Panasonic®

Operating Instructions

DVD Recorder

Model No. DMR-ES35V

Please read the operating instructions, the safety notes and the notes on setting up the unit on page 3 before connecting, operating or setting up the unit.

Contents

Safety precautions

Install this device in a horizontal position. Do not place anything heavy on it.

Keep this device away from high temperatures and avoid changes in temperatures.

Keep away from liquids, humidity and dust.

Back of product, see page 9.

På baksiden av produktet (Norsk).

Laitteen takaosa (Fin).

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CLASS 1
LASER PRODUCT
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LUOKAN 1 LASERLAITE / KLASS 1 LASER APPARAT

Inside of product

Produktets innside (Norsk)

Tuotteen sisällä (Fin)

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 NÄR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. VQL1J67

Voltage: Only use power sources complying with the specifications for this device.

AC mains lead protection: Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock.

Service: Never attempt to repair this unit by yourself. If a problem occurs that is not described in these operating instructions, disconnect the power supply and contact your dealer or an authorised after sales service centre.

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

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

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

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

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

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

The model and serial number of this product can be found on the back of the unit. Please note them and keep for future reference.
Model No. …………………   **Serial No.** …………………

Sikkerhetsinstrukser (Norsk)

ADVARSEL:
FOR Å REDUSERE FAREN FOR BRANN, ELEKTRISK STØT ELLER SKADER PÅ PRODUKTET, MÅ DETTE APPARATET IKKE UTSETTES FOR REGN, FUKTIGHET, VANNDRÅPER ELLER VANNSPRUT. DET MÅ HELLER IKKE PLASSERES GJENSTANDER FYLT MED VANN, SLIK SOM BLOMSTERVASER, OPPÅ APPARATET.

ADVARSEL!
- APPARATET MÅ IKKE PLASSERES I EN BOKHYLLE, ET INNEBYGGET KABINETT ELLER ET ANNET LUKKET STED HVOR VENTILASJONSFORHOLDENE ER UTILSTREKKELIGE. SØRG FOR AT GARDINER ELLER LIGNENDE IKKE FORVERRER VENTILASJONSFORHOLDENE, SÅ RISIKO FOR ELEKTRISK SJOKK ELLER BRANN FORÅRSAKET AV OVERHETING UNNGÅS.
- APPARATETS VENTILASJONSÅPNINGER MÅ IKKE DEKKES TIL MED AVISER, BORDDUKER, GARDINER OG LIGNENDE.
- PLASSER IKKE ÅPEN ILD, SLIK SOM LEVENDE LYS, OPPÅ APPARATET.
- BRUKTE BATTERIER MÅ KASSERES UTEN FARE FOR MILJØET.

ADVARSEL!
DETTE PRODUKTET ANVENDER EN LASER. BETJENING AV KONTROLLER, JUSTERINGER ELLER ANDRE INNGREP ENN DE SOM ER BESKREVET I DENNE BRUKSANVISNING, KAN FØRE TIL FARLIG BESTRÅLING. DEKSLER MÅ IKKE ÅPNES, OG FORSØK ALDRI Å REPARERE APPARATET PÅ EGENHÅND. ALT SERVICE OG REPARASJONSARBEID MÅ UTFØRES AV KVALIFISERT PERSONELL.

DETTE APPARATET ER BEREGNET TIL BRUK UNDER MODERATE KLIMAFORHOLD.

Dette apparatet kan under bruk fange opp høyfrekvente forstyrrelser forårsaket av en mobiltelefon som benyttes i nærheten. Hvis slik forstyrrende påvirkning konstateres, bør mobiltelefonen benyttes på større avstand fra dette apparatet.

Utstyret bør plasseres i nærheten av AC-stikkontakten, og støpslet må være lett tilgjengelig hvis det skulle oppstå problemer.

Norsk: Apparatet bør stilles opp i nærheten av stikkontakten på en slik måte at man uhindret får tilgang til nettpluggen hvis det skulle oppstå en feil.

Plasser apparatet horisontalt. Ikke plasser tunge gjenstander på apparatet.

Ikke utsett apparatet for høye temperaturer og temperatursvingninger.

Beskytt apparatet mot væske, fuktighet og støv.

Finnish: Laite tulisi sijoittaa verkkopistorasian lähelle siten, että verkkopistokkeeseen päästään häiriötapauksessa varmasti esteettömästi käsiksi.

Aseta laite vaakasuoraan. Älä aseta raskaita esineitä laitteen päälle.

Suojaa laite korkeilta lämpötiloilta ja lämpötilaheilahteluilta.

Suojaa laite nesteiltä, kosteudelta ja pölyltä.

Turvallisuusohjeita (Finnish)

VAROITUS:
TULIPALO-, SÄHKÖISKUVAARAN TAI TUOTETTA KOHTAAVAN MUUN VAHINGON VÄHENTÄMISEKSI EI LAITETTA SAA ALTISTAA SATEELLE, KOSTEUDELLE, VESIPISAROILLE TAI ROISKEELLE, EIKÄ NESTETTÄ SISÄLTÄVIÄ ESINEITÄ, KUTEN ESIMERKIKSI MALJAKOITA, SAA ASETTAA LAITTEEN PÄÄLLE.

VAROITUS!
- ÄLÄ ASENNA TAI LAITA TÄTÄ LAITETTA KABINETTITYYPPISEEN KIRJAKAAPPIIN TAI MUUHUN SULJETTUUN TILAAN, JOTTA TUULETUS ONNISTUISI. VARMISTA, ETTÄ VERHO TAI MIKÄÄN MUU MATERIAALI EI HUONONNA TUULETUSTA, JOTTA VÄLTETTÄISIIN YLIKUUMENEMISESTA JOHTUVA SÄHKÖISKU- TAI TULIPALOVAARA.
- ÄLÄ PEITÄ LAITTEEN TUULETUSAUKKOJA SANOMALEHDELLÄ, PÖYTÄLIINALLA, VERHOLLA TAI MUULLA VASTAAVALLA ESINEELLÄ.
- ÄLÄ ASETA PALAVAA KYNTTILÄÄ TAI MUUTA AVOTULEN LÄHDETTÄ LAITTEEN PÄÄLLE.
- HÄVITÄ PARISTOT LUONTOA VAHINGOITTAMATTOMALLA TAVALLA.

VAROITUS!
LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

TÄMÄ LAITE ON TARKOITETTU KÄYTETTÄVÄKSI LEUDOSSA ILMASTOSSA.

Tämä tuotteen toimintaan saattaa tulla häiriötä lähellä olevasta matkapuhelimesta. Mikäli matkapuhelimesta johtuvia häiriötä ilmenee, siirrä matkapuhelin mahdollisimman kauas laitteesta jotta häiriöt poistuvat.

Laite tulee asettaa lähelle verkkopistorasiaa ja pistokkeen täytyy olla sellaisessa asennossa, että siihen on helppo tarttua ongelman sattuessa.

Information on the unit

DivX **DivX-compatible**

DivX files can be played back from CD-R/CD-RW and DVD-R.

Quick start

You can record to DVD-RAM about one second after switching on the unit.

COPYING

With the push of a button, you can copy the content of a VHS cassette to a disc or vice versa.

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

DOLBY DIGITAL RECORDING **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 trademarks of Dolby Laboratories.

dts **DTS (Digital Theater Systems)**

Sound system used in cinemas or movie theaters all over the world. "DTS" and "DTS 2.0 + Digital Surround" 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.

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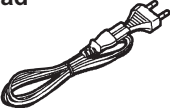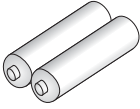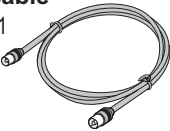
Thank you for your trust and your decision to purchase this top-quality device.
Panasonic is one of the leading manufacturers of entertainment electronics devices.
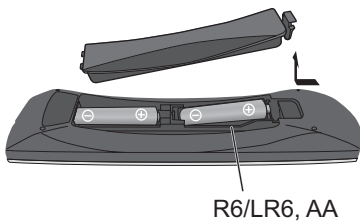We are sure that you will be completely satisfied with this device.

