 1** While stopped
Press **[FUNCTIONS]**.
- 2** Press **[▲, ▼]** to select “To Others” and press **[ENTER]**.
- 3** Press **[▲, ▼]** to select “DISC MANAGEMENT” and press **[ENTER]**.
- 4** Press **[▲, ▼]** to select “Format Disc” and press **[ENTER]**.
- 5** Press **[◀, ▶]** to select “Yes” and press **[ENTER]**.
- 6** Press **[◀, ▶]** to select “Start” and press **[ENTER]**.
A message appears when formatting is finished.
- 7** Press **[ENTER]**.

Note

- **Do not disconnect the AC mains lead while formatting.** This can render the disc unusable. Formatting normally takes a few minutes, however it may take up to a maximum of 70 minutes.

• 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.)

- Formatting cannot be performed on DVD-R, +R or CD-R/RW.
- You can format DVD-RW only as DVD-Video format on this unit.
- When a disc has been formatted using this unit, it may not be possible to use it on any other equipment.

To exit the screen

Press **[RETURN]** several times.

To return to the previous screen

Press **[RETURN]**.

Enabling DVD-R, DVD-RW (DVD-Video format) or +R to be played on other equipment–Finalize

-R **-RW(V)** **+R**

- 1** While stopped
Press **[FUNCTIONS]**.
- 2** Press **[▲, ▼]** to select “To Others” and press **[ENTER]**.
- 3** Press **[▲, ▼]** to select “DISC MANAGEMENT” and press **[ENTER]**.
- 4** Press **[▲, ▼]** to select “Auto-Play Select” and press **[ENTER]**.
Press **[▲, ▼]** to select “Top Menu” or “Title 1” and press **[ENTER]**.
You can select whether to show the top menu after finalizing.
Top Menu: The top menu appears first.
Title 1: The disc content is played without displaying the top menu.
- 5** Press **[▲, ▼]** to select “Finalize” and press **[ENTER]**.
 - ①** Press **[◀, ▶]** to select “Yes” and press **[ENTER]**.
 - ②** Press **[◀, ▶]** to select “Start” and press **[ENTER]**.
Finalizing starts.
You cannot cancel finalizing.
A message appears when finalizing is finished.
 - ③** Press **[ENTER]**.

Note

When finalizing a high-speed recording compatible disc, it may take longer than displayed on the confirmation screen (approximately four times).

After finalizing

- **-R** **+R** The disc becomes play-only and you can no longer record or edit.
- **-RW(V)** You can record and edit the disc after formatting (→ left) although it becomes play-only after finalizing.
- Titles are divided into about 5-minute* chapters.
* This time varies greatly depending on the condition and mode of recording.
- There is a pause of several seconds between titles and chapters during play.

Do not disconnect the AC mains lead while finalizing. This will render the disc unusable.

- Finalizing takes up to 15 minutes.

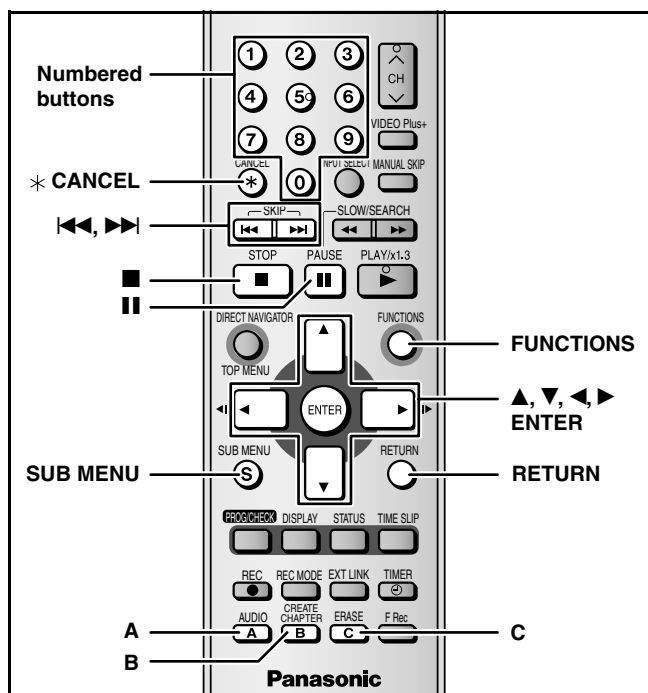
- You cannot finalize DVD-R, DVD-RW (DVD-Video format) or +R recorded on other manufacturer's equipment.
- DVD-R, DVD-RW (DVD-Video format) or +R finalized on this unit may not be playable on other players due to the condition of the recording.
- Visit Panasonic's homepage for more information about DVDs.
<http://www.panasonic-europe.com>

To exit the screen

Press **[RETURN]** several times.

To return to the previous screen

Press **[RETURN]**.



RAM -R -RW(V) +R

You can give names to recorded titles, etc.
The maximum number of characters:

RAM	Characters	-R -RW(V) +R	Characters
Title	64 (44*)	Title	44
Playlist	64	Disc	40
Disc	64		

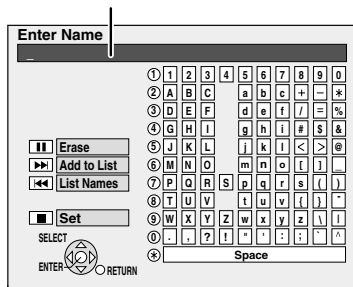
* Timer recording

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

1 Show Enter Name screen.

Title (timer recording)	(→ page 19 and 20, Step 3)
Title	(→ page 28, Step 3)
Playlist	(→ page 31, Step 5)
Disc	(→ page 32, "Providing a disc with a name")

Name field: shows the text you have entered



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

Repeat this step to enter other characters.

