Panasonic

Operating Instructions

DVD Recorder

Model No. DMR-EZ45VEBS

This DVD Recorder is for viewing and recording free to view channels only, not pay TV or encrypted channels.

Read the operating instructions, the safety precautions, and the information on setting up the unit on page 3 thoroughly before you connect, operate or adjust any settings on the unit.

Trademark of the DVB Digital Video Broadcasting Project (1991 to 1996)
Declaration of Conformity No.3957, 12th January 2006

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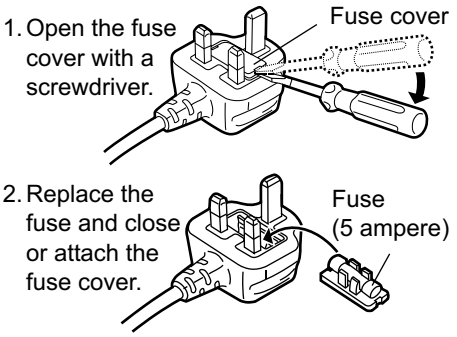
Safety Precautions

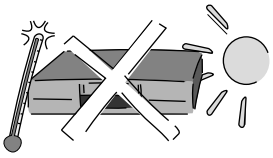
Important Safety Warnings

- The moulded three pin mains plug is supplied for your safety and convenience and must NOT be cut off.
- A 5 amp fuse is fitted in the mains plug. If the fuse has to be replaced, it must be of the same rating and approved by ASTA or BSI to BS1362. Check for the ASTA mark or the BSI mark on the body of the fuse.

  To replace the fuse, open the fuse compartment with a screwdriver as shown and replace the fuse and the cover securely.



- To prevent electric shock, do not remove cover. No user serviceable parts inside. Refer servicing to qualified service engineer only.
- 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.
- Do not insert metal object into the slots or openings of the unit.
- This unit is not disconnected from a.c. mains while it remains connected to a live mains outlet, even if it has been turned off.
- The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.
- This unit is intended for use in moderate climates.

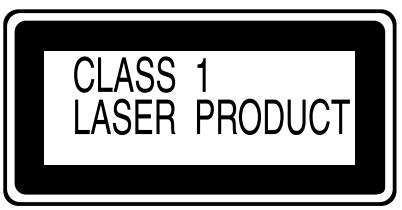


Caution

- Avoid exposing the unit to direct sunlight or other heat sources.
- Avoid sudden change in temperature or humidity, dew or condensation may form, causing malfunction.
- Dispose of batteries in accordance with the instructions given in this book.
- Place the unit on a flat, stable surface. Do not place heavy object on top of the unit.
- Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast materials may infringe copyright laws.
- This unit is designed for indoor use only.
- Do not use in area with strong magnetic fields, e.g. near transmitting antenna.
- 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.

- Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation vents.
- Do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.
- Do not place sources of naked flames, such as lighted candles, on the unit.
- Dispose of batteries in an environmentally friendly manner.

- This 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 by yourself. Refer servicing to qualified personnel.



Inside of product

DANGER –	VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. FDA 21 CFR/Class IIIb
注意	– 打开时有可见及不可见激光辐射。避免光束照射。
注意	– ここを開くと可視及び不可視レーザ光が出ます。ビームを見たり、触れたりしないでください。
CAUTION –	CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. IEC60825-1 +A2/Class 3B
ATTENTION –	RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 3B, EN CAS D'OUVERTURE. EVITER UNE EXPOSITION AU FAISCEAU.
FORSIGTIG –	SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 3B, NÅR LÅGET ER ÅBENT. UNDGÅ AT BLIVE UDSAT FOR STRÅLEN.
VARO –	AVATTAESSA OLET ALTTIINA LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. VARO ALTISTUMISTA SÄTEELLE.
VARNING –	KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK EXPONERING FÖR STRÅLEN.
VORSICHT –	SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 3B, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
CAUTION –	VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. (IEC60825-1)
ATTENTION –	RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL –	SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! –	AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING –	SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
VORSICHT –	SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
ADVARSEL –	SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. VQL1J67

If you see this symbol, read page 4.

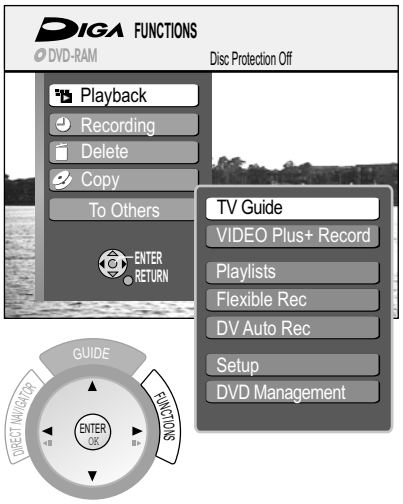
Back of product, see page 9

Care and Maintenance

- The cabinet can be wiped clean with a damp cloth, disconnect from mains before cleaning. Do not use detergent or solution containing benzol or petroleum.

Information about the unit

Menu FUNCTIONS 33



- Press **FUNCTIONS** on the remote to start the FUNCTIONS menu.
- Select the unit menu with the navigation buttons ▲▼◀▶ and **ENTER**.
- Press **RETURN** to leave the menu.

DVB-T
This unit is a DVD Recorder with integrated tuner. You can receive and record both analog and terrestrial digital channels (DVB-T) without an additional reception unit (Set Top Box).

GUIDE
The TV Guide gives you a preview of the TV programmes for the next 7 days from your digital stations. Simply select each programme to store it for Timer programming.

The HDMI connection makes it easy to connect up your multimedia units. One single cable transmits both digital video data and digital audio data. HDMI is the world's first complete digital consumer AV interface complying with a non-compression standard.

DV interface
You can connect your digital camcorder directly to this unit via the DV IN connection. This way it's easy to copy your movies.

Licence information

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

Dolby Digital
Method of encoding digital signals. The signals are very much compressed in the process to enable recordings of large volumes of data. Manufactured under license from Dolby Laboratories. Dolby and the double-D symbol are registered trademarks of Dolby Laboratories.

DTS (Digital Theater Systems)
Sound system used in cinemas or movie theaters all over the world. "DTS" and "DTS 2.0 + Digital Out" are trademarks of Digital Theater Systems, Inc.

MP3 or **MPEG 1 Audio Layer 3** is a file compression format used for digital audio files. It provides files of an extremely small size and may cause a consequential loss of quality. MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

HDAVI Control™ is a trademark of Matsushita Electric Industrial Co., Ltd.

SD Logo is a trademark.
miniSD™ is a trademark of SD Card Association.

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

-If you see this symbol-

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)

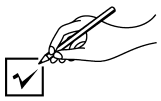
This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.
For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.
Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.
Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.
Information on Disposal in other Countries outside the European Union
This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Before you start

Dear customer
Thank you for your trust and your decision to purchase this top-quality unit. Panasonic is one of the leading manufacturers of entertainment electronics units. We are sure that you will be completely satisfied with this unit.

Matsushita Electric Industrial Co., Ltd.
http://www.panasonic.co.jp/global/



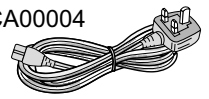
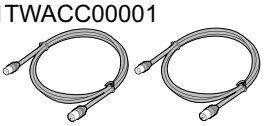
Please check and identify the supplied accessories.

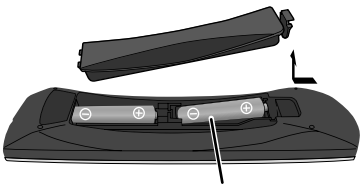
Use numbers when asking for replacement parts.

(Product numbers correct as of March 2006. These may be subject to change.)

- ☐ **Operating Instructions**
- ☐ **Quick Setup Guide**
- ☐ **Reference Guide**
- ☐ **Guarantee Card**

Included Accessories

☐ **Remote Control** EUR7659YN0	☐ **AC mains lead** RJA0044-3C or K2CT3CA00004 
☐ **Batteries for Remote Control** AA, UM3 or R6	☐ **Audio/Video cable** K2KA6BA00003
☐ **RF coaxial cables (black)** K1TWACC00001 	☐ **RF coaxial cable (grey)** K1TWACA00001



R6/LR6, AA

Inserting batteries
- The batteries last for about a year, depending on how often you use the remote control unit.
- Do not mix old with new batteries, or batteries of different types.
- Only use batteries without any harmful substances (lead, cadmium, mercury).
- Do not use rechargeable type batteries.
- Remove the batteries if the remote control unit will remain unused for longer periods of time.
- Do not heat or short-circuit the batteries. Immediately remove used-up batteries and replace with batteries of type AA, UM3 or R6.
- Be sure to put in the batteries the right way round + and -.

Dispose of **batteries**, packaging material and the unit according to statutory regulations. They must not be thrown into the household refuse.

Panasonic

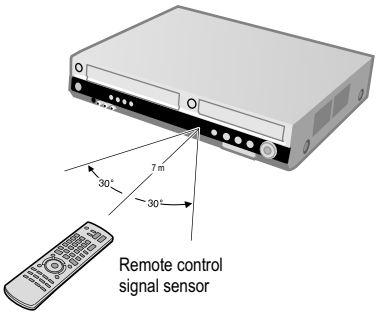
Sales and Support Information

Customer Care Centre
- For customers within the UK: **08705 357357**
- Visit our website for product information: **www.panasonic.co.uk**
- 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 online 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 call 0870 240 6284 or visit our website www.panasonic.co.uk/guarantee

Remote Control



Point the remote control at the sensor of the unit. Avoid obstacles along the transmission path. The maximum reach of the remote control is 7 metres directly in front of the unit. Make sure that the transmission window and the sensor on the unit are clean. The process can be impaired by direct sunlight and glass cabinet doors.

Child protection

You can lock the buttons on the unit and the remote control.

- Press and hold the **RETURN** and **ENTER** buttons until [X HOLD] appears in the display. The buttons on the unit are locked.
- To unlock the child protection, repeat the process until [X HOLD] disappears.

Operating a television

Change the code on the remote control to control your TV.

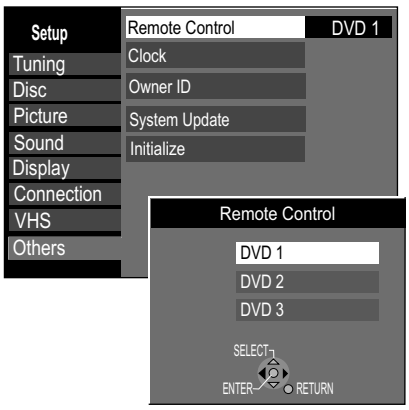
- Press and hold the **TV** on and off button.
- Enter the two-digit code for your television.
  You must repeat this process after changing the batteries.

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

Some television models of the listed brands (e.g. older Panasonic units) cannot be controlled via the remote control.

Switching to AV input on your Panasonic television

- Press **AV**.
  Switches between TV reception and AV input each time the button is pressed.



Setting up the remote control

If you are using another Panasonic unit at the same location, change the setting of the remote control so that you can operate the units independently of each other.

Set up the remote control for the unit.

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Setup] with ▲▼ and confirm with **ENTER**.
- Select [Others] with ▲▼, [Remote Control] with ► and confirm with **ENTER**.
- Select [DVD 1, 2 or 3] with ▲▼ and confirm with **ENTER**.

Apply the selected setting [DVD 1, 2 or 3] to the remote control.

- Press and hold **ENTER** and press the appropriate number button 1, 2 or 3 for at least 2 seconds.
- Exit the menu with **RETURN**.

If the remote control setting does not match that of the unit, [DVD 1, 2 or 3] appears on the unit's display.

- Press **ENTER** and press the appropriate number key 1, 2 or 3 simultaneously for at least 2 seconds.

  If you want to operate two units independently of each other using the same remote control, then change the the remote control setting.

Remote Control

Standby/on switch
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

DRIVE SELECT
Select the DVD, VHS or SD drive.

Direct entry using the number buttons
Selection of channels, title numbers, etc.

VCD	5: 0 5	15: 1 5
JPEG MP3	5: 0 0 5	15: 0 1 5
JPEG	5: 0 0 0 5	15: 0 0 1 5

Delete a function.
VHS: **RESET** = Reset the tape counter.

SKIP = Skip chapters, titles or pictures. 26
VHS: **INDEX** = Find the beginning of a recording. 28

Stop a recording or playback.
VHS: Stop jet rewind.
Press for more than 3 seconds to eject the cassette.

Select the banner and information about the programme, also in the TV Guide. 20

Direction buttons in the menu guide.
Select ▲▼◀▶ groups or titles.

Launch the sub-menu.

DIRECT NAVIGATOR = Launch the Title View. 35

RED button: menu guide (Profile, GUIDE, Digital TEXT, Manual Tuning)

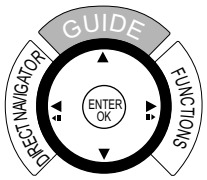
GREEN button: menu guide (Profile, GUIDE, Digital TEXT)

Recording. 31

Record mode button (XP, SP, LP, EP) 31

Launch the Digital TEXT Service 21

Display subtitles



ENTER/OK = Select or save a setting.
◀II II▶ = Frame or slow-motion playback.

TV
Switch the TV on and off.
Select the AV input on the TV set.
CH = Select the programme position on the TV set.
VOLUME = TV volume control.

CH = Programme selection button
PAGE = Page in the electronic TV Guide.
VHS: **TRACKING/V-LOCK+/-** = Optimise the playback picture. 29

VIDEO Plus+ Record menu 52

Delete a title.

Select button to switch AV input between tuner, A1, A2, A3 (Front), A4 and DV.

SLOW = Slow-motion playback. 26
SEARCH = Search during playback.
VHS: **REW** = Jet rewind 28
FF = Fast forward from **STOP** mode.
REW = Rewind
FF = Forward search during playback.

Pause a recording or playback. 26
VHS: Press and hold for more than 2 seconds for slow-motion playback. 28

PLAY: Start playback. 25
RAM Quick View: You can increase the playback speed. 27
VHS: Playback or repeat playback 28

Check or change a Timer Recording 43

Return to the previous menu.

GUIDE = Launch the TV Guide. 49
FUNCTIONS = Launch the selection menu. 33

YELLOW button: menu guide (Profile, GUIDE, Digital TEXT)
DVD: Dividing a recording into chapters. 26

BLUE button: menu guide (Profile, GUIDE, Digital TEXT)
DVD: Jump forward 30 seconds. 26

Timer Recording with external recording control. 53

Direct TV recording. 32

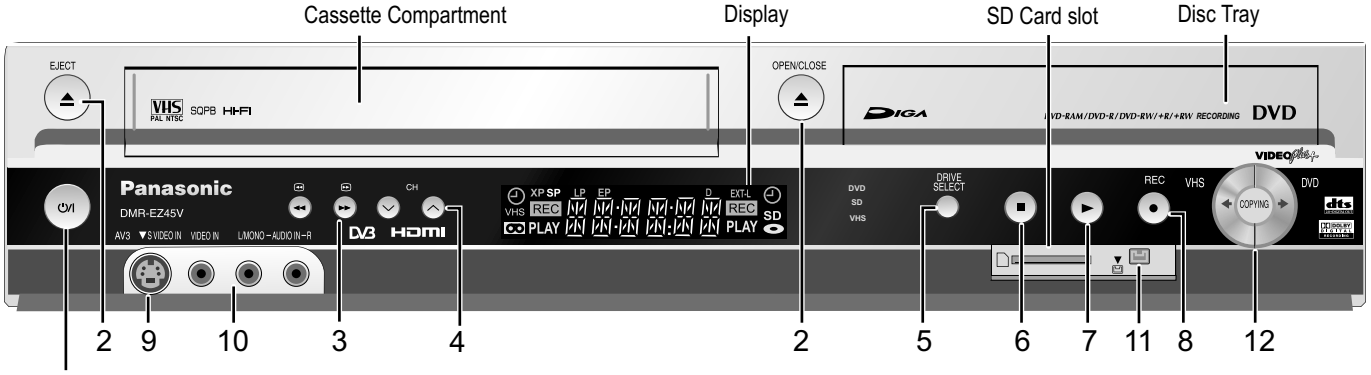
DVD: Picture and sound settings. 70

DVD: **TIME SLIP** = Select the time frame. 27

VHS: **JET REW** = Jet rewind to the beginning of the tape. 28

You can also switch on the unit from Standby mode using the **PLAY ▶**, **GUIDE, DIRECT NAVIGATOR**, **PROG/CHECK** or **VIDEO Plus+** buttons.

Front Panel



1 **Standby/on** switch ⏻/**I** : Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power. Switching this unit into standby mode does not disconnect it from the mains.

1 ⏻/I **Standby/on** switch	2 ⏏ **EJECT**: Eject the cassette. **OPEN/CLOSE**: Open and close the disc tray.	3 ◀◀ ▶▶ Forward/rewind ◀◀ ▶▶ Search during playback.	4 CH ∨ ∧ Channel select button
5 DRIVE SELECT Drive select	6 ■ **STOP** ■	7 ▶ **PLAY** ▶ Playback RAM Quick View	8 ● **REC**: Record
9 S VIDEO input AV3	10 AV3 VIDEO IN L/MONO – AUDIO IN – R AV3 input terminal	11 DV input	12 VHS DVD COPYING Copy

Display

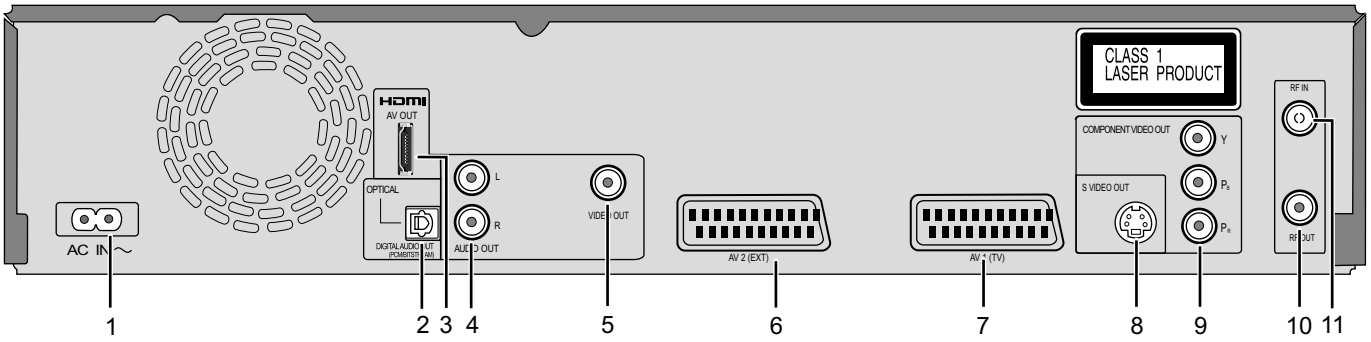
◷	Shows Timer standby or Timer Recording.		
DVD **SD** **VHS**	The selected drive is being displayed.	**XP, SP** **LP, EP**	Recording mode / All on: FR mode Flexible recordings/Timer Recordings.
SD	The inserted medium is being shown.	**D**	Digital channel
REC	The selected drive is recording. Flashes shortly before a Timer Recording starts.	**EXT-L**	External-Link: A Timer Recording is being made from an external unit.
PLAY	The selected drive is playing.	88:88	Current time, recording/playback counter, various messages.

Other messages

PLEASE WAIT	Please wait.
DVD 1, 2, 3	Wrong remote control code.
SETUP	You are in the Setup menu.
READ	Disc is being read.
No READ	Disc cannot be read.
FINAL	DVD is being finalized.
No CASSETTE	No cassette has been inserted.
No DISC	No disc has been inserted.
PROTECT	Disc is write-protected.
RETURN	Cancellation of a function.
JETREW	A cassette is being jet-rewound.
OFF0:30	The recording time is set to 30 minutes.
REPEAT	Repeat playback is on.
START	A function (copying) is beginning.
COPY	Copying is taking place.
STOP	A function has been stopped (copying).
PROG FULL	All 16 timer programme positions are full.
UNSUPPORT	Disc format is not supported.
UNFORMAT	Disc is unformatted.
SW-DL	Software Download.
X HOLD	Child protection is active.
GUIDE	EPG Download

Error messages 72

Rear Panel



1 **AC IN~** = Power supply Connection for the AC mains lead.	2 **OPTICAL** Digital audio output
3 **HDMI AV OUT** Digital audio output	4 L / R AUDIO OUT Audio output, right/left channel
5 VIDEO OUT Video output	6 AV2 (EXT) **AV2 (EXT)** = 21-pin Scart terminal External unit connection
7 AV1 (TV) **AV1 (TV)** = 21-pin Scart terminal TV connection	8 **S VIDEO OUT** S VIDEO output terminal
9 Y / P_B / P_R **COMPONENT VIDEO OUT** **Y** = Luminance signal (brightness) $\mathbf{P_B}$ = Chrominance signal (colour difference) $\mathbf{P_R}$ = Chrominance signal (colour difference)	
10 **RF OUT** Aerial output	11 **RF IN** Aerial input

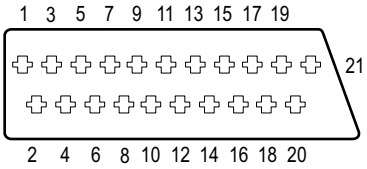
The outputs of 3, 4, 5, 8 and 9 are dedicated to modules of digital signal processing (DVD).
The video and audio outputs of 6 and 7 are dedicated to modules of digital (DVD) or analogue (VHS) signal processing.
Both groups of outputs are used for analogue and digital sources. But there are limitations, e.g.: During recording or scheduled recording on DVD, the VHS playback is only possible on outputs of 6 and 7.

For a conventional tube television, we recommend using the Scart terminal.
You retain a high-quality RGB video picture with an RGB-compatible television.

- If you want to use a progressive-capable LCD/plasma television or LCD projector, connect it to COMPONENT VIDEO OUT to get a high quality progressive video picture.

21-pin Scart terminal

The 21-pin Scart terminal transmits both input and output signals for picture and sound.
TVs equipped with the same type of terminal can be connected here.
This type of terminal is also called Peritel, Euro Connector and Euro AV.



AV1 Scart terminal (TV)

1	Audio output CH2 (R)
2	Audio input CH2 (R)
3	Audio output CH1 (L)
4	Audio ground
5	Blue ground
6	Audio input CH1 (L)
7	Blue output
8	Switching voltage
9	Green ground
10	Q Link control signal
11	Green output
12	Reserved
13	Red ground
14	Blanking ground
15	Red output / chrominance output
16	Blanking output
17	Video output ground
18	Video input ground
19	Video output / luminance output
20	Video input
21	Ground

AV2 Scart terminal (EXT)

1	Audio output CH2 (R)
2	Audio input CH2 (R)
3	Audio output CH1 (L)
4	Audio ground
5	Blue ground
6	Audio input CH1 (L)
7	Blue input
8	Switching voltage
9	Green ground
10	Reserved
11	Green input
12	Reserved
13	Red ground
14	Blanking ground
15	Red input / chrominance input
16	Blanking input
17	Video output ground
18	Video input ground
19	Video output
20	Video input / luminance input
21	Ground

Basic connections

Before connection, turn off all connected equipment and read the appropriate operating instructions.

BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD 3

Choose from one of the connection types A-B that suits your requirement.

Use of the supplied RF coaxial cable
To prevent interference patterns from appearing on your TV, use only the supplied RF coaxial cables when you connect this unit to your TV and aerial outlet or aerial cable and satellite receiver, as shown in connection types A-B.

- Keep the RF coaxial cables as far away as possible from other cables.
- Do not roll up the RF coaxial cables.

Connecting to a television only

A

Connection with 21-pin Scart cable (not included)

You can enjoy high-quality viewing by connecting the unit to an RGB compatible TV.

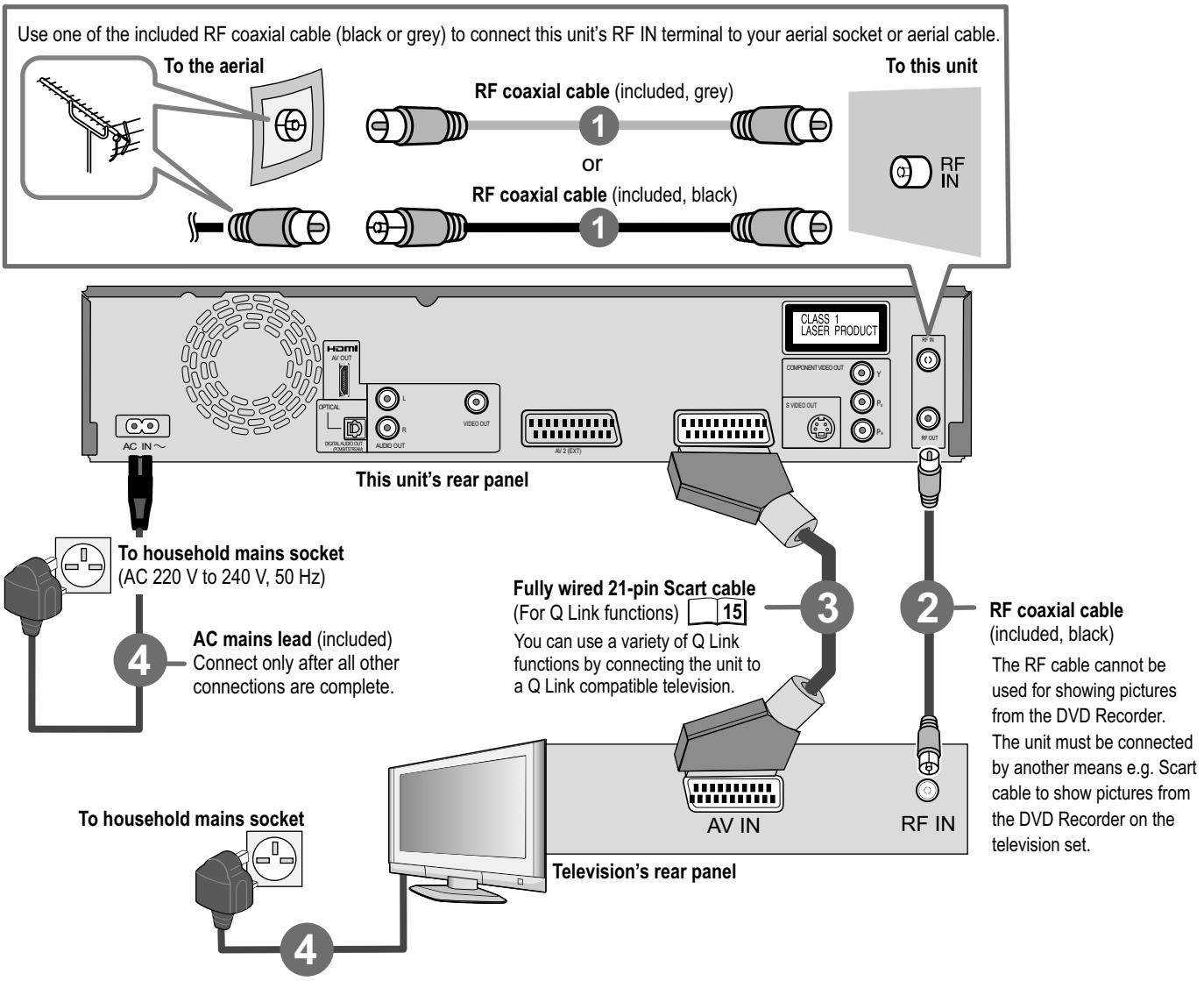
1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.

2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.

3 Connect the AV1 terminal (21-pin Scart terminal) of the DVD Recorder with the Scart input of the TV.

4 Connect the DVD Recorder and the television to the household mains socket.

After completing the above connections, proceed to the Auto-Setup to tune in TV channels.

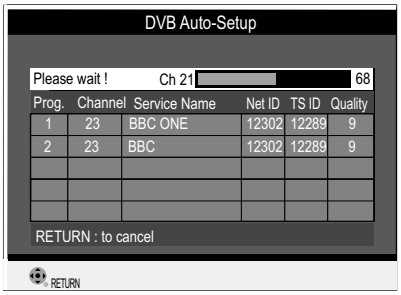


Auto-Setup

Automatic setup of the unit
After being switched on for the first time, the unit proceeds with an automatic station search for digital channels. This is followed by the search for analogue channels.

- Turn on the television and select the AV input that this unit is connected to.
- Switch the unit on using the **Standby/on**-switch.

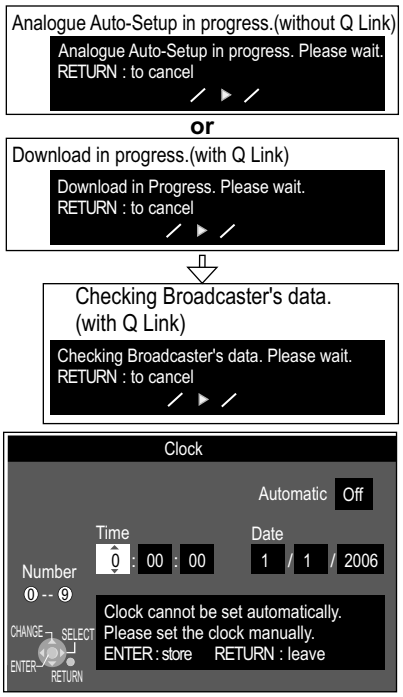
1 DVB Auto-Setup (Tuning digital channels)



Depending on different countries or regions, the digital TV programme has its own selection of operating frequency channels, frequency bands, transmission parameters and frequencies. The unit automatically searches for all available digital stations.

You can repeat the station search again. 59

2 Auto-Setup (Tuning analogue channels)



Analogue Auto-Setup (without Q Link)
The auto setup tunes in all available analogue television stations. This takes approx. 5 minutes.

Download from TV with Q Link
If your television is equipped with the Q Link feature, it will start to download TV tuning information to this unit. In order to be able to use Q Link, the unit must be connected to a TV with Q Link or a similar feature via a fully wired 21-pin Scart cable. 61

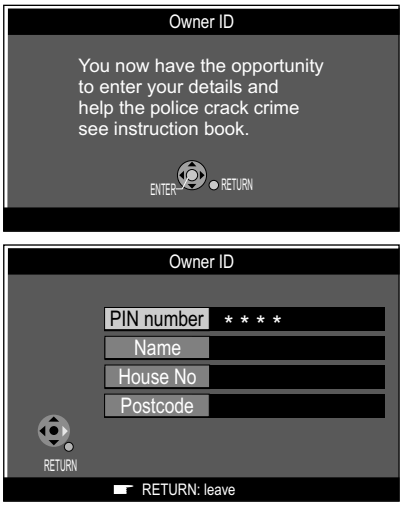
Checking Broadcaster's data (with Q Link)
Once the station data have been adopted from the television set, the analogue stations are sorted accordingly.
You can repeat the station search again. 59

Setting the date and time (if not found automatically)
If the Date and Time are not transferred via a television station, the Clock menu appears.

- Set the clock manually. 66

An incorrect date or time affects the programmed recording of television programmes (note summer and winter time).