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

Included accessories

Remote Control EUR7659YF0	**AC Mains Lead** RJA0043-1C
Batteries AA, UM3 or R6	**Audio/Video cable** K2KA6BA00003
Operating Instruction **Guarantee Card**	**RF Coaxial cable** K1TWACC00001

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.

R6/LR6, AA

Remote Control

Remote control signal sensor

7m

30° 30°
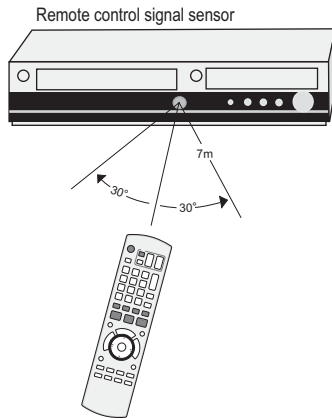
Point the remote control at the sensor of the unit. Avoid obstacles along the transmission path. The maximum reach of the remote control is 7 metres directly in front of the unit. Make sure that the transmission window and the sensor on the unit are clean. The process can be impaired by direct sunlight 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.

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.

Setup	Remote Control	DVD 1
Tuning	Clock	
Disc	Power Save	Off
Picture	Quick Start	On
Sound	DivX Registration	
Display	Initialize	
Connection		
VHS	Remote Control	
Others	DVD 1	
	DVD 2	
	DVD 3	

SELECT
ENTER
RETURN
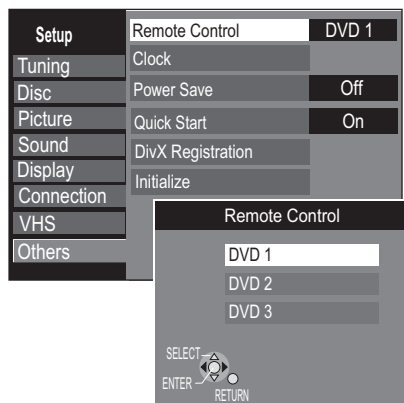
Set up the remote control for the unit.
- Press **FUNCTIONS**.
- Select [To Others] with ▲▼ and confirm with **ENTER**.
- Select [Setup] with ▲▼ and confirm with **ENTER**.
- Select [Others] with ▲▼, [Remote Control] with ▶ and confirm with **ENTER**.
- Select [DVD 1, 2 or 3] with ▲▼ and confirm with **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

DVD/VHS
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
DRIVE SELECT
Select the DVD or VHS drive.

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

VCD	5: ⓪⑤	15: ①⑤
JPEG MP3	5: ⓪⓪⑤	15: ⓪①⑤
JPEG	5: ⓪⓪⓪⑤	15: ⓪⓪①⑤

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

◄◄ ►►|
⌐SKIP/INDEX⌐
SKIP = Skip chapters, titles or pictures. [19]
VHS: **INDEX** = Find the beginning of a recording. [21]

STOP
Stop a recording or playback.

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

You can also switch on the unit from Standby mode using the **DIRECT NAVIGATOR**, **PROG/CHECK** and **ShowView** buttons.

TIME SLIP/◄◄JET REW
○ **DVD**: **TIME SLIP** = Select the time frame. [20]

VHS: ◄◄ **JET REW** = Jet rewind to the beginning of the tape. [21]

(ENTER)
Direction buttons in the menu guide.
Select ▲▼◄► groups or titles.

◄‖ ‖► Frame or slow-motion playback.

SUB MENU
Ⓢ
Launch the sub-menu.

AUDIO
Ⓐ
Select the audio channel/soundtrack [20]
A = Delete selected stations.
Menu guide [46]

DISPLAY
Ⓑ
DVD only: Picture and sound settings. [54]
B = Insert station.
Menu guide [46]

CREATE CHAPTER
Ⓒ
DVD only: Divide a recording into chapters. [19]
C = Move selected stations.
Menu guide [46]

STATUS
Detailed information appears on the screen. [15]

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

TRACKING/V-LOCK
CH **CH** = Programme selection button
VHS: **TRACKING/V-LOCK+/-** = Optimise the playback picture. [22]

ShowView
ShowView Record menu [41]

DELETE
Delete a title.

INPUT SELECT
Switch button to switch AV input between tuner, AV1, AV2, AV3 (front) and DV IN.

SLOW/SEARCH
◄◄ ►►
⌐REW FF⌐
SLOW = Slow-motion playback. [19]
SEARCH = Search during playback.
VHS: **REW** = Jet rewind [21]
FF = Fast forward from **STOP** mode.
REW = Rewind
FF = Forward search during playback.

PAUSE
Pause a recording or playback. [19]
VHS: Press and hold for more than 2 seconds for slow-motion playback. [21]

PLAY
Start playback. [18]
RAM Quick View: You can increase the playback speed. [20]
VHS: Playback or repeat playback [21]

MANUAL SKIP
○ DVD only: Jump ahead 30 seconds. [19]

PROG/CHECK = Check or change a Timer recording [35]

DIRECT NAVIGATOR = Launches the Title View. [18]

FUNCTIONS = Launch the selection menu. [26]

ENTER = Select or save a setting.

RETURN
○ Return to the previous menu.

REC
● Recording [24]

REC MODE
Record mode button (XP, SP, LP, EP) [24]

EXT LINK
Timer Recording with external recording control. [36]

DIRECT TV REC
● Direct TV recording to DVD and VHS. [25]

Front Panel
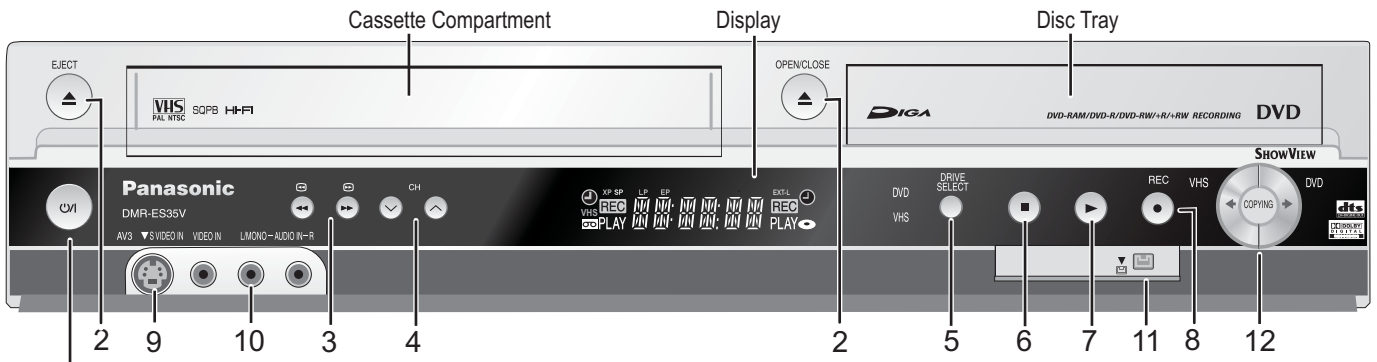
Cassette Compartment   Display   Disc Tray

1 **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. Switching this unit into standby mode does not disconnect it from the mains.

1 **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 VHS or DVD	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.	**XP, SP** **LP, EP**	Recording mode / All on: FR mode Flexible recordings/timer recordings.
📼 💿	The inserted medium is being shown.	**DVD** **VHS**	The selected drive is being displayed.
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.	▯▯:▯▯	Current time, recording/playback counter, various messages.

Other messages
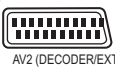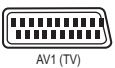
PLEASE WAIT	Please wait.
DVD 1, 2, 3	Wrong remote control code.
SETUP	You are in the Setup menu.
READ	Disc is being read.
No READ	Disc cannot be read.
FINAL	DVD is being finalised.
No CASSETTE	No cassette has been inserted.
No DISC	No disc has been inserted.
PROTECT	Disc is write-protected.
RETURN	Cancellation 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.
X HOLD	Child protection is active.