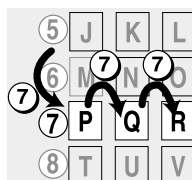
• To erase a character

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"

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



• To enter a space

Press [× CANCEL] and press [ENTER].

• To add frequently used names

Maximum number of added names: 20

Maximum number of characters per name: 20

① Press [▶▶] while the name to be added is shown in the name field.

② Press [◀] to select "Add" and press [ENTER].

• To cancel adding word

Press [RETURN].

• To recall an added name

① Press [◀◀].

② Press [▲, ▼, ◀, ▶] to select the name to be recalled and press [ENTER].

• To erase an added name

① Press [◀◀].

② Press [▲, ▼, ◀, ▶] to select the name to be erased and press [SUB MENU].

③ Press [ENTER].

④ Press [◀] to select "Erase" and press [ENTER].

⑤ Press [RETURN].

3 Press [■] (Set).

Returns to the previously displayed screen.

To end partway

Press [RETURN].

Text is not saved.

Changing the unit's settings

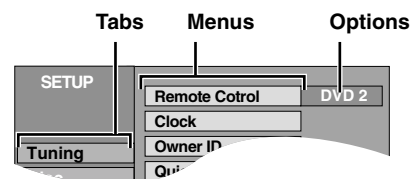
Common procedures

1 While stopped

Press [FUNCTIONS].

2 Press [▲, ▼] to select "To Others" and press [ENTER].

3 Press [▲, ▼] to select "SETUP" and press [ENTER].



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

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

6 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)	
	Download from TV (→ page 39)	
Disc	Settings for playback	
	● Press [ENTER] to show the following setting.	
	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.	<ul style="list-style-type: none"> ● <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.
	DVD-Audio Video mode Playback Select "On" to play DVD-Video content on some DVD-Audio.	<ul style="list-style-type: none"> ● <u>Unlock Recorder</u> ● Change Password ● Change Level ● Temporary Unlock
	Soundtrack DVD-V ● Some discs start in a certain language despite any changes you make here.	<ul style="list-style-type: none"> ● <u>English</u> ● French ● German ● Italian ● Spanish ● Original: The original language of each disc will be selected. ● Other * * * *
	Subtitle ● Enter a code (→ page 37) when you selecting "Other * * * *".	<ul style="list-style-type: none"> ● <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	<ul style="list-style-type: none"> ● <u>English</u> ● French ● German ● Italian ● Spanish ● Other * * * *
	Settings for recording	
	● Press [ENTER] to show the following setting.	
	Recording time in EP mode Select the maximum number of hours for recording in EP mode (→ page 16, Recording modes and approximate recording times).	<ul style="list-style-type: none"> ● EP (6Hours): You can record for 6 hours on an unused 4.7 GB disc. ● <u>EP (8Hours)</u>: You can record for 8 hours on an unused 4.7 GB disc.
Picture	Comb Filter Select the picture sharpness when recording. The setting is fixed with "On" if you set "TV System" to "NTSC" (→ page 39).	<ul style="list-style-type: none"> ● On: Select it to record clear picture. ● <u>Off</u>: Normally, use this setting.
	Still Mode Select the type of picture shown when you pause play (→ page 42, Frames and fields).	<ul style="list-style-type: none"> ● <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.
Sound	Dynamic Range Compression DVD-V (Dolby Digital only) Change the dynamic range for late night viewing.	<ul style="list-style-type: none"> ● On ● <u>Off</u>
	Bilingual Audio Selection Select whether to record the main or secondary audio type when recording to DVD-R, DVD-RW (DVD-Video format) or +R. You cannot select this when recording from an external source onto DVD-R, DVD-RW (DVD-Video format) or +R. Select the audio on the other equipment.	<ul style="list-style-type: none"> ● <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 10).	
	● 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.	<ul style="list-style-type: none"> ● 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 	<ul style="list-style-type: none"> ● <u>Bitstream</u>: When connecting to equipment displaying the Dolby Digital logo. ● PCM: When connecting to equipment not displaying the Dolby Digital logo.
	DTS 	<ul style="list-style-type: none"> ● <u>Bitstream</u>: When connecting to equipment displaying the DTS logo. ● PCM: When connecting to equipment not displaying the DTS logo.
	MPEG	<ul style="list-style-type: none"> ● Bitstream: When connected to equipment with a built-in MPEG decoder. ● <u>PCM</u>: When connected to equipment without a built-in MPEG decoder.
	Note Not making the proper settings may result in noise or some trouble for digital recording. To avoid damaging your hearing and speakers, turn down the volume level.	

Tabs	Menus	Options (Underlined items are the factory presets.)		
Display	On-Screen Messages Choose whether to show status messages automatically.	<ul style="list-style-type: none"> • <u>Automatic</u> • Off 		
	Grey Background Select "Off" if you do not want to have the unit show the grey background when tuner reception is weak.	<ul style="list-style-type: none"> • <u>On</u> • Off 		
	FL Display Changes the brightness of the unit's display.	<ul style="list-style-type: none"> • <u>Bright</u> 	<ul style="list-style-type: none"> • Dim 	
Connection	TV Aspect (→ page 14)	<ul style="list-style-type: none"> • <u>16:9</u> 	<ul style="list-style-type: none"> • 4:3 	<ul style="list-style-type: none"> • Letterbox
	Progressive (→ page 14) This setting cannot be made when the "AV1 Output" is set to "RGB (without component)" (→ below)	<ul style="list-style-type: none"> • On 	<ul style="list-style-type: none"> • <u>Off</u> 	
	TV System (→ page 39)	<ul style="list-style-type: none"> • <u>PAL</u> 	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Video (with component) • S Video (with component) • <u>RGB (without component)</u> 		
	AV2 Settings Set to match the connected equipment. • Press [ENTER] to show the following settings.			
	AV2 Input Set to "RGB/Video" when receiving or recording RGB output from external equipment.	<ul style="list-style-type: none"> • <u>RGB/Video</u> • RGB • Video • S Video 		
	Ext Link This setting cannot be made when the "TV System" is set to "NTSC" (→ page 39).	<ul style="list-style-type: none"> • <u>Ext Link 1</u>: When a satellite/digital terrestrial receiver (SKY digital STB etc.) which transmits a special control signal recordings via the 21-pin Scart lead is connected. • Ext Link 2: When an external equipment with a timer function is connected. 		