3 Owner ID



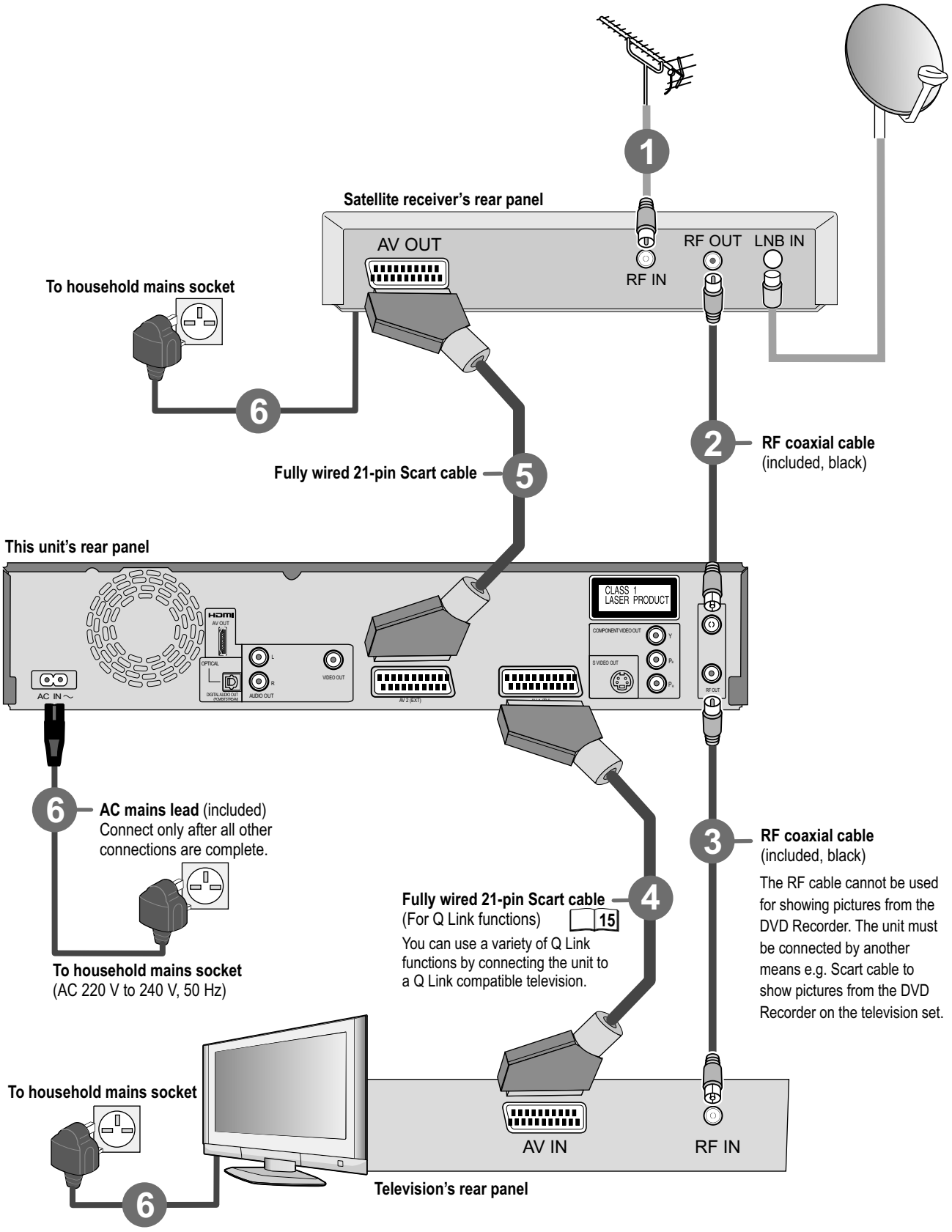
You can complete the Owner ID now. To skip this step and do it later, press the **RETURN** button. Your DVD Recorder is now ready to use. You can later set the Owner ID in the Setup Menu. 67

- To enter the Owner ID, press **ENTER**.
- Press ▶. To set the Owner ID now, use 0 — 9 to enter a four-digit PIN number.
  Press ▲▼◀▶ to correct the digit.
- Make sure that you will remember the PIN number (make a note of it).
- Press the **ENTER** button to confirm.
- Select [Yes] with ◀ and confirm with **ENTER**.
- Press ▶. Enter the [Name], [House No] and [Postcode] in the same way, using ▲▼◀▶.
- Press the **ENTER** button to confirm each entry.
- Press the **RETURN** button to leave the Owner ID screen. You will now see the TV picture. Your DVD Recorder is now ready to use.

Auto-Setup for your unit is complete. The availability of stations may differ regionally. You can now select your favourite stations and store them in the required order in the profiles. 59

Connecting to a television and satellite receiver

B



Connecting to a television and satellite receiver

B

If you receive your television programme via a satellite receiver (digital/analogue), connect your DVD Recorder as shown in connection type B.

If your television supports Q Link, use a fully wired 21-pin Scart cable to connect it to the TV.
The analogue stations automatically downloaded through [Download from TV].
If your television supports RGB, set the AV1 Output to [RGB 1] or [RGB 2] in the Setup menu. 64

1 Connect the aerial to the RF IN (aerial input) and/or the dish (satellite) to the LNB IN of the external unit.

2 Connect the RF OUT (aerial output) of the external unit with the RF IN (aerial input) of the DVD Recorder.

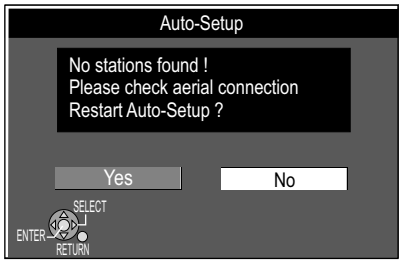
3 Connect the RF OUT (aerial output) of the DVD Recorder with the RF IN (aerial input) of the television unit.

4 Connect the AV1 terminal (21-pin Scart terminal) of the DVD Recorder with the Scart input of the television unit.

5 Connect the external unit with a 21-pin Scart cable to the AV2 terminal of the DVD Recorder.

6 Connect the DVD Recorder, the TV and the external unit to the household mains socket.

Auto-Setup



Auto-Setup with connected Satellite Receiver and aerial
After completing the above connections, proceed to the Auto-Setup. 11

Auto-Setup with connected Satellite Receiver
Turn on the television and select the AV input that this unit is connected to.
Switch on the external unit and DVD Recorder.
[Auto-Setup] follows automatically and if it ends with the note: [No stations found !].
- Select [No] with ▶ and confirm with **ENTER**.
- You can complete the Owner ID now. To skip this step and do it later, press the **RETURN** button. 67

The TV Guide does not show any information if you have connected the unit to a satellite receiver only.

The date and time are not set automatically. Set them manually. 66
An incorrect date or time affects the programmed recording of television programmes (note summer and winter time).

Your DVD Recorder is now ready to use.
- Switch the DVD Recorder to AV2 with **CH** ◇.
  You see the television picture from the external unit.

View / record satellite programmes
Press **INPUT SELECT** to select the input channel AV2 or put this unit in standby mode.
To record satellite programmes refer to “VIDEO Plus+ codes for satellite receivers". 52

Connection with HDMI cable (not included)

The HDMI connection can be used only with units that are suited for HDMI.

1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.

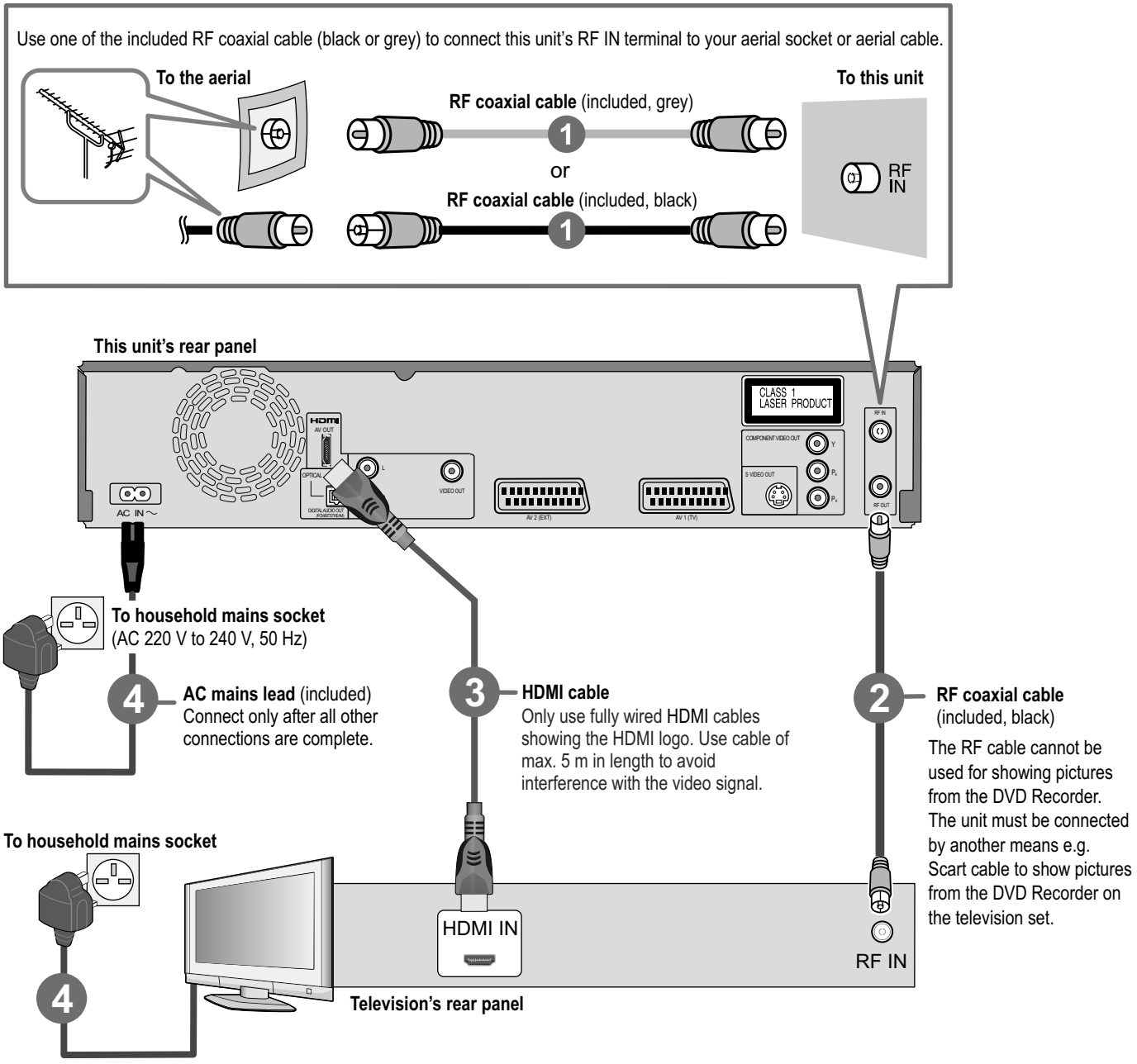
2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.

3 Connect HDMI AV OUT of the DVD Recorder with the HDMI input of the TV.

For Q Link functions:
Connect the AV1 terminal (21-pin Scart terminal) of the DVD Recorder with the Scart input of the TV.

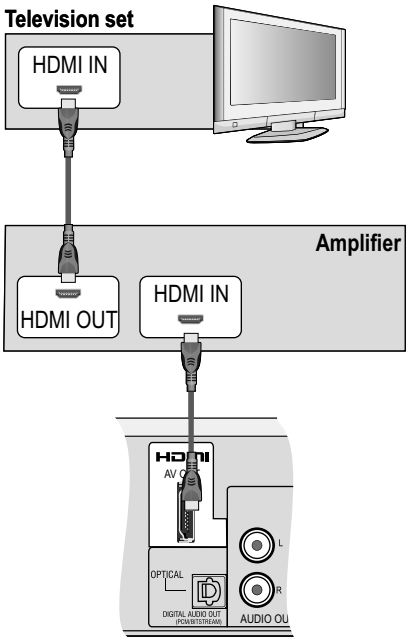
4 Connect the DVD Recorder and the television to the power supply system.

After completing the above connections, proceed to the Auto-Setup, to tune in TV channels. 11



Connection with HDMI cable (not included)

Connection to an amplifier



HDMI (High Definition Multimedia Interface)

If you connect the DVD Recorder to an HDMI-compatible unit, just one cable transfers a high quality digital audio and video signal without interference.

- Once an HDAVI Control compatible unit has been connected to the HDMI terminal, switch the units on and automatically selects the input channel for the DVD Recorder. Repeat the procedure if there is any change to the HDMI terminal.

The audio signal cannot be transmitted via HDMI if an externally connected unit does not support CPPM (Content Protection for Prerecorded Media), or when playing a DVD audio with copy protection. In this case, use an audio cable. 19

If a connected TV only supports dual-channel audio, then an audio signal with 3 or more channels is down-converted, with output through 2 audio channels.
It is not always possible to down-convert all discs. 63
Titles where down-converting is not possible can only be reproduced via HDMI through an amplifier which corresponds to the HDMI Ver. 1.1 standard or higher and is CPPM compatible.

Connect an amplifier complying with the HDMI Ver. 1.1 standard and adjust the setting in the [Setup] menu to [HDMI and Optical].
Now you can enjoy the full audio sound. 65

For HDCP (High-Bandwidth Digital Content Protection) compatible units with DVI (Digital Visual Interface) connection (e.g. PC monitors): depending on the unit, it is possible that a DVI/HDMI adapter does not reproduce the video signal perfectly. The audio signal is not transmitted in this case.

Control via Q Link and HDMI (HDAVI Control)

If you connect this unit with an HDMI cable to a Panasonic television set with HDAVI control function, then both units can be controlled.
If you connect this unit with an fully wired 21 pin scart cable you can use the Q Link functions to control the television and this unit.
You can use both kinds of connection at the same time.
Settings for control with HDMI and Q Link: 65

The following systems from other manufacturers have similar function to Q Link from Panasonic.

- Easy Link (Trademark of Philips)
- SMARTLINK (Trademark of Sony)
- DATA LOGIC (Trademark of Metz)
- Megalogic (Trademark of Grundig)

For details, refer to your television's operating instructions or consult your dealer.

A TV takes a certain time to change over the input channel for the DVD Recorder automatically. It is therefore possible that the television set does not display the playback at the start of the title. Press **SKIP** ⏮⏭ or **SLOW/SEARCH** ◀◀ ▶▶ to return to the start of the playback.

Q Link HDMI	**Automatic input changeover (Easy Playback)** If you start the playback function or select a menu (e.g. Direct Navigator, Timer Recording), the TV automatically switches to the input channel for the DVD Recorder. If you are recording on the DVD drive, the TV does not automatically change to the input channel.
Q Link	**Direct TV recording** Press **DIRECT TV REC** to directly record the programme you are currently watching. You do not need to enter anything else.
Q Link HDMI	**Power on link** If you start the playback function or e.g. select the menu Direct Navigator or Timer Recording or by inserting a disc, the television set switches on and automatically selects the input channel for the DVD Recorder. If you are recording on the DVD drive, the TV does not automatically change to the input channel. TV/DVD automatic switch-on If the TV set and DVD Recorder are switched off (in standby), both units are switched on automatically by pressing **PLAY**, **DIRECT NAVIGATOR**, **GUIDE**, **VIDEO Plus+** or **PROG/CHECK**.
Q Link HDMI	**Power off link** If the television set is switched off, this unit automatically switches off as well. The unit also switches off while the menu FUNCTIONS, DISPLAY or status messages are being displayed, and even when a Timer-controlled recording has been programmed or during playback. The unit does not switch off during a recording with the ● **REC** button, the Copying function or while a disc is being finalized.
Q Link	**Download from TV** (analogue channels only) Station transfer from television set. During [data transfer from TV], data for the station list are automatically downloaded from the TV set. The stations are stored in the same presets of the DVD Recorder as on your TV set. This unit allows for Timer Recordings using the programming function of the television (e.g. IDTV).

Connection to COMPONENT VIDEO terminal

The terminal can be used for INTERLACE or PROGRESSIVE output and deliver a clearer picture than S VIDEO OUT terminal.
The Q Link functions are not available with this kind of connection.

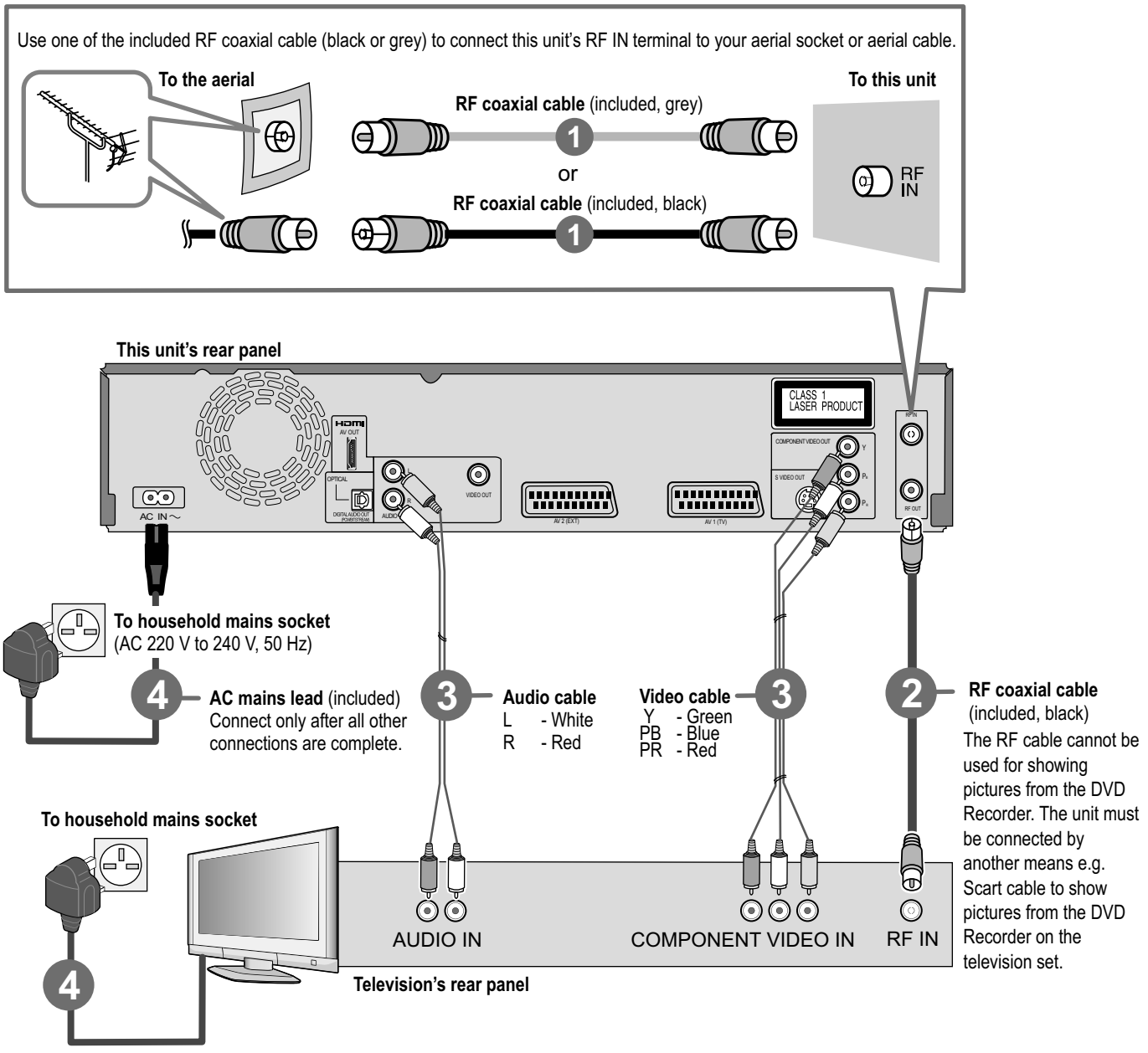
1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.

2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.

3 Connect the COMPONENT VIDEO OUT terminal of the unit with the COMPONENT VIDEO IN of the TV unit. Use a video cable.
Always connect terminals with the same colour.
Connect the audio cables to the corresponding audio input terminals on the TV.

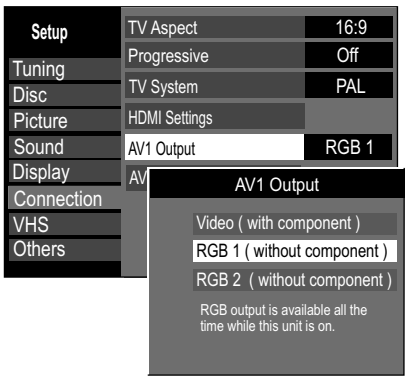
4 Connect the DVD Recorder and the television to the power supply system.

After completing the above connections, proceed to the Auto-Setup. 11



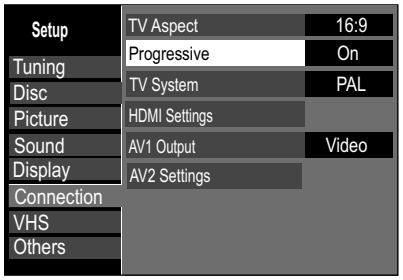
Connection to COMPONENT VIDEO terminal

COMPONENT VIDEO OUT terminal
The terminals can be used for INTERLACE or PROGRESSIVE output and deliver a clearer picture than the S VIDEO OUT terminal. Connections via these terminals output the colour difference signals (P_B/P_R) and the brightness signal (Y) separately. Colours can be reproduced true to the original colour. The properties of the COMPONENT VIDEO input terminal are dependent on the TV or screen.



Connecting a TV with COMPONENT VIDEO input terminals
If your TV with LCD or plasma screen supports the progressive process, connect it to the COMPONENT VIDEO OUT terminals.
If you want to enjoy full progressive video, set Progressive to [On].

If the AV1 Output setting in the Setup menu is set to [RGB 1/2 (without component)], there is no output to the COMPONENT VIDEO OUT terminals.
Set this option to [Video (with component)]. 64
If the unit is connected to the TV via the S VIDEO OUT or the AV1 terminal, output is Interlace regardless of the settings.



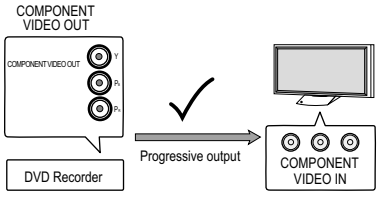
- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Setup] with ▲▼ and confirm with **ENTER**.
- Select [Connection] with ▲▼, [Progressive] with ▶, ▲▼ and confirm with **ENTER**.
- Select the option [On] with ▲▼ and confirm with **ENTER**.

Progressive television picture
The progressive picture aspect ratio (height to width) is set to 16:9. DVD-Video with a picture aspect ratio of 16:9 is properly displayed. However, video material with an image page ratio of 4:3 is shown stretched from right to left. If it is possible to adjust the picture aspect ratio on your television, select the setting [Progressive - On].

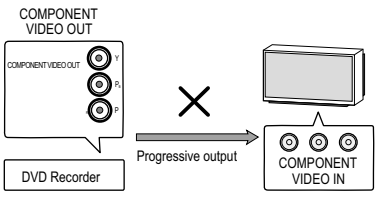
With a normal television, the progressive output can cause the picture to flicker, even if the television is progressive-capable.
Select the setting [Progressive - Off]. 64

Progressive-compatible televisions (PAL)

LCD/plasma television or LCD projector
If progressive output is used, videos can be viewed in High Resolution, for example from DVD-Video. COMPONENT VIDEO OUT on this unit is connected with the COMPONENT VIDEO IN on the television. Select the [Progressive - On] setting.



Conventional televisions
On a normal television, Progressive output can cause flickering even if the television is Progressive-compatible.
Select the [Progressive - Off] setting.



Connection with Video cable or S Video cable

You can use this frequently used standard connection with the provided accessories (Video cable). Depending on the television, the connection with the S VIDEO cable results in a higher quality picture than the connection with an Audio/Video cable.
The Q Link functions are not available with this kind of connection.

1 Connect the aerial to RF IN (Aerial input) of the DVD Recorder.

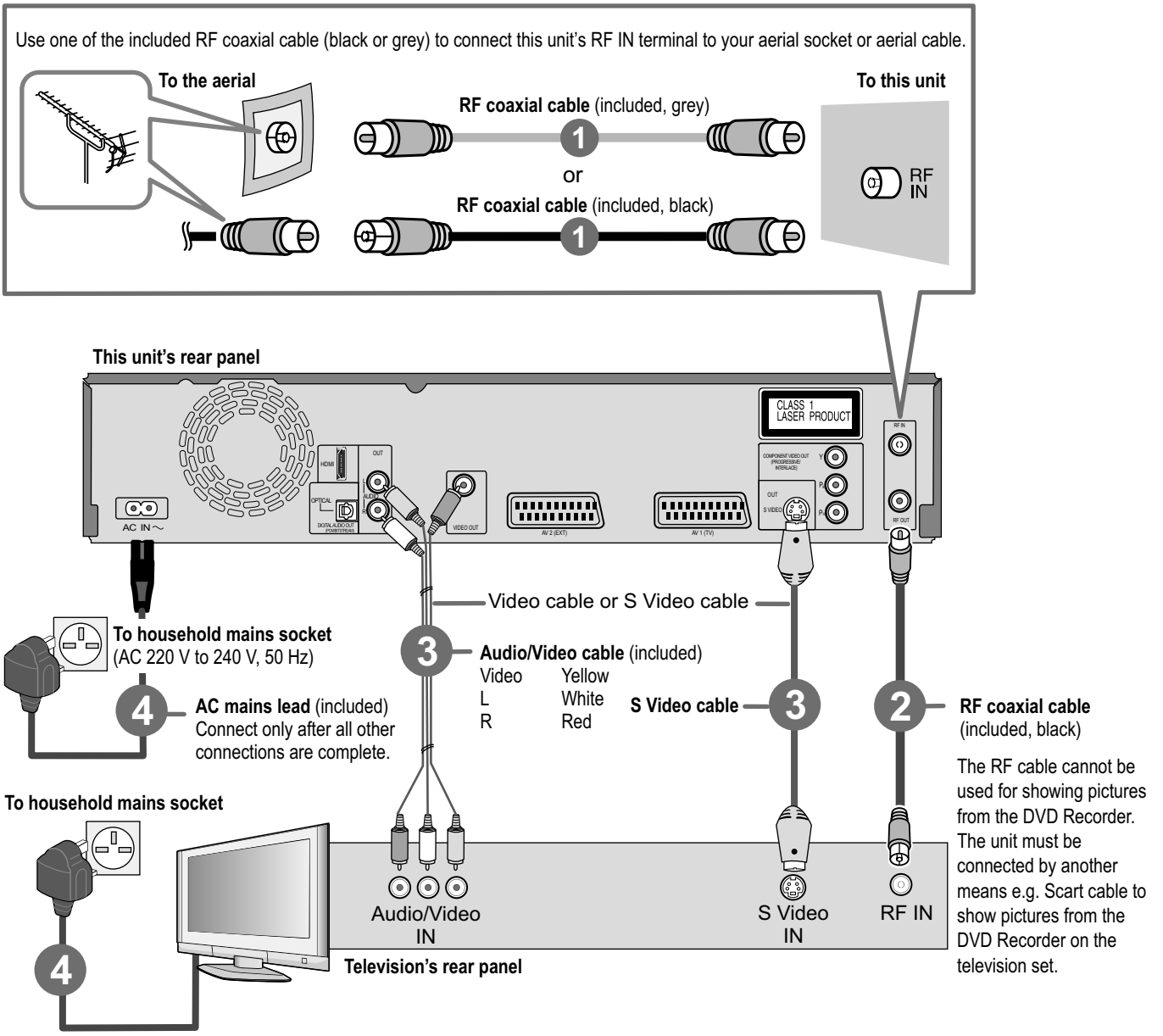
2 Connect RF OUT (Aerial output) of the DVD Recorder with the aerial input of the TV.

3 Connect the AUDIO OUT (L-white/R-red) of the DVD Recorder with the audio of the television.
Connect the VIDEO OUT or S VIDEO OUT of the DVD Recorder with the input of the television.

4 Connect the DVD Recorder and the television to the power supply system.

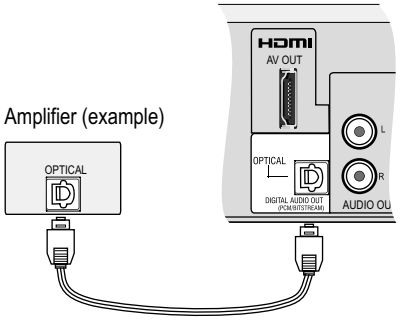
After completing the above connections, proceed to the Auto-Setup to tune in TV channels. 11

If the unit is connected via S Video output, select the setting S Video (with component)] in the Setup menu under [Connection] - [AV1 Output]. 64



External units

For all connections described:
Before you connect cables, make sure that all units are switched off. Switch on the units after you have connected the cables.

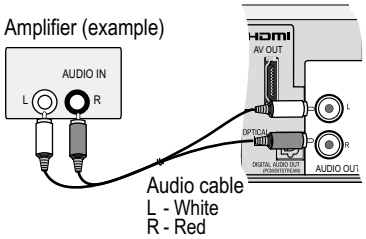


Optical digital audio cable

Connecting a digital amplifier or a digital system component
If an amplifier equipped with Dolby Digital, DTS or an MPEG-decoder is connected, a DVD-Video-Disc with multi-channel surround sound can be played back.

- Connect an amplifier with a Dolby Digital, DTS or an MPEG decoder.
- Use an Optical digital audio cable.
- Change the [Digital Audio Output] setting in the Setup menu [Audio] according to your connected digital amplifier. 63
- You cannot use DTS Digital Surround decoders that are not suitable for DVD.

If the unit is connected to the television set with an HDMI cable and you are using the DIGITAL AUDIO OUT (Optical) for audio output, change the setting [Digital Audio Output] to [Optical Only] in the Setup menu. 65



Audio cable
L - White
R - Red

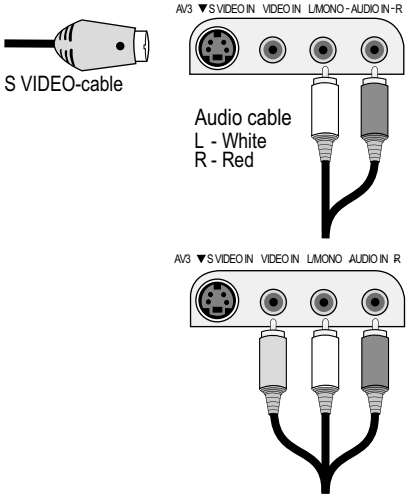
Connecting an analogue amplifier or an analogue system component
In order to enjoy stereo or Dolby Pro Logic, connect a corresponding amplifier or an analogue audio component.

- Connect the AUDIO OUT (L/R) output e.g. with a Dolby Pro Logic amplifier.
- Connect the audio cable according to the colours and markings on the connection terminal (white/L, red/R).

Push the jack all the way into the terminal with this side facing up.

Connect this unit to a device with a DTS decoder in order to be able to play DVDs with this symbol.

This unit can record and playback stereo sound in Dolby Digital (dual channel). DVD-Vs can be played back in multi-channel sound.



Connection to AV3 (e.g. camcorder)

If the audio output of the other unit is mono, connect it to the L/MONO terminal. Both the left and the right channel will be recorded.

- Select one of the two connection options.
  The connection with S VIDEO cable and audio cable (L/R) delivers the best quality.

It is not possible to copy to a VHS cassette via DV input.

Connection to DV input
DV means digital video and is a video standard.
You can connect a DV-compatible camcorder to the DVD Recorder. The DV IN connection is available for this purpose.
The DVD Recorder cannot be controlled via an external unit that is connected to the DV IN terminal.