<u>**Error messages**</u>   56

Rear Panel

1	**AC IN~** = Power supply Connection for the power cable.	2	**OPTICAL** Digital audio output
3	Audio output, right/left channel	4	Video output
5	**AV2 (DECODER/EXT)** = 21-pin Scart socket External unit connection	6	**AV1 (TV)** = 21-pin Scart socket TV connection
7	**S VIDEO OUT** S VIDEO output socket	8	**COMPONENT VIDEO OUT** **Y** = Luminance signal (brightness signal) P_B = Chrominance signal (colour difference) P_R = Chrominance signal (colour difference)
9	**RF OUT** Aerial output	10	**RF IN** Aerial input

The outputs of 2, 3, 4, 7 and 8 are dedicated to modules of digital signal processing (DVD).
The video and audio outputs of 5 and 6 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 5 and 6.

For a conventional tube television, we recommend using the Scart socket.
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.

Connections

1 Aerial

Aerial infeed line

21-pin Scart socket AV1 (TV)

RF IN
Aerial input

AC IN~

4 AC Mains lead

3 21-pin Scart cable
Necessary for TV
with Q Link

TV

Aerial input

RF OUT
Aerial output

2 RF Coaxial cable
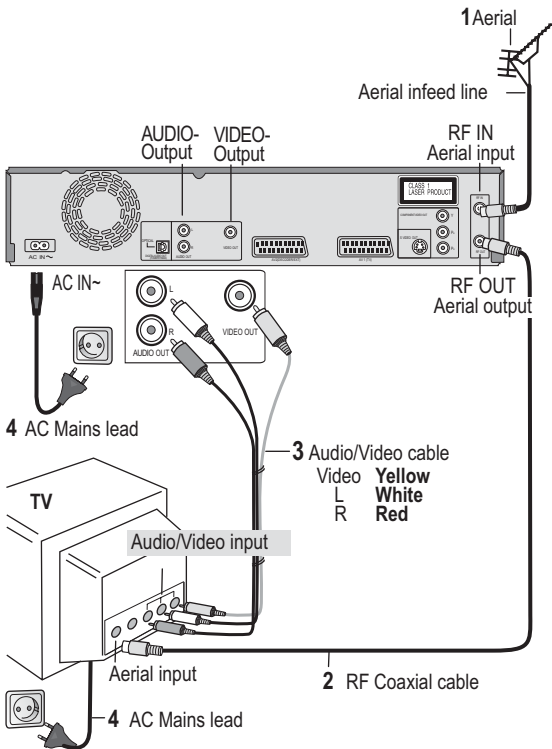
4 AC Mains lead
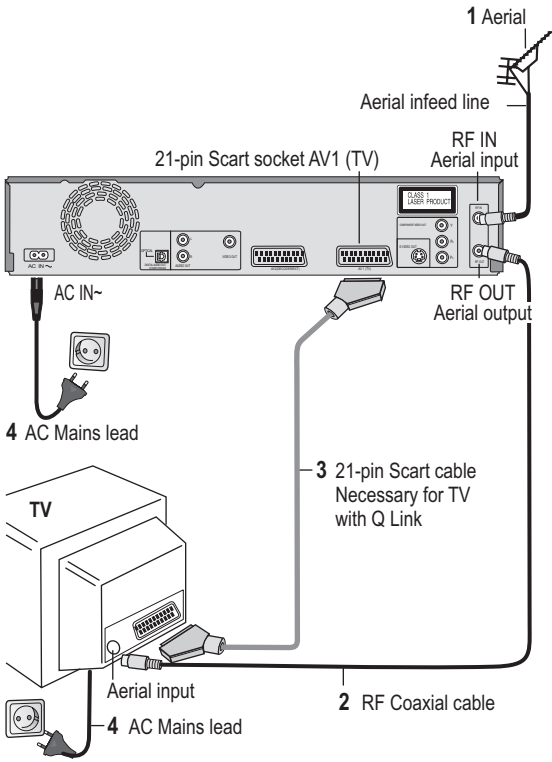
Connection with 21-pin Scart cable (not provided)

You need a fully wired 21-pin Scart cable for this optimal connection type.

Disconnect all units from the power supply system.

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 socket (21-pin Scart socket) of the DVD Recorder with the Scart input of the TV.

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

If your television supports Q Link, use a fully wired 21-pin Scart cable to connect it to the TV. The stations are 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. [50]

1 Aerial

Aerial infeed line

AUDIO-
Output

VIDEO-
Output

RF IN
Aerial input

AC IN~

VIDEO OUT

R
AUDIO OUT

4 AC Mains lead

RF OUT
Aerial output

3 Audio/Video cable
Video **Yellow**
L **White**
R **Red**

TV

Audio/Video input

Aerial input

2 RF Coaxial cable

4 AC Mains lead

Connection with Audio/Video cable

You can use this frequently used standard connection with the provided accessories.

Disconnect all units from the power supply system.

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/R) and VIDEO OUT of the DVD Recorder with the Audio/Video input of the television.

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

Connections

1 Aerial

Aerial infeed line

AUDIO-output   S VIDEO-output   RF IN
Aerial input

AC IN~

4 AC Mains lead

3 Audio cable
L **White**
R **Red**

3 S VIDEO-cable

RF OUT
Aerial output

TV

S VIDEO-input

Audio input

Aerial input

2 RF Coaxial cable

4 AC Mains lead
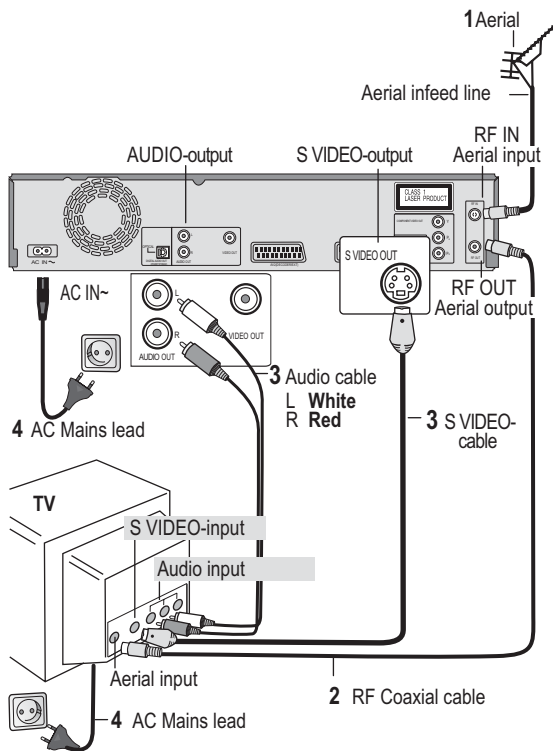
Connection with S VIDEO-cable (not provided)

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.

Disconnect all units from the power supply system.

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 AUDIO OUT (L/R) and S VIDEO OUT of the DVD Recorder with the S VIDEO and audio input of the TV.

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

Settings

- Switch on your television and select the AV channel.
- Switch on the unit using the **Standby/On** button.

Country

- Select the corresponding country with ▲▼◀▶ and confirm with **ENTER**.

For **EC** models: If you select Schweiz, Suisse or Svizzera, the Power Save menu appears after auto setup. If you select Power Save [On], the unit's power consumption reduced to a minimum in Standby mode.

Auto-Setup

The auto setup saves all avaiable television stations and takes approx. 5 minutes.
If the station also broadcasts Date and Time, the time will be set automatically.
If the automatically set time does not match the current time, you can set it manually.

Download from TV with Q Link (Registered trademark of Panasonic)

If your television is equipped with the Q Link feature, the stations are downloaded through the transfer of the station table.
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.