Tabs	Menus	Options (Underlined items are the factory presets.)		
Others	Remote Control (→ page 15)	• <u>DVD 1</u>	• DVD 2	• DVD 3
	Clock			
	Auto Clock Setting (→ page 40)			
	Manual Clock Setting (→ page 40)			
	Owner ID (→ page 11, 12)	• PIN number	• Name	• House No. • Postcode
	In order to prevent another person from using this unit if it is stolen, you can set a PIN number and input your personal information. Once the PIN number has been set, you cannot return to the factory preset. Make sure not to forget this.			
	Quick Start	• <u>On</u>		
	A few seconds after turning on the unit, you can start recording to DVD-RAM.	• Off		
	Power consumption is also higher when the unit is turned off if this is set to "On".			
	Shipping Condition	• Yes		
	All the settings except for the ratings level, ratings password, Owner ID and time settings return to the factory preset. The timer recording programmes are also cancelled.	• <u>No</u>		
	Default Settings	• Yes		
	All the settings except for the programmed channels, time settings, disc language settings, ratings level, ratings password, Owner ID and remote control code return to the factory presets.	• <u>No</u>		

Language code list

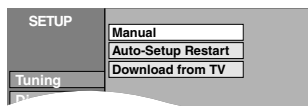
Enter the code with the numbered buttons.

Abkhazian: 6566	Catalan: 6765	Gujarati: 7185	Lingala: 7678	Rhaeto-Romance: 8277	Tamil: 8465
Afar: 6565	Chinese: 9072	Hausa: 7265	Lithuanian: 7684	Romanian: 8279	Tatar: 8484
Afrikaans: 6570	Corsican: 6779	Hebrew: 7387	Macedonian: 7775	Russian: 8285	Telugu: 8469
Albanian: 8381	Croatian: 7282	Hindi: 7273	Malagasy: 7771	Samoan: 8377	Thai: 8472
Ameharic: 6577	Czech: 6783	Hungarian: 7285	Malay: 7783	Sanskrit: 8365	Tibetan: 6679
Arabic: 6582	Danish: 6865	Icelandic: 7383	Malayalam: 7776	Scots Gaelic: 7168	Tigrinya: 8473
Armenian: 7289	Dutch: 7876	Indonesian: 7378	Maltese: 7784	Serbian: 8382	Tonga: 8479
Assamese: 6583	English: 6978	Interlingua: 7365	Maori: 7773	Serbo-Croatian: 8372	Turkish: 8482
Aymara: 6589	Esperanto: 6979	Irish: 7165	Marathi: 7782	Shona: 8378	Turkmen: 8475
Azerbaijani: 6590	Estonian: 6984	Italian: 7384	Moldavian: 7779	Sindhi: 8368	Twili: 8487
Bashkir: 6665	Faroeese: 7079	Japanese: 7465	Mongolian: 7778	Singhalese: 8373	Ukrainian: 8575
Basque: 6985	Fiji: 7074	Javanese: 7487	Nauru: 7865	Slovak: 8375	Urdu: 8582
Bengali; Bangla: 6678	Finnish: 7073	Kannada: 7578	Nepali: 7869	Slovenian: 8376	Uzbek: 8590
Bhutanian: 6890	French: 7082	Kashmiri: 7583	Norwegian: 7879	Somali: 8379	Vietnamese: 8673
Bihari: 6672	Frisian: 7089	Kazakh: 7575	Oriya: 7982	Spanish: 6983	Volapük: 8679
Breton: 6682	Galician: 7176	Kirghiz: 7589	Pashto, Pushto: 8083	Sundanese: 8385	Welsh: 6789
Bulgarian: 6671	Georgian: 7565	Korean: 7579	Persian: 7065	Swahili: 8387	Wolof: 8779
Burmese: 7789	German: 6869	Kurdish: 7585	Polish: 8076	Swedish: 8386	Xhosa: 8872
Byelorussian: 6669	Greek: 6976	Laotian: 7679	Portuguese: 8084	Tagalog: 8476	Yiddish: 7473
Cambodian: 7577	Greenlandic: 7576	Latin: 7665	Punjabi: 8065	Tajik: 8471	Yoruba: 8979
	Guarani: 7178	Latvian, Lettish: 7686	Quechua: 8185		Zulu: 9085

Refer to the control reference on page 34.

Tuning

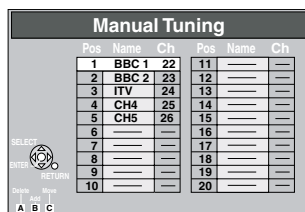
- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼] to select "To Others" and press [ENTER].
- 3 Press [▲, ▼] to select "SETUP" and press [ENTER].
- 4 Press [▲, ▼] to select "Tuning" and press [▶].



Manual

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

- 5 Press [▲, ▼] to select "Manual" and press [ENTER].



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

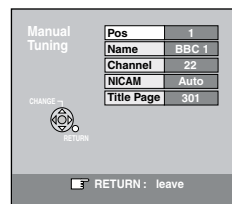
- ① Press [▲, ▼, ◀, ▶] to select a programme position and press [C].
- ② Press [▲, ▼, ◀, ▶] to select the new programme position to which you want to assign the TV station and press [ENTER].