Before you connect the DV cable, make sure that all units are switched off. After you have connected the cable, switch on the units.

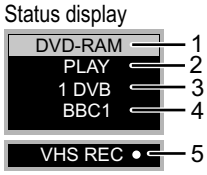
- Connect the DV output of the DV unit (e.g. digital camcorder) with the DV input terminal of the DVD Recorder. Use a DV cable.
- After you have connected the cable, switch on both units.

The DV input of this unit is only intended for DV units. For example, a computer cannot be connected. Some DV units do not allow for proper input of the picture and sound signal.

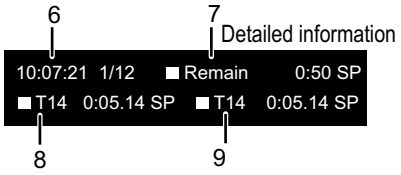
Status displays

DVD VHS SD

Status display



Status display of other media



ⓘ Screen information

Every time you change the station, a status display and banner appear automatically. They disappear again after a short time.
You can change how long they appear for in the setup menu. 63

- Press ⓘ to show the screen information again.
- The display changes every time a button is pressed, depending on the function, e.g. PLAY, REC or REC PLAY.
- Also press ⓘ, to leave the display.

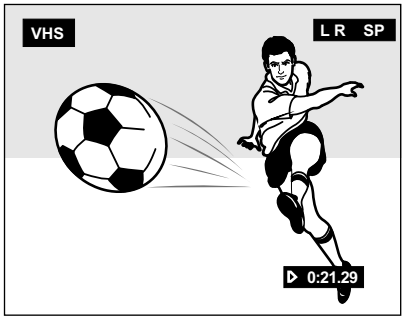
Status displays

1: Current medium
2: Current recording playback status and remaining time
3: Current station position. DVB shows a digital station.
4: Current station
5: Status display and recording status of other media.

REC Record	▶▶ Fast forward (5 stages)	◀◀ Rewind (5 stages)
PAUSE Pause	▮▶ Slow motion (5 stages)	◀▮ Slow-motion rewind (5 stages)
PLAY Playback	PLAY/x1.3 Quick View	▮▮ Pause playback

You can display detailed informationen only during playback or recording (VHS only recording). They are not recorded.

6: Current date and time
7: Available recording time and recording mode: e.g. 0:50 SP shows 50 minutes in SP mode.
8: Title number: shows the recording mode and the elapsed play time of the title. **VHS**: Current tape counter.
9: Title number: shows the recording mode and the recording time of the title.



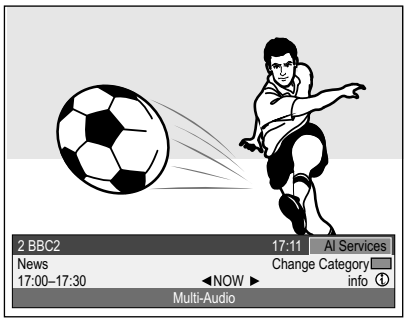
VHS screen information

- Press ⓘ during playback. Each time the button is pressed, the display switches between tape counter and remaining tape time

VHS	Current medium
L R SP	**LR**, **L**, **R**: The soundtrack can be changed with the **DISPLAY** button. **SP**: Selected recording mode.
REMAIN: 0:24	**Remaining tape time:** The display depends on the correct setting of the tape length. 65
▷ 0:21.29	**Tape counter:** It is automatically set to 0:00.00 when a video cassette is inserted. Use ✳ / RESET to reset the counter to 0:00.00.
R▷ 0:21.29	Repeat 28

Banner

DVD VHS SD



The banner contains information about the current (NOW) and following (NEXT) programme. It cannot be selected during playback or recording. Banners can only be selected for digital stations.

- Press ⓘ to display the banner.
- Use ◄► to change between NOW and NEXT.
- Use **CH** ◊ to select the available stations. The television picture of the selected station appears with the corresponding banner.
- Use ▲▼ to select the banner of the available stations. The television picture does not change to the corresponding station. The current station is stored in yellow.
- Press **ENTER** to watch the selected station.

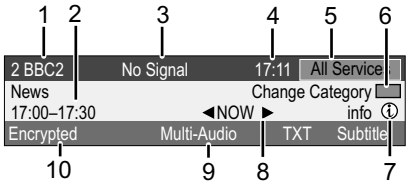
Additional information about a programme

For these programmes, ⓘ appears in the banner.

- Select the detailed programme information with ⓘ
  This information remains visible until you press ⓘ again.

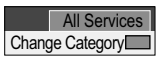
Change Category

- Press ⓘ to display the banner
- Press the **BLUE** button to change the category.



1	Programme position and name of the current station.
2	Title and airtime of the current programme.
3	Signal quality of the current station: No signal; Bad signal. No service = a programme is not transmitted at the moment. 60
4	The current time.
5	Selected Category: All Service, TV, Radio, Profile 1-4 50
6	Press the **BLUE** button to change the category.
7	Detailed information on the current programme.
8	NOW: Information on the current programme. NEXT: Information on the next programme.
9	Programme is broadcast in multi-channel sound. Press **DISPLAY**. Select Audio - [DVD Multi Audio]. 71
10	Station with an encrypted signal.

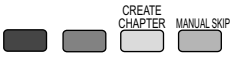
On selecting a radio station or if the banner shows [No Signal], [Bad Signal], [Encrypted] or [No Service], the banner cannot disappear and is included in any current recording.



No banners with information are displayed for analogue channels.

- Press ⓘ to launch a banner to change the profile.
- Press the **BLUE** button to change the profile.
  The banner disappears after 5 seconds.

Digital TEXT



Digital TEXT is a digital teletext service provided by various broadcast organisations (not for analogue channels). Stations that offer the Digital TEXT can be identified by the [TXT] in the Banner.

- Press **TEXT** to launch the Digital TEXT. It may take some time for the information to load and display. Please be patient.
- Use ▲▼ to page up and down or use numeric buttons to select a specific page number. The features depend on the respective station.
- The coloured buttons allow you to quickly access certain topic areas and the navigation to the Digital TEXT pages. The features depend on the respective station.
- Press **TEXT** to exit the Digital TEXT service.

Digital Teletext cannot be recorded. When subtitle is on or additional information in the banner is displayed, Digital Teletext does not work.
During a recording the Digital TEXT function is not possible.

Subtitles

If the programme provider of digital programmes offers subtitles, these can be displayed with **STTL**. The preset subtitle language can be changed in the Setup menu. 63

- Press **STTL** to show or conceal subtitles.

Disc formats

Playback and recording discs

DVD-RAM: DVD Video Recording format

DVD-RAM RAM
4.7 GB 12 cm
9.4 GB 12 cm
2.8 GB 8 cm
rewritable

DVD-RAM

The DVD-RAM can be compared with the hard disc and can be written to 100,000 times on average. The disc can only be played on DVD-RAM-compatible players.
The recording occurs in DVD Video Recording format (VR). Movies and parts of movies can be edited and deleted. The deletion of movies frees previously used storage space.
The creation of playlists does not require any additional storage space.
Dual-channel sound and 16:9 format are supported in addition to the TIME SLIP function.

DVD Video Recording format (VR)

This format enables recording and playback.
Programmes limited to "one-time recording" can be recorded to a CPRM-compatible disc.
You can record to a CPRM-compatible DVD-RAM.
Playback is only possible with a compatible DVD player. Use a DVD-RAM to record in DVD Video Recording format.

DVD-R: DVD-Video format
+R : +VR format

DVD-R -R
4.7 GB 12 cm
1.4 GB 8 cm
recordable

+R +R
4.7 GB 12 cm
recordable

DVD-R/+R (Recordable)
The DVD-R/+R can only be recorded once. Movies or parts of them can be deleted during processing, but storage space is still taken up and cannot be used for other movies.
Through finalization, the DVD-R/+R becomes DVD-V that can be played on other units.

DVD-R/+R/-R DL/+R DL (-R, +R, -R DL, +R DL) ⇨ **Finalization** (On the recording unit) ⇨ DVD VIDEO 69

The movies can no longer be edited after finalization.

Recording with this recorder	⇨	Playback on another unit
Recording with another unit	⇨	Playback on this recorder

DVD-RW : DVD-Video format
+RW : +VR format

DVD-RW(V) -RW(V)
4.7 GB, 12 cm
1.4 GB, 8 cm
rewritable

+RW +RW
4.7 GB, 12 cm
1.4 GB, 8 cm
rewritable

DVD-RW(V)/+RW (Rewritable)
DVD-RW(V)/+RW is rewritable and erasable. You must format the disc to be able to rewrite it again. Through finalization, the DVD-RW(V) becomes a DVD-V that can be played on other units. A finalized DVD-RW(V) can be reformatted and rewritten.
Formatting deletes all data!
A +RW becomes a DVD-V by creating a Top Menu. 69

DVD-RW(V) -RW(V) ⇨ **Finalization** (On the recording unit) ⇨ DVD VIDEO ⇨ **Formatting** ⇨ **DVD-RW(V)** -RW(V)

The movies can no longer be edited after finalization.

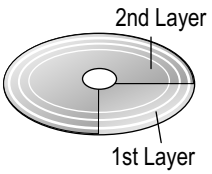
Recording with this recorder	⇨	Playback on another unit
Recording with another unit	⇨	Playback on this recorder

DVD-R DL: DVD-Video format
+R DL : +VR format

DVD-R DL -R DL
8.5 GB 12 cm, writable

+R DL +R DL
8.5 GB 12 cm,writable

DVD-R DL/+R DL (Double Layer DVD/Dual Layer DVD)



The data are saved on two parallel layers. They have more space available. If the laser changes layers during playback, brief interruptions to the image and sound may occur.
You cannot switch layers during a recording. The recording stops when the storage space on the first Layer is full. You must close the first Layer to be able to record on the second Layer.

DVD-Video format (V)

This recording format is the standard DVD-Video. Digital programmes that are limited to "one-time recording" cannot be recorded. Not for recording and playback of still pictures.

+VR format

Digital programmes limited to "one-time recording" can not be recorded. Not for recording and playback of still pictures.

Disc formats

DVD

DVD RW	**DVD-RW** (DVD-VR format) 12 cm/ 8 cm, playable only	-RW(VR)
DVD VIDEO	**DVD-Video** 12 cm/ 8 cm, playable only	DVD-V
DVD AUDIO	**DVD-Audio** 12 cm/ 8 cm, playable only	DVD-A
COMPACT disc DIGITAL AUDIO	**CD** **CD-R/RW** 12 cm/ 8 cm, playable only	CD
COMPACT disc SUPER VIDEO / COMPACT disc DIGITAL VIDEO	**Video CD** **CD-R/RW** 12 cm/ 8 cm, playable only	VCD

Playback discs

A DVD-RW that was recorded on another DVD recorder is played back in DVD-RW (VR) format on this unit. Programmes limited on "one-time recording" can be played back. If you format the disc, you can record and play it in DVD-Video format with this unit.

High-quality video and music discs.

Digital-quality music discs. Playback in stereo.

Music and audio recordings, music in MP3 format, pictures in JPEG and TIFF format.

Music and video recordings.
SVCD in compliance with IEC62107.

MP3 JPEG You can play MP3 and JPEG/TIFF data from a finalized CD-R, CD-RW or DVD-R. Depending on the recording conditions, playback may nonetheless be faulty.

Some DVD-Audio discs with multi-channel sound are designed by the manufacturer to prevent inter-mixing on the entire disc or at certain places. Depending on the disc type, the regional code and the recording conditions, it may not be possible to play the discs in some cases.
See the jewel case for more information.

Regional codes

DVD-Video only

DVD-Videos with the regional code 2 or ALL can be played with this unit. The code is listed on the backside of the unit. England and Continental Europe: 2.

Non playable discs

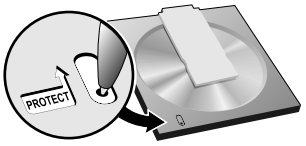
- 2.6 GB and 5.2 GB DVD-RAM, 12 cm.
- 3.95 GB and 4.7 GB DVD-R for Authoring.
- DVD-R that was recorded in DVD Video Recording format (VR).
- DVD-R (V), DVD-R DL, DVD-RW(V), +R, +R DL that was recorded on another unit and not finalized.
- Blu-ray, DVD-ROM, +R (8 cm), CD-ROM, CDV, CD-G, photo CD, CVD, SACD, MV disc, PD, “Chaoji VCD” that can be purchased in stores, including CVD, DVCD and SVCD that are not IEC62107-compliant, etc.

Only play round discs.

Do not touch the disc recording surface.

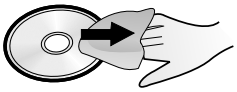
Cartridge discs RAM

With active write-protection, you can neither record to the disc nor edit or delete content.



Cartridge write-protection

Remove the 8-cm disc from the cartridge before using it with this unit.



Handling discs

If the surface of a disc, which has no Cartridge or was removed from one, is scratched, dirty, dusty or has finger prints, playback or processing can be impaired. Such impairments can also occur when the disc is placed back in the Cartridge.
Note: Only write on the label side of the disc. Use a soft, oil-based felt-tip pen. Do not use a ball-point pen or any other hard writing instrument. Do not affix stickers or labels to the disc. When not in use, put the disc in its case or Cartridge.

Cleaning the DVD-RAM

Clean the disc with a special DVD-RAM cleaner (optional) and read the cleaner instructions throughly before use. Bad scratches and stubborn dirt may not be able to be removed so that recording, editing or playback is still compromised even after cleaning. The disc should then no longer be used.
Do not use benzine, alcohol, water, cleaning sprays, household cleaners or other solvents.

DVD lens cleaner (RP-CL720E)
Compatible models: Only for Panasonic's DVD recorders.
Do NOT use this cleaner with any other Panasonic DVD products or with the DVD products of any other companies since doing so may damage the products.

Cleaning DVD-Videos, Video-CDs and CDs

Wipe with a moist and then with a dry cloth.

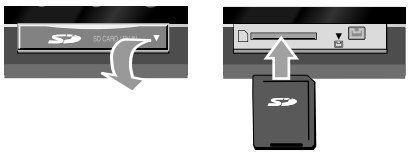
- - **SD Memory Card** SD
miniSD™Card
MultimediaCard
8 MB to 2 GB (Maximum)
Pictures

Use an SD card for playback and transfer (copying) pictures taken for example with a Digital Camera.

If the SD Memory Card was formatted with another unit, under certain circumstances you may possibly not be able to use it with this unit.
In this case, reformat the card with this unit.
Caution! All saved data are deleted during formatting.

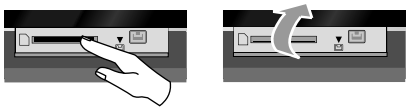
The usable memory can deviate from the card capacity.

Inserting the storage card



Inserting the storage card
- Opening the cover. Press the protruding section to open the cover to the slot.
- Press on the centre of the card until it clicks into place. Insert the card label up with the cut-off corner on the right.

Removing the storage card

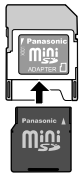


Removing the storage card
- Press on the centre of the card. Pull it straight out.
- Closing the cover. Press down.

Write- protection

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

When the write-protection device is activated, you can neither record nor edit or delete the contents of the SD Card.



Use an appropriate adapter for miniSD™ cards.

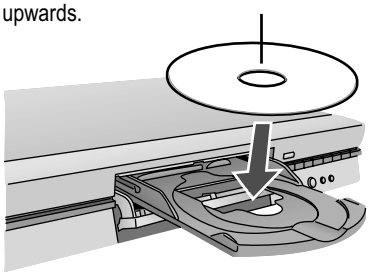
This unit supports SD Memory Cards that are formatted with FAT 12 and FAT 16 systems (based on SD Memory Card spec.).

Additional information is available on the Internet
http://panasonic.co.jp/pavc/global/cs

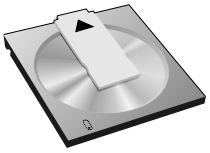
Do not touch the memory card contacts.

Keep the small memory cards such as the SD Memory Card out of reach of children. If swallowed, seek medical advice immediately.

Insert with label facing upwards. In the case of double-sided discs, the label of the side that you want to play should be facing upwards.

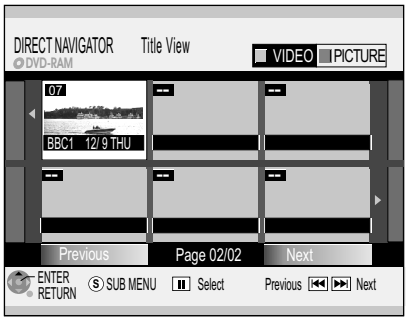


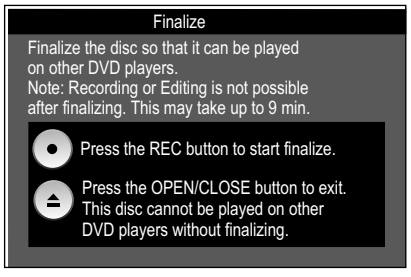
Insert a Cartridge disc in the direction of the arrow, label facing upwards.



Direct input via the number buttons

5: 0 5 **15:** 1 5
5: 0 0 5 **15:** 0 1 5
5: 0 0 0 5 **15:** 0 0 1 5





Preparation

- Turn on the television and select the AV input that this unit is connected to.
- Switch on the DVD Recorder.

- Press **OPEN/CLOSE ⏏** on the unit to open the disc tray.
- Insert a disc in the disc tray and close it.
  It may take some time to read the disc!

Playback

- Press **PLAY ▶** to start playback.
  Playback begins with the last title recorded.

RAM -R -R DL -RW(V) +R +R DL +RW Disc playback stops when a Timer Recording starts.

Playback of a selected title

- During playback, use the number buttons to select the desired title, chapter or piece and confirm with **ENTER**.

DVD-A When the screen saver is shown, you can enter a group number. On some discs, this function is only available when playback stops.

Playback starts automatically DVD-A DVD-V VCD

Playback always starts at the beginning of the disc. If the disc has its own disc menu, then this is displayed. The operation of the disc menu depends on the inserted disc.

Due to the programme structure determined by the manufacturer, all described functions may not be available.

- In the case of VCD, use the number buttons to select the number of the title.
- In the case of DVD-A/DVD-V, use ▲▼◀▶ or the number buttons to select a title and confirm with **ENTER**.

Use the following buttons to launch the disc menu again:
DVD-V: **SUB MENU**, DVD-A: **DIRECT NAVIGATOR**, VCD: **RETURN**

If ⃠ appears on the television unit, the procedure is interrupted by the unit or the disc.

Selecting programmes/titles for playback

Use the **DIRECT NAVIGATOR** button to launch the menu during playback, recording and in **STOP** mode.

- Press **DIRECT NAVIGATOR**.
- Select the desired title with ▲▼◀▶ and confirm with **ENTER**. Playback starts.
- Press **RETURN** to exit the menu.
  You can select other pages with **SKIP** ⏮ Previous or ⏭ Next.

Auto finalize -R -RW(V) +R -R DL +R DL

Auto finalization is always offered before an unfinalized disc is ejected. You can only play an unfinalized disc on this DVD Recorder.

- Press **OPEN/CLOSE ⏏** on the unit.
- Press **REC** on the unit to start the finalization.
- After successful finalization, the disc is ejected automatically.
  It can now be played on any DVD unit.
- If you do not want to finalize the disc, press **OPEN/CLOSE ⏏** on the unit again.

PAUSE **Pausing playback**

- Press **PAUSE** ❚❚ to pause playback.
- Press **PAUSE** ❚❚ again to resume playback.

STOP **Stopping playback**

- Press **STOP** ■.
  Playback stops and the television picture appears.
- During playback of DVD-A, DVD-V, VCD and CD press **STOP** ■ twice to return to the television picture.

Saving the playback position

- Press **STOP** ■ during playback. The unit saves the position.
  The position is deleted if you switch off the unit.
- Press **PLAY** ▶ to resume playback from the saved position.
- To cancel this function, press **STOP** ■ several times.
  This function is not available if playback was started from DIRECT NAVIGATOR or from Playlists.

SLOW/SEARCH ◀◀ ▶▶ **Slow-motion playback** Not CD

- Press **SLOW/SEARCH** ◀◀ ▶▶ in **PAUSE** mode.
  The speed can be controlled in 5 levels. With some disc formats, the **PAUSE** function is switched on after 5 minutes.
- Press **PLAY** ▶ to resume normal playback.

VCD Forwards only. DVD-A Moving pictures only.

SLOW/SEARCH ◀◀ ▶▶ **Fast forward**

- Press **SLOW/SEARCH** ◀◀ ▶▶ during playback.
  Each time the button is pushed, the fast forward speed increases by one level up to a maximum of five levels. +R +R DL +RW(V) Maximum 3 levels.
- Press **PLAY** ▶ to resume playback.

  The sound is only output at the first fast forward speed.
  With DVD-Audio (except for moving pictures), CDs and MP3s, the sound is output at all fast forward speeds.

CREATE CHAPTER **Dividing a recording into chapters** RAM

- Press **CREATE CHAPTER** during playback.
  During playback, press ⏮ **SKIP** or **SKIP** ⏭ to skip a chapter.

⏮ ⏭ SKIP/INDEX **Skipping**

- Press **SKIP** ⏮ ⏭ during playback or **PAUSE** mode to skip chapters, titles or pictures.

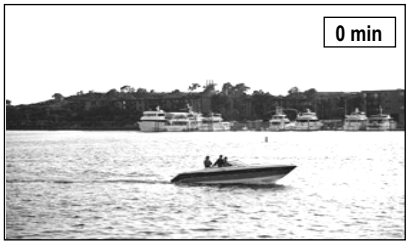
MANUAL SKIP **MANUAL SKIP** Not CD

- Press **MANUAL SKIP** during playback.
  Playback jumps forward approx. 30 seconds.

◀❚❚ ❚❚▶ **Frame playback** Not CD

- Press ◀❚❚ ❚❚▶ in **PAUSE mode**.
  Each time the button is pressed, the next or the previous frame is displayed.
- Press **PLAY** ▶ to resume playback.

VCD Forwards only. DVD-A Moving pictures only.



TIME SLIP

JET REW **TIME SLIP** Not DVD-V DVD-A VCD CD

- Press **TIME SLIP** during playback.
- Use ▲▼ to select the time span by which playback is to jump forward or backward. Each time the button is pressed, the time span increases or decreases in minute increments.
  For recordings that are longer than 10 minutes, the time span increases or decreases in 10-minute increments when the button is held down longer.
- Press **ENTER** to confirm the selected time.

Delayed playback RAM

Playback can be started while the unit is still recording. You can watch the recording without stopping the current recording.

- Press **STOP** ■ to end playback.
- After 2 seconds, press **STOP** ■ again to stop the recording.
  If a Timer Recording is to be stopped, use ◄ to select [Stop Recording] and confirm with **ENTER**.

PLAY ▶ **Quick View** (PLAY/x1.3) RAM

You can increase the playback speed without negative effects on the sound.

- Press and hold **PLAY** ▶ during playback.
- Press **PLAY** ▶ again to return to normal speed.

With a digital connection, playback is in PCM.
Quick View is paused if you press **PAUSE** ❚❚ or the playback of a programme begins, which was not recorded with Dolby Digital. Quick View does not function during simultaneous recording and playback in XP or FR mode.

Simultaneous recording and playback

You can play a different title during the current recording.

Recording to DVD-RAM - Playback from DVD-RAM

- Press **DIRECT NAVIGATOR** during the recording or Timer Recording. The title view appears.
- Select a title with ▲▼◄► and confirm with **ENTER**.
  Playback of the selected title begins.
- Use **STOP** ■ to end playback.
  Playback during recording standby ◴ does not affect Timer Recordings. Recording begins at the programmed time.

Recording to DVD - Playback from VHS

- Select the VHS drive with **DRIVE SELECT**.
- Select **PLAY** ▶ to start playback.
- Select **STOP** ■ to end playback.

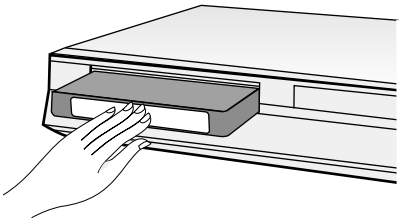
Recording to VHS - Playback from DVD

- Select the DVD drive with **DRIVE SELECT**.
- Select **DIRECT NAVIGATOR**.
- Select a title with ▲▼◄► and confirm with **ENTER**.
  Playback of the selected title starts.
- Select **STOP** ■ to end playback.

Changing the audio channel

DISPLAY For disc formats DVD-A, DVD-V

- Press **DISPLAY** during playback.
- Depending on the disc, select the audio channel or the sound track. LR ⇒ L ⇒ R



The tape automatically rewinds when the end is reached. This function is not available during a Timer Recording.

Preparation
- Switch on the DVD Recorder and use **DRIVE SELECT** to select the VHS drive.
- Enter a recorded video cassette.

PLAY ▶ Playing a video cassette
- Press **PLAY** ▶ to start playback.
  Playback starts automatically if a video cassette was inserted and its write-protection strip was removed.

Repeat playback
The video recorder repeats the recording until the end is reached.
- Press **PLAY** ▶ for more than 5 seconds. R ▷ and the tape play time or remaining tape play time appears on the screen.

STOP ■ Stopping playback
- Press **STOP** ■.

PAUSE ❚❚ Pausing playback
- Press **PAUSE** ❚❚ during playback.
  Press **PAUSE** ❚❚ again to resume playback.

Slow-motion playback during playback
- Press **PAUSE** ❚❚ for more than 2 seconds.
- Press **PLAY** ▶ to resume playback.
  Slow-motion playback is automatically cancelled after 10 minutes.

Frame playback during playback
- Press **PAUSE** ❚❚.
- Press **PLAY** ▶ to resume playback.
  Frame playback is automatically cancelled after 5 minutes.

SLOW/SEARCH ◀◀ REW / ▶▶ FF Forwards ▶▶ or backwards ◀◀ search
- Press ▶▶ or ◀◀ during playback.
  Press the button twice (JET SEARCH) to increase the search speed. If you press and hold the button, the search starts for the length that the button is pressed.
- Press **PLAY** ▶ to resume playback.
  The forwards/backwards search is cancelled after 10 minutes.

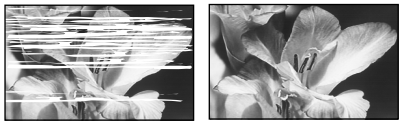
FF ▶▶ Fast forward / REW ◀◀ Jet rewind
- In **STOP** mode, press ▶▶ or ◀◀.
- Press **STOP** ■ to end the forward/rewind function.

◀◀ JET REW
To quickly rewind to the beginning of the cassette.
Approx. 50 seconds for a E180 cassette.
Depending on the video cassette or the operating condition, the rewind speed may vary.
If the tape rewinds to the beginning, the counter is reset to 0:00.00.

⏮ / ⏭ SKIP/INDEX VHS Index Search System (VISS)
This unit records special index signals to the cassette tape for each recording. The index search function uses these signals to quickly find the beginning of the desired recording. Up to 20 index signals can be used.
- Press **INDEX** during playback or in **STOP** mode.
  ▶▶| tape forwards/|◀◀ tape rewinds. If an index signal was found, the unit automatically begins playback. With each push of the button, the number of jumps is increased.
- Press **STOP** ■ to end the search.
  If the index signals are too close together, the feature may fail. The recordings should be at least 5 minutes long.

S-VHS Quasi Playback (SQPB)
It is possible to play cassettes that were recorded on an S-VHS unit. The picture quality is the same as a VHS recording. Depending on the video tape used, slight picture distortions may occur.
An S-VHS recording is not possible with this unit.

Manual tracking
The unit sets tracking automatically. If a cassette was recorded on another unit, it may be necessary to set tracking manually.



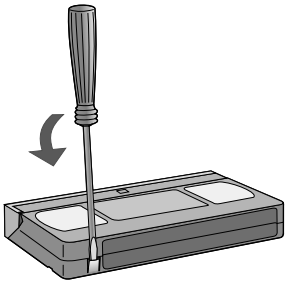
The picture shows interference or is blurred during playback.

- During normal playback or in slow motion, press **TRACKING/V-LOCK +/-** until the blurriness disappears.
  If freeze frames are blurry, first switch the unit to slow motion and then adjust the tracking.
  Tracking cannot be controlled on some video cassettes. This does not indicate functional problems.

Automatic tracking

- Press **TRACKING/V-LOCK +** and **-** at the same time to return to automatic tracking.
  On some TVs, the picture can move up or down when special playback functions are used.
  This does not indicate functional problems.

Handling video cassettes
If the video cassette is not in use, remove it from the unit and store it in its jacket.
Avoid recording on the same tape section multiple times in order to avoid wearing out the video tape prematurely.
Carefully insert the cassette into the video recorder to avoid damage.
Do not expose the video cassette to high humidity, temperature or dust particles.
Do not store the video cassette near magnetic waves, such as television sets.
Do not use defective cassettes and do not try to repair them.
Do not open the housing or the protective flap on the front side of the cassette and do not touch the tape.
Use high-quality name-brand cassettes, such as those made by Panasonic.
When playing cassettes recorded on another VHS-Recorder, there may be a slight decrease in picture quality.



Write-protecting cassettes
Remove the write-protection tab to protect cassettes from accidentally being erased.
If you want to record to a protected cassette, cover the gap with adhesive tape.

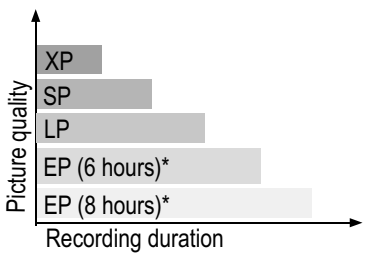
Cleaning video heads
Use a cleaning tape to clean the video heads.

Maximum number of recordable titles	
RAM -R -RW(V) -R DL	+R +RW +R DL
99	49

Programmes in 16:9 format are recorded in 4:3 format.
16:9 format is used to record to DVD-RAM.

Titles in PAL or NTSC format can be displayed on the following TV sets:

TV type	Disc	Yes/No
Multi system TV	PAL	Yes
	NTSC	Yes
NTSC-TV	PAL	No
	NTSC	Yes
PAL-TV	PAL	Yes
	NTSC	Yes (PAL60)



* Only if Recording time in EP mode is set to [EP (6 Hours)] in the Setup menu. 61

Before recording

You can record to DVD-RAM, DVD-R, DVD-RW(V), -R DL, +R DL, +R or +RW with this unit. DVD-R/-RW(V) is the most common medium.
DVD-Video format is used to record to discs. The format is compatible with most DVD-Video players and DVD-ROM drives in computers.

Disc protection

Protect your recordings from accidental deletion or overwriting.
Title: 44 Pictures: 44 Recordings: 36 The entire disc: 68

If you activated write-protection, remove it before processing.

Conventional DVD-Vs are usually equipped with copy protection and cannot be copied.

CPRM (Content Protection for Recordable Media) RAM

This unit is compatible with the CPRM copy-protection system for recordable media.
When using a CPRM-compatible disc, a programme can be recorded once.
Programmes broadcast with this copy-protection system cannot be recorded to DVD-R or 2.8 GB DVD-RAM.

Formatting 68

If using an unformatted disc, you must format it before the first recording. Formatting prepares the media, such as a recordable DVD-RAM, for recording.
All data is irreversibly erased.