Setting the date and time

If the Date and Time are not transferred via a television station, the Clock menu appears.
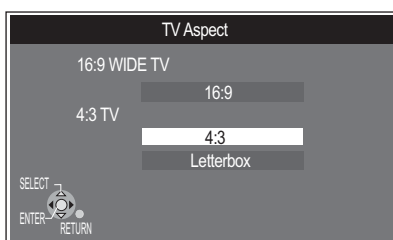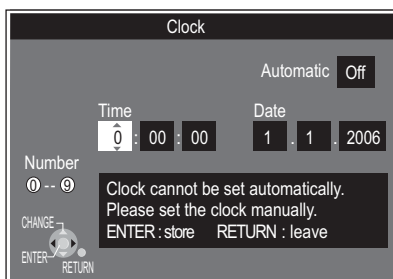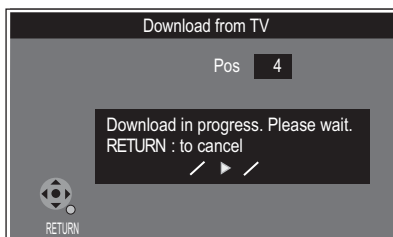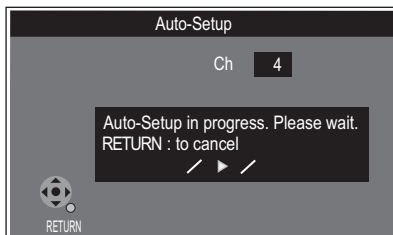- Change Time and Date with ▲▼ or 0 – 9 and ▶.
- Confirm the change with **ENTER**.

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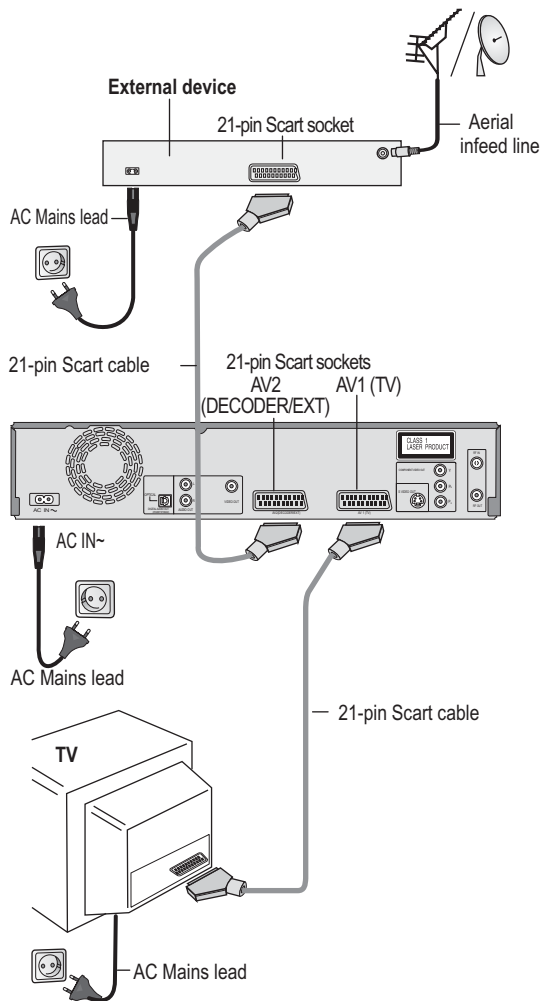
TV Aspect

- Select the desired screen format with ▲▼ and confirm with **ENTER**.

Auto setup for your unit is complete. The availability of stations may differ regionally. The completeness of the downloaded stations can be checked in the Setup menu. **46**

Auto-Setup

Ch   4

Auto-Setup in progress. Please wait.
RETURN : to cancel

RETURN

Download from TV

Pos   4

Download in progress. Please wait.
RETURN : to cancel

RETURN

Clock

Automatic   Off

Time   Date
0 : 00 : 00   1 . 1 . 2006

Number
0 -- 9

Clock cannot be set automatically.
Please set the clock manually.
ENTER : store   RETURN : leave

CHANGE

ENTER   RETURN

TV Aspect

16:9 WIDE TV
16:9

4:3 TV
4:3
Letterbox

SELECT

ENTER   RETURN

External units

External device

21-pin Scart socket

Aerial infeed line

AC Mains lead

21-pin Scart cable

21-pin Scart sockets
AV2   AV1 (TV)
(DECODER/EXT)

CLASS 1
LASER PRODUCT

AC IN~

AC Mains lead

21-pin Scart cable

TV

AC Mains lead

Setup	AV2 Settings	
Tuning	AV2 Input	Video
Disc	AV2 Connection	Ext
Picture	Ext Link	Ext Link 2
Sound		
Display		
Connection		
VHS		
Others		

AV2 Connection

Decoder

Ext

SELECT

ENTER

RETURN

Connection of Set Top Box or satellite receiver

If you receive your television programme via a Set Top Box (DVB-T) or a satellite receiver (digital/analogue), connect your DVD Recorder as a downstream unit.

Disconnect all units from the power supply system.

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

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

3 Connect the aerial (DVB-T or SAT) to the aerial input of the external unit.

4 Connect the DVD Recorder, the TV and the external unit to the power supply system

5 Switch on the external unit, the TV and the DVD Recorder.

• Switch your TV to the AV channel.
• Select the appropriate country from the Country menu with ▲▼◄► and confirm with **ENTER**.
• [Auto-Setup] follows automatically and it ends with the note: [No stations found !].
• Select [No] with ► and confirm with **ENTER**.
  The available stations are downloaded from the external unit.
• Select the desired screen format with ▲▼ and confirm with **ENTER**.
• Switch the DVD Recorder to AV2 with **CH** ⬍ . You see the television picture from the external unit.

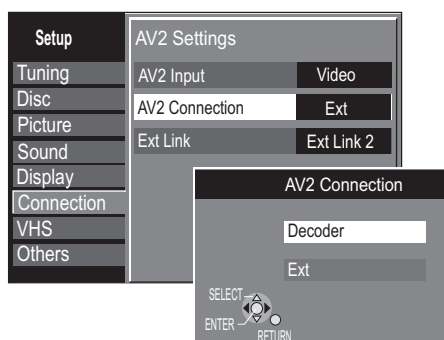The date and time are not set automatically.
Set them manually.   11

Connecting a decoder

1 Connect the DVD Recorder as described under Connection with 21-pin Scart cable.   10

2 Connect the decoder to AV2 (DECODER/EXT) with an additional 21-pin Scart cable.

In the connection to the Auto Setup, change the setting for the AV2 socket in the [Setup] menu.   50

• Press **FUNCTIONS**.
• Select [To Others] with ▲▼ and confirm with **ENTER**.
• Select [Setup] with ▲▼ and confirm with **ENTER**.
• Select [Connection] with ▲▼ , [AV2 Settings] with ►, ▲▼ and confirm with **ENTER**.
• In the next screen, select [AV2 Connection] with ▲▼ and confirm with **ENTER**.
• Select [Decoder] with ▲▼ and confirm with **ENTER**.
• Press **RETURN** and return to [Connection] with ◄ .
  Press **RETURN** multiple times to return to the television picture.

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.

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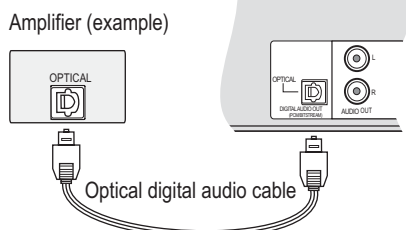In order to enjoy stereo or Dolby Pro Logic, connect a corresponding amplifier or an analogue audio component.