Note

If Preset Download (→ page 11) has been performed, only deletion of the programme position can be performed.

- To change the tuning settings for individual programme position

- 6 Press [▲, ▼, ◀, ▶] to select a programme position and press [ENTER].



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].
NICAM	To select the type of sound to be recorded Press [▲, ▼] to select "Auto" and press [ENTER]. • Select "Off" if you want to record the normal (mono) sound during a stereo, bilingual or NICAM broadcast, or if the stereo sound is distorted due to inferior reception conditions.
Title Page	To enter the Teletext title page for a channel Entering title page number allows the unit to automatically record programme and station names. Press [▲, ▼] or numbered buttons to enter the number and press [ENTER]. • To find the correct title page for the station, refer to its Teletext TV guide. • The unit's clock must be set correctly.

Auto-Setup Restart, Download from TV

You can restart auto channel setting if Preset Download or Auto-Setup (→ page 11, 12) fails for some reason.

■ Auto-Setup Restart

- 5** Press [▲, ▼] to select “Auto-Setup Restart” and press [ENTER].

The confirmation screen appears.

- 6** Press [◀, ▶] to select “Yes” and press [ENTER].

Auto-Setup starts.

■ Download from TV

- 5** Press [▲, ▼] to select “Download from TV” and press [ENTER].

The confirmation screen appears.

- 6** Press [◀, ▶] to select “Yes” and press [ENTER].

Download starts.

To exit the screen

Press [RETURN] several times.

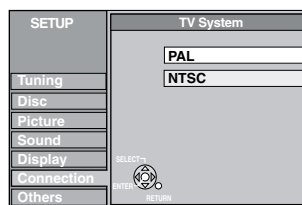
To return to the previous screen

Press [RETURN].

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 “To Others” and press [ENTER].
- 3** Press [▲, ▼] to select “SETUP” and press [ENTER].
- 4** Press [▲, ▼] to select “Connection” and press [▶].
- 5** Press [▲, ▼] to select “TV System” and press [ENTER].
- 6** 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.

- 7** 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, press and hold [■] and [▲ OPEN/CLOSE] on the main unit at the same time for about 5 seconds.

Refer to the control reference on page 34.

Clock settings

Usually, the unit's Preset Download or Auto-Setup function (→ page 11, 12) automatically adjusts the clock to correct time. Under some reception conditions, however, the unit cannot set the clock automatically.

In this case, follow the operation steps below to manually set the clock.

- 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 "To Others" and press [ENTER].
- 3 Press [▲, ▼] to select "SETUP" and press [ENTER].
- 4 Press [▲, ▼] to select "Others" and press [▶].
- 5 Press [▲, ▼] to select "Clock" and press [ENTER].

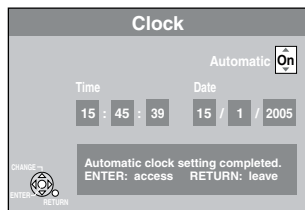
Auto Clock Setting

If a TV station transmits a time setting signal, and when "Automatic" in the Clock setting menu is set to "On", the automatic time correction function checks the time and if necessary it is adjusted several times every day.

- 6 Press [▲, ▼] to select "On" of "Automatic" and press [ENTER].

Auto clock setting starts.

The following screen appears when setting is complete.



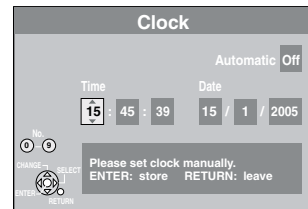
To stop partway

Press [RETURN].

- If the unit cannot set the clock automatically, set the clock manually (→ right, "Manual Clock Setting" Step 6).

Manual Clock Setting

- 6 Press [▲, ▼] to select "Off" of "Automatic" and press [ENTER].



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

The items change as follows:

Hour ↔ Minute ↔ Second ↔ Day ↔ Month ↔ Year

- 8 Press [▲, ▼] to change the setting.

You can also use the numbered buttons for setting.

- 9 Press [ENTER] when you have finished the settings.

The clock starts.

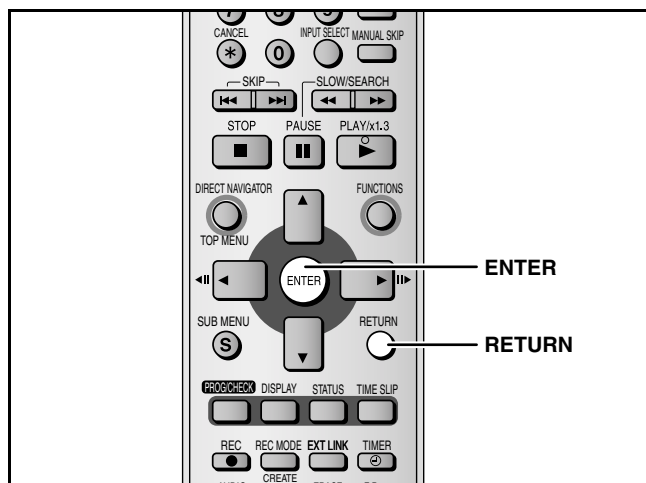
To exit the screen

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),
DVD-Video format (DVD-RW)

Recordable discs

DVD-RAM :

Ver. 2.0

Ver. 2.1/3x--SPEED DVD-RAM Revision 1.0

Ver. 2.2/5x--SPEED DVD-RAM Revision 2.0

DVD-R :

for General Ver. 2.0

for General Ver. 2.0/4x--SPEED DVD-R Revision 1.0

for General Ver. 2.x/8x--SPEED DVD-R Revision 3.0

DVD-RW :

Ver. 1.1

Ver. 1.1/2x--SPEED DVD-RW Revision 1.0

Ver. 1.2/4x--SPEED DVD-RW Revision 2.0

+R :