For recording

The recording is saved to free areas on the disc. If there is no more space left on the disc, you must delete recordings or use a new disc.
Continuous recording or playback of both sides of a double-sided disc is not possible.
After the end of the recording, the unit needs approx. 30 seconds to record data for recording management.

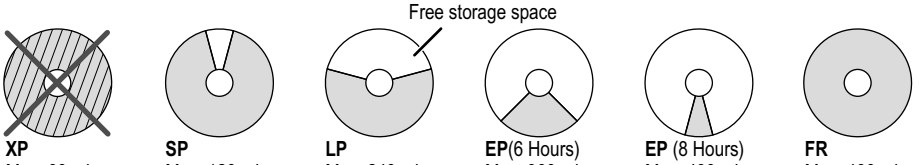
Discs suitable for recording

Rewritable			Writable			
RAM	-RW(V)	+RW	-R	+R	-R DL	+R DL
x2	x1	x2.4	x1	x2.4	x4	x2.4
x3	x2	x4	x4	x4		
x5	x4	x8*	x8	x8		
	x6		x16	x16		

* Playback only

Under certain circumstances, digital sound signals may not be recorded in their original format. Digital programmes limited to "one-time recording" can only be recorded to 12-cm DVD-RAM.

Recording a 90-minute title to a disc with 4.7 GB of storage space.



XP Max. 60 min. **SP** Max. 120 min. **LP** Max. 240 min. **EP**(6 Hours) Max. 360 min. **EP** (8 Hours) Max. 480 min. **FR** Max. 480 min.

It is not possible to record a 90-minute title in XP mode.
The available storage space is used optimally in FR mode. The title is recorded in the best possible quality.

You cannot record to DVD and VHS at the same time.

DVD: Insert a disc.
If you activated write-protection, cancel it. RAM

VHS: Insert a video cassette with an intact write-protection tab.
- Press **FUNCTIONS.**
- In the Setup menu, select the appropriate tape length under VHS. 65
- Confirm with **ENTER**.
- Press **RETURN** several times, in order to return to the television picture.

- Select the DVD or VHS drive with **DRIVE SELECT.**

REC
Record
- Press ● **REC** to start a recording.
  After the recording is complete, it takes some time for the unit to process the unit control information.

Approx. recording times in hours

	DVD-RAM		- R, - RW +R, +RW
	4.7 GB	9.4 GB	4.7 GB
XP	1	2	1
SP	2	4	2
LP	4	8	4
EP: 6 h	6	12	6
EP: 8 h	8	16	8

Approx. recording times in hours

	-R DL +R DL 8.5 GB		
	Total	1st Layer	2nd Layer
XP	1:45	0:55	0:50
SP	3:30	1:50	1:40
LP	7:00	3:40	3:20
EP: 6h	10:45	5:30	5:15
EP: 8h	14:15	7:25	6:50

It is not possible to record continuously from the first layer to the second layer.

PAUSE
Pause the recording
- Press **PAUSE** ❚❚ to pause the recording.
  If the recording is paused for more than 5 minutes, the unit switches to **STOP** mode.
- Press **PAUSE** ❚❚ again or ● **REC** to resume recording.
  The title is not divided.

DVD recording of TV programmes
- Select the station with **CH** ◇ or the number buttons.
- Select the recording mode with **REC MODE**.
  Switch between SP, LP, EP and XP with each push of the button.
- Press ● **REC** to start the recording.
- Select **STOP** ■ to stop the recording.
  If you resume recording, a new title will be created.
- Press ● **REC** again to resume recording.
  You can play VHS cassettes while recording. The recording to DVD is not impaired.

REC MODE
Changing the recording mode
- Press **REC MODE** in **PAUSE** or **STOP** mode.
  Switch between SP, LP, EP and XP (XP only with DVD) each time the button is pressed. The material is recorded as a separate title with each switch.

  RAM With the [EP mode (8Hours)] setting, playback on DVD-RAM-compatible DVD players may not be possible.
  Select [EP mode (6Hours)]. 61

Recording time for E-240 cassettes

SP-Normal mode: approx. 4 hrs.
LP-Long-play mode: approx. 8 hrs.
EP-Extra long-play mode: approx. 12 hrs.

Use SP if you value a high-quality picture.

VHS recording of TV programmes
- Select the station with **CH** ◇ or the number buttons.
- Select the tape speed with **REC MODE**.
  Switch between SP, LP and EP each time the button is pressed.
- Press ● **REC** to start the recording.
- Select **STOP** ■ to stop the recording.
- Press ● **REC** again to resume recording.
  You can playback discs while recording. The recordings to VHS are not impaired.
  When using an S-VHS cassette, the recording is in conventional VHS.

Timer Recording with the television set
If your television set is equipped with the Q Link function and the possibility of programming with Timer Recording, then you can do a Timer Recording with the television set. To do so, connect the DVD Recorder with a fully wired 21-pin Scart cable to the television set. 15
- Program the Timer Recording on your television set.
- Press **DRIVE SELECT** on the DVD Recorder to select the HDD or DVD drive.
- Switch the DVD Recorder to the Standby mode.
  The television set controls the beginning and end of the recording.
- Press **STOP** ■ to end the recording.

The recording will not start if the DVD Recorder is in Timer or EXT LINK standby.
If several Timer Recordings follow on in quick succession, they are recorded as one title.

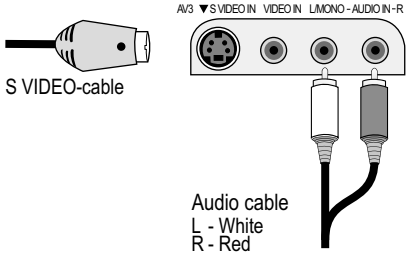
Specifying a time as the recording duration
This function is not available for Timer Recordings.
- Press ● **REC** on the unit during recording.
  The recording time changes each time the button is pressed on the unit display:
  OFF ⇨ 0:30 ⇨ 1:00 ⇨ 1:30 ⇨ 2:00 ⇨ 3:00 ⇨ 4:00 ⇨ OFF
- Press **STOP** ■. The recording is paused and the time setting is deleted.
  The unit switches itself off at the end of the recording if no functions are being executed on another drive.

  DVD: This function is not possible with Flexible Rec. If the channel or recording mode (XP, SP, LP, EP) is changed while recording is paused, the time is deleted.

  VHS: If the tape speed is changed during the recording, a slight picture distortion will occur at that point.

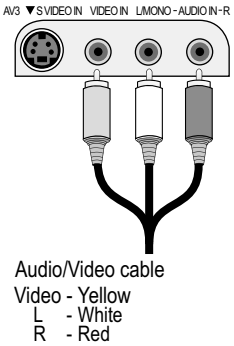
DVD playback during recording RAM
During the recording, you can the playback from the beginning of the programme.
- Press **PLAY** ► during recording or Timer Recording
  At least 2 second must have elapsed since the beginning of the recording.

DIRECT TV REC **Direct TV recording**
If your TV is equipped with Q Link, you can record a TV programme that you are currently watching. Other settings are not necessary. The recorder automatically switches to the appropriate station.
- Press **DIRECT TV REC** for 3 seconds. Recording begins.
- Press **STOP** ■ to stop the recording.



Recording from an external unit, e.g. a camera
- Connect the external unit to the AV3 input terminal on the front side of the unit.
- Select one of the two connection options.
  The S VIDEO-cable and audio cable (L/R) connection delivers the best quality.

  You cannot receive signals from PCs with this unit.



Recording to VHS: Insert a video cassette with an intact write-protection tab.
- Select the VHS drive with **DRIVE SELECT.**
- Select the recording mode with **REC MODE.**
- In **STOP** mode, use **INPUT SELECT** to select input channel AV3.
- Press **PLAY** ►.
- At the point where you wish to start recording press **PAUSE** II .
- Press ● **REC**.
- Start playback on the external unit.
- Then press **PAUSE** II to start the recording.
- Use **STOP** ■ to stop the recording.

Recording to DVD: Insert a recordable disc.
If you activated the write-protection, cancel it. RAM
- Select the DVD drive with **DRIVE SELECT**.
- Select the recording mode with **REC MODE.**
- In **STOP**-mode use **INPUT SELECT** to select input channel AV3.
- Start playback on the external unit.
- Press ● **REC** at the point where you want to start the recording.
- Use **STOP** ■ to stop the recording.

Selecting the sound track to record for programmes with dual-channel sound Not RAM

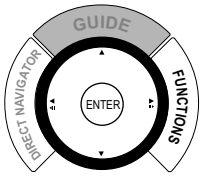
Analogue channels
- Before recording, select Sound setting Bilingual Audio Selection [M1] or [M2] in the Setup menu.
  Select [M1] or [M2] on an external unit before recording.
- If the output signal of the external unit is an NTSC signal, set the TV System to [NTSC] in the Setup menu.

Digital channels
- Press **DISPLAY** and select Audio setting [Multi Audio].

Recording in dual-channel audio
On DVD-RAM, both channels of a programme in dual-channel sound are recorded.
Use **DISPLAY** to switch between the two recorded sound tracks.

FUNCTIONS

DVD VHS SD

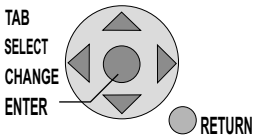


You can access the main functions via FUNCTIONS.
The illustrations show DVD-RAM menus. The menu entries may differ depending on the disc or the medium.

- Press **FUNCTIONS**. During Recording or Timer Recording, some menus have a grey background and cannot be selected.
- Select a menu with ▲▼ and confirm with **ENTER**.
- Select the following page with ▲▼ [To Others] and confirm with **ENTER**.
  Press **RETURN** to return to the first page.
- Press **FUNCTIONS** to exit the selection menu.

Playback	DIRECT NAVIGATOR menu	35
Recording	Timer programming in the Timer Recording menu	42
Delete	DELETE Navigator	44
Copy	Copy menu	45
TV Guide	TV Guide menu	49
VIDEO Plus+ Record	VIDEO Plus+ Record menu	52
Playlists	Playlists menu	54
Copy All Pictures	Copy pictures (only for SD card)	57
Flexible Rec	Record in FR-Modus	58
DV Auto Rec	Record the DV signal	58
Setup	Change the unit setup	59
DVD Management	Format and finalize discs, write-protection	68
Card Management	Format SD cards	69

The FUNCTIONS menu cannot be launched during playback.
Stop playback with **STOP** ■.



TAB: Select submenu with ▲▼◄►.

SELECT: Select setting or option.

CHANGE: Change the option

ENTER: Select or save a setting.

RETURN: Back to the previous screen.
Exit a menu.

Notes on the menus

Selecting a title or chapter
- Select a title or chapter with ▲▼◄► or 0 – 9 .

Selecting other pages
- Select [Previous] or [Next] with ▲▼◄► and confirm with **ENTER**.

Cancelling a function
- Depending on the specific entry, select [No] or [Cancel] with ▲▼◄► and confirm with **ENTER**.
  You can also cancel a function with **RETURN**.

Starting playback
- Start playback of the selected title or chapter with **ENTER**.

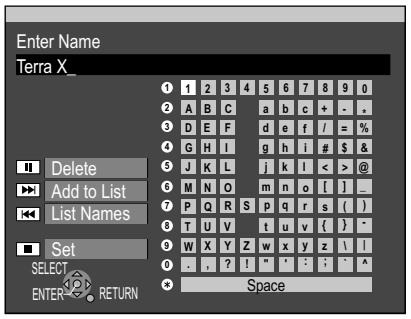
For faster processing

In addition to fast forward, slow motion playback and frame playback, there are other function available for faster processing.

Jump to the beginning/end of a title/chapter with **PAUSE** ❚❚ and **SKIP** ⏮ ⏭ .
Find the position for a marking with **SKIP** ⏮ ⏭, **SLOW/SEARCH** ◄◄ ►►, **TIME SLIP**, **MANUAL SKIP** or ◄►.
You can jump between set markers with **SKIP** ⏮ ⏭ .

Editing several elements ☑
You can process several chapter or titles at the same time.
Functions such as Copy, Set up Protection or Delete are marked with the symbol ☑.

- Select the desired title with ▲▼◄► and press **PAUSE** ❚❚.
  A check appears. Repeat this process to select other titles.
- Press **PAUSE** ❚❚ again to clear the selection.



Entering text

You can give titles to your programmes or discs in the different menus and while setting up the Timer Recording.

Entering a title or disc name using the menu

- Select the desired character with ▲▼◄► and confirm with **ENTER**.
  By inserting spaces, hyphen or dashes, you can enter the title you want. Select **PAUSE** ❚❚ to delete a letter.
- Press **STOP** ■ to apply the name/title.

Enter a title using the number buttons, e.g.: the letter "R"

- Press [7] to switch to the 7th line.
- Press [7] twice to select "R" and confirm with **ENTER**.

Top Menu Preview

-R -RW(V) +R -R DL +R DL +RW

In the DIRECT NAVIGATOR, select the setting [Enter Name]. The Top Menu Preview also appears. The later display of the title is shown. Add blanks, hyphens etc. to write the title as you want it.

Working with List Names

In the case of recurring programmes, save time entering the title by saving it in the title list.

Save a disc name or title in List Names

- After entering a title, press **SKIP** ⏭.
- In the next screen, select [Add] with ◄ and confirm with **ENTER**.

Using a disc name or title from List Names

- Open List Names with ⏮ **SKIP**.
- Select the disc names or title with ▲▼◄► and press **ENTER**.
- Press **STOP** ■ to apply the name/title.

Deleting a disc name or title from the List Names

- Open List Names with ⏮ **SKIP**.
- Select the title or name with ▲▼◄► and press **SUB MENU**.
- Confirm [Delete Name] with **ENTER**.
- In the next screen, select [Delete] with ◄ and confirm with **ENTER**.

Symbols

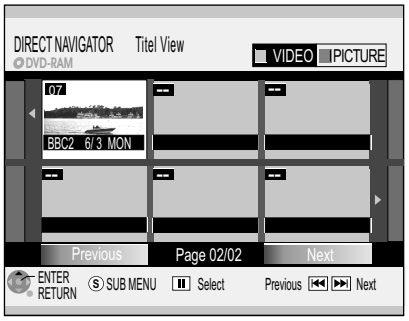
	The title is being recorded.
	Timer mode is active.
	A daily or weekly Timer Recording was stopped. The icon disappears when next Timer Recording starts.
W	The title overlaps other recordings.
F	DVD was full. The title could not be recorded.
✕	The programme cannot be played due to damaged data or could not be recorded for another reason.
	The title is write-protected.
	The programme was copy-protected; the title was not recorded.
	Title that can only be copied once.
✓	The title has been selected.
N NTSC P PAL	The title or the playlist was recorded with a TV system other than the one currently selected. Title and playback lists with these markings cannot be played back. To playback this title/playlist, switch your TV system.

FUNCTIONS ⇨ Playback ⇨ DIRECT NAVIGATOR

Overview of DIRECT NAVIGATOR

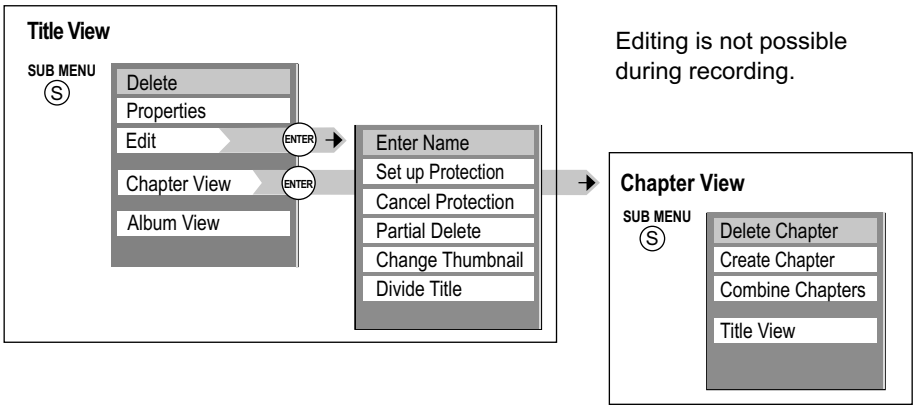
You can archive, edit or start playback after selecting a title in DIRECT NAVIGATOR.

The DIRECT NAVIGATOR cannot be called if the VHS drive is selected.



VIDEO **RED** button: Title View

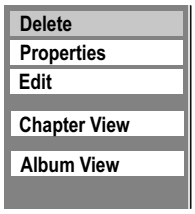
PICTURE **GREEN** button: Album View (JPEG)



Editing is not possible during recording.

Launching the DIRECT NAVIGATOR menu

- Press **FUNCTIONS**.
- Confirm [Playback] with **ENTER**.
  The DIRECT NAVIGATOR menu appears.

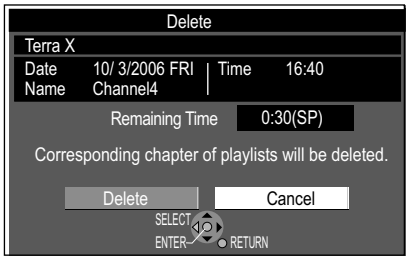


Playback

- Select a title with ▲▼◄► and start playback with **ENTER**.

Edit

- Press **SUB MENU** to edit a title.
- Select the desired option with ▲▼ and confirm with **ENTER**.



Delete ☑ Not -RW(VR)

When you execute this process, the title will be deleted and cannot be restored.

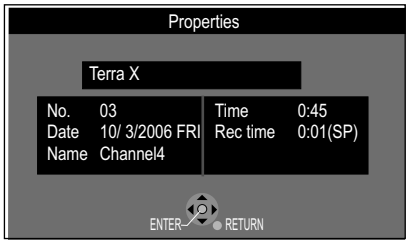
- Confirm [Delete] with **ENTER**.
- Select [Delete] with ◄ and confirm with **ENTER**.

The available recording time may remain the same after deleting a short title.

RAM The storage space of a deleted title becomes available for a new recording.

-R -R DL +R +R DL The storage space is not released by deleting titles.

-RW(V) +RW Available recording space increases only when the last recorded title is deleted.



Properties

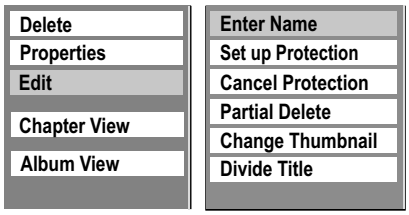
Information on the title, such as name, date and time, is displayed.

- Select [Properties] with ▲▼ and confirm with **ENTER**.

Album View: VIDEO (**Green** button) / PICTURE (**Red** button)
Change to Album View.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.

FUNCTIONS → Playback → DIRECT NAVIGATOR



Editing titles in the SUB MENU

- Select [Edit] with ▲▼ and confirm with **ENTER**.
- In the submenu, select the desired option with ▲▼ confirm with **ENTER**.

Enter Name

Not -RW(VR) 34

Enter or change the title of the programmes.
The full name is displayed in the Properties submenu.

Set up Protection ☑

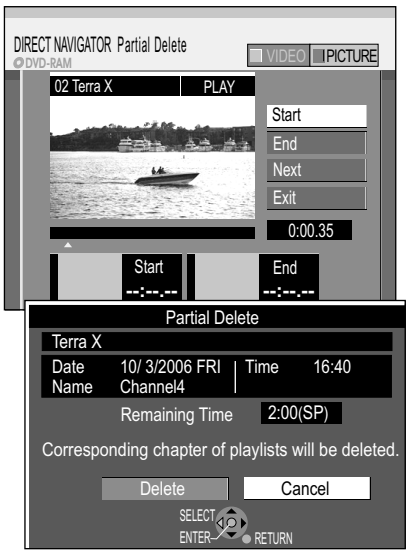
RAM +R DL +R +RW

- Select [Yes] with ◄ and confirm with **ENTER**. 🔒 is displayed.

Cancel Protection ☑

RAM +R DL +R +RW

- Select [Yes] with ◄ and confirm with **ENTER**. 🔒 disappears.



Partial Delete

RAM

Make sure that you really want to delete parts of the recording.

- At the desired start point, confirm [Start] with **ENTER**.
- At the desired end point, confirm [End] with **ENTER**.
- If you want to carry out the deletion, select [Exit] with ▲▼ and confirm with **ENTER**.
- In the next screen, select [Delete] with ◄ and confirm with **ENTER**.
  You exit the menu after the deletion.

- To delete other parts, confirm [Next] with **ENTER**.
- Select [Delete] with ◄ and confirm with **ENTER**.
  After each deletion, you can select the next start and end point.
- To exit the menu, select [Exit] with ▲▼ and press **ENTER**.

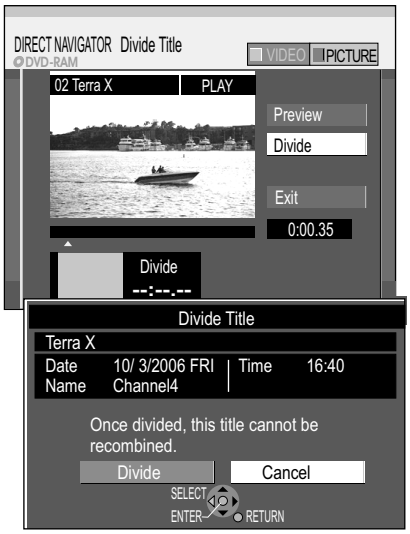
  You may not be able to identify a start and end point if they less than 3 seconds apart or if recorded image is a still picture. The unit switches to **PAUSE** mode at the end of the title. The available recording time on the disc may remain the same after deletion.

Change Thumbnail

Not -RW(VR)

You can select any position in a title as the thumbnail for the title view.

- Press **PLAY** ► to start playback.
- At the position which is to be displayed as the new thumbnail, confirm [Change] with **ENTER**. The select thumbnail is displayed.
- Confirm [Exit] with **ENTER**. The selected thumbnail is displayed in the title view.



Divide Title

RAM

You can divide a selected title. A divided title cannot be joined together again.

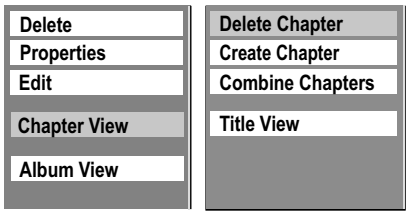
- At the position where the title is to be divided, confirm [Divide] with **ENTER**.
- Confirm [Preview] with **ENTER**. A section will be played back from 10 seconds before to 10 seconds after the dividing point.
- Confirm [Exit] with **ENTER**.
- In the next screen, select [Divide] with ◄ and confirm with **ENTER**.
  A short section of the recording right before the dividing point may be lost. The divided titles retain the name of the original title.

  You cannot use this function if the resulting sections are extremely short or if you have saved more than 99 titles to DVD-RAM.

You can jump to the beginning/end of a title/chapter with **PAUSE** ❚❚ and **SKIP** ⏮ ⏭.
Find the position for a marker with **SKIP** ⏮ ⏭, **SLOW/SEARCH** ◀◀ ▶▶, **TIME SLIP**, **MANUAL SKIP** or ◄►.
You can jump between set markers with **SKIP** ⏮ ⏭.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ❚❚.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ❚❚ again to clear the selection.

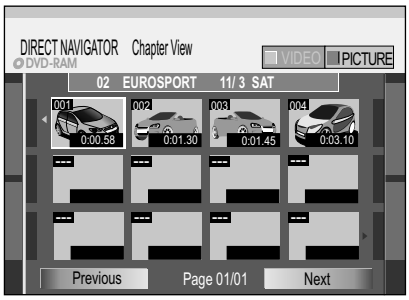
FUNCTIONS ▭▭▭▷ Playback ▭▭▷ DIRECT NAVIGATOR



Editing chapters in the SUB MENU

RAM

- Press **FUNCTIONS**.
- Confirm [Playback] with **ENTER**.
- Select the desired title with ▲▼◄► in the Title View menu.
- Press **SUB MENU**.
- Select [Chapter View] with ▲▼ and confirm with **ENTER**.

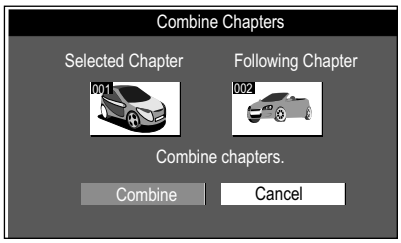


- Select the desired chapter with ▲▼◄►.
- Press **SUB MENU**.
- Select the desired option with ▲▼ in the submenu and confirm with **ENTER**.

Delete Chapter ☑
- Select [Delete] with ◄ and confirm with **ENTER**.

Create Chapter
Divide the title into chapters. Determine the points where a new chapter needs to begin. The chapters can be selected later during playback with **SKIP** ⏮ ⏭.
- Press **ENTER** at the position where you want to create the chapter.
- Repeat this step to create additional chapters.
- Select [Exit] with ▼ and confirm with **ENTER**.
  A short section right before the dividing point may be lost.

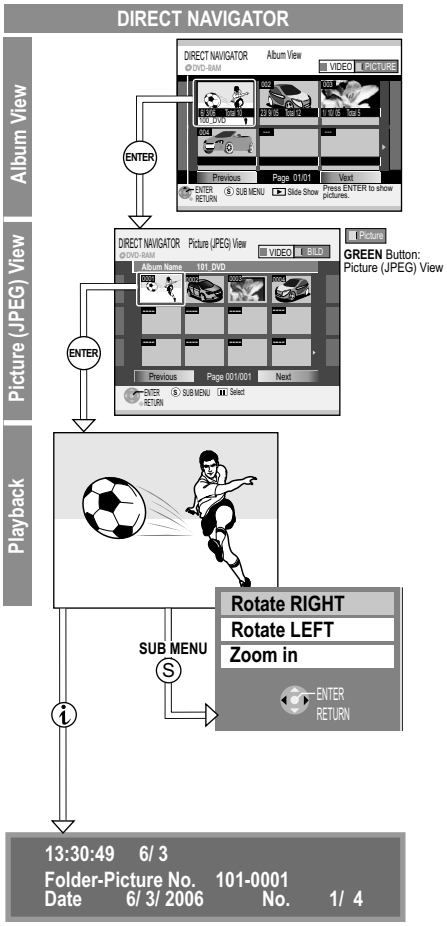
Combine Chapters
- Select [Combine] with ◄ and confirm with **ENTER**.
  The selected chapter is combined with the following chapter.



Title View Return to Title View

You can jump to the beginning/end of a title/chapter with **PAUSE** ⏸ and **SKIP** ⏮ ⏭.
Find the position for a marker with **SKIP** ⏮ ⏭, **SLOW/SEARCH** ◀◀ ▶▶, **TIME SLIP**, **MANUAL SKIP** or ◄►.
You can jump between set markers with **SKIP** ⏮ ⏭.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.



If TIFF fixed images are played back or if there are a lot of files, sessions and/or folders, it can take a relatively long time to display the data.

JPEG/TIFFplayback from DVD-RAM/SD

JPEG (Joint Photographic Experts Group), a system for compressing/decoding colour still pictures. Despite strong compression, there is only a slight loss of picture quality.

TIFF (Tag Image File Format), a system for compressing/decoding colour still pictures.
It enables digital cameras and other units to save high-quality pictures.

Picture playback

RAM SD

If you have saved pictures in JPEG format on DVD-RAM, you can playback and edit these using the Album View function.
The albums are displayed with preview pictures. To playback the pictures, an album must be selected and opened.

- Press **DIRECT NAVIGATOR**.
- RAM In the title view, press **SUB MENU**. Select [Album View] with ▲▼ and press **ENTER** to confirm.
- In the Album View select the required album with ▲▼◄► and press **ENTER** to confirm.
- Select the required picture in the Picture (JPEG) View with ▲▼◄► or 0–9 and press **ENTER** to start the playback
- Press **STOP** ■ to stop the playback.

SUB MENU during picture playback

RAM SD -R CD

- Press **SUB MENU**.
- Select the required option with ▲▼ and press **ENTER** to confirm.

Rotate pictures

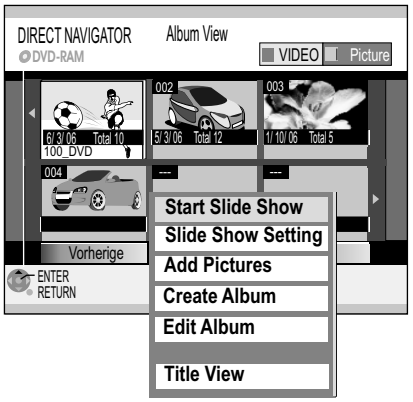
- Press **SUB MENU** during playback.
- Select the desired setting with ▲▼ and confirm with **ENTER**.

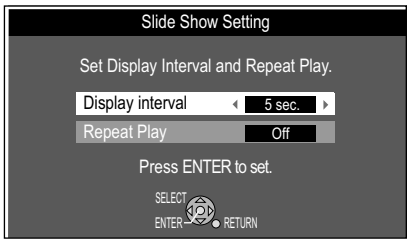
Zoom in/Zoom out (Only available for pictures smaller than 640 x 480 pixels.)

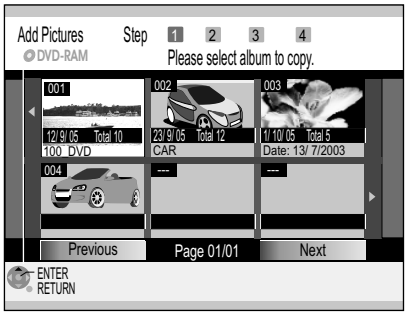
- Press **SUB MENU** during playback.
- Select [Zoom in] with ▲▼ and confirm with **ENTER**.
- To switch back to the original size, confirm [Zoom out] with **ENTER**.
  The rotation and zooming of pictures is not saved.

Display picture properties

- During playback, press ⓘ twice to launch the display.
- Press ⓘ again to exit the display.
- Press **RETURN** to return to the Album View.







Album View

RAM SD

Slide Show from the Album View

- Select the required Album from the Album View with ▲▼◄►.
- Press **PLAY** ►.

SUB MENU in the Album View

- Press **SUB MENU**.
- Select the required option with ▲▼ and press **ENTER** to confirm.

Start Slide Show

The pictures of the selected folder are played back automatically in succession in the selected display interval. The Slide Show is repeated if you have set [Repeat Play] to [On] in the Slide Show.

- Press **STOP** ■ to stop the Slide Show.

Slide Show Settings

You can set the Display Interval for each picture, together with Repeat Play of the Slide Show.

- Select [Display interval] with ◄► for each picture.
- For Repeat Play of the Slide Show select [Repeat Play] with ▲▼ and change the setting with ◄►.
- Press **ENTER** to confirm

Add Pictures

RAM SD

Pictures are assigned to the selected album from other albums.

- Select [Start] with ◄ and press **ENTER** to confirm.

Step 1 • Select the required album with ▲▼◄► and press **ENTER** to confirm.

Step 2 Use Copy Pictures to copy individual pictures or Copy Album to copy a complete album.
- Select [Copy Pictures] or [Copy Album] with ▲▼.
- Press **ENTER** to confirm.
- Copy pictures: select the pictures you want to copy and press **ENTER** to confirm. ☑

Step 3 The pictures of the selected Album are copied.

Step 4 • To continue copying, select [Yes] with ◄ and press **ENTER** to confirm. Repeat steps 1-3.
- To end copying, press **ENTER** to confirm [No].

Create Album

To create a new album, pictures must already exist on the disc or SD card. Pictures from the selected album are copied into the new album on being created.