Amplifier (example)

AUDIO IN
L   R

Audio cable
L - White
R - Red

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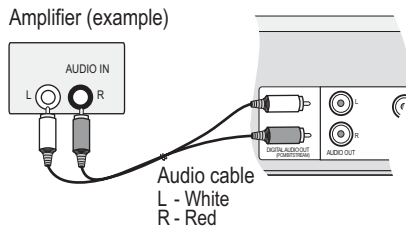
Connecting a digital amplifier or a digital system component
If an amplifier equipped with Dolby Digital, DTS or an MPEG-decoder is connected, a DVD-Video-Disc with multi-channel surround sound can be played back.

Amplifier (example)

OPTICAL

Optical digital audio cable

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

- 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. `49`
- Select audio channel (M1) or (M2) on the external unit.
 You cannot use DTS Digital Surround decoders that are not suitable for DVD.

dts 2.0+DIGITAL OUT Connect this unit to a device with a DTS decoder in order to be able to play DVDs with this symbol.

DOLBY DIGITAL RECORDING This device can playback stereo sound in Dolby Digital (2 channels). Connect an amplifier with built-in Dolby Digital decoder in order to be able to enjoy Surround Sound.

S VIDEO-cable

AV3 ▼S VIDEO IN   VIDEO IN   L/MONO – AUDIO IN – R

Audio cable
L - White
R - Red
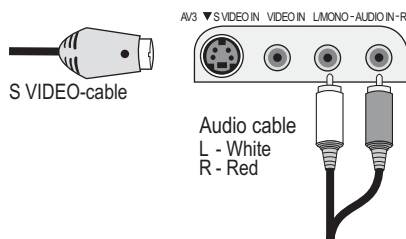
Connection to AV3 (e.g. camcorder)

If the audio output of the other unit is mono, connect it to the L/MONO socket.
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.

AV3 ▼S VIDEO IN   VIDEO IN   L/MONO   AUDIO IN R

Audio/Video cable
Video - Yellow
L   - White
R   - Red
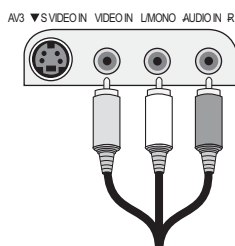
Connection to DV IN

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.
Digital satellite tuners and digital VHS video recorders are not compatible with this unit. The DVD Recorder cannot be controlled via an external unit that is connected to the DV IN socket.

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 socket of the DVD Recorder. Use a DV cable.
- After you have connected the cable, switch on both units.

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

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.

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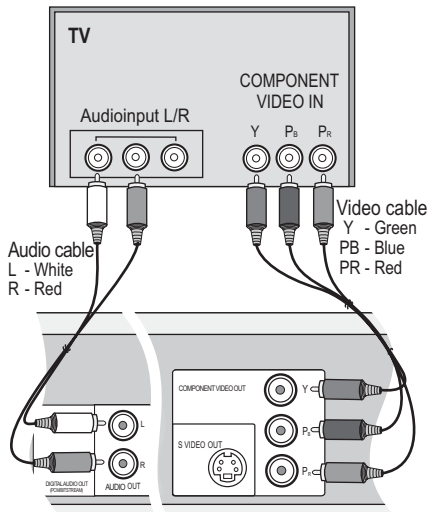
COMPONENT VIDEO OUT socket
The sockets can be used for INTERLACE or PROGRESSIVE output and deliver a clearer picture than the S VIDEO OUT socket.
Connections via these sockets output the colour difference signals (P_B/P_R) and the brightness signal (Y) separately.
Colours can be reproduced true to the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

- Connect the COMPONENT VIDEO OUT sockets of the unit with the COMPONENT VIDEO IN of the TV unit. Use a Video cable.
- Always connect sockets with the same colour.
- Connect the audio cables to the corresponding audio input sockets on the TV.

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

- 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**.
- Press **RETURN** multiple times to return to the television picture.

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 sockets.
Set this option to [Video (with component)].
If the unit is connected to the TV via the S VIDEO OUT or the AV1 socket, output is Interlace regardless of the settings.
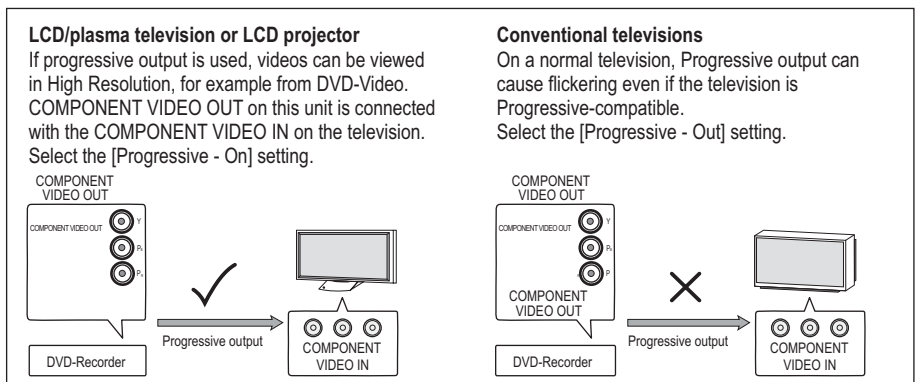
Progressive television picture
The progressive picture aspect ratio (height to width) is set to 16:9. DVD-Video with a picture aspect ratio of 16:9 is properly displayed. However, video material with an image page ratio of 4:3 is shown stretched from right to left. If it is possible to adjust the picture aspect ratio on your television, select the setting [Progressive - On].
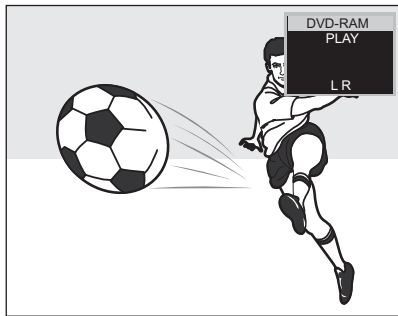
With a normal television, the progressive output can cause the picture to flicker, even if the television is progressive-compatible.
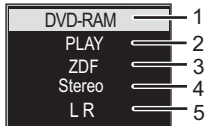Select the setting [Progressive - Off].
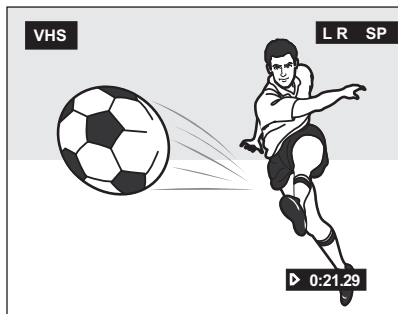
Progressive-compatible televisions (PAL)

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 - Out] setting.

STATUS displays

Status displays

1: Current medium
2: Current recording, playback mode and remaining time
3: Current station
4: Sound type
5: Sound mode

VHS REC ●

Status displays for other drive.

6   7   Detail information

| 10:07:21 1.12. | ■ Remain | 0:50 SP |
| ■ T14   0:05.14 SP | ■ T14   0:05.14 SP | |

8   9
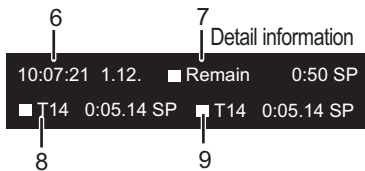
STATUS   Screen information

- Press **STATUS**.
- Press **STATUS** again. Depending on the function, e.g. PLAY, REC or REC PLAY, the display changes each time the button is pressed.
- Also press **STATUS** to exit the display.

You can switch off the status displays in the Setup menu.   📖 49

1: Current medium
2: Current recording, playback mode and remaining time
3: Current station
4: Sound type: Stereo = a stereo transmission is currently being received.

       M1/M2 = a 2-channel transmission is currently being received.

       M1 = a single-channel NICAM transmission is being received.

5:   Sound mode: LR, L, R: the soundtrack can be changed with the **AUDIO** button.

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

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.