Ver. 1.0

Ver. 1.1

Ver. 1.2

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, DVD-R, DVD-RW, +R,

+RW, DVD-Video, DVD-Audio, CD-Audio (CD-DA), Video CD,

CD-R/RW (MP3, CD-DA, Video CD, JPEG formatted discs)

Video

Video System:

PAL colour signal, 625 lines, 50 fields

NTSC colour signal, 525 lines, 60 fields

MPEG2 (Hybrid VBR)

Recording system:

Video In (PAL/NTSC):

AV1/AV2 (21 pin), AV3/AV4 (pin jack) 1 Vp-p 75 Ω termination

S-Video In (PAL/NTSC):

AV2 (21 pin), AV3/AV4 (S terminal) 1 Vp-p 75 Ω termination

RGB In (PAL): AV2 (21 pin) 0.7 Vp-p (PAL) 75 Ω termination

Video Out (PAL/NTSC):

AV1/AV2 (21 pin), Video Out (pin jack) 1 Vp-p 75 Ω termination

S-Video Out (PAL/NTSC):

AV1 (21 pin), S-Video Out (S terminal) 1 Vp-p 75 Ω termination

RGB Out (PAL/NTSC): 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

Pb: 0.7 Vp-p 75 Ω termination

Pr: 0.7 Vp-p 75 Ω termination

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 k Ω

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 k Ω

Digital Audio Out: Optical terminal (PCM, Dolby Digital, DTS, MPEG)

Television System

Tuner System:

PAL-I

Channel Coverage:

The United Kingdom

UHF: CH 21-68

Republic of Ireland

VHF: CH 4-13, A-J

UHF: CH 21-68

RF Converter Output:

The United Kingdom

UHF: CH 21-68 71 \pm 3 dB μ 75 Ω termination

Republic of Ireland

Not provided

LASER Specification

Class 1 LASER Product

Wave Length: 780 nm (CDs), 662 nm (DVDs)

Laser Power:

No hazardous radiation is emitted with the safety protection

Others

Region Code

2

Operating Temperature:

5-40 $^{\circ}$ C

Operating Humidity range:

10-80 % RH (no condensation)

Power supply:

AC 220-240 V, 50 Hz

Power consumption:

23 W

Dimensions (WxDxH):

Approx. 430 mm \times 337 mm \times 63 mm

Mass:

Approx. 3.5 kg

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.

Dolby Digital

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

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.

DTS (Digital Theater Systems)

This surround system is used in many movie theaters. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range

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

Film and video

DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.

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, DVD-R etc. possible on equipment that can play such media. You can finalize DVD-R, DVD-RW (DVD-Video format) or +R on this unit.

After finalizing, the disc becomes play-only and you can no longer record or edit. You can record after formatting although it becomes play-only after finalizing, when you use DVD-RW.

Formatting

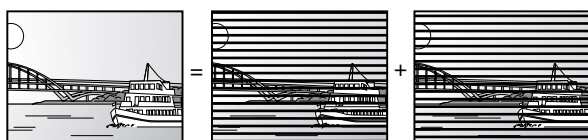
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.

You can format DVD-RAM or DVD-RW (only as DVD-Video format) on this unit.

Formatting erases irrevocably all contents.

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.

JPEG (Joint Photographic Experts Group)

This is a system used for compressing/decoding colour still pictures. If you select JPEG as the storage system on digital cameras etc., the data will be compressed to 1/10–1/100 of its original size. The feature of JPEG is less deterioration in picture quality considering the degree of compression.

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 625 (or 576) interlaced (i) scan lines, whereas progressive scanning, called 625p (or 576p), uses twice the number of scan lines. For the NTSC standard, these are called 525i (or 480i) and 525p (or 480p) 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.

Panasonic televisions with 625 (576)/50i · 50p, 525 (480)/60i · 60p input terminals are progressive compatible.

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.

Thumbnail

This refers to a miniature representation of a picture used to display multiple pictures in the form of a list.

TIFF (Tag Image File Format)

This is a system used for compressing/decoding colour still pictures. A common format for storing high quality images on digital cameras and other devices.

Q Link

This function works only if the unit is connected via a fully wired 21-pin Scart lead to a TV featuring the Q Link or similar function.

Q Link offers the following functions:

- Download from the TV*

When you connect the unit to a TV, the station list data is automatically copied from the TV to the unit, and the TV stations are assigned to the programme positions on the unit in the same order as on the TV.

- Direct TV Recording

By simply pressing [● DIRECT TV REC], you can at once record the same programme that you are watching on the TV.

- TV/DVD Auto On*

Even if the TV and the unit are off (standby mode), pressing [▶] (PLAY), [DIRECT NAVIGATOR, TOP MENU], [VIDEO Plus+] or [PROG/CHECK] automatically turns on both the TV and the unit. If the TV is off (standby mode) and the unit is on, when you press [FUNCTIONS] or [▶] (PLAY), or insert the disc [except DVD-RAM, DVD-R, DVD-RW (DVD-Video format) and +R], the TV automatically is turned on.

- DVD Auto Standby*

When you turn the TV off, the unit is turned off as well. However, this function works in the stop mode.

This function does not work during the following operations: Preset Download, Auto-Setup, Auto Clock Setting and Manual Tuning.

- On-Screen Messages*

When you are watching a TV programme, the following messages appear on the TV screen to inform you of the unit's condition:

Message	Message appears when:
This programme has already started	A timer recording has just started.
Set DVD to timer standby mode	The unit is not in the timer standby mode 10 minutes before the programmed recording start time (message appears every minute during these 10 minutes).
DVD is in timer recording mode	[● REC] on the main unit or [VIDEO Plus+] was pressed while the unit is in the timer recording mode.

Depending on the type of TV used, the above messages may not appear correctly.