- Select [Yes] with ◄ and press **ENTER** to confirm.

Step 1 • Select the required Album which you would like to copy the pictures with ▲▼◄► and press **ENTER** to confirm.

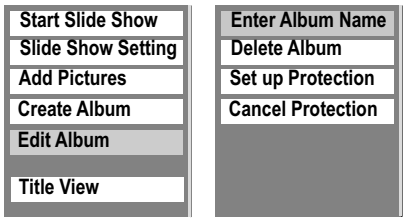
Step 2 Use Copy Pictures to copy individual pictures or Copy Album to copy a complete album.
- Select [Copy Pictures] or [Copy Album] with ▲▼.
- Press **ENTER** to confirm.
- Copy pictures: select the pictures you want to copy and press **ENTER** to confirm. ☑

Step 3 The pictures of the selected Album are copied.

Step 4 • To continue copying, select [Yes] with ◄ and press **ENTER** to confirm. Repeat steps 1-3.
- To end copying, press **ENTER** to confirm [No].
  Select [Yes] to give the Album a name.
  Enter the Album name.
  If you select [No], then the date is saved as name of the Album.

34

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ❚❚.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ❚❚ again to clear the selection.



SUB MENU in the Album View
- Press **SUB MENU**.
- Select the required option with ▲▼ and press **ENTER** to confirm.

Edit Album
- Select [Edit Album] with ▲▼ and press **ENTER** to confirm.
- Select the required option with ▲▼ and press **ENTER** to confirm.

Enter Album Name Enter the Album name. 34

Delete Album ☑
The selected Album is deleted and cannot be recovered.
- Select [Delete] with ◄ and press **ENTER** to confirm.

Set up Protection/Cancel Protection ☑
You can set up or remove cancel protection for pictures.
- Select [Yes] with ◄ and press **ENTER** to confirm.

SUB MENU in the Picture (JPEG) View RAM SD
- Select an Album in the Album View with ▲▼◄► and press **ENTER** to confirm.
- Press **SUB MENU** in the Picture (JPEG) View
- Select the required option with ▲▼ and press **ENTER** to confirm.

Delete Picture ☑
The selected picture is deleted and cannot be recovered.
- Select [Delete] with ◄ and press **ENTER** to confirm.

Set up Protection/Cancel Protection ☑
You can set up or remove cancel protection for pictures.
- Select [Yes] with ◄ and press **ENTER** to confirm.

SD

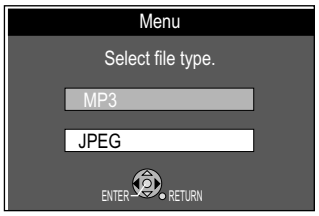
DPOF ☑
The number of desired picture copies in the selected folder is determined.
- Use ◄► or the numeric buttons to select the number and confirm with **ENTER**.
  The pictures are marked in Picture (JPEG) View.
  The number 0 resets the setting. Settings previously made with other units are reset.

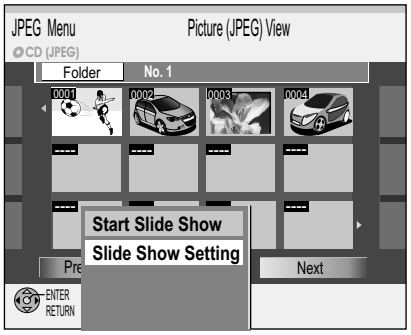
DPOF (Digital Print Order Format) is the standard format for printing pictures recorded with a digital camera etc. It enables automatic printing in a photo shop or on your own printer.
The print settings (DPOF) made with this unit may not be able to be viewed on other units. If the folder or the files are not compatible with the DCF standard or there is not enough space on the card, the setting cannot be performed.

Album View
Return to Album View.

In the Album View, you can select an overriding folder under [Select Folder].
- Select the required folder with ◄► and press **ENTER** to confirm.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.





JPEG/TIFF playback from CD/DVD-R

If your disc contains other formats such as MP3 in addition to JPEG, a message regarding the preset play mode will appear after the disc has been inserted.

- Confirm the message with **ENTER**.
- Press **FUNCTIONS** and confirm [Menu] with **ENTER**.
- Select the desired file type with ▲▼ and confirm with **ENTER**.

- Press **DIRECT NAVIGATOR**. The Picture (JPEG) View appears on the screen.

Picture playback

- Select the desired picture with ▲▼◄► or 0–9 and start playback with **ENTER**.
- End playback with **STOP** ■ or **DIRECT NAVIGATOR**.

Folder

- Use ▲ to select [Folder].
- Press **SUB MENU**.
- Select the desired option with ▲▼ and confirm with **ENTER**.

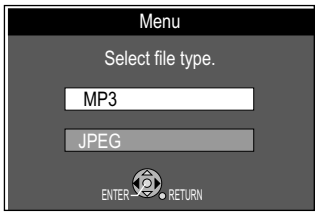
Start Slide Show 39

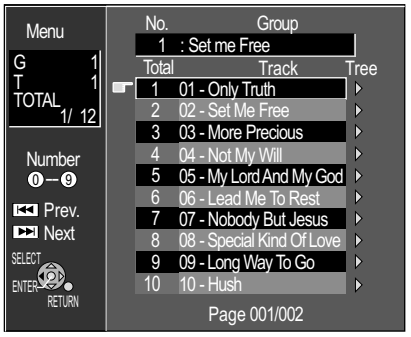
Slide Show Setting 39

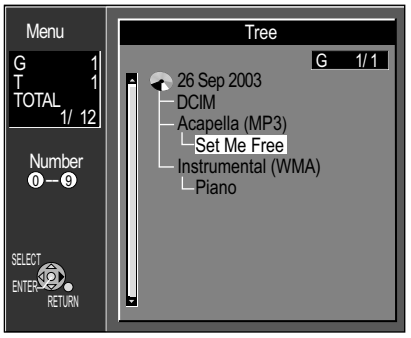
Change Folder

- Select [Folder] with ▲ and press **ENTER** to confirm. The available folders are shown.
- Select the required folder with ▲▼ and press **ENTER** to confirm.

You can select a folder directly and open it. It may be possible that you cannot open folders not created with this unit.







MP3 playback

-R CD

This unit can play MP3 that were recorded with a computer. Files are captured as tracks and folders as groups.
"TOTAL" includes all pieces in all groups on the disc.

In addition to MP3 data, the disc also contains JPEG data:
After a disc is inserted, a message appears regarding the preset playback mode.

- Confirm the message with **ENTER**.
- Press **FUNCTIONS** and confirm [Menu] with **ENTER**.
- Select the desired file type with ▲▼ and confirm with **ENTER**.

Starting playback

- Press **DIRECT NAVIGATOR** to launch the Menu screen.
- Select the desired track with ▲▼ or 0–9 and confirm with **ENTER**. Playback takes place up to the last track in the selected group.
- Press **STOP** ■ to end playback.
  Use **DIRECT NAVIGATOR** or **RETURN** to exit the screen.

  Browse through the pages with **SKIP** ⏮ ⏭. The lists of groups follow one after the other.

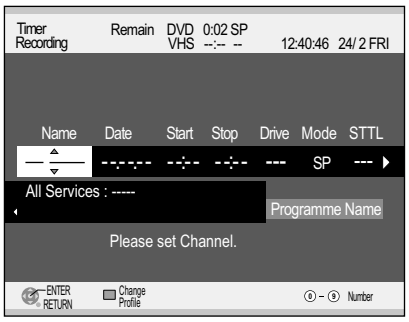
☞ Shows the track currently being played
G: Group number
T: Track number in the group
TOTAL: Selected track number/ Total number of tracks numbers
No.: Selected group number
Group: Selected group name

Selecting a group

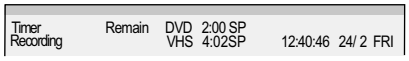
- Press ► to switch to the Tree menu.
- Select the desired group with ▲▼◄► and confirm with **ENTER**.
  The contents of the selected group are displayed.

FUNCTIONS

Recording

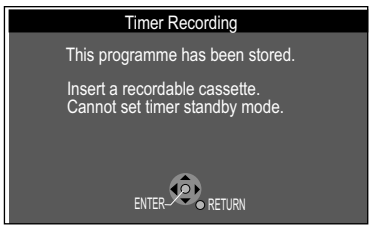


STTL Function: DVB channels only.



The remaining time of a VHS cassette will only be displayed after using a function like playback, fast forward or such.

If you did not insert a cassette or disc, the following message appears:



Manual programming

Make sure that there is a recordable disc or cassette in the selected drive. Otherwise, the Timer Recording will not run.

- Press **FUNCTIONS**.
- Select [Recording] with ▲▼ and confirm with **ENTER**.
  The Timer Recording screen appears.
- Confirm [New Timer Programme] with **ENTER**.
- Switch to the next entry with ◄► and change the setting with ▲▼.

Name : Select the programme position/name of the TV station with ▲▼.
Date : One-time, daily or weekly programming.
Start/Stop : Start time/end of recording. If you press and hold the ▲▼ buttons, the time increases/decreases in 30-minute intervals. You can also use the number buttons for these entries.
Drive : Select the drive.
Mode : Recording mode DVD: XP, LP, EP, SP, FR
: Recording mode VHS: SP, LP, EP, AUTO
STTL : Subtitles [On] or [Off]. Recorded subtitles cannot be deleted later.

- To enter the title of the recording, select [Programme Name] with ◄► and confirm with **ENTER**.
- Enter the desired name in the Programme Name menu. 34
- Press **STOP** ■ to apply the name.
- After you have made your changes, save the programming with **ENTER**.
- To enter other programmes, select [New Timer Programme].

The unit automatically switches to timer standby mode at the start time.
REC flashes in the unit's display one minute before the recording is set to start.

A Timer Recording does not start while a disc is being formatted, deleted or finalized. The recording begins afterwards.

RAM If you programmed the Timer programmes one after the other in sequential order, the first few seconds of the second Timer Recording are not recorded.
With other types of discs, it is approx. 30 seconds.

If you receive your TV programme via a satellite receiver (digital/analogue):

On the external unit, select the station with the programme that you want to record. The station must not be changed during the recording.
It is always the programme on this set station which is recorded.

Name : Select AV2 as the name of the TV station with ▲▼.

Change Profile

To change the station name manually, you can select the station from the preset categories and profiles.

- Press the **BLUE** button in the Name box to see the first station of the corresponding category or preset profile.
- Select the required station with ▲▼ and press **ENTER** to confirm.

Automatic SP/LP switching during a VHS recording

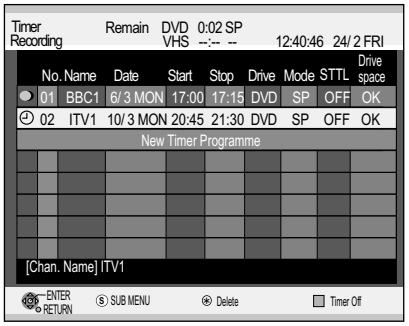
AUTO: If there is insufficient recoding time left on a video cassette, the SP/LP function switches the video recording speed to LP (NTSC to EP). This ensures that the programme is recorded in full. Should the remaining recording time on the video cassette still not be sufficient even in LP mode, then the programme will not be recorded in full. Automatic switching to EP mode is not possible.

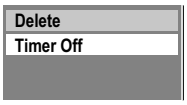
PROG/CHECK

Checking or changing Timer Recordings

Check the settings and correct them if necessary.
- Press **PROG/CHECK**.

Checking or changing
- Select the desired Timer programming with ▲▼ and press **ENTER**.
- Select the position that you want to change with ▲▼◄► and confirm with **ENTER**.
  Programmes that are currently being recorded cannot be changed.





Timer Off/On
If you have regular e.g. weekly Timer programmings, you can suspend the recording if you wish to record another programme at the same time, for example.
Your Timer programming is retained. You do not need to delete and re-enter it later on.
The recording is suspended just once.

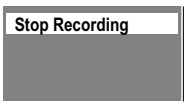
- Select the desired Timer programming with ▲▼.
- Press **SUB MENU**.
- Select [Timer Off] and confirm with **ENTER**.

- To switch the Timer back on, press **SUB MENU**.
- Select [Timer On] and press **ENTER**.
  You can also press the **RED** button to interrupt or switch on a Timer programming.

If you want to interrupt a weekly Timer programming for a longer period, delete it using ∗.
The programming is suspended just once with [Timer Off]. The unit then switches to [Timer On] and continues to record the subsequent schedule.

Delete
- Select the desired Timer programming with ▲▼.
- Press **SUB MENU**.
- Select [Delete] and confirm with **ENTER**.
  Programmes that are currently being recorded cannot be deleted. First stop the recording.
  You can also delete a Timer programming using ∗.

Stop Recording

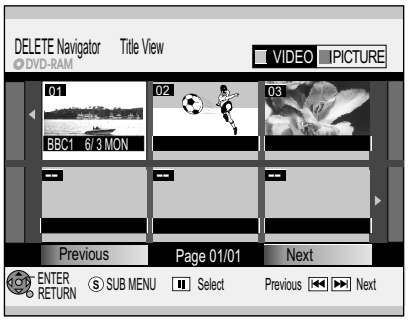


You can stop a current Timer Recording.
- Select the current Timer Recording with ▲▼.
- Press **SUB MENU**.
- Select [Stop Recording] and confirm with **ENTER**.
  The Timer Recording ends and is thereby deleted.
  If you stop a regular Timer programming (e.g. a weekly recording), it is marked as stopped and not deleted.
  The programming is retained for the following recordings.

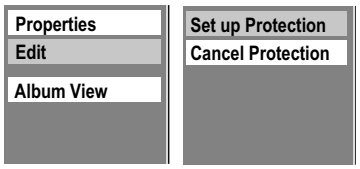
Description of the symbols on page 34.

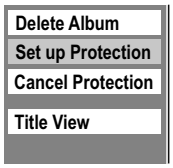
Drive space
OK: There is sufficient storage space available for the programmed recording.
— : Storage space will not be calculated.
➔ **(Date)**: The existing storage space is displayed for daily or weekly recordings.
! : The disc was not inserted, it is write-protected or there is insufficient storage space available.

FUNCTIONS



VIDEO **RED** button: Title View
PICTURE **GREEN** button: Album View (JPEG)





Delete

Deleting titles and pictures

You can delete titles or write-protect recordings so that they are not accidentally deleted or overwritten.

- Press **FUNCTIONS**.
- Select [Delete] with ▲▼ and confirm with **ENTER**.
- Select the title that you want to delete with ▲▼◄► and confirm with **ENTER**.
- Select [Delete] with ◄ and confirm with **ENTER**.
  Deleted titles cannot be restored later on.
- Press **SUB MENU** to edit a title.

Properties

Information on a title is displayed, such as name, date and time.

- Confirm [Properties] with **ENTER**.

Set up Protection/Cancel Protection of titles ☑

- Select [Edit] with ▲▼ and confirm with **ENTER**.
- Select the desired option with ▲▼ and confirm with **ENTER**.
- Select [Yes] with ◄ and confirm with **ENTER**.

Deleting pictures ☑

- Select [Album View] with ▲▼◄► [Album View] and press **ENTER** to confirm.
- Select an album with ▲▼◄► and press **ENTER** to confirm.
- Select the picture that you want to delete with ▲▼◄► and press **ENTER** to confirm.
- Select [Delete] with ◄ and press **ENTER** to confirm.

Deleting albums ☑

- Select an album in the [Album View] menu with ▲▼◄► and press **SUB MENU**.
- Press **ENTER** to confirm [Delete Album].
- Select [Delete] with ◄ and press **ENTER** to confirm.

Set up Protection/Cancel Protection of pictures or albums

- Select the desired option with ▲▼ and confirm with **ENTER**.
- Select [Yes] with ◄ and confirm with **ENTER**.

Album View/Title View: Change between Album View (PICTURE) and Title View (VIDEO)

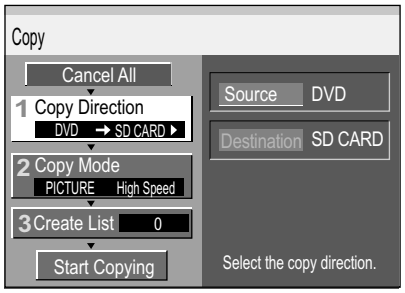
Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.

FUNCTIONS ⟹ Copy

Copy pictures

RAM SD ⟷ RAM SD

Pictures can be put together in the required order in a copy list and then copied



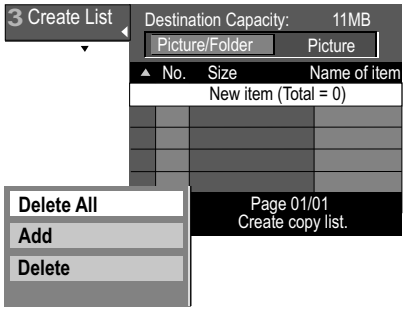
- Press **FUNCTIONS**.
- Select [Copy] with ▲▼ and confirm with **ENTER**.
- Select the desired option with ▲▼.

Cancel All
All created settings are deleted!
- Select [Yes] with ◄ and confirm with **ENTER**.

Press **ENTER** to change the setting.

1 Copy Direction
- Select [Source] with ► and press **ENTER** to confirm.
- Select DVD or SD CARD with ▲▼ and press **ENTER** to confirm.
- Select [Destination] with ▼ and press **ENTER** to confirm.
- Select DVD or SD CARD with ▲▼ and press **ENTER** to confirm.
- Return to [Copy Direction] with ◄ and select [Create List] with ▼.

2 Copy Mode
Pictures are copied automatically in the High Speed mode.



3 Create List
You can create a copy list from the existing pictures or from the existing folders.
- Select [New item] with ► and confirm with **ENTER**.
- In the Create List screen, use ▲▼◄► to select the desired picture and confirm with **ENTER**. The picture is applied to the copy list.

Change Folder
- To change to another folder, select [Folder] with ▲ and press **ENTER** to confirm.
- Select the required folder with ▲▼ and press **ENTER** to confirm.

SUB MENU in the copy list
- Press **SUB MENU** to edit the selected element of the copy list.

Deleting all elements
You can delete all elements of a copy list.
- Confirm [Delete all] with **ENTER**.
- In the next screen, use ◄ to select [Yes] and confirm with **ENTER**.

Editing individual elements ☑
- Use ▲▼ to select the desired option and confirm with **ENTER**.

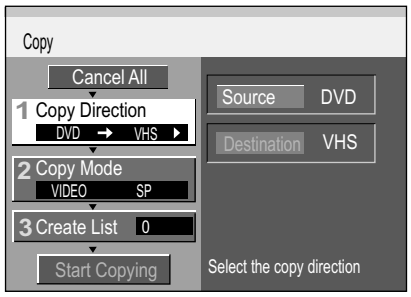
Add: Select the desired picture or folder with ▲▼◄► and confirm with **ENTER**.
Delete: Select [Yes] with ◄ and confirm with **ENTER**.

- Return with ◄ to [Create List] and select [Start Copying] with ▼.

Start Copying
- Press **ENTER** to start copying.
- Select [Yes] with ◄ and confirm with **ENTER**.
- Press **RETURN** for 3 seconds to prematurely end copying.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.

FUNCTIONS → Copy



Copying with a copy list

RAM +RW -RW(VR) ⇨ VHS

- Press **FUNCTIONS**.
- Select [Copy] with ▲▼ and confirm with **ENTER**.
- Select the desired option with ▲▼.

Cancel All

All created settings are cancelled!

- Select [Yes] with ◄ and confirm with **ENTER**.

Press **ENTER** to change the setting.

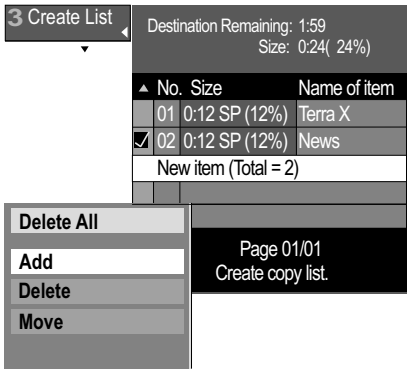
1 Copy Direction

- Select [Source] with ► and confirm with **ENTER**.
- Select DVD with ▲▼ and confirm with **ENTER**. The destination drive is detected automatically.
- Return to [Copy Direction] with ◄ and select [Copy Mode] with ▼.

Press **ENTER** to change the setting.

2 Copy Mode

- Select [Recording Mode] with ► and confirm with **ENTER**.
- Select the desired recording mode [SP, LP, EP; NTSC: SP, EP] with ▲▼ and confirm with **ENTER**. The format is detected automatically.
- Return to [Copy Mode] with ◄ and select [Create List] with ▼.



3 Create List

You can create a copy list from existing titles/playlists.

- Select [New Item] with ► and confirm with **ENTER**.
- In the Create List screen, select the desired title with ▲▼◄► and confirm with **ENTER**. The title is saved in the copy list.

- Press **SUB MENU** to edit the select element of the copy list.

Deleting all elements

You can delete all elements of the copy list.

- Confirm [Delete All] with **ENTER**.
- In the next screen, select ◄ with [Yes] and confirm with **ENTER**.

Editing individual elements ☑

- Select the desired option with ▲▼ and confirm with **ENTER**.
  Add: Select the desired title with ▲▼◄► and confirm with **ENTER**.
  Delete: Select [Yes] with ◄ and confirm with **ENTER**.
  Move: Select a new position with ▲▼ and confirm with **ENTER**.

- Return to [Create List] with ◄ and select [Start Copying] with ▼.

Start Copying

- Press **ENTER** to start copying.
- Select [Yes] with ◄ and confirm with **ENTER**.
- Press **RETURN** for 3 seconds to stop copying.

You can display the recording properties in the Create List screen or switch between VIDEO and Playlists.

- Press **SUB MENU**.

Display properties

- Confirm [Properties] with **ENTER**.

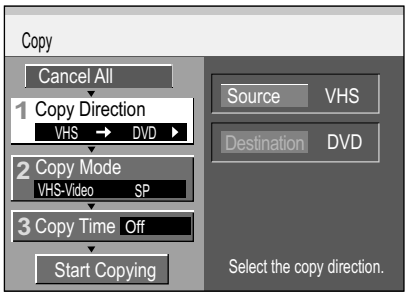
Other View

- Select [Other View] with ▲▼ and confirm with **ENTER**.
- Confirm Playlists or VIDEO with **ENTER**.

  You can also switch between VIDEO and Playlists with the **RED** and **GREEN** buttons.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE II**.
A check appears. Repeat this process to select other titles.
Press **PAUSE II** again to clear the selection.

☞ FUNCTIONS ▭▭▭▷ Copy



Time-triggered copying

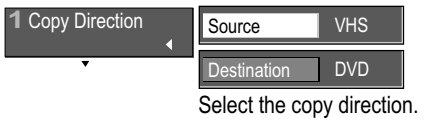
VHS S-VHS ⇨ RAM -R -RW(V) +RW -R DL +R +R DL
DVD-V ⇨ VHS

- Press **FUNCTIONS**.
- Select [Copy] with ▲▼ and confirm with **ENTER**.
- Select the desired option with ▲▼.

Cancel All

All created settings are cancelled!

- Select [Yes] with ◄ and confirm with **ENTER**.

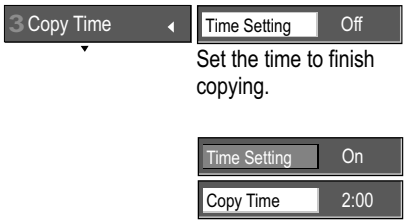


1 Copy Direction

- Select [Source] with ► and confirm with **ENTER**.
- Select VHS with ▲▼ and confirm with **ENTER**. The destination drive is detected automatically.
- Return to [Copy Direction] with ◄ and select [Copy Mode] with ▼.

2 Copy Mode

- Select [Recording Mode] with ► and confirm with **ENTER**.
- Select the desired recording mode [XP, SP, LP, EP or FR] with ▲▼ and confirm with **ENTER**. The format is detected automatically.
- Return to [Copy Mode] with ◄ and select [Copy Time] with ▼.



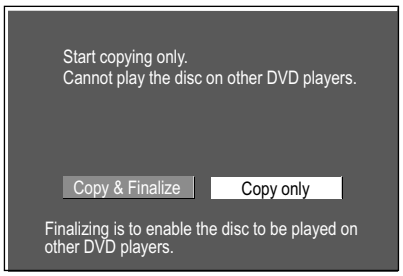
3 Copy Time

- Select [Time Setting] with ► and confirm with **ENTER**.
- Select [On] or [Off] with ▲▼ and confirm with **ENTER**.
  [On]: Select [Copy Time] with ▼ and confirm with **ENTER**.
  Change the time setting with ▲▼◄► and confirm with **ENTER**.
  [Off]: When the copy time is switched off, the entire disc is copied if there is sufficient space on the destination drive.
- Return to [Copy Time] with ◄ and select [Start Copying] with ▼.

Recording mode FR and time setting [Off]
Copying starts after the tape rewinds to the beginning. Titles are automatically created for each index signal.

Start Copying

- Press **ENTER** to start copying.
- Select [Yes] with ◄ and confirm with **ENTER**.



Finalizing

-R -RW(V) +R -R DL +R DL

Before copying starts, you can select whether you want to finalize the disc after copying.

- Confirm [Copy Only] with **ENTER** if the disc just needs to be copied.
- Select [Copy&Finalize] with ◄ and confirm with **ENTER** if the disc needs to be finalized after copying.
  Finalization cannot be cancelled.

- Press **RETURN** for 3 seconds to end copying.

The screen displays are also recorded during copying. In the case of a DVD-Video, the original picture and sound quality may not be fully achieved.

COPYING

DVD VHS

On the front of the unit

COPYING

You can copy the contents of a cassette to disc or the contents of a disc to cassette at the push of a button.
COPYING of a disc starts with the first title and copies till the end of the disc.
COPYING VHS to DVD starts at the selected position and copies till the end of the cassette.

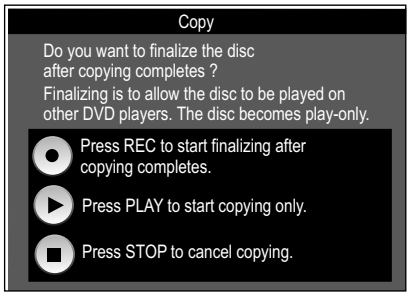
If you start **COPYING** from DVD to VHS during playback, the current title and all subsequent titles up to the end of the disc are copied.

The copying button at the front of the unit lights during COPYING.

Copying from VHS to DVD

VHS S-VHS ⇨ RAM -R -RW(V) +R -R DL +R DL +RW

Insert a video cassette and a recordable disc.
- Select the VHS drive with **DRIVE SELECT**.
- Find the desired start position on the VHS cassette.
- Select the DVD drive with **DRIVE SELECT**.
- Select the recording mode (XP, SP, LP, EP) for DVD with **REC MODE**.
  RAM -RW(V) Select the desired audio channel for dual channel sound with **DISPLAY.**.



- Press **COPYING DVD** for the desired copy direction.
  START flashes on the unit's display.
- Press **COPYING DVD** for approx. 3 seconds.
  START disappears from the display and copying begins.
- To cancel **COPYING**, press **STOP** ■ or **RETURN** for 3 seconds.

Finalizing

-R -RW(V) +R -R DL +R DL

Before copying starts, you can select whether you want to automatically finalize the disc after copying.
- Press **PLAY** if you only want to copy on the disc.
- Press **REC** if the disc needs to be finalized after copying.
  Finalization cannot be cancelled.
- Press **STOP** to stop copying.

Copying from DVD to VHS

RAM -R -RW(V) +R -RW(VR) -R DL +R DL +RW ⇨ VHS

Insert a disc and a recordable video cassette.
- Select the VHS drive with **DRIVE SELECT**.
- Find the desired start position on the VHS cassette.
- Select the recording mode (SP, LP, EP; NTSC: SP, EP) for VHS with **REC MODE**.
- Select the DVD drive with **DRIVE SELECT**.
  RAM -RW(V) Select the desired audio channel for dual channel sound with **DISPLAY.**

- Press **COPYING VHS** for the desired copy direction.
  START flashes on the unit's display.
- Press **COPYING VHS** for approx. 3 seconds.
  START disappears and copying starts.
- To stop **COPYING**, press **STOP** ■ or **RETURN** for 3 seconds.

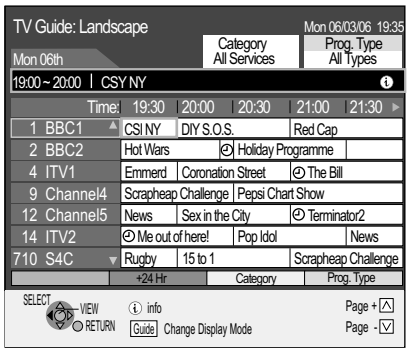
FUNCTIONS ⇨ To Others ⇨ TV Guide

The TV Guide gives you a 7-day preview of the programme for your digital television and radio stations. For many of these programmes, you can select additional information provided by the stations.
You can sort the programme preview according to various topics such as sport, films etc. and according to categories such as TV or radio.

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and press **ENTER** to confirm.
- Select [TV Guide] with ▲▼ and press **ENTER** to confirm.
  The TV Guide programme preview now appears.
- Press **RETURN** to return to the television picture.

The programme preview is available immediately if your DVD Recorder has found a digital station and loaded the information in the memory. This process can take a while depending on the particular station.
The programme preview data are continuously downloaded in the background when the unit is switched on. That means that the programme preview can sometimes change while you are looking at it.
If the unit is disconnected from the power, all programme data are lost

No programme preview is broadcast for analogue stations. The display shows [No info for analogue programmes]. You can recognise analogue stations from the station number. Example: 1 BBC - digital station
901 (A) BBC - analog station



Landscape view

The TV Guide offers you a Landscape view and a Portrait view.
When you select the TV Guide for the first time, the Landscape view appears.

In the upper part of the screen there is a time bar divided into 30 minute steps. When you select a programme, the detailed title and the air time appear in the line above the time bar.

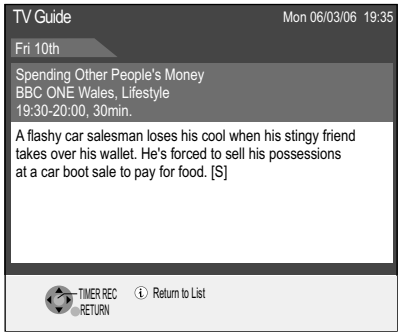
Moving in the Landscape view

- Move around in the programme preview with ▲▼◀▶.
  The programme preview only shows current and future programmes.
- Scroll through the programme preview page for page with **PAGE** ◊.

Go forward 24 hours:
- Press the **GREEN** button to go forwards one day.

Go back 24 hours:
- Press the **RED** button. You can only go back as far as the current date.

Changing station in the Landscape view
- Use ▲▼ to select a currently running programme. The selected programme is marked with a yellow frame.
- Press **ENTER** to see the programme.

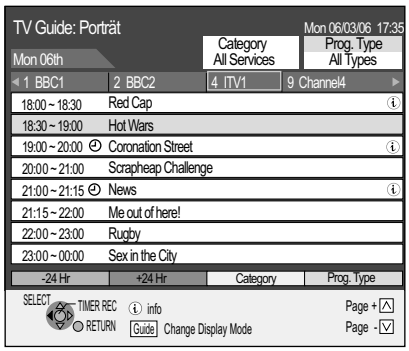


Additional information about a programme
The selected programme appears in the title bar. Press ⓘ to see additional information about a programme. You will then see ⓘ at these programmes in the title bar. You can have this information displayed. The contents of the information depends on the particular station and cannot be influenced by the unit.