STATUS   VHS screen information

- Press **STATUS** 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 **AUDIO** button. **SP**: Selected recording mode.
REMAIN: 0:24	**Remaining tape time:** The display depends on the correct setting of the tape length. 📖 51
▷ 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 📖 21

Symbols

⬤	The title is being recorded.
🕐	Shows a Timer programming.
⊖	A daily or weekly Timer recording was stopped. The icon disappears when next Timer recording starts.
Ⓦ	The title overlaps other recordings.
Ⓕ	The disc was full so the programme failed to record.
✕	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.
Ⓝ NTSC Ⓟ 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.

Disc formats

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	

Playback and recording discs

DVD-RAM
The DVD-RAM can be compared with the hard disk 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
A DVD-RAM with Cartridge is write-protected and is CPRM-compatible.
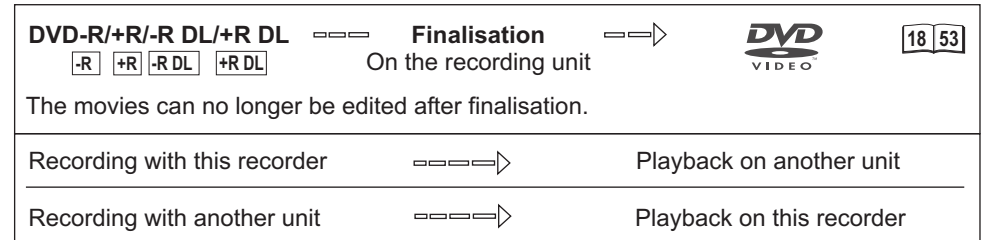
DVD Video Recording format (VR)
This format enables recording and playback.
Digital programmes limited to "one-time recording" can be recorded to a CPRM-compatible disc. You can record to a CPRM-compatible DVD-RAM.
Playback is only possible with a compatible DVD player. Use a DVD-RAM to record in DVD Video Recording format.

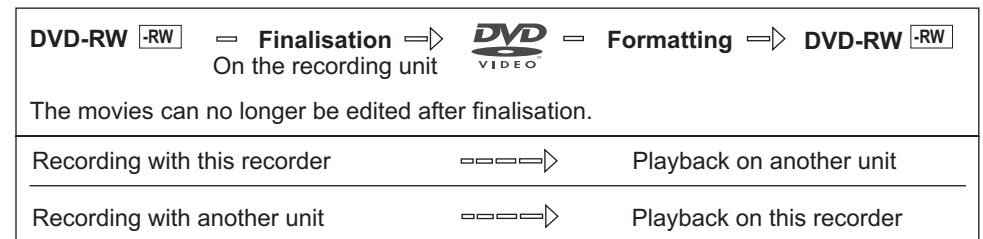| DVD-R : DVD-Video format +R : +VR format	
DVD-R `-R` 4.7 GB 12 cm 1.4 GB 8 cm writable	
+R `+R` 4.7 GB 12 cm writable	

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 finalisation, 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` ─ ─ ─ **Finalisation** On the recording unit ═⟹ `DVD VIDEO` `18` `53`	
The movies can no longer be edited after finalisation.	
Recording with this recorder ═══⟹	Playback on another unit
Recording with another unit ═══⟹	Playback on this recorder

DVD-RW/+RW (Rewritable)
DVD-RW/+RW is rewritable and erasable. You must delete it completely to be able to rewrite it again. Through finalisation, the DVD-RW becomes a DVD-V that can be played on other units. A finalised DVD-RW can be reformatted and rewritten. Formatting deletes all data!
A DVD+RW becomes a DVD-V by creating a Top Menu. `53`

DVD-RW : DVD-Video format +RW : +VR format	
DVD-RW `-RW` 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 `-RW` ═ **Finalisation** On the recording unit ═⟹ `DVD VIDEO` ═ **Formatting** ═⟹ DVD-RW `-RW`	
The movies can no longer be edited after finalisation.	
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.

2nd Layer

1st Layer
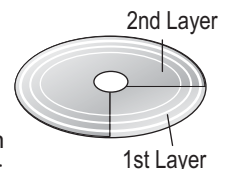
DVD-Video format (V)
This recording format is the standard DVD-Video. Digital programmes that are limited to "one-time recording" cannot be recorded. Not for recording and playback of still pictures.

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

Playback discs

A DVD-RW that was recorded on another DVD recorder is played back in DVD-VR format on this unit. Programmes limited on "one-time recording" can be played back if recorded to a CPRM-compatible disc. 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 dual-channel sound.

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

Music and video recordings.
SVCD in compliance with IEC62107.

DivX MP3 JPEG You can play DivX, MP3 and JPEG/TIFF data from a finalised 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

| 2 | 2 3 4 | ALL | **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.
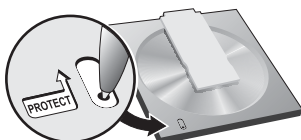
Non playable discs
- 2.6 GB and 5.2 GB DVD-RAM, 12 cm.
- 3.95 GB and 4.7 GB DVD-R for Authoring.
- DVD-R that was recorded in DVD Video Recording format (VR).
- DVD-R (V), DVD-R DL, DVD-RW (V), +R, +R DL that was recorded on another unit and not finalised.
- Blu-ray, DVD-ROM, +R (8 cm), CD-ROM, CDV, 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.

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.

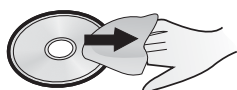### Cartridge discs   RAM

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.

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.
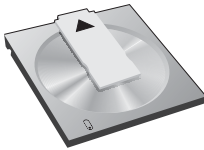
Cleaning DVD-Videos, Video-CDs and CDs
Wipe with a moist and then with a dry cloth.

Playback

⊙**DVD**

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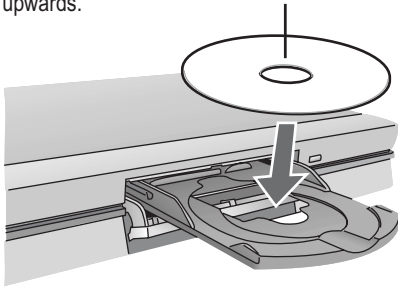
Insert a Cartridge disc in the direction of the arrow, label facing upwards.

Preparation
• Switch on your television and select the appropriate AV channel.
• 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!

PLAY ▶ **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] [CD] [-R(MP3)]
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.

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]
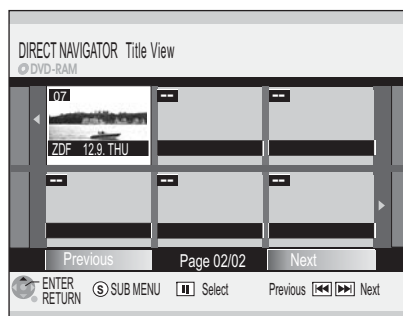
Selecting programmes/titles for playback

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 ►►I Next.
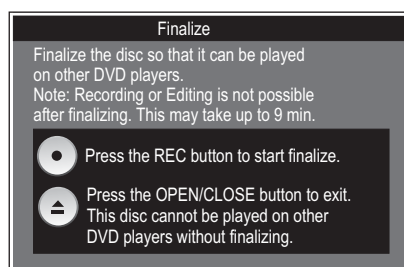
Finalising   [-R] [-RW(V)] [+R] [-R DL] [+R DL]

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

• Press **OPEN/CLOSE** ⏏ on the unit.
• Press **REC** on the unit to start the finalisation.
• After successful finalisation, the disc is ejected automatically.
  It can now be played on any DVD unit.

• If you do not want to finalise 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.
- Press **PLAY ▶** to resume playback from the saved position.
- To cancel the 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 foward speed increases by one level up to a maximum of five levels.
- Press **PLAY ▶** to resume playback.

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

CREATE CHAPTER
C **Dividing a recording into chapters**   RAM
- Press **CREATE CHAPTER** during playback.
  During playback, press ◀◀ **SKIP** or **SKIP** ▶▶ to skip a chapter.

◀◀ ▶▶ **Skipping**
SKIP/INDEX
- Press **SKIP ◀◀ ▶▶** during playback or **PAUSE** mode to skip chapters, titles or pictures.
  With DVD-Rs and CDs (DivX), you can only skip backwards.