* These operations are only available if the unit is connected to a TV featuring the Q Link function.

PDC (Programme Delivery Control)

Programme Delivery Control adjusts the start and stop time of a timer recording automatically to ensure the recording starts and finishes in line with the programme broadcast. This is useful when a programme over-runs the published times.

The station must be transmitting PDC and the exact time must be set for PDC to work.

The unit detects whether a station is transmitting PDC only during the tuning process.

If PDC is introduced or discontinued by a station you will need to re-tune the unit before it becomes aware of this.

PDC transmissions are not currently nation-wide so please check with your local broadcaster for more information.

The beginnings of recordings may not be recorded correctly in some cases.

Frequently asked questions

Set up		Page
What equipment is necessary to play multi channel surround sound?	<ul style="list-style-type: none"> • 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. 	10 —
Are the headphones and speakers directly connected to the unit?	<ul style="list-style-type: none"> • You cannot directly connect to the unit. Connect through the amplifier etc. 	10
The television has a Scart terminal and component video input terminal. Which terminal should I connect with?	<ul style="list-style-type: none"> • If you have a CRT (cathode ray tube) television, we recommend using the Scart terminal. You can enjoy high-quality RGB video from this unit by connecting to an RGB compatible television. • 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 that is compatible with progressive scan, we cannot recommend progressive output as some flickering can occur. 	7, 8
Is my television progressive output compatible?	<ul style="list-style-type: none"> • All Panasonic televisions that have 625 (576)/50i · 50p, 525 (480)/60i · 60p 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?	<ul style="list-style-type: none"> • You cannot play DVD-Video if their region number does not include “2” or “ALL”. 	Cover
Can a DVD-Video that does not have a region number be played?	<ul style="list-style-type: none"> • 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, DVD-RW, +R and +RW compatibility with this unit.	<ul style="list-style-type: none"> • This unit records and plays DVD-R, DVD-RW (DVD-Video format) and +R, and plays DVD-RW (DVD Video Recording format) and +RW. • This unit also records and plays high speed recording compatible DVD-R, DVD-RW, +R discs. 	4, 5 —
Please tell me about CD-R and CD-RW compatibility with this unit.	<ul style="list-style-type: none"> • This unit plays CD-R/CD-RW discs (audio recording discs) which have been recorded under one of the following standards: CD-DA, Video CD, MP3 and still pictures (JPEG/TIFF). • Close the session or finalize the disc after recording. This unit can recognize up to 99 folders (groups) and 999 files (tracks) on a disc with MP3 or still pictures (JPEG/TIFF). • You cannot write to a CD-R or CD-RW with this unit. 	5, 24 —

Recording		
Can I record from a commercially purchased video cassette or DVD?	<ul style="list-style-type: none"> • Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible. 	—
Can DVD-R, DVD-RW (DVD-Video Format) and +R recorded on this unit be played on other equipment?	<ul style="list-style-type: none"> • You can play on compatible equipment such as DVD players after finalizing the disc on this unit. However depending on the condition of the recording, the quality of the disc and capabilities of the DVD player, play may not be possible. 	33
Can I record digital audio signals using this unit?	<ul style="list-style-type: none"> • 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?	<ul style="list-style-type: none"> • You can record if using the PCM signal. When recording DVD, change the “Digital Audio Output” settings to the following from the SETUP menu. <ul style="list-style-type: none"> – PCM Down Conversion: On – Dolby Digital/DTS/MPEG: PCM • However, only <ul style="list-style-type: none"> – As long as digital recording from the disc is permitted. – As long as the recording equipment is compatible with a sampling frequency of 48 kHz. • You cannot record MP3 signals. 	35 —
Can I switch to bilingual broadcast during recording?	<ul style="list-style-type: none"> • With DVD-RAM, you can. Just press [AUDIO]. • With DVD-R, DVD-RW (DVD-Video format) or +R, you cannot. Change before recording with the “Bilingual Audio Selection” in the SETUP menu. 	— 35

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 lens cleaner (RP-CL720E)** about once every year, depending on frequency of use and the operating environment. Read the lens cleaner's instructions carefully before use.



Error messages

On the television

Page

Cannot finish recording completely.	<ul style="list-style-type: none"> The programme was copy-protected. The disc may be full. There are already 99 recorded titles (+R 49 recorded titles). 	—
Cannot playback. TV system is different from the setting. To playback, please change the TV System in SETUP.	<ul style="list-style-type: none"> You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the "TV System" setting on this unit to suit. 	39
Cannot record on the disc.	<ul style="list-style-type: none"> The disc may be dirty or scratched. 	5
Unable to format.		
Please check the disc.		
Cannot record. Disc is full.	<ul style="list-style-type: none"> Create space by erasing any unnecessary titles. RAM -RW(V) (Even if you erase recorded content from the DVD-R or the +R, there is no increase in disc space.) Use a new disc. 	23, 29, 32
Cannot record. Maximum numbers of titles exceeded.		—
Error has occurred. Please press ENTER.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The disc may be upside down. 	—
Please change the disc.	<ul style="list-style-type: none"> 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.) 	5
This is a non-recordable disc.	<ul style="list-style-type: none"> The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R, DVD-RW (DVD-Video format) or +R. You inserted an unformatted DVD-RAM or DVD-RW. Format the disc with this unit. 	4, 5
This disc is not formatted properly.		33
	<ul style="list-style-type: none"> The operation is prohibited by the unit or disc. 	—