- Press ⓘ. The information about the programme appears.
- Scroll through the longer information sentence by sentence with ▲▼ or section by section with **PAGE** ◊.
- Press ⓘ to leave the information.

Changing between the views
- Press **GUIDE** to change between Landscape view and Portrait view.

FUNCTIONS ⇨ To Others ⇨ TV Guide



Portrait view

The station bar is positioned horizontally over the programme preview. You can see the programme of one station at a time. The programme that is currently running is at the top of the list when you select this function..

Moving in the Portrait view

- Move around in the programme preview of the selected station with ▲▼. Only current and future programmes are shown.
- Scroll through the programme page by page with **PAGE** ◇.

Go forwards 24 hours:

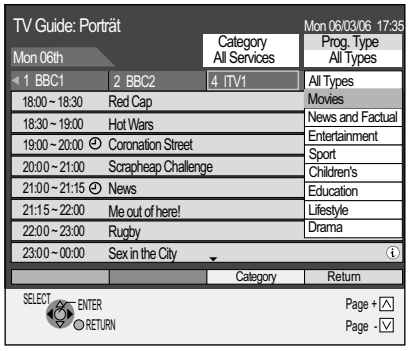
- Press the **GREEN** button to go forwards one day.

Go back 24 hours:

- Press the **RED** button. You can only go back as far as the current date.

Changing station in the Portrait view

- Use ▲▼ to select a currently running programme. The selected programme is marked with a yellow frame.
- Press **ENTER** to see the programme.

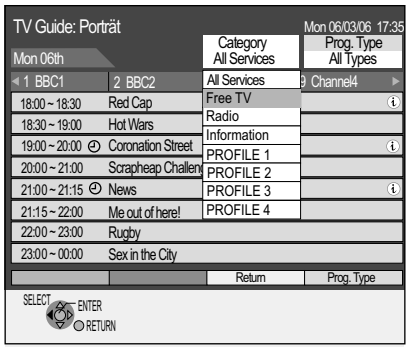


Prog. Type Display according to topic areas

You can limit the TV Guide display with [Prog. Typ]. That means that you can select a programme preview sorted according to topic areas (e.g. Movies, Sport).

- Press the **BLUE** button.
- Select the required topic area with ▲▼. Select between: All Types, Movies, News and Factual, Entertainment, Sport, Children's, Education, Lifestyle, Drama.
- Press **ENTER** to confirm. The selected topic area is marked pale in the programme display. The Landscape view shows all programmes which do not belong to your choice in grey. The Portrait view only shows you the programmes which match your selection

The station companies allocate individual programmes to topic areas. If the selection is not complete, this is not an error in the unit



Display according to Category

You can sort your programme preview according to categories, using the Category function for this purpose. You can limit the view for example to All Services, Radio or a Profile which you have put together yourself.
You can put together your favourite stations and sort them in a Profile. The sub-points Profile 1 to 4 can only be selected if these have been created first. If you have given the profiles names, these appear in the display.

- Press the **YELLOW** button to select the Category function.
- Select the required Category or Profile with ▲▼: Choose between: All Services, Free TV, Radio, Information, Profile 1, Profile 2, Profile 3, Profile 4
- Press **ENTER** to confirm.

FUNCTIONS ⇨ To Others ⇨ TV Guide

Programming the timer in the TV Guide

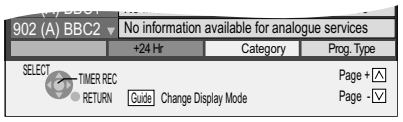
The TV Guide makes it easy to set a programme for recording.

Timer Recording menu for digital stations

The data required for programming have been taken from the TV Guide.

- Press **ENTER** to confirm the programming.
  After the message [This programme has been stored], the new TV Guide appears again.
  The set programme is marked with a ◴.
  Timer Recording starts automatically at the set time.
- Changing the preset data: 42
- Change Programme Name: 34

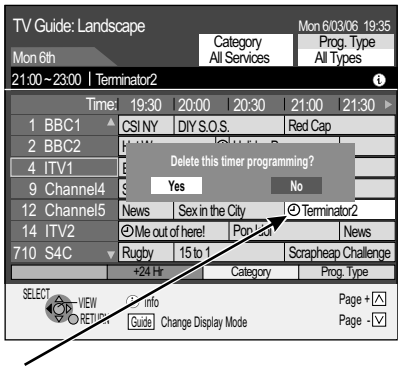
Analogue stations (A)



Timer Recording menu for analogue stations (A)

- Select the required programme in the programme preview.
- Press **ENTER** to confirm.
  The Timer Recording screen now appears.

The TV Guide does not contain information for analogue programmes.
You can set programmes broadcast by analogue stations with the Timer Recording menu. 42



◴ Marking for a Timer-set programme

Deleting a Timer programming

You can delete a Timer Recording which has not started yet, directly in the TV Guide.

- Select the set programme in the programme preview with ▲▼◀▶ and press **ENTER** to confirm
- Press **ENTER** to confirm [Yes]. The setting is deleted.

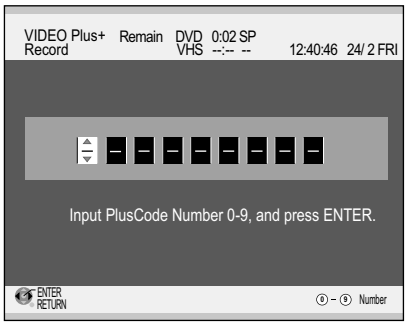
Stopping a current Timer Recording

- Press **STOP** ■ during the Timer Recording.
- In the following screen, select [Stop Recording] with ◀ and press **ENTER** to confirm.
  The recording is stopped and the Timer programming is deleted.

Automatic title transfer

When programmes are recorded from the TV Guide, the name of the selected programme is transferred automatically for the recording. If an analogue station broadcasts teletext, the unit automatically records the name of the programme and the station, on condition that the TEXT page setting has been entered correctly in the station table. 60
It can take approx. 10 minutes to find the title with this unit, and sometimes this fails.

FUNCTIONS ⇨ To Others ⇨ **VIDEO Plus+ Record**



VIDEO Plus+ Record

Entering a VIDEO Plus+ Code causes the data for programmes provided by broadcasters to be saved. The appropriate codes can be found in newspapers and TV guides. You can programme up to 16 programmes per month in advance.

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Confirm [VIDEO Plus+ Record] with **ENTER**.
- Enter the VIDEO Plus+ Code with the number buttons. Delete a number with ◀.
- Confirm the VIDEO Plus+ Code with **ENTER**.

The Timer Recording screen appears with the transferred data. Missing or incorrectly transferred data can be corrected as described on page 42.

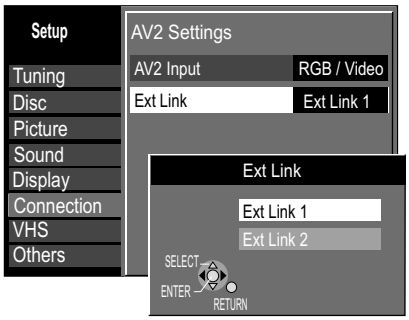
- Press **ENTER** to save the programme.

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

VIDEO Plus+ codes for satellite receivers

This DVD Recorder is not designed to control (switch on or change channel) your satellite receiver, however, it can be taught to recognise VIDEO Plus+ Codes for satellite stations. The satellite receiver must be switched on and the correct station selected. Some receivers have their own timer facility for this purpose. Please refer to your satellite receiver instructions for use of such timer facilities.
For your DVD Recorder to recognise the VIDEO Plus+ Codes for each satellite station, you must teach your DVD Recorder which channel or AV input to record from for the first time. Otherwise when setting a VIDEO Plus+ recording, the [- -] symbol will appear in the channel position indicating that the DVD Recorder does not know which channel position to set. Once you have set the channel/AV input the DVD Recorder will remember it whenever you use a VIDEO Plus+ Code for the station again.

- Press the **VIDEO Plus+** button.
- Enter a VIDEO Plus+ Code from a satellite TV guide for a satellite channel, e.g. Sky 1 using the Numeric buttons. Press ◀ to correct any mistakes.
- Press the **ENTER** button. [- -] will appear instead of a channel number/AV input.
- Press the **CH** button to select the channel or AV input that is to be used for recording from the satellite channel.
- Press the **ENTER** button to memorise the setting. The DVD Recorder will now automatically set the programme position or AV input correctly when a VIDEO Plus+ recording is set for this satellite station in the future.
- Press ▲▼ to select the programme that you have just set. Now press the **RESET** button to delete it from the Timer Recording list. It is no longer needed.
- Repeat the steps above until you have set and deleted dummy Timer Recordings for each of the satellite stations that you will make VIDEO Plus+ recordings from.
- Press **RETURN** when you have finished.



Timer Recording via external units

Setting for external units (EXT LINK)

You control the recording function via an external unit (e.g. a receiver) with **EXT LINK**. Connect the unit to the AV2 terminal with a 21-pin Scart cable.

- Press **FUNCTIONS**, select [To Others] with ▲▼ and press **ENTER**.
- Select [Setup] with ▲▼ and press **ENTER**.
- Select [Connection] with ▲▼ and [AV2 Settings] with ▶, ▲▼ and press **ENTER**.
- Select [Ext Link] with ▲▼ and confirm with **ENTER**.
- Select [Ext Link 1] or [Ext Link 2] with ▲▼ and confirm with **ENTER**.

Ext Link 1: For digital receivers that send a special recording control signal, e.g. the F.U.N. receiver (TU-DSF41).
Ext Link 2: External recording control for satellite or digital receivers (video signal). The Ext Link 2 setting cannot be used if the input signal is in NTSC format.

The beginning of the recording may not be recorded correctly.

Recording programming on an external unit

The programming for a Timer Recording takes place on an external unit. Read the operating instructions for your external unit.

EXT LINK

Switching the DVD Recorder to recording standby mode

- Select recording drive DVD or VHS with **DRIVE SELECT**.
- Press **EXT LINK**.
  Recording standby mode for **EXT LINK**-controlled recordings is activated. The selected drive and EXT-L appear on the display.
  The recording begins if an appropriate signal is received from a connected unit. As long as a video picture is transmitted by the external unit, the selected drive will record it.

Switching off recording standby mode

- Press **EXT LINK** to switch off recording standby mode.
  EXT-L disappears from the display.

Prematurely cancelling recording

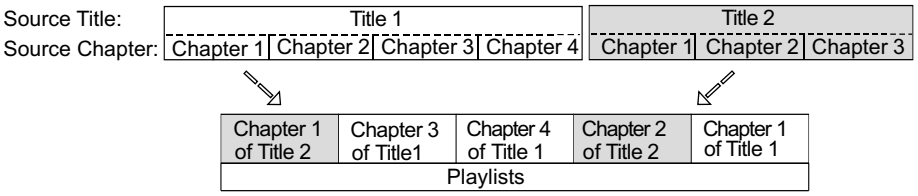
- Stop the transfer of the recording signal on the external unit.
- Press **EXT LINK** to switch off recording standby mode.
  EXT-L disappears from the display.

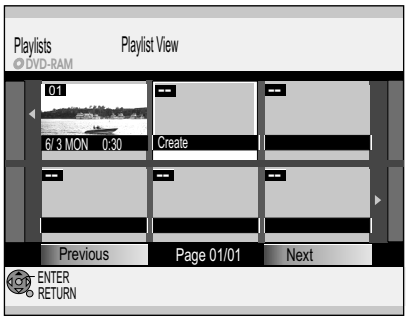
Playback during Ext Link mode RAM

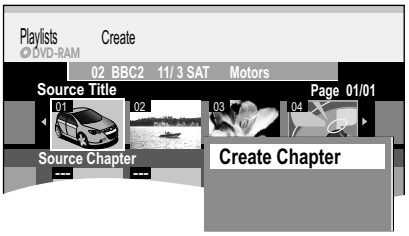
- Press **DIRECT NAVIGATOR**.
- Select a title with ▲▼◀▶ and start playback with **ENTER**.
- Press **STOP** ■ or **DIRECT NAVIGATOR** to end playback.
- Press **RETURN** to leave the **DIRECT NAVIGATOR**.

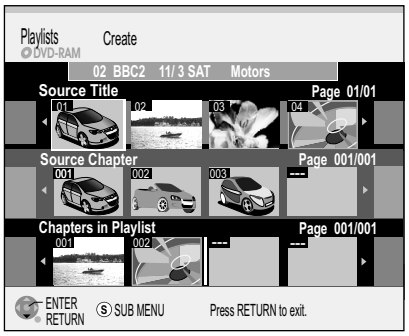
FUNCTIONS ⇨ To Others ⇨ **Playlists**

Use this function to edit your movies/recordings made by a recorder or camcorder.
You can remove unwanted scenes (e.g. commercials) or change the sequence.
You can also divide your recordings (titles) into chapters.
You can create a playlist with your favourite chapters and edit this later.









Insert a recorded disc.
If you activated write-protection, deactivate it. RAM

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Playlists] with ▲▼ and confirm with **ENTER**.

Creating a playlist RAM

You can create a playlist from both source titles and source chapters.

- Select the free field [Create] with ▲▼◄► and confirm with **ENTER**.

1 Selecting a **Source Title**

- Select the desired source title with ◄► and press **SUB MENU**.
- Confirm [Create Chapter] with **ENTER**.

  A complete source title can be inserted directly into Chapters in Playlists with **ENTER**.

2 Creating a **Source Chapter**

- Select the chapter section with **ENTER**. The length of the chapter sections is displayed as a time entry.
- Stop playback with **PAUSE** ❚❚.
- Locate the position for an exact chapter marker with ◀◀ ▶▶.
- Select [Exit] with ▼ and confirm with **ENTER**.

3 **Inserting a chapter into the playlist**

- Switch from Source Title to Source Chapter with ▼.
- Select a source chapter that you want to add to the playlist with ◄► and confirm with **ENTER**.
- Select the position where the source chapter should be inserted into the Chapters in Playlists with ◄► and confirm with **ENTER**.
  You cannot select a position when inserting the first chapter.
  Repeat step 3 to add another chapter.
- Return to the Playlist View with **RETURN**.

You can also insert a Source Title as a chapter into the playlist.

- Select a Source Title with ▲▼◄► and confirm with **ENTER**.
- Select the position where the Source Title should be inserted in Chapters in Playlists with ◄► and confirm with **ENTER**.

Jump to the beginning/end of a title/chapter with **PAUSE** ❚❚ and **SKIP** ⏮ ⏭.
Locate the position for a marker with **SKIP** ⏮ ⏭, **SLOW/SEARCH** ◀◀ ▶▶, **TIME SLIP**, **MANUAL SKIP** or ◄►.
You can jump between set markers with **SKIP** ⏮ ⏭.

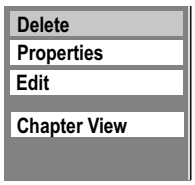
FUNCTIONS ⇨ To Others ⇨ **Playlists**

Launching the Playlists menu

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Playlists] with ▲▼ and confirm with **ENTER**.

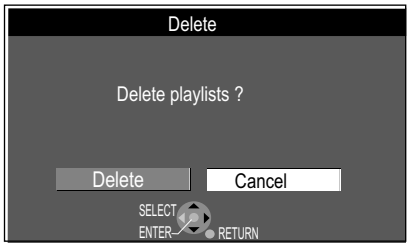
Playback RAM -RW(VR)

- Select a playlist with ▲▼◄► and start playback with **ENTER**.



Edit RAM

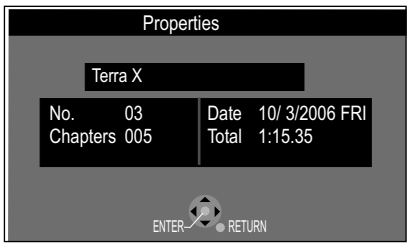
- Select a playlist with ▲▼◄►.
- Press **SUB MENU**.



Delete ☑

This procedure deletes the playlist and it cannot be restored. The source titles are retained.

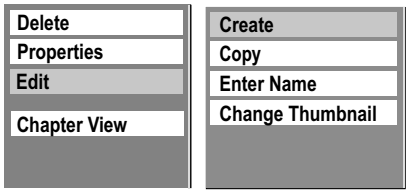
- Confirm [Delete] with **ENTER**.
- Select [Delete] with ◄ and confirm with **ENTER**.



Properties RAM -RW(VR)

Information on the playlist, such as chapter, date and time, is displayed.

- Select [Properties] with ▲▼ and confirm with **ENTER**.



Editing playlists in the SUB MENU. RAM

- Select [Edit] with ▲▼ and confirm with **ENTER**.
- Select the desired option in the sub menu.

Create

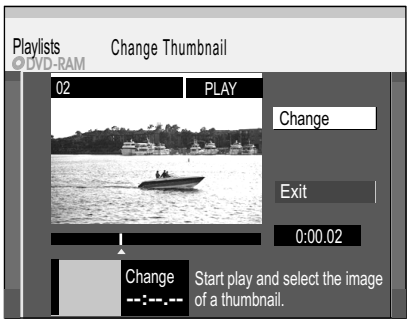
Please read Creating a playlist.

Copy ☑

- Select [Copy] with ◄ and confirm with **ENTER**.

Enter Name 34

Change or enter the title of the programme. If you enter a long name, it is only partially displayed.



Change Thumbnail

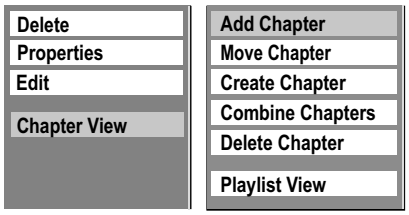
You can select any position in a title as the thumbnail for the Playlist View.

- Press **PLAY** ► to start playback.
- At the position to be displayed as the new thumbnail, confirm [Change] with **ENTER**. The selected thumbnail is displayed.
- Confirm [Exit] with **ENTER**.
  The selected thumbnail is added to the Playlist View.

Jump to the beginning/end of a title/chapter with **PAUSE** ⏸ and **SKIP** ⏮ ⏭.
Locate the position for a marker with **SKIP** ⏮ ⏭, **SLOW/SEARCH** ◀◀ ▶▶, **TIME SLIP**, **MANUAL SKIP** or ◄►.
You can jump between set markers with **SKIP** ⏮ ⏭.

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.

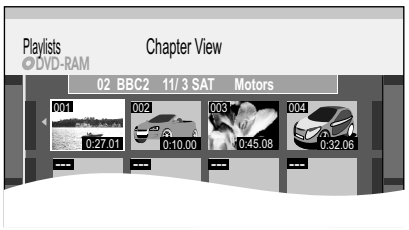
FUNCTIONS ⇨ To Others ⇨ Playlists



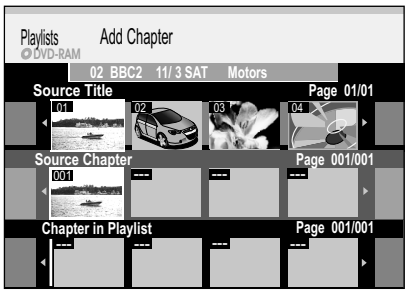
Editing chapters in the SUB MENU

RAM

- Press **FUNCTIONS**.
- Use [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Playlists] with ▲▼ and confirm with **ENTER**.
- Select a playlist in the Playlist View with ▲▼◄► .
- Press **SUB MENU**.
- Select [Chapter View] with ▲▼ and confirm with **ENTER**.



- Select the desired chapter with ▲▼◄► and press **SUB MENU** again.
- Select the desired option in the sub menu with ▲▼ confirm with **ENTER**.



Add Chapter

You can create a new chapter from the Source Title.

- Select a Source Title with ▲▼◄► and press ▼.
- Select a Source Chapter with ◄► and confirm with **ENTER**.
  Cancel the process with ▲.
- Select the position where the chapter is to be inserted with ◄► and confirm with **ENTER**.
- Repeat the steps to add another chapter.
  You can select other source titles with ▲.
- Exit the menu with **RETURN**.

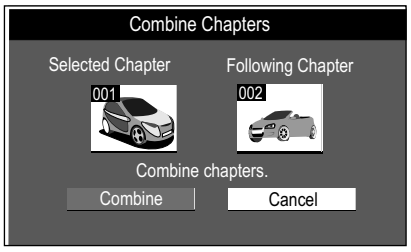
Move Chapter

- Select the position where the chapter is to be moved to with ▲▼◄► and confirm with **ENTER**.

Create Chapter

Divide the title into chapters. Identify the points where a new chapter is to start.
The chapters can be selected later during playback with **SKIP** ⏮⏭ .

- Press **ENTER** at the position where you want to create the chapter. Repeat this step to create a chapter at another location.
- Select [Exit] with ▼ and confirm with **ENTER**.
  A short section of the recording right before the separation point may be lost.



Combine Chapters

- Select [Combine] with ◄ and confirm with **ENTER**.
  The selected chapter is combined with the next chapter.

Delete Chapter ☑

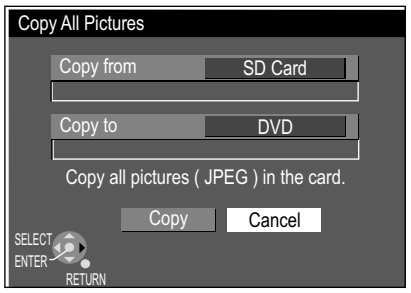
- Select [Delete] with ◄ and confirm with **ENTER.**
  The original title is not deleted when the chapter is deleted.

Playlist View: Return to Playlist View.

Jump to the beginning/end of a title/chapter with **PAUSE** ⏸ and **SKIP** ⏮⏭ .
Locate the position for a marker with **SKIP** ⏮⏭, **SLOW/SEARCH** ◀◀ ▶▶,
TIME SLIP, **MANUAL SKIP** or ◄►.
You can jump between set markers with **SKIP** ⏮⏭ .

Editing several elements ☑
Select the desired title with ▲▼◄► and press **PAUSE** ⏸.
A check appears. Repeat this process to select other titles.
Press **PAUSE** ⏸ again to clear the selection.

FUNCTIONS ⇨ To Others ⇨ **Copy All Pictures**

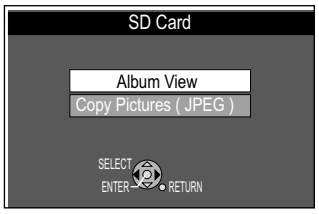


Copying all pictures of an SD card

SD → RAM

You can copy the entire contents of the SD card onto DVD with the function [Copy All Pictures].

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Copy all pictures] with ▲▼ and confirm with **ENTER**.
- Select [Copy] with ◄ and press **ENTER** to confirm.
- To stop copying prematurely, press and hold **RETURN** for 3 seconds.
- To exit copying, press **ENTER**.
- To do another copy, press **RETURN**.
- Repeat the steps stated above.



Automatic detection of an SD card

SD cards are detected automatically on being inserted.

- Place the SD card in the SD card slot.

For viewing pictures from your SD Card:

- Confirm [Album View] with **ENTER.**

39

For copying pictures from your SD Card:

- Select [Copy Pictures (JPEG)] with ▼ and press **ENTER** to confirm.

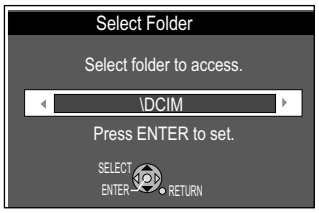
The copied folders are placed behind the folders already on the DVD.
The print setting DPOF is not transferred during copying. The order in which the pictures are registered in the copying list may possibly not correspond to the order in the copying target.

If you copy the pictures folder for folder or card for card, all other files in this folder will be copied as well as the picture files. However, this does not apply to sub-folders contained in the folder.

If the target folder already contains pictures, the new pictures are recorded after the existing ones.

If the target drive does not have enough capacity or the number of files/folders being copied exceeds the maximum, then the copying process is stopped prematurely.

If the copying source folder has no name, this folder may be given another name on the copying target. Give the folder a name before copying.



Select Folder

In the Album View, you can select another folder in the submenu under [Select Folder]. You can select a folder directly and open it. It may be possible that folders which were not created with this unit cannot be opened.

- Select [Album View] with ▲▼ and press **ENTER** to confirm.
- Press **SUB MENU** and press **ENTER** to confirm [Select Folder].
- Select the required folder with ◄► and press **ENTER** to confirm.

☞ FUNCTIONS ⇨ To Others ⇨ **Flexible Rec**

When a Timer Recording starts, recording in FR mode is cancelled.

Flexible recording mode (FR)

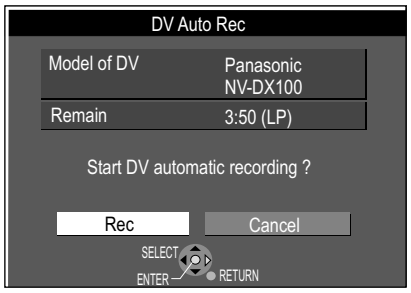
The unit calculates the best possible recording quality between XP and EP. It is adjusted for the space available on the disc.
This function is not available during an EXT LINK recording.

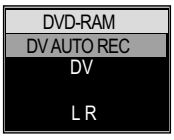
- Select the station with **CH** ◇ or the number buttons.
- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Flexible Rec] with ▲▼ and confirm with **ENTER**.
- Select [Hour] or [Min.] with ◄► and change the recording time with ▲▼.
- Go back to [Set rec. time] with ◄►.
- Select [Start] with ▲▼ , ◄ and confirm with **ENTER**. Recording begins.
- Press **STOP** ■ to cancel the recording before it has ended.
- The channel and recording mode cannot be changed in **PAUSE** mode.

Displaying the available recording time

- Press ⓘ multiple times.

☞ FUNCTIONS ⇨ To Others ⇨ **DV Auto Rec**





This unit cannot be controlled from a connected DV unit. The DV input of this unit is only designed for DV units. (A computer etc. cannot be displayed.) The name of the DV unit may not be displayed correctly. Some DV units do not enable proper input of the picture and sound signal. The date and time information on the tape in the DV unit is not recorded. Simultaneous recording and playback is not possible.

Automatic detection of a camcorder at DV IN RAM

- Connect your Camcorder with a DV cable to the DV IN input of the DVD Recorder. The DVD Recorder automatically detects the Camcorder.
- Select [Rec to DVD] with ◄► and confirm with **ENTER**.
- Confirm [Rec] with **ENTER**. Recording begins.

  Not all DV units are detected automatically. In this case, copy with the [DV Auto Rec] function in the FUNCTIONS menu.

Recording via DV input RAM -R -RW(V) +R +RW

The programmes (e.g. via a digital video unit) are recorded as one title.
RAM Each time the picture is interrupted, a chapter is created and a playlist is automatically created.
Switch off this unit and the DV unit (e.g. digital camcorder) before you connect it to the DV terminal.
If the VHS drive is selected, change to the DVD drive with **DRIVE SELECT**.

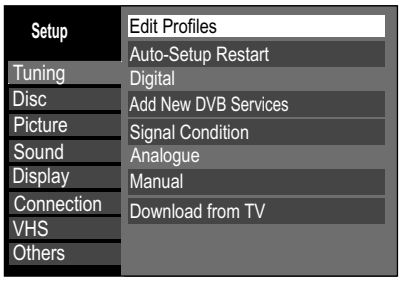
- In the Setup menu under Audio Mode for DV Input, select [Stereo 1/2] or [Mix].
- Set the DV unit to Pause at the desired start position.
- Press **REC MODE** to select the recording mode SP, LP, EP, XP.
- Press **FUNCTIONS**. 63
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [DV Auto Rec] with ▲▼ and confirm with **ENTER**.
- Confirm [Rec] with **ENTER**. Recording begins.
- Confirm the message at the end of the recording with **ENTER**.
- To prematurely stop the recording, press **STOP** ■. Confirm the message to prematurely stop the recording with **ENTER** or **RETURN**.

Manual recording via DV input RAM -R -RW(V) +R +RW

- Start playback on your external DV unit.
- Press Pause at the desired start position.
- Select the DV channel with **INPUT SELECT**.
- Select the recording mode with **REC MODE**.
- Press ● **REC** on the DVD Recorder.
- Start playback on the external DV unit.
- End the recording on the DVD Recorder with **STOP** ■ .
- End playback on the DV unit.

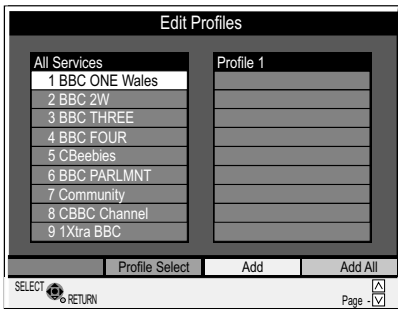
  Recording cannot be cancelled with **PAUSE** ❚❚ .

FUNCTIONS ⇨ To Others ⇨ Setup



Setup menu overview
- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Setup] with ▲▼ and confirm with **ENTER**.
- Select the desired sub menu with ▲▼ and switch to setup with ▶.
- Select the desired setting with ▲▼ and confirm with **ENTER**.
- Select the desired option with ▲▼ and confirm with **ENTER**.
  Follow the menu guide. The unit saves your settings.
- Press **RETURN** multiple times to exit the menus.

▲▼ Tuning ▶ ◀▶ Edit Profiles ENTER



Creating new profiles

DVB Digital Video Broadcasting

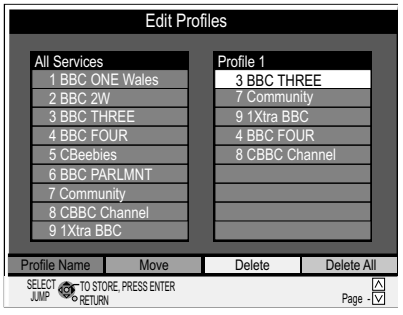
You can create four different profiles where you can put together your favourite analogue and digital TV stations (99 entries).
The profiles are stored in the TV Guide.

- Use **PAGE** ◊ to scroll backwards or forwards page for page through the two tables.

Profile Select
Four different profiles are available.
- Use the **GREEN** button to select a profile.

Add
- Select the required station in the left table with ▲▼.
- Use the **YELLOW** button to accept the selected station.
  Every station can only be added to the profile once.
- Press **ENTER** to save the profile.

Add All
- Use the **BLUE** button to add all available stations to the profile.
- Press **ENTER** to save the profile.



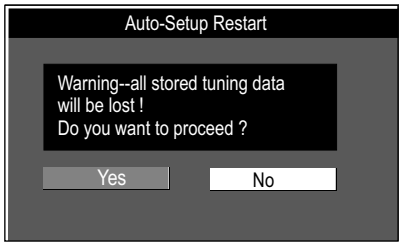
Edit profile
- Use ▶ to go to the column of the selected profile.
  Use the coloured buttons to edit the profiles.

Profile Name 34
- Press the **RED** button to change the profile name.

Move
You can change the order of stations in the selected profile.
- Select the required station with ▲▼.
- Use the **GREEN** button to mark the station.
- Move the station to the required position with ▲▼.
- Press the **GREEN** button again to insert the station.
- Press **ENTER** to save the profile.

Delete
- Select the required station with ▲▼.
- Use the **YELLOW** button to delete the station from the profile.
- Press **ENTER** to save the profile.