MANUAL SKIP
○ **MANUAL SKIP**   Not CD
- Press **MANUAL SKIP** during playback.
  Playback jumps forward approx. 30 seconds.
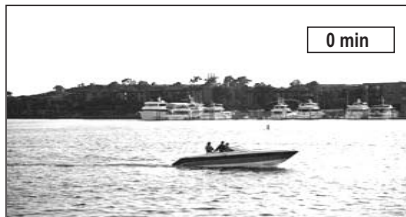
◀‖ ‖▶ **Frame playback**   Not CD
- Press ◀‖ ‖▶ in **PAUSE mode**.
  Each time the button is pressed, the next or the previous frame is displayed.
- Press **PLAY ▶** to resume playback.

  VCD Forwards only.   DVD-A   Moving pictures only.

Playback   ⊙ **DVD**

0 min

○ **TIME SLIP**   Not 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.

Stop Recording
Timer recording in progress.
Stop this timer recording ?
It will be cancelled if you stop.

| Stop Recording | Cancel |

SELECT
ENTER ● RETURN

- 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.
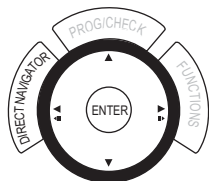
Simultaneous recording and playback
You can play a different title during the current recording.

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
AUDIO
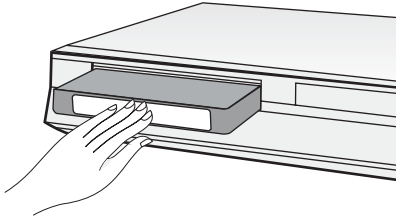A For disc formats RAM, -RW(VR), -R(DivX), CD(DivX), VCD
- Press **AUDIO** during playback.

DISPLAY
B 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

Playback

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.

◀◀ ▶▶ VHS Index Search System (VISS)
SKIP/INDEX
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 fowards/❘◀◀ 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.
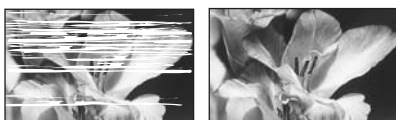
Playback

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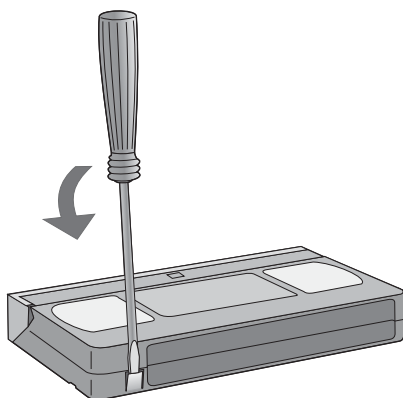
Write-protecting cassettes
Remove the write-protection tab to protect cassettes from accidentally being erased.
If you want to record to a protected cassette, cover the gap with adhesive tape.

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

Recording

Before recording

You can record to DVD-RAM, DVD-R, DVD-RW, -R DL, +R DL, +R or +RW with this unit. DVD-R/-RW 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.

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 RAM.

Disc Protection

Protect your recordings from accidental deletion or overwriting.
Title: ☐37   Recordings: ☐29   The entire disc: 52☐

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

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

RAM **CPRM** (Content Protection for Recordable Media)
This unit is compatible with the CPRM copy-protection system for recorable media. When using a CPRM-compatible disc, a digital programme can be recorded once. Programmes broadcast with this copy-protection system cannot be recorded to DVD-R or 2.8 GB 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)

Formatting

52☐

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	+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.

* Only if Recording time in EP mode is set to [EP (6 Hours)] in the Setup menu. ☐47

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

XP	SP	LP	EP(6 hours)	EP (8 hours)	FR
Max. 60 min.	Max. 120 min.	Max. 240 min.	Max. 360 min.	Max. 480 min.	Max. 480 min.
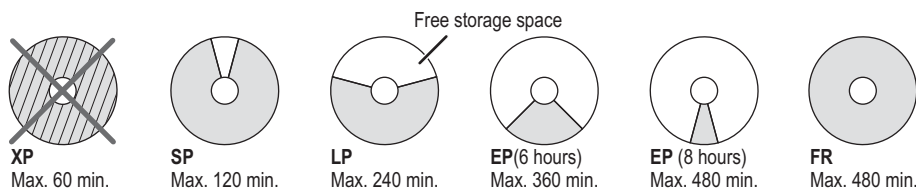
It is not possible to record a 90-minute title in XP mode.
The available storage space is used optimally in FR mode. The title is recorded in the best possible quality.

Recording   ◎DVD ▨VHS

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.   `⊏ 51`
• Confirm with **ENTER**.
• Press **RETURN** multiple times 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.

PAUSE
`▮` **Pause the recording**
• Press **PAUSE ❚❚** to pause the recording.
• Press **PAUSE ❚❚** again or ● **REC** to resume recording.
  The title is not divided.

VHS: If the recording is paused for more than 5 minutes, the unit switches to **STOP** mode.

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.

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.
  `RAM` With **AUDIO,** you can switch the incoming audio channel during the recording.
  It has no effect on the recorded audio channel.

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)].   `⊏ 47`

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 recording to VHS are not impaired.
  When using an S-VHS cassette, the recording is in conventional VHS.

Recording

⊙**DVD** ▨**VHS**

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. This function is not possible during a Timer- or Ext Link
  recording.

  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.
It works to the selected drive when the button is pressed.
• Press **DIRECT TV REC** for 3 seconds. Recording begins.
• Press **STOP** ■ to stop the recording.
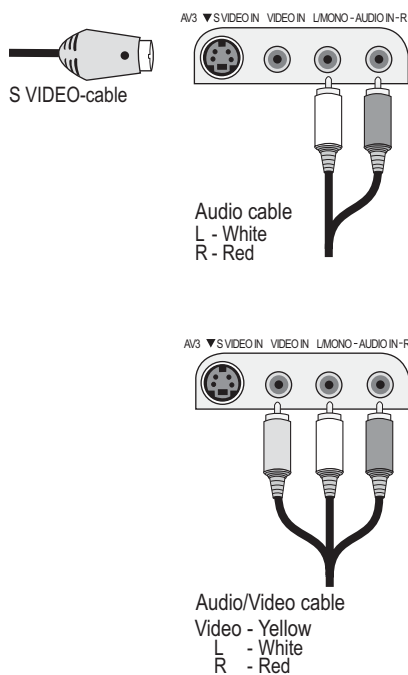
Recording from an external unit, e.g. a camera
• Connect the external unit to the AV3 input sockets on the front side of the unit.
• Select one of the two connection options.
  The S VIDEO-cable and audio cable (L/R) connection delivers the best quality.

  You cannot receive signals from PCs with this unit.

AV3 ▼S VIDEO IN   VIDEO IN   L/MONO - AUDIO IN - R

S VIDEO-cable

Audio cable
L - White
R - Red

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** ❚❚ .
• Press ● **REC**.
• Start playback on the external unit.
• Then press **PAUSE** ❚❚ to start the recording.
• Use **STOP** ■ to stop the recording.

AV3 ▼S VIDEO IN   VIDEO IN   L/MONO - AUDIO IN - R

Audio/Video cable
Video - Yellow
L   - White
R   - Red

Recording to DVD: Insert a recordable disc.

If you activated the write protection, cancel it.   RAM

• Select the DVD drive with **DRIVE SELECT.**
• Select 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

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

• Before recording, select Sound setting Bilingual Audio Selection [M1] or [M2]
  in the Setup menu.   📖 49
  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
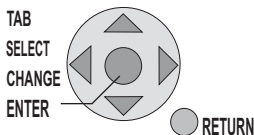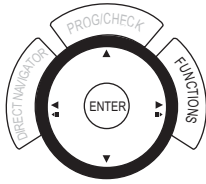 to [NTSC] in the Setup menu.   50 📖

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	28
Recording	Timer programming in the Timer Recording menu	34
Delete	DELETE Navigator	37
Copy	Copy menu	38

ShowView Record	ShowView Record menu	41
Playlists	Playlists menu	42
Flexible Rec	Record in FR-Modus	45
DV Auto Rec	Record the DV signal	45
Setup	Change the unit setup	46
DVD Management	Format and finalise discs, write-protection	52

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

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.