On the unit's display

REMOTE DVD  (" " stands for a number.)	<ul style="list-style-type: none"> The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds. 	15
HARD ERR	<ul style="list-style-type: none"> If there is no change after turning the unit on and off, consult the dealer where the unit was purchased. 	—
NO READ	<ul style="list-style-type: none"> The disc is dirty or badly scratched. The unit cannot record, play, or edit. This message may appear when the lens cleaner has finished cleaning. Press [▲ OPEN/CLOSE] on the main unit to eject the disc. 	5
PROG FULL	<ul style="list-style-type: none"> There are already 16 timer programmes. Delete unnecessary timer programmes. 	21
SELF CHECK	<ul style="list-style-type: none"> There was something unusual detected with the disc while recording or playing, there was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears. 	45
UNSUPPORT	<ul style="list-style-type: none"> You have inserted a disc the unit cannot play or record on. 	4, 5
UNFORMAT	<ul style="list-style-type: none"> You have inserted a DVD-RAM or DVD-RW that is unformatted or recorded on other equipment. 	33
U59	<ul style="list-style-type: none"> 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 vent on the rear of the unit. 	—
U99	<ul style="list-style-type: none"> 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. 	—
X HOLD	<ul style="list-style-type: none"> The Child Lock function is activated. Press and hold [ENTER] and [RETURN] simultaneously until "X HOLD" disappears. 	40

Sales and Support Information

Customer Care Centre

- For customers within the UK: 08705 357357
- For customers within the Republic of Ireland: 01 289 8333
- Visit our website for product information
- E-mail: customer.care@panasonic.co.uk

Direct Sales at Panasonic UK

- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday-Thursday 9:00am-5:30pm, Friday 9:30am-5:30pm (Excluding public holidays).

- Or go on line through our Internet Accessory ordering application at www.panasonic.co.uk.
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

Interested in purchasing an extended guarantee? Please contact your dealer or our Customer Support Department on 01344 476540 or customer.care@panasonic.co.uk for more details.

Optional Accessories

Product numbers correct as of January 2005. These may be subject to change.

DVD-RAM	9.4 GB, double-sided, type 4 cartridge:	LM-AD240ME	(compatible with high speed recording 5X)
		LM-AD240LE	(compatible with high speed recording 3X)
	4.7 GB, single-sided, type 2 cartridge:	LM-AB120ME	(compatible with high speed recording 5X)
		LM-AB120LE	(compatible with high speed recording 3X)
	4.7 GB, single-sided, non-cartridge:	LM-AF120ME	(compatible with high speed recording 5X)
		LM-AF120LE	(compatible with high speed recording 3X)
DVD-R	4.7 GB, single-sided, non-cartridge:	LM-RF120ME	(compatible with high speed recording 8X)
		LM-RF120LE	(compatible with high speed recording 4X)

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, DVD-RW (DVD-Video format) or +R.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions in reception due to periodic satellite broadcasting breaks.
- Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)
- The unit freezes due to one of its safety devices being activated. (Press and hold [⏻/⏮] on the main unit for 10 seconds.)

Power

Page

No power.	<ul style="list-style-type: none"> • Insert the AC mains lead securely into a known active AC mains socket. • Timer recording is in recording standby. Press [⏻/⏮] to cancel the recording standby. • Linked timer recordings with external equipment is in recording standby. Press [EXT LINK] to cancel the recording standby. 	7–9 19, 20 21
Unit does not turn on pressing [⏻/⏮].		
The unit switches to the standby mode.	<ul style="list-style-type: none"> • One of the unit's safety devices is activated. Press [⏻/⏮] on the main unit to turn the unit on. 	—

Displays

The display is dim.	<ul style="list-style-type: none"> • Change "FL Display" in the SETUP menu. 	36
"0:00" is flashing on the unit's display.	<ul style="list-style-type: none"> • Set the clock. 	40
The clock is not correct.	<ul style="list-style-type: none"> • Under adverse reception conditions, etc., the automatic time correction function may not work. In this case, "Automatic" is automatically turned to "Off". If re-setting the Auto Clock Setting does not work, set the time manually. 	40
The time recorded on the disc and the available time shown do not add up.	<ul style="list-style-type: none"> • Times shown may disagree with actual times. • Even if you erase recorded content from the DVD-R or the +R, there is no increase in disc space. • Available recording space on a DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased. 	—
The play time shown for MP3 does not agree with the actual time.	<ul style="list-style-type: none"> • More disc space than the actual recording time is used after recording or editing the DVD-R or +R 200 times or more. • While searching, the elapsed time may not display correctly. 	—
"SELF CHECK" is displayed and the disc cannot be ejected.	<ul style="list-style-type: none"> • The unit is carrying out the recovery process. Do the following to eject the disc. <ol style="list-style-type: none"> 1 Press [⏻/⏮] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/⏮] on the main unit for about 10 seconds. The unit is forcibly switched to standby. 2 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. 	—

TV screen and video

Television reception worsens after connecting the unit.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Select "Automatic" in "On-Screen Messages" in the SETUP menu. 	36
The grey background does not appear.	<ul style="list-style-type: none"> • Select "On" in "Grey Background" in the SETUP menu. 	36
The 4: 3 aspect ratio picture expands left and right.	<ul style="list-style-type: none"> • Use the television to change the aspect. If your television does not have that function, set "Progressive" in the Picture menu to "Off". 	27
Screen size is wrong.	<ul style="list-style-type: none"> • Check the settings for "TV Aspect" in the SETUP menu. 	14
There is a lot of after-image when playing video.	<ul style="list-style-type: none"> • Set "Playback NR" in the Picture menu to "Off". 	27
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	<ul style="list-style-type: none"> • 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. 	27
There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.	<ul style="list-style-type: none"> • The effect is less perceivable with some types of video. 	—
The images from this unit do not appear on the television.	<ul style="list-style-type: none"> • Make sure that the television is connected to the AV1 terminal, 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., AV1) is correct. 	7, 8
Picture is distorted.	<ul style="list-style-type: none"> • The television isn't compatible with progressive signals. Press and hold [■] and [▶ (PLAY/x1.3)] on the main unit at the same time for about 5 seconds. The setting will change to interlace. 	—