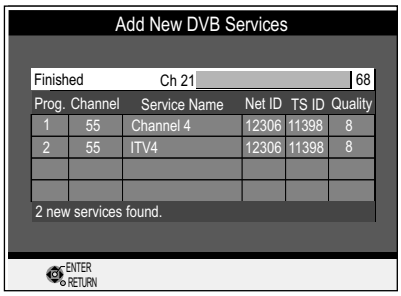
Delete All
- Use the **BLUE** button to delete all stations from the profile.
- Press **ENTER** to save the profile.



▲▼ Tuning ▶ ▲▼ Auto-Setup Restart ENTER

Auto-Setup Restart
- Select [Yes] with ◀ and confirm with **ENTER**. The station search begins.
- To cancel the process, select [No] with ▶ and confirm with **ENTER** or press **RETURN**.
- Press **RETURN** to prematurely end the station search.
  All station settings and all adjusted profiles are deleted.

FUNCTIONS ⇨ To Others ⇨ Setup



▲▼ Tuning ▶ ▲▼ Add New DVB Services ENTER

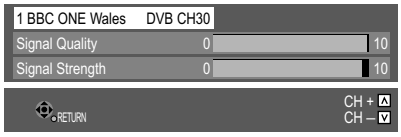
Add New DVB Service

The unit looks for new digital stations.

The station search is automatic.

The bar over the table shows you the search progress. At the end of the search, the number of found new digital stations appears..

- Press **RETURN** to stop the station search prematurely.
  The channels found before stopping are not saved.



▲▼ Tuning ▶ ▲▼ Signal Condition ENTER

Signal Condition

The display in the [Signal Condition] menu shows the quality and strength of the selected digital station.

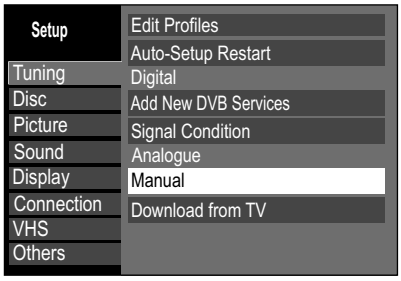
- You can select and check the stations consecutively with **CH** ◇.

Signal Quality

Display red: signal quality below 2: the signal quality is poor so that there may be interference in the pictures and sound.
Display orange; signal quality 2-5: the signal quality is basically adequate, but brief interference in the pictures and sound is possible in isolated cases.
Display green; signal quality over 5: optimum picture and sound quality.

Signal Strength

The display for signal strength is grey. 0 means signal strength = 0 %, 10 means signal strength = 100%.
The signal strength can also be > 100 % (> 10). In this case, the display is red. 73

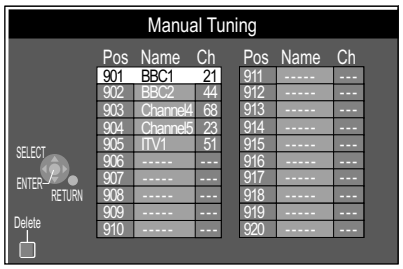


▲▼ Tuning ▶ ▲▼ Manual ENTER

Entering a new television station

- Select a free station location with ▲▼◀▶ and confirm with **ENTER**.
- Enter the channel with ▲▼ or 0 – 9 .
- The channel tuning starts. Wait a moment until the desired station is set and confirm the setting with **ENTER**.

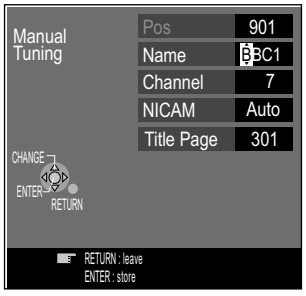
Options available for tuning the channels			
Pos			Station position in the station table.
Name ▶	▲▼ [A-Z, 0-9, -, +, *]	ENTER	Set the station name.
Channel ◀▶	▲▼ [21-68]	ENTER	Set the channel.
NICAM ◀▶	▲▼ [Auto] [Off]	ENTER	Automatic NICAM detection / Mono
Title Page ◀▶	▲▼ [100-899]	ENTER	Select the video text page which supplies the title information.



Your digital channels can be found at positions 1 - 900.
Your analogue channels can be found at positions 901 - 999.

Changing the name of the television station

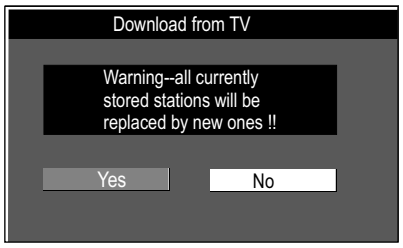
- Select the name of the television station with ▲▼◀▶ and confirm with **ENTER**.
- Select [Name] with ▲▼ and the name field with ▶.
  The cursor jumps to the first letter **BBC1**.
- Change the letter with ▲▼.
- Select the next letter with ▶, B**BC1**.
- Press **ENTER**. The new name is saved in the station table.



Deleting television stations

- Select the station that you want to delete with ▲▼◀▶.
- Press the **RED** button to delete the station.
  The station position settings are deleted.

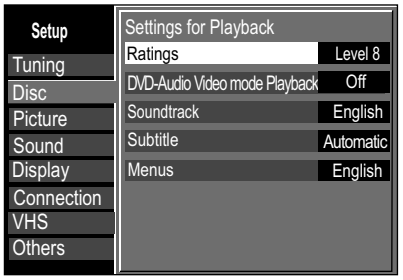
FUNCTIONS ⇨ To Others ⇨ **Setup**



▲▼ **Tuning** ▶ ▲▼ **Download from TV** ENTER

Download from TV (with Q Link or similar functions)

- Select [Yes] with ◀ and confirm with **ENTER**. Data transfer begins.
- To cancel the procedure, use to select [No] with ▶ and confirm with **ENTER** or press **RETURN**.
- To prematurely end the data transfer, press **RETURN**.



▲▼ **Disc** ▶ ▲▼ **Setting** ENTER ▲▼ **Option** ENTER

Ratings — **[8] [1-7] [0]**

You can restrict the playback of DVD-Video after entering a password.
8 Allows all titles.
1-7 Prevents the playback of DVD-Video with the registered security levels.
0 Blocks all titles.

Changing the security level

Unlock Recorder	Return to level 8
Change Password	Change the password
Change Level	Change the authorisation level
Temporary Unlock	You can temporarily authorise a disc for playback.

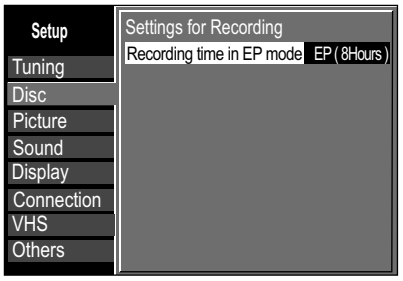
The security level is retained if you switch to standby or open the disc tray.

DVD-Audio Video mode Playback — **[On] [Off]**

On: You want to play DVD-Video content from a DVD-Audio. If you change the disc or switch off the unit, the setting is reset to [Off].

Soundtrack Subtitle Menus DVD-V

Select the language for audio, subtitles and disc menus.
Under [Other], enter the language code for another language.



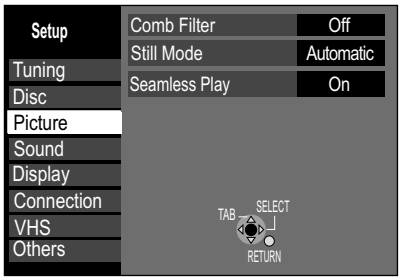
Recording time in EP mode — **[EP (6Hours)] [EP (8Hours)]**

Select the maximum number of hours for recording in EP mode.
EP (6 Hours): Recording time on a 4.7 GB disc.
EP (8 Hours): Recording time on a 4.7 GB disc. The sound quality is lower.

List of language codes

Abkhazian	6566	Burmese	7789	Frisian	7089	Javanese	7487	Marathi	7782	Scots Gaelic	7168	Thai	8472
Afar	6565	Byelorussian	6669	**G**alician	7176	**K**annada	7578	Moldavian	7779	Serbian	8382	Tibetan	6679
Afrikaans	6570	**C**ambodian	7577	Georgian	7565	Kashmiri	7583	Mongolian	7778	Serbo-Croat.	8372	Tigrinya	8473
Albanian	8381	Catalan	6765	German	6869	Kazakh	7575	**N**auru	7865	Shona	8378	Tonga	8479
Ameharic	6577	Chinese	9072	Greek	6976	Kirghiz	7589	Nepali	7869	Sindhi	8368	Turkish	8482
Arabic	6582	Corsican	6779	Greenlandic	7576	Korean	7579	Norwegian	7879	Singhalese	8373	Turkmen	8475
Armenian	7289	Croatian	7282	Guarani	7178	Kurdish	7585	**O**riya	7982	Slovak	8375	Twi	8487
Assamese	6583	Czech	6783	Gujarati	7185	**L**aotian	7679	**P**ashto	8083	Slovenian	8376	**U**krainian	8575
Aymara	6589	**D**anish	6865	**H**ausa	7265	Latin	7665	Persian	7065	Somali	8379	Urdu	8582
Azerbaijani	6590	Dutch	7876	Hebrew	7387	Latvian	7686	Polish	8076	Spanish	6983	Uzbek	8590
Bashkir	6665	**E**nglish	6978	Hindi	7273	Lingala	7678	Portuguese	8084	Sudanese	8385	**V**ietnamese	8673
Basque	6985	Esperanto	6979	Hungarian	7285	Lithunian	7684	Punjabi	8065	Swahili	8387	Volapük	8679
Bengali	6678	Estonia	6984	**I**celandic	7383	**M**acedonian	7775	**Q**uechua	8185	Swedish	8386	**W**elsh	6789
Bhutani	6890	**F**aroese	7079	Indonesian	7378	Malagasy	7771	**R**haeto-Rom.	8277	**T**agalog	8476	Wolof	8779
Bihari	6672	Fiji	7074	Interlingua	7365	Malay	7783	Romanian	8279	Tajik	8471	**X**hosa	8872
Breton	6682	Finnish	7073	Irish	7165	Malayalam	7776	Russian	8285	Tamil	8465	**Y**iddish	7473
Bulgarian	6671	French	7082	Italian	7384	Maltese	7784	**S**amoan	8377	Tatar	8484	Yoruba	8979
				Japanese	7465	Maori	7773	Sanskrit	8365	Telugo	8469	**Z**ulu	9085

FUNCTIONS ⇨ To Others ⇨ **Setup**



▲▼ Picture ▶ ▲▼ Setting ENTER ▲▼ Option ENTER

Comb Filter | **[On] [Off]**

On: The picture is clear and contour-rich. The setting is always set to [On] if you selected [TV System - NTSC].
Off: If the picture to be recorded is distorted.

Still Mode | **[Automatic] [Field] [Frame]**

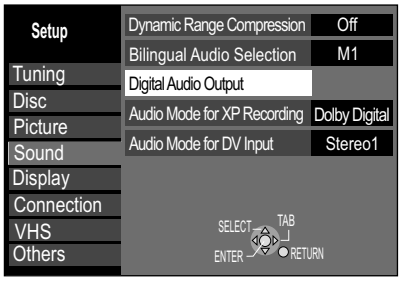
Select how the still picture should be displayed.
Field: Select this function if the picture is distorted with the setting [Automatic].
Frame: Select this function if small text or line structures are not displayed clearly with the setting [Automatic].

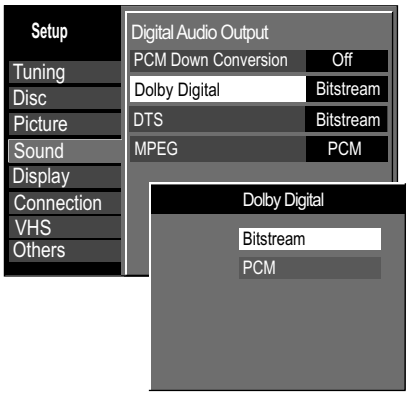
Full pictures are still pictures that, displayed one after the other, create a moving picture. A full picture is made up of 2 half pictures. The picture can appear blurry, but the overall quality is very good.
A half picture only contains half the information of a full picture and the picture quality is poorer.

Seamless Play RAM -RW(VR) | **[On] [Off]**

Seamless playback of a chapter in a playlist.
On: The chapter in a playlist are playback seamlessly. This is only possible if the playlist contains the same audio types. This function is not possible with Quick View.
The position of the chapter segments may change slightly.
Off: The boundaries of the chapters in the playlist are followed exactly, but the picture may freeze for a short period of time.

FUNCTIONS ⇨ To Others ⇨ Setup





▲▼ Sound ▶	▲▼ Setting ENTER	▲▼ Option ENTER
Dynamic Range Compression	DVD-V	**[On] [Off]** (Dolby Digital Only)

On: The level of quieter passages increases and the level of louder passages decreases. The audio can be clearly understood even when the volume is lowered.

Bilingual Audio Selection	-R -R DL -RW(V) +R +R DL +RW	**[M 1] [M 2]**

If you want to record programmes that are broadcast in dual-channel sound, you can select between the original language [M1] or another available language [M2]. If you are copying from an external source or from a tape position, select the sound track on the other unit.

Digital Audio Output	**[PCM Down Conversion] [Dolby Digital] [DTS] [MPEG]**

Select the appropriate setting if you have connected an external unit to the DIGITAL AUDIO OUT of the DVD Recorder.

PCM Down Conversion	**[On] [Off]**

Select the audio output mode for a scan frequency of 96 kHz or 88.2 kHz. Despite this setting, signals are converted to 48 kHz or 44.1 kHz if they have a scan frequency over 96 kHz or 88.2 kHz or if the disc is copy-protected.
On: The connected unit cannot process signals with a scan frequency of 96 kHz or 88.2 kHz. Signals are converted with 48 kHz or 44.1 kHz.
Off: The connected unit can process signals with a scan frequency of 96 kHz or 88.2 kHz. Signals are output as 96 kHz or 88.2 kHz.

Dolby Digital, DTS, MPEG	**[Bitstream] [PCM]**

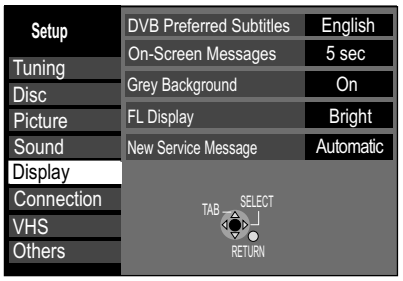
Bitstream: The connected unit can decode the corresponding signal.
PCM: If the connected unit cannot decode the corresponding signal, the setting must be changed to [PCM]. Otherwise, the loud noise can lead to damage to your hearing or loudspeakers. Make the necessary changes depending on your audio system.

Audio Mode for XP Recording	**[Dolby Digital] [LPCM]**

Selection of the audio type when copying in XP mode.
The picture quality of LPCM recordings may be worse than with normal recordings in XP mode.

Audio Mode for DV Input	-R -R DL -RW(V) +R +R DL +RW	**[Stereo 1] [Stereo 2] [Mix]**

Select the audio type when copying from the DV input.
Stereo 1: Original sound; **Stereo 2**: Voice-over, **Mix**: Original sound + voice-over



▲▼ Display ▶	▲▼ Setting ENTER	▲▼ Option ENTER
DVB Preferred Subtitles		**[English] [Welsh] [Gaelic]**

Select the language of the subtitles.

On-Screen Messages	**[Off] [3 sec] [5 sec] [7 sec] [10 sec]**

Automatic: The on-screen displays are displayed on the screen.

Grey Background	**[On] [Off]**

On: The grey background is displayed when there is no television reception.

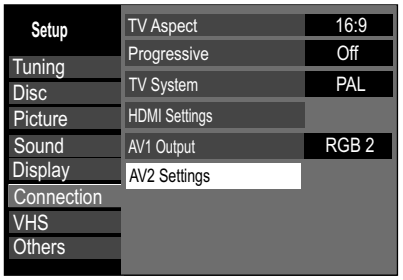
FL Display	**[Bright] [Dim]**

Dim: The display goes dark during playback. It lights up again when a button is pushed. If the unit is switched off, the display turns off.

New Service Message	**[Automatic][Off]**

Off: The Service Messages are not shown.

FUNCTIONS ⇨ To Others ⇨ Setup



▲▼ Connection ▶	▲▼ Setting ENTER	▲▼ Option ENTER

TV Aspect — **[16:9] [4:3] [Letterbox]**

Select the TV screen format of your television. Programmes in 16:9 format are recorded in 4:3 format. 16:9 format is used to record to RAM.
Letterbox: Black bars appear on the upper and lower edges of the screen (16:9).

Progressive — **[On] [Off]** 17

On: The signal is displayed in full-picture quality using COMPONENT VIDEO OUT.

Changeover not possible when HDMI Video Format is set to [Automatic] and when using the HDMI connection.

TV System — **[PAL] [NTSC]**

PAL: You connect the unit to a PAL or multi-system television. Programmes that were recorded with NTSC are played as PAL60.
NTSC: You connect the unit to an NTSC television. Programmes that were recorded with NTSC are played as NTSC.

HDMI Settings 65

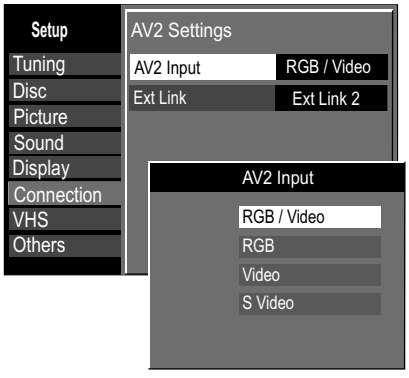
HDMI (High Definition Multimedia Interface) is a digital interface for Audio and Video. One single cable transfers both digital video data (picture data) and also digital audio data. HDMI is the world's first complete AV interface complying with a non-compression standard.

AV1 Output — **[Video (with component)] [RGB 1 (without component)] [RGB 2 (without component)]**

Video (with component): If RGB 1 or 2 is set, there is no signal available on COMPONENT VIDEO OUT.
If the unit is connected to HDMI, [Video (with component)] is switched on automatically.

RGB 1 (without component): RGB output is available all the time while this unit is on.

RGB 2 (without component): RGB output is available only during playback or on-screen display.



AV2 Settings	**AV2 Input**	Perform the settings in the following submenus for the connected unit.
	Ext Link	

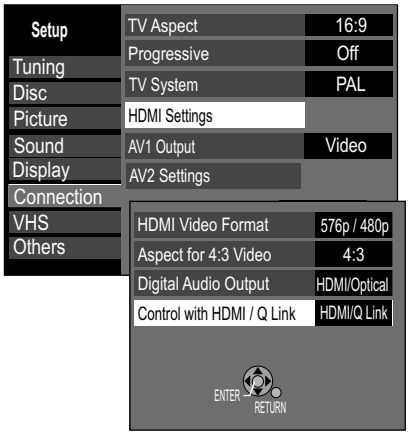
AV2 Input — **[RGB / Video] [RGB] [Video] [S Video]**

RGB / Video: Is detected automatically when receiving or recording RGB output from external equipment (not NTSC).
RGB, Video, S Video: Input is switched to the selected signal (S Video not NTSC).

Ext Link — **[Ext Link1] [Ext Link 2]**

Ext Link 1: For digital receivers that send a special recording control signal, for example, the F.U.N. receiver (TU-DSF41)
Ext Link 2: External recording control for satellite or digital receivers (video signal).

FUNCTIONS ⇨ To Others ⇨ **Setup**



▲▼ Connection ▶ ▲▼ HDMI ENTER ▲▼ Option ENTER

HDMI Video Format — **[Automatic] [576i / 480i] [576p / 480p] [720p] [1080i]**

Select the screen resolution of your connected television set.
Automatic: automatically selects the setting belonging to the connected unit. If you are not satisfied with the picture quality, a change in the setting may possibly result in an improvement. You can only select the settings supported by the connected unit.

Aspect for 4:3 Video — **[4:3] [16:9]**

Use this setting if you want to replay videos in 4:3 format on the connected television set in 16:9 format. (Only possible for an HDMI resolution of [720p] or [1080i].)
4:3: Picture is output as original aspect.
16:9: Picture is output as 16:9 aspect with side panels.

Digital Audio Output — **[HDMI/Optical] [Optical Only]**

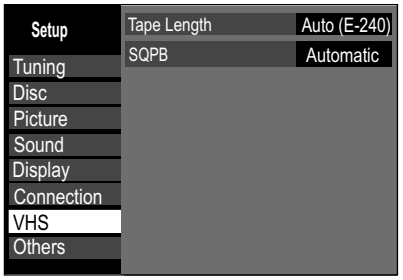
HDMI/Optical: Both outputs are activated with one signal.
Optical Only: Only the optical output is activated with one signal.

Control with HDMI / Q Link — **[HDMI and Q Link] [Q Link Only]**

HDMI and Q Link: Simultaneous interaction of HDMI and Q Link functions. Select this setting if you have connected a unit via HDMI.

Q Link Only: If your TV set is equipped with the Q Link function, select this setting for the link.
Select the screen resolution of your connected television set.

	HDMI and Q Link	only Q Link (via AV1)	only HDMI
Easy Playback	✓	✓	✓
Direct TV recording	✓ (not via HDMI)	✓	—
Power on link	✓	✓	✓
Power off link	✓	✓	✓
Download from TV	✓ (not via HDMI)	✓	—



▲▼ VHS ▶ ▲▼ Setting ENTER ▲▼ Option ENTER

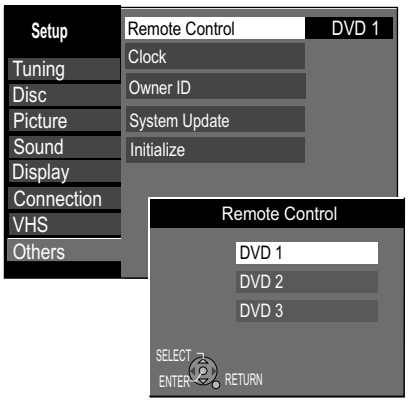
Tape Length — **[Auto (E-240)] [E-195] [E-260] [E-300]**

Setting for the tape length of the cassette in use.

SQPB — **[Automatic] [On] [Off]**

Automatic: The unit detects the recording type.
On: Playback of an S-VHS cassette in quasi S-VHS format.
Off: Playback of recordings in VHS format.

FUNCTIONS ⇨ To Others ⇨ Setup



▲▼ Others ▶ | ▲▼ Setting ENTER | ▲▼ Option ENTER

Remote Control | **[DVD 1] [DVD 2] [DVD 3]**

Setting the remote control

If you use another Panasonic unit at the same location, change the mode of the remote control so that you can operate the units independently of each other.
Change the code of the remote control so that you can simultaneously operate another Panasonic DVD unit.

Set up the remote control for the unit.

- Select [DVD 1, 2 or 3] with ▲▼ and confirm with **ENTER**.

Apply the selected setting [DVD 1, 2 or 3] to the remote control.

- Press and hold **ENTER** and press the appropriate number button 1, 2 or 3 for at least 2 seconds.
- Exit the menu with **RETURN**.

If the remote control setting does not match that of the unit, DVD 1, 2 or 3 appears on the unit's display.

- Press **ENTER** and press the appropriate number key 1, 2 or 3 simultaneously for at least 2 seconds.

  If you want to operate two units independently of each other using the same remote control, then change the the remote control setting.

Clock

Clock setting

The clock will normally be set correctly during Auto-Setup however, under certain circumstances the DVD Recorder cannot set the clock automatically. In this case follow the operation steps below to manually set the clock.

- Switch with ▲▼ automatic mode to [Off] and confirm with **ENTER**.
- Change with ▲▼ and ▶ Time and Date.
- Confirm the change with **ENTER**.
  Don't forget to change summer time and winter time.

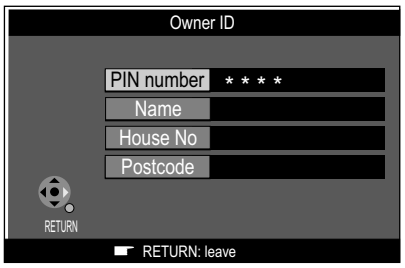
Activating the automatic time correction function

The correct time for the clock can be automatically maintained when the DVD Recorder is tuned to a station that transmits a time signal.

- Switch with ▲▼ automatic mode to [On] and confirm with **ENTER**.
  The automatic setting of the clock begins.

Under adverse reception conditions, etc., the Automatic time correction function may not work. In this case the indication for Clock setting is automatically reset to [Off]. If the reception conditions improve later on, it is possible to activate this function.
If the Clock setting is set to [On], do not set it to [Off], otherwise the automatic time correction function is deactivated.
This DVD Recorder uses a 24-hour-clock.
In the event of a power failure an automatic back-up system maintains the clock for approximate 60 minutes.
When the Clock setting is set to [On], the automatic time correction function checks and if necessary adjusts the time several times every day. The automatic time correction function only works when the DVD Recorder is in standby, it does not work in the Timer Recording mode.

FUNCTIONS ⇨ To Others ⇨ **Setup**

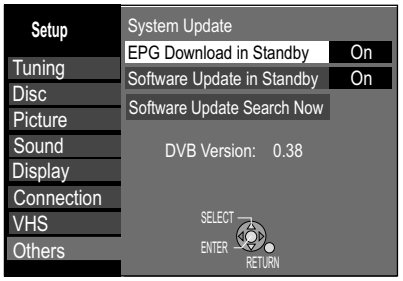


▲▼ Others ▶ | ▲▼ Owner ID ENTER | ▲▼ Option ENTER

Owner ID

- To set the PIN number press ▶. Use 0 — 9 to enter a four-digit PIN number. Press ▲▼◀▶ to correct the digit.
- Make sure that you will remember the PIN number (make a note of it).
- Press the **ENTER** button to confirm.
- Select [Yes] with ◀ and confirm with **ENTER**.
- Press ▶. Enter the [Name], [House No] and [Postcode] in the same way, using ▲▼◀▶.
- Press the **ENTER** button to confirm each entry.
- Press the **RETURN** button to leave the Owner ID screen.

To display the Owner ID information on TV
- On the unit press **STOP** for more than 5 seconds. The PIN number is not displayed. After 30 seconds this menu automatically disappears.



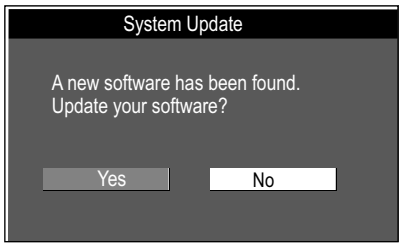
System Update DVB Digital Video Broadcasting

EPG Download im Standby-Modus	**[On] [Off]**

On: EPG data are loaded in standby mode.

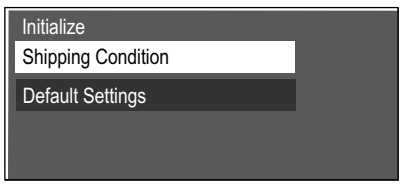
Software Update in Standby	**[On] [Off]**

The software is automatically updated when the unit is in standby mode. This is shown in the unit display. If the unit is in standby to record, the timer-controlled recordings are not affected. If you want to prevent the automatic updates, select the setting [Software Update in Standby - Off].



Software Update Search Now

Start the search for new software manually.
A new software version is announced by a message. Do not switch your unit off during the update. This could result in the loss of data. A message shows that the update has finished. If a new software version is not going to be broadcast until the next few days, a corresponding message also appears.

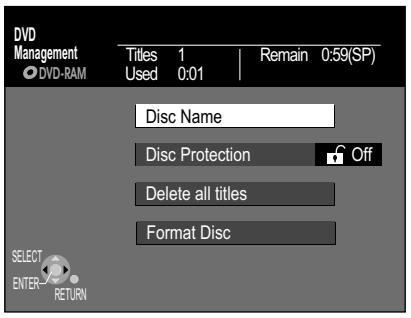


Initialize	**[Shipping Condition] [Default Settings]**

Shipping Condition: All settings, except for the security levels with the associated password and the time settings and the owner ID, are reset to the factory-default settings.

Default Settings: All settings, except for the programmed channels, time and disc-language settings, the security levels including password and the remote control code and the owner ID, are reset to the factory-default settings.

FUNCTIONS ⇨ To Others ⇨ **DVD Management**



If you activated write-protection, deactivate it. RAM

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [DVD Management] with ▲▼ and confirm with **ENTER**.
- Select the desired menu with ▲▼ and confirm with **ENTER**.
- Return to the FUNCTIONS menu with **FUNCTIONS**.

Disc Name 34

- Enter the name. The name is displayed in the DVD Management window. You cannot name a disc after it has been finalized.

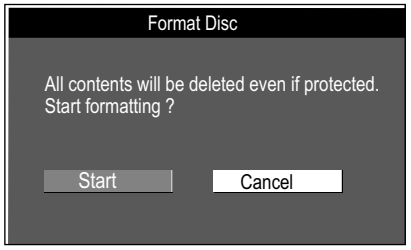
Disc Protection RAM

This procedure makes it possible to activate or deactivate write-protection.

- Select [Yes] with ◄ and confirm with **ENTER**.
  Disc Protection On: The padlock is closed.
- To deactivate write-protection, select [Yes] with ◄ and confirm with **ENTER**.
  Disc Protection Off: The padlock is opened.

Delete all Titles RAM

- Confirm [Delete all Titles] with **ENTER**.
- In the next screen, select [Yes] with ◄ and confirm with **ENTER**.
- In the security question, select [Start] with ◄ and confirm with **ENTER**.
  All titles and playlists are deleted and cannot be restored. Protected discs or titles cannot be deleted. If at least one title is protected, it cannot be deleted.



Format Disc RAM -RW(V) +RW -RW(VR) +R +R DL Only for new discs

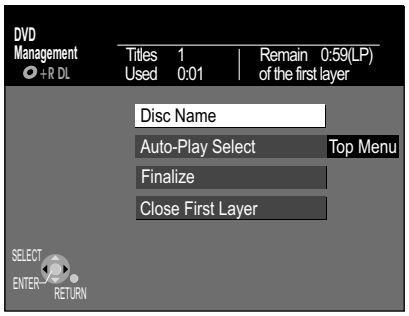
Some discs are not formatted. They must be formatted before they can be used in this unit. The formatting process deletes all data from the disc. The estimated duration of the formatting process is displayed in the menu.

- Select [Yes] with ◄ and confirm with **ENTER**.
- Select [Start] with ◄ and confirm with **ENTER**. The formatting process begins. A message appears upon completion.
- Press **ENTER**.

Do not unplug the unit while the disc is being formatted or finalized.

The formatting process deletes all data, including the recordings created with this unit.

FUNCTIONS ⇨ To Others ⇨ **DVD Management**

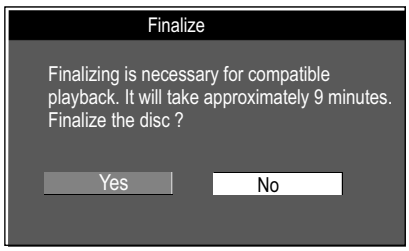


Auto-Play Select

-R -RW(V) +R -R DL +R DL +RW

Before finalization, you can select whether playback should start from the beginning of the disc or whether it should be lauched from a disc menu.

- Select [Top Menu] or [Title 1] with ▲▼ and confirm with **ENTER**.
  If [Top Menu] is selected, the disc menu appears first.
  If [Title 1] is selected, playback begins at the beginning of the disc.