DIGA FUNCTIONS
DVD-RAM — Disc Protection Off
- Playback
- Recording
- Delete
- Copy
- To Others
ENTER
RETURN

DIGA FUNCTIONS
DVD-RAM — Disc Protection Off
- Playback
- Recording
- Delete
- Copy
- To Others
  - ShowView Record
  - Playlists
  - Flexible Rec
  - DV Auto Rec
  - Setup
  - DVD Management
ENTER
RETURN

TAB
SELECT
CHANGE
ENTER
RETURN

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.

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.

  Use buttons **A** and **B** to switch between [Standard Characters] and [Other Characters].

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**.
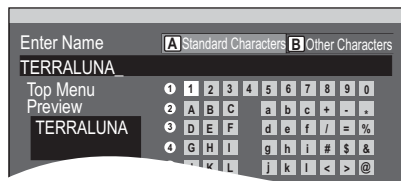
Top Menu Preview

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

Select the setting Enter Name from DIRECT NAVIGATOR, the Top Menu Preview appears additionally. The later representation of the title is displayed. Insert, if necessary spaces, hyphens or dashes in order to display the title according to your desire.

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**.
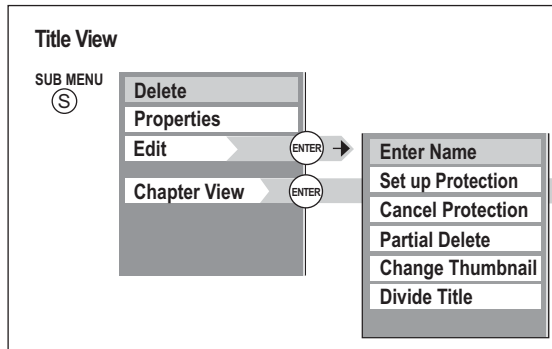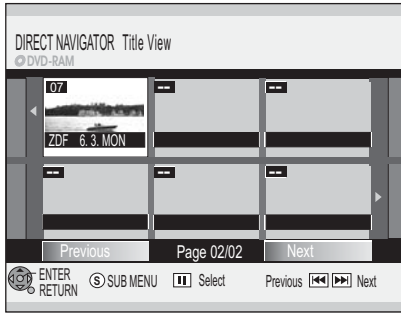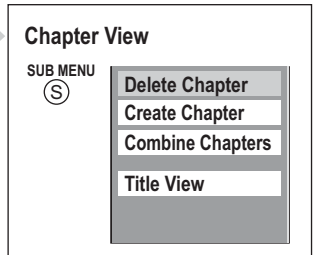
FUNCTIONS
⊙DVD

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.

DIRECT NAVIGATOR Title View
⊙DVD-RAM

07	---	---
ZDF 6. 3. MON		
---	---	---

◄ ►

Previous   Page 02/02   Next

◎ENTER ◎RETURN   Ⓢ SUB MENU   Ⅱ Select   Previous ⏮ ⏭ Next

Title View

SUB MENU
Ⓢ

Delete
Properties
Edit   ENTER →
Chapter View   ENTER

→ **Enter Name**
Set up Protection
Cancel Protection
Partial Delete
Change Thumbnail
Divide Title

→ **Chapter View**

SUB MENU
Ⓢ

Delete Chapter
Create Chapter
Combine Chapters

Title View

Editing is not possible during recording.
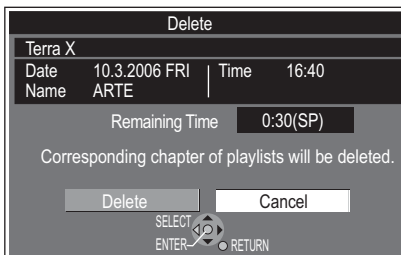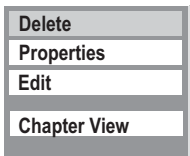
Launching the DIRECT NAVIGATOR menu

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

Playback

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

Delete
Properties
Edit

Chapter View

Edit

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

Delete

Terra X

Date	10.3.2006 FRI	Time	16:40
Name	ARTE		

Remaining Time   0:30(SP)

Corresponding chapter of playlists will be deleted.

Delete   Cancel

SELECT ◄◎►
ENTER ⤵ ◎ RETURN

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.
  In the case of a DVD-RAM, the storage space of a deleted title becomes available for a new recording. With other discs, the storage space is not released by deleting titles.

Properties

Terra X

No.	03	Time	0:45
Date	10.3.2006 FRI	Rec time	0:01(SP)
Name	ARTE		

ENTER ⤵ ◎ RETURN

Properties

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

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

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** ▭▭▭⇨ | 🖵 Playback | ⇨ **DIRECT NAVIGATOR**

Delete		Enter Name
Properties		Set up Protection
Edit		Cancel Protection
		Partial Delete
Chapter View		Change Thumbnail
		Divide Title

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)   ⬜ 27

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 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.

DIRECT NAVIGATOR Partial Delete
⊙DVD-RAM

| 03 Terra X | PLAY |

| Start |
| End |
| Next |
| Exit |
| 0:00.35 |

▲
| Start | End |

Partial Delete

Terra X

| Date | 10.3.2006 FRI | Time | 16:40 |
| Name | ARTE | | |

Remaining time   2:00(SP)

Corresponding chapter of playlists will be deleted.

| Delete | Cancel |

SELECT ◄🔘►
ENTER─🔘● RETURN

- 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.
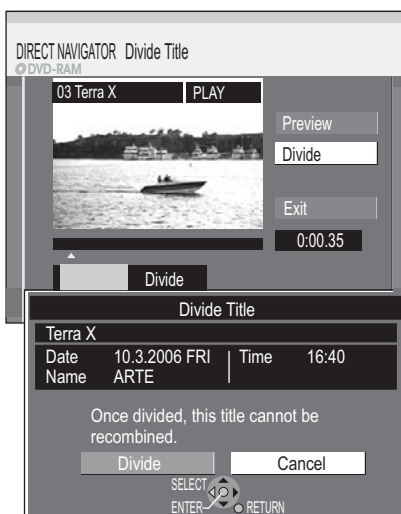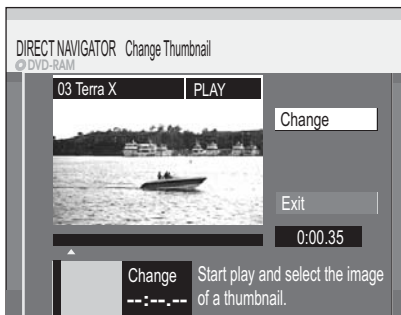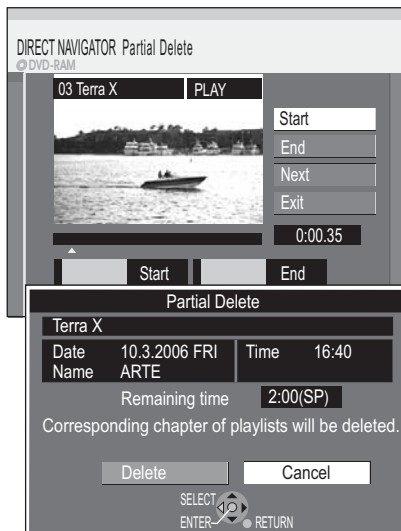
Change Thumbnail
Not -RW(VR)

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.

DIRECT NAVIGATOR Change Thumbnail
⊙DVD-RAM

| 03 Terra X | PLAY |

| Change |

| Exit |
| 0:00.