Sound

No sound.	<ul style="list-style-type: none"> • Check the connections and settings. Check the input mode on the amplifier if you have connected one. 	7–10, 35
Low volume.	<ul style="list-style-type: none"> • Press [AUDIO] to select the audio. 	22
Distorted sound.	<ul style="list-style-type: none"> • Turn off V.S.S. in the following cases. <ul style="list-style-type: none"> –When using discs that do not have surround sound effects such as Karaoke discs. –When playing bilingual broadcast programmes. 	27
Cannot hear the desired audio type.	<ul style="list-style-type: none"> • 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. 	—


Continued on the next page

Sound (Continued)

Page


Cannot switch audio.	• You cannot change the audio type when a DVD-R, a DVD-RW (DVD-Video format) or a +R is in the disc tray.	—
	• You cannot change the audio type when playing a DVD-R, a DVD-RW (DVD-Video format) or a +R. (You can select “M 1” or “M 2” in “Bilingual Audio Selection” in the SETUP menu before recording.)	35
	• You have used digital connection. Set “Dolby Digital” to “PCM” or connect using audio cables (analog connection).	10, 35
	• 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.	15
	• The remote control and main unit are using different codes. Change the code on the remote control.	15
	 Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.	3
	• The batteries are depleted. Replace them with new ones. • 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 (“U59” appears on the display). Wait for “U59” 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.	• Timer recording is in recording standby. Press [⏻ TIMER] to cancel the recording standby.	19, 20
	• Linked timer recordings with external equipment is in recording standby. Press [EXT LINK] to cancel the recording standby.	21
	• 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.	—
Cannot tune channels. Cannot download channel presets.	• Check the connections.	40
	• You must connect to a television equipped with the Q Link function with a fully wired 21-pin Scart lead to download channel presets.	—
Startup is slow.	• Make sure that “Quick Start” is set to “On”. Even if “Quick Start” is set to “On”, startup is slow if the clock is not set, there was a power failure or the AC plug has just been connected.	7–10
	• A few dozen seconds after turning on the unit, you can play a disc or start recording to discs other than DVD-RAM.	7
	• Startup takes time for a few minutes after 5:15 am due to system maintenance of this unit.	—

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.	4, 5
	• The disc is unformatted. Format the disc. [RAM] [RW(V)]	33
	• The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DISC MANAGEMENT.	32
	• Some programmes have limitations on the number of times they can be recorded. (CPRM)	41
	• The disc is full or nearly full. Erase un-needed titles or use another disc.	23, 29, 32
	• You cannot record on finalized DVD-R, DVD-RW (DVD-Video format), +R or DVD-RW (DVD Video Recording format) discs.	—
Timer recording does not work properly. VIDEO Plus+ programming does not work properly.	• Due to peculiarities of DVD-R, DVD-RW (DVD-Video format) or +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.	—
	• DVD-R, DVD-RW (DVD-Video format) and +R recorded on this unit may not be recordable on other Panasonic DVD recorders.	—
	• The timer programme is incorrect or different timer programme times overlap. Correct the programme.	21
Timer recording does not stop even when [■] is pressed.	• The unit is not on timer recording standby. (“⏻” on the unit's display is not on.) Press [⏻ TIMER].	19, 20
	• Set the clock.	40
The timer programme remains even after recording finishes.	• While using timer recording, press [⏻ TIMER]. (“⏻” disappears.)	19, 20
	• When using the linked timer recording with external equipment, press [EXT LINK]. (“Ext Link” disappears.)	21
A part or whole of a recorded title has been lost.	• The timer programme remains if set to daily or weekly.	20
	• 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] [RW(V)]) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs.	—

Play		Page
Play fails to start even when [▶] (PLAY) is pressed. Play starts but then stops immediately.	<ul style="list-style-type: none"> • Insert the disc correctly with the label facing up. • You tried to play a blank DVD-RAM, DVD-R, DVD-RW (DVD-Video format), +R or DVD-RW (DVD Video Recording format) unplayable on this unit. • When recording to DVD-RAM using "EP (8Hours)" mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use "EP (6Hours)" mode. 	22 4, 5 35
	DVD-Video is not played.	35
	Alternative soundtrack and subtitles cannot be selected.	— 22
No subtitles.	<ul style="list-style-type: none"> • Subtitles are not recorded on the disc. • Turn the subtitles on. 	— 26
Angle cannot be changed.	<ul style="list-style-type: none"> • Angles can only be changed during scenes where different angles are recorded. 	—
You have forgotten your ratings password.	<ul style="list-style-type: none"> • While the disc tray is open, press and hold [● REC] and [▶ (PLAY/x1.3)] on the main unit at the same time for 5 or more seconds. 	—
Quick View does not work.	<ul style="list-style-type: none"> • This does not work when audio is other than Dolby Digital. • This does not work when recording is in XP or FR mode. 	— —
The resume play function does not work.	<ul style="list-style-type: none"> • This function only works when the indicator on the left 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 playlist is also canceled when the playlist and title are edited. 	— —
The Video CD picture does not display properly.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • The disc is dirty. Wipe with a damp cloth and then wipe dry. • You tried formatting a disc that is not compatible with this unit. 	5 4, 5
Cannot create chapters.	<ul style="list-style-type: none"> • 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. 	—
Cannot mark the start point or the end point during "Partial Erase" operation.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • When the chapter is too short to erase, use "Combine Chapters" to make the chapter longer. 	29
The available recording time doesn't increase even after erasing recordings on the disc.	<ul style="list-style-type: none"> • Available recording space on the DVD-R or the +R does not increase even after erasing previously recorded titles. • Available recording space on a DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased. 	— —
Cannot create a playlist.	<ul style="list-style-type: none"> • 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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