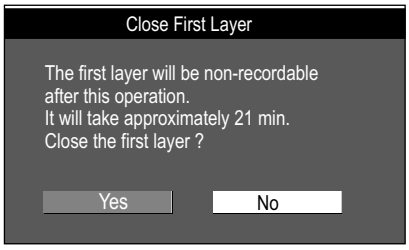
Finalize

-R -RW(V) +R -R DL +R DL

The discs become DVD-Videos in DVD-Video format through finalization. They can be played on all DVD Players that support DVD-Video format.

- Select [Yes] with ◄ and confirm with **ENTER**.
- Select [Start] with ◄ and press **ENTER**. The finalization process begins. A message is displayed upon completion.
- Press **ENTER**.

You can only finalize DVDs that were recorded on this unit. You can no longer record to DVDs that have already been finalized. A finalized DVD-RW(V) can be recorded again after it is reformatted.

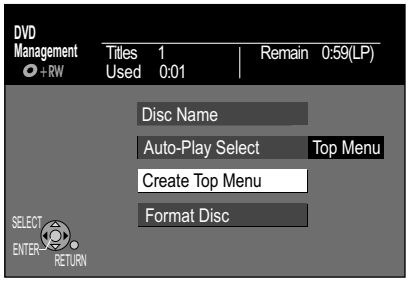


Close First Layer

-R DL +R DL

The second Layer can only be recorded after the first Layer has been written and finalized.

- To close the first Layer, select [Yes] with ◄ and confirm with **ENTER**.
- Select [Start] ◄ and confirm with **ENTER**.



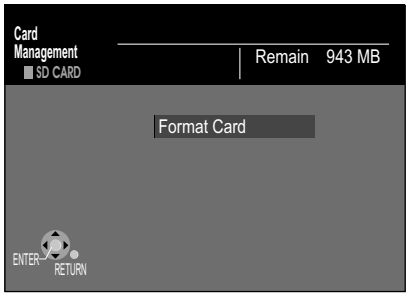
Create Top Menu

+RW

With a +RW, you have the option of creating a Top Menu.
The Top Menu created can be used for playback on another DVD-Player.

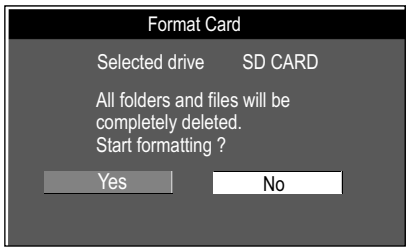
- Select [Create Top Menu] with ▲▼ and confirm with **ENTER**.
- In the following menu, select [Yes] with ◄ and confirm with **ENTER**.
- Select [Start] with ◄ and confirm with **ENTER**. The Top Menu is created.
  The procedure concludes with the message: Top Menu was created.
  Return to DVD Management with **ENTER**.

FUNCTIONS ⇨ To Others ⇨ **Card Management**



If you activated write-protection, deactivate it.

- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Card Management] with ▲▼ and confirm with **ENTER**.
- Select the desired menu with ▲▼ and confirm with **ENTER**.
- Return to the FUNCTIONS menu with **FUNCTIONS**.



Format Card

The formatting process deletes all data from the card.

- Select [Yes] with ◄ and confirm with **ENTER**.
- Select [Start] with ◄ and confirm with **ENTER**. The formatting process begins.
  A message appears upon completion.
- Press **ENTER**.

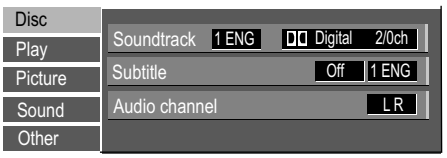
Picture and sound settings

DVD

DISPLAY menus contain information on the disc or the unit. With DVD-Videos, you can use the repeat function, change subtitles and the angle, change the picture and sound settings for DVD playback. Depending on the status of the unit (playback, STOP), there are some entries that cannot be selected or changed.

DISPLAY

- Press **DISPLAY** to launch the menu.
- Press **DISPLAY** again to exist the menu.



Subtitles, sound track and recording angle can only be selected if they were recorded on the disc. For some discs, they can only be changed via the disc menus. When bilingual recordings are played back, "1+1 ch" is displayed.

▲▼ Disc ▶	▲▼ Option ▶	▲▼ Setting	
	Soundtrack	**Soundtrack lang.**	DVD-A DVD-V Select the sound and the language.
		Sound properties	RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR) The disc sound properties are displayed. LPCM/PPCM/Dolby Digital, DTS and MPEG: signal type, ch (channel): number of channels, k (kHz): scan frequency, b (bit): number of bits VCD Select the audio channel.
	Subtitle	**[On] [Off]**	DVD-A DVD-V Switch subtitles on or off, select the language. RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR) Only for discs with the Subtitle On/Off setting. The Subtitle On/Off setting cannot be recorded with this unit. VCD Switch subtitles on or off, select the number of the subtitle.
		Language	ENG: English, FRA : French, DEU : German, ITA : Italian, ESP : Spanish, NLD : Dutch, SVE : Swedish, NOR: Norwegian, DAN: Danish, POR: Portuguese, RUS: Russian, JPN : Japanese, CHI : Chinese, KOR: Korean, MAL : Malay, VIE : Vietnamese, THA : Thai, POL : Polish, CES : Czech, SLK : Slovak, HUN: Hungarian, FIN : Finnish, * : Others * Others: Enter the appropriate language code. 61
	Audio Channel	**L+R / L / R**	RAM -RW(VR) VCD Change audio during playback.
	Angle		DVD-A DVD-V Select another recording angle.
	Still Picture		DVD-A Select the still image playback type.
		[Slide Show]	Disc playback in the original sequence.
		[Page]	Select the still image number and playback. RANDOM: Playback in random order. Return to the standard page: Select [Return] and press **ENTER**.
	PBC		VCD PBC shows whether the menu playback control is on/off.

Picture and sound settings

DVD

▲▼ Play ▶	▲▼ Option ▶	▲▼ Setting
Repeat Play	**[On] [Off]**	The function is only available if the elapsed time is displayed. CD VCD ▸ Track ↔ All ↔ Off ◂ RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) ▸ Title ↔ Chapter ↔ Off ◂ DVD-A MP3 ▸ Track ↔ Group ↔ Off ◂ During playback of a playlist RAM -RW(VR) ▸ PL (Playlists) ↔ Off ◂ If the Video-CD has playback control, select a track in **STOP** mode with the number buttons.

▲▼ Picture ▶	▲▼ Option ▶	▲▼ Setting
Playback NR	**[On] [Off]**	Reduces screen interference.
Progressive	**[On] [Off]**	Select [On] to activate full picture output.
Transfer.	**[Progressive - On]**	Select the appropriate conversion method for full-picture output. PAL output signal [Auto] Film and video content is detected and converted appropriately. [Video] If problems occur with the [Auto] setting. [Film] Select Video or Film if the video content is is not displayed correct with the Auto setting. NTSC output signal [Auto 1] Film and video content is detected and converted appropriately. [Auto 2] Movies with different picture frequencies are converted [Video] If content does not display correct with the [Auto 1] or [Auto 2] settings.
Copy NR	**[Automatic]** **[On]** **[Off]**	Reduces noise during tape recording. Only for AV1, AV2, AV3 or DV. Only with picture input from a video cassette. Noise reduction is activated for video input. The input signal can be recorded unchanged.

▲▼ Sound ▶	▲▼ Option ▶	▲▼ Setting
DVB Multi Audio	**[Other 1]** **[Other 2]**	If more than one audio channel is broadcast, you can set the desired channel here (only applies to digital channels).
V.S.S.	**[Natural]** **[Emphasis]** **[Off]**	RAM -R -R DL -RW(V) +R +R DL +RW DVD-A DVD-V -RW(VR) Surround sound effect with 2 front speakers. Only with Dolby Digital with 2 or more channels. Switch off V.S.S. if this causes problems. V.S.S. does not work with recordings in dual-channel sound.
Dialog Enhancer	**[On] [Off]**	RAM -R -R DL -RW(V) +R +R DL +RW DVD-A DVD-V -RW(VR) Dolby Digital, only with 3 or more channels, including a center channel. The volume is increased so that dialogue is easier to understand.

▲▼ Other ▶	▲▼ Option ▶	▲▼ Setting
Position	**[1 - 5]**	Position of the OSD displays on the screen.

If you need help

CUSTOMER SERVICE

Should problems occur, please try to resolve them by referring to the error sources described here. If this does not help, you should contact your dealer or customer service.

Normal disc revolution sounds, atmospheric interference during reception, picture interference while fast-forwarding, and limited reception of the satellite programs are not signs of a defective unit.
If the disc cannot be played due to poor quality, try it again with a disc from Panasonic.

		Page
ERROR MESSAGES	▹ The unit is malfunctioning.	
The error code H □□, U □□ or F□□ appears.	▹ The numbers following H, U or F indicate the status of the unit. • Switch the unit to Standby mode with ⏻/I. If the unit does not switch to Standby mode, press ⏻/I for approx. 10 seconds or unplug it for a minute and then plug it back in. • Press ⏻/I to switch on the unit. If this does not solve the problem, contact customer service with the displayed error code.	
Error code U59	▹ The unit is hot and switches to Standby mode for safety reasons. ▹ Wait approx. 30 minutes until the message disappears. Place the unit in a well ventilated location. Do not block the vents at the back of the unit.	
Error code U61	▹ The unit has found an error during recording or playback without an inserted disc. The unit proceeds with the recovery procedure. This procedure restores the normal operating mode. The unit is not defect. Please wait until the message goes off.	
Error code U71	▹ The connected unit is not suitable for connection to HDMI.	
Error code U72 **Error code U73**	▹ The HDMI connection does not work perfectly. ▹ The connected unit is not suitable for connection to HDMI. ▹ The HDMI cable is too long. ▹ The HDMI cable is broken.	
Error code U88	▹ A problem occurred during recording or playback of a disc. The unit is not defective, but is performing a restore procedure. Wait until the error message disappears from the display.	
HARD ERR	▹ The unit is not functioning properly. • Switch the unit off and back on again. If this does not solve the problem, contact customer service.	
The unit automatically switches to Standby mode.	▹ One of the unit's safety devices may have been activated. • Press ⏻/I to switch on the unit.	
FUNCTION		
No functions possible.	▹ Check the connection to the power supply. ▹ The unit is in Standby mode for a Timer programming via external units. EXT-L appears in the display. • Press **EXT LINK** to switch off recording standby mode. • To cancel a recording prematurely, stop the transfer of the recording signal on the external unit. • Press **EXT LINK** to switch off recording standby mode.	**53**
The disc cannot be ejected.	▹ The unit is currently recording. • With the unit switched off, press **STOP** ■ and **CH** ∧ on the unit at the same time and hold for about 5 seconds. Contact your dealer. ▹ The above procedure cannot be executed if the child-protection feature is activated. • Switch off the child-protection feature.	**6**

If you need help

		Page
PICTURE		
No picture.	▹ Check the connection to the TV, e.g. AV1.	10
	▹ The PROGRESSIVE output is activated, but the connected TV is not progressive-capable.	17
There is picture interference.	• Press and hold **STOP** ■ and **PLAY** ▶ on the unit at the same time for more than 5 seconds. The function is switched to half-picture (INTERLACE).	17
	▹ The [TV System] setting does not match that on the disc. • In **STOP** mode, press and hold **STOP** ■ and **OPEN/CLOSE** ⏏ on the unit for more than 5 seconds. This switches the unit from PAL to NTSC or vice versa.	64
Television reception worsens when the unit is connected.	▹ Check the aerial connection and the alignment of your aerial. You may need to use a signal amplifier.	
The TV picture format is not set correctly.	▹ Check the [TV Aspect] setting in the Connection Setup menu.	64
The picture flickers.	▹ Adjust the picture. Read the operating instructions for the TV.	
No on-screen messages.	▹ Change the [On-Screen Messages] setting the Display Setup menu.	63
Poor picture in spite of good signal quality.	▹ Overmodulation makes the signal strength display go to red. • Readjust the picture with your room aerial until the picture quality improves.	
SOUND		
No sound. Distorted sound. Volume set to quiet.	▹ Check the connections. ▹ If you connected an amplifier, check the input mode. ▹ Switch off the V.S.S. function if it causes problems.	19 71
It is not possible to hear the desired sound type.	• Press **DISPLAY** to select the desired sound type. • Change the appropriate setting in the Sound Setup menu. ▹ The sound cannot be switched on some discs.	63
The sound cannot be set for stereo or NICAM broadcasts.	▹ Connect external units with audio cables even if you use a digital connection. ▹ You can change the sound type when using DVD-RAM.	19
REMOTE CONTROL		
No functions.	▹ An incorrect remote control code was selected. ▹ Check the batteries. ▹ Point the remote control at the sensor on the unit. ▹ The child protection feature has been activated.	6 5 6 6
The TV cannot be operated.	▹ An incorrect remote control code was selected.	6
DISPLAY		
The display light is weak.	▹ Change the [FL Display] setting in the Display Setup menu.	63
"0:00" blinks on the unit display.	▹ No time. Set the time in the Others [Clock] Setup menu.	66

If you need help

		Page
PLAYBACK		
Playback does not start.	▹ No disc or video cassette inserted. ▹ The disc is dirty or badly scratched. ▹ You inserted a disc that is not suitable for playback. ▹ You inserted a blank disc.	**23**
DVD-Video will not play.	▹ Some DVD-Videos cannot be played if the security level has been changed.	**61**
No reaction when PLAY ► is pressed.	▹ ⃠ appears on the screen. The procedure is being prevented by the unit or the disc. ▹ The child protection feature has been activated.	**6**
A title or chapter is not played back afer being selected.	▹ Some titles or chapters of DVD-Videos are not played back if the security level has been changed.	**61**
Soundtrack/subtitles cannot be selected or do not match the language selected in the Setup menu.	▹ The subtitles were not recorded on the disc or are not switched on. ▹ The languages were not recorded on the disc. ▹ You may need to use the disc menu to select the languages.	**63**
The angle cannot be changed.	▹ The angle perspective can only be changed for scenes that were recorded from different angles.	**70**
You forgot your security password.	• Select the DVD drive and, while the disc tray is open, press and hold ● **REC** and **PLAY** ► on the unit for at least 5 seconds.	
RECORDING		
Cannot record.	▹ The video cassette is write-protected. ▹ Check whether the inserted disc is suitable for recording. ▹ The disc is not formatted. Format the disc. ▹ The write-protection device on the cartridge is set to "PROTECT". Deactivate the write-protection. ▹ Deactivate the write-protection in the DVD Management menu. ▹ The material that you want to record is copy-protected. The number of possible copies is limited with some programmes. ▹ Discs containing PAL and NTSC signals cannot be recorded.	**29** **68** **68** **23**
Some or all recorded programmes were lost.	▹ If there is a power cut during recording or processing or if the unit is unplugged from the power supply the programme may be lost or the disc may be damaged. Reformat the disc or use a new disc.	**68**
Timer Recording is not functioning.	▹ The Timer programming is defective, different Timer programmes overlap each other. Correct the programming. ▹ Check the clock setting.	**43** **66**
Timer Recording cannot be cancelled.	• With an **EXT LINK**-controlled recording via an external unit, press **EXT LINK**. The EXT-L display disappears. ▹ If you want to cancel the recording prematurely, stop the transfer of recording signal on the external unit. Press **EXT LINK** to switch off recording standby.	**53**
SOFTWARE UPDATE		
When are the software updates broadcast ?	▹ The unit shows automatically when a software update has been broadcast, and also automatically updates the software if thus function has not been switched off in the Setup menu.	**67**

If you need help

		Page
TV GUIDE		
The displayed information is wrong.	▸ The broadcasting companies are responsible for the information. Deviations are possible when changes are made at the last minute.	
No or incomplete data.	▸ Date/time incorrectly set. ▸ The signal is too weak or no signal was found. Check the aerial. Realign the aerial and check the values with the signal quality in the [Setup] menu. ▸ The broadcasting companies are responsible for the information. Deviations are possible when changes are made at the last minute.	**66** **60**
EPG database empty or incomplete after switching on.	▸ Downloading the data was not possible. Switch the unit to standby over night. ▸ Activate the EPG Download in the [Setup] menu.	**67**
No current data in spite of active EPG download function.	▸ Downloading the data was not possible. Switch the unit to standby over night ▸ Make sure that no Timer Recording was carried out during the time chosen for the EPB download.	
DVB-T		
No station found. Time not set.	▸ The signal is too weak or no signal was found. Check the aerial. Realign the aerial and check the values with the signal quality in the [Setup] menu. ▸ Repeat the auto setup.	**60** **59**
Date/time incorrectly set.	▸ The transfer did not work. Repeat the Automatic Time Setting.	**66**
Unusual station sorting.	▸ The station sorting of this unit is pre-defined. Use profiles to sort the stations as you want them.	
No teletext	▸ This DVD Recorder does not support teletext.	
No automatic station allocation in VIDEO Plus+.	▸ No unique code for the digital stations. Allocate the stations manually when programming for the first time. The DVD Recorder will then recognise the stations correctly in future.	
Which aerial is suitable for receiving DVB-T?	▸ Any (terrestrial) roof aerial can be used. Room rod aerials are also suitable. Use an active room aerial if the reception is poor.	
After the auto setup, there aren't any stations in the station list although found stations were displayed during auto setup.	▸ [Shipping Condition] was performed or the unit was in the delivery status. The auto setup was then started and interrupted. Do an auto setup again and let it continue right through to the end. The data are only saved after this has been completed.	
EXTERNAL INPUT		
Video or audio is not recorded from an external unit.	▸ The external unit is not connected correctly. ▸ The incorrect input channel AV2, AV3 or DV IN was selected.	**19** **19**

If you need help

		Page
HDMI		
Which accessories are required to hear multi-channel Surround Sound?	▹ Multi-channel sound can only be played back with this unit if it is connected with an HDMI cable or a digital audio optical fibre cable to an amplifier with an integrated decoder.	
Switching on takes longer in spite of the Quick Start function.	▹ All units connected by HDMI are checked while switching on. This can take a while.	
No picture on the television set.	▹ Check whether the television set and DVD Recorder are connected correctly with the HDMI cable. If the external unit has been connected correctly, the HDMI message appears briefly on the display of the DVD Recorder. ▹ If more than four units are connected with HDMI cables, you may possibly not be able to see a picture. Reduce the number of connected units. ▹ If the unit is connected via COMPONENT VIDEO OUT to a television unit which is not progressive-compatible, no unit can be connected with HDMI. The [Progressive] setting is automatically switched to [On] in the Setup if a unit is connected up with HDMI.	**65**
Wrong screen format.	▹ If a television set is connected via HDMI AV OUT, in the [Setup] menu, set the setting [HDMI Aspect] to [4:3]. ▹ Check the setting [TV Aspect] in the [Setup] menu.	**65** **64**
Part of the picture appears duplicated some of the time when using the output. COMPONENT VIDEO OUT	▹ Do not connect this unit to the television set with an HDMI cable. ▹ In the Setup menu, set the [Progressive] setting to [Off].	**65**
No sound. Low volume. Sound with interference. The required audio type cannot be heard.	▹ The amplifier connected via HDMI does not support CPPM and the HDMI Ver. 1.1. Standard. No Multi Audio-Disc can be played back. ▹ The sound is not played back if the Bitstream Signal is output from HDMI AV OUT or OPTICAL DIGITAL AUDIO OUT. ▹ If more than four units are connected with HDMI cables, you may possibly not hear any sound. Reduce the number of connected units. ▹ If the unit is connected with an HDMI cable to a television set and OPTICAL DIGITAL AUDIO OUT is used as audio output, in the [Setup] menu, set the setting [Digital Audio Output] to [Off]. ▹ When one or several units are connected via HDMI AV OUT, it is possible for there to be interference with the sound. Select another connection type.	**65**
HDAVI Control is not working.	▹ In the [Setup] menu, change the setting [Control with HDMI / Q Link] to [HDMI and Q Link]. ▹ Use a fully wired HDMI cable. ▹ The connected unit possibly does not support HDAVI control.	**65**

What can I do with which disc?

The table shows an overview of the most important functions which can be recorded, played back and edited with the various formats on this unit. Not all functions are available to the same extent for all formats. Restrictions are stated separately in the corresponding description of the function.

► Playback Functions	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Playback of a recorded title (DIRECT NAVIGATOR)	✓					✓	✓	✓	✓	✓	✓	✓	
Starting playback with Disc menu		✓	✓		✓								
Playback starts with the last recorded title	✓					✓	✓	✓	✓	✓	✓	✓	
Playback starts from the beginning of the disc		✓	✓	✓	✓	✓(MP3)							
Changing the audio channel (**DISPLAY**)	✓	✓	✓		✓				✓				
Quick View (PLAY/x1.3)	✓												
TIME SLIP	✓					✓	✓	✓	✓	✓	✓	✓	
MANUAL SKIP	✓					✓	✓	✓	✓	✓	✓	✓	
CREATE CHAPTER	✓												
Slow-motion/Frame playback	✓	✓*	✓		✓**	✓	✓	✓	✓	✓	✓	✓	

✓* - Moving pictures only, ✓** - Forwards only

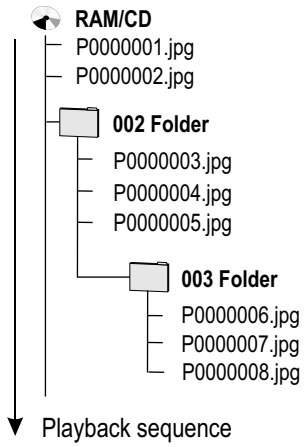
● Recording	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Flexible Rec	✓					✓	✓	✓		✓	✓	✓	
Playback during recording	✓												
Timer Recording	✓					✓	✓	✓		✓	✓	✓	
Timer Recording with Ext Link	✓					✓	✓	✓		✓	✓	✓	
Recording via DV input	✓					✓		✓		✓		✓	
Manual recording via DV input	✓					✓	✓	✓		✓	✓	✓	

Functions of the DIRECT NAVIGATOR	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Playback	✓								✓				
Delete	✓					✓	✓	✓		✓	✓	✓	✓
Properties	✓					✓	✓	✓	✓	✓	✓	✓	✓
Edit	✓					✓	✓	✓		✓	✓	✓	✓
Enter Name	✓					✓	✓	✓		✓	✓	✓	✓
Set up Protection/Cancel Protection	✓									✓	✓	✓	✓
Partial Delete	✓												
Change Thumbnail	✓					✓	✓	✓		✓	✓	✓	
Divide Title	✓												
Playlist	✓								✓				
Edit Playlist	✓												

✓* - only Playback and Properties

Functions of the DVD/Card Management	RAM	DVD-A	DVD-V	CD	VCD	-R	-R DL	-RW(V)	-RW(VR)	+R	+R DL	+RW	SD
Disc Name	✓					✓	✓	✓		✓	✓		
Disc Protection	✓												
Delete all titles	✓												
Format Disc	✓							✓		✓	✓	✓	✓
Auto-Play Select						✓	✓	✓		✓	✓	✓	
Finalize						✓	✓	✓		✓	✓		
Create Top Menu												✓	
Close First Layer							✓				✓		

Folder structure



DVD(JPEG), CD(JPEG)

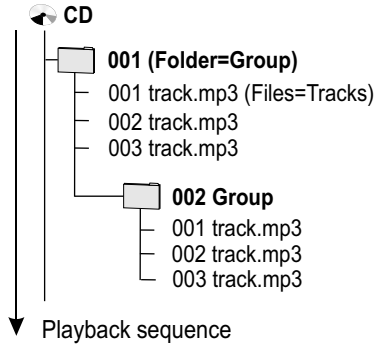
Format	ISO9660 level 1 or 2 (except for extended formats), Joliet
Compatible pixels	between 34x34 and 6144x4096 pixels
Sub Sampling	4 : 2 : 2 or 4 : 2 : 0

This unit is not compatible with MOTION JPEG.

Maximum number of folders	300 Recognizable folders per disc on this unit (including the root folder)
Maximum number of JPEG files	3000 Recognizable JPEG files per disc on this unit*

This unit is compatible with multi-session.
This unit is not compatible with packet writing.

*Total number of recognizable files including MP3, JPEG and other type of files is 4000.



DVD(MP3), CD(MP3)

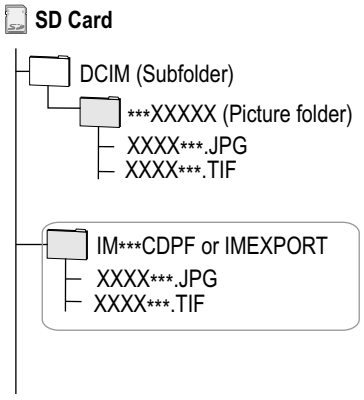
Format	ISO9660 level 1 or 2 (except for extended formats), Joliet
Compatible compression rate	32kbps ~320kbps
Compatible sampling rate	16kHz, 22.05kHz, 24kHz, 32kHz, 44.1kHz, 48kHz

This unit is not compatible with ID3 tags.

Maximum number of folders	300 Recognizable folders per disc on this unit (including the root folder)
Maximum number of MP3 files	3000 Recognizable MP3 files per disc on this unit*

This unit is compatible with multi-session.
This unit is not compatible with packet writing.

*Total number of recognizable files including MP3, JPEG and other type of files is 4000.



SD Card Slot

	SD Memory Card Slot 1pc
Still Picture	JPEG, TIFF
Compatible media	SD Memory Card (includes mini SD_{TM}Cards), Multi Media Card
Format	FAT12,FAT16
Image File Format	JPEG conform DCF (Design rule for Camera File system) TIFF (Uncompressed RGB chunky), DPOF Compatible
Sub sampling	4:2:2, 4:2:0
Number of pixels	between 34x34 and 6144x4096
Thawing Time	Approx. 3sec (6M pixels)

This unit can display the following folder names:
***: figures / XXX : letters

SVCD

Format IEC62107

This unit is not compatible with "Chaoji VCD" available on the market including CVD, DCVD and SVCD that do not conform to IEC62107.

Specifications

Power source	AC 220V-240V	50 Hz	**Dimensions**	approx. 430 mm (W) x 84 mm (H) x 351 mm (D)	
Power consumption	30 W		**Weight**	approx. 5.4 kg	
			Operating temperature	5°C - 40°C	
			Operating humidity	35% - 80% RH no condensation	

VHS

Recording format	VHS Video Cassette System Standard with FM audio	
Heads	4 Helical Scan Heads for Video	
	2 Helical Scan Heads for FM audio	
	1 Fixed Head for Normal audio	
Tape Speed/ Recording Time (with E-240 tape)	PAL,MESECAM:	SP: 23.39 mm/s 240 min.
		LP: 11.7 mm/s 480 min.
		EP: 7.8 mm/s 720 min.
	NTSC:	SP: 33.35 mm/s 168 min.
		EP: 11.12 mm/s 505 min.

Television system	PAL 625 lines, 50Fields, NTSC, 525 lines, 60 Fields	
Tuner System	PAL-I, DVB-T	
Antenna reception input	UHF: CH 21 - 68 75Ohm Termination	

Video system

Recording System (DVD)	MPEG 2 (Hybrid VBR)	
Input		
	AV1 SCART	CVBS: 1.0 Vpp; 75Ohm
(PAL, NTSC)	AV2 SCART	CVBS: 1.0 Vpp; 75Ohm
		Y: 1.0 Vpp, C: 0.3 Vpp; (PAL); 75Ohm
(RGB: PAL)		RGB: 0.7 Vpp; (PAL); 75Ohm
	AV3 RCA	CVBS: 1.0 Vpp; 75Ohm
	S VIDEO	Y: 1.0 Vpp, C: 0.3 Vpp; (PAL); 75Ohm
Output		
	AV1 SCART	CVBS: 1.0 Vpp; 75Ohm
		RGB: 0.7 Vpp; (PAL); 75Ohm
	AV2 SCART	CVBS: 1.0 Vpp; 75Ohm
	Line RCA	CVBS: 1.0 Vpp; 75Ohm
	S-VIDEO	Y: 1.0 Vpp, C: 0.3 Vpp; (PAL); 75Ohm
Component Video Output	CPN RCA	Y: 1.0 Vpp, P_B: 0.7 Vpp, P_R: 0.7 Vpp; 75Ohm (PAL,NTSC: 625i/625p, 525i/525p)

Recording System	DVD-RAM	DVD Video Recording format
	DVD-R	DVD-Video format
	DVD-R DL (Dual Layer)	DVD-Video format
	DVD-RW	DVD-Video format
	+R, +R DL (Double Layer), +RW	

Recording Time	Max. 8 hours (using 4.7 GB disc)	
	XP: Approx. 1hour	SP: Approx. 2hours
	LP: Approx. 4hours	EP: Approx. 6 / 8 hours

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
	for General Ver.2.x/16X-SPEED DVD-R Revision 6.0
	for DL Ver.3.0
	for DL Ver.3.x/4X-SPEED DVD-R for DL Revision 1.0
DVD-RW	Ver.1.1
	Ver. 1.x/2X-SPEED DVD-RW Revision 1.0
	Ver. 1.x/4X-SPEED DVD-RW Revision 2.0
	Ver. 1.x/6X-SPEED DVD-RW Revision 3.0
+R	Ver.1.0, Ver.1.1, Ver.1.2, Ver. 1.3, for DL Ver. 1.0
+RW	Ver. 1.1, Ver.1.2/4X-SPEED

Audio system

Recording system	(for DVD) Dolby Digital (2ch)
Analog Input	
AV1 SCART AV2 SCART AV3 RCA	Reference: -6dBV, at 1kHz Full scale: +6dBV, at 1kHz Input Impedance > 10kOhm
Analog Output	
AV1 SCART AV2 SCART Line RCA	Reference: -6dBV, at 1kHz Full scale: +6dBV, at 1kHz Output Impedance < 1kOhm
Number of channels (for DVD)	Recording: 2 channels Playback: 2 channels
Number of track (for VHS)	HiFi: 2 track Normal: 1 track
Digital output	1 Digital Audio Optical Connector (PCM, Dolby Digital, DTS, MPEG)

HDMI output	19 pin type A Version 1.2a (EDID Ver. 1.3)
DV Input (PAL, NTSC)	IEEE1394 Standard 4Pin
SD Card Slot	Memory Card Slot

Playable Disc	DVD-RAM	DVD Video Recording format
	DVD-R	DVD-Video format, JPEG, MP3
	DVD-R DL (Dual Layer)	DVD-Video format
	DVD-RW	DVD-Video format, DVD Video Recording format
	+R, +R DL (Double Layer), +RW	
	DVD-VIDEO, DVD-Audio	
	CD-Audio (CD-DA), Video CD	
	CD-R/CD-RW (CD-DA,Video CD, SVCD, MP3, JPEG formated discs)	
	SVCD	

Regional Code	#2

Quick Start for Recording & EPG (Quick Start: [ON])
1 sec Quick Start for Recording (DVD-RAM) and EPG Display (When connecting to TV using SCART, Component Video, Video or S-Video Terminals)
From power on the recording starts in about 1 sec. after the REC button is pressed. If the GUIDE button is pressed while the unit is off, the EPG is displayed in about 1sec.

Optical pick-up	System with 1 lens, 1 laser diode (twin wave length)
LASER specification	LASER product of class 1
Wave Length	780 nm (CDs), 662 nm (DVDs)
Laser Power	No hazardous radiation is emitted with the safety protection.

Note: The values given for weight and dimension are approximate values. The technical data can be changed without advanced notice.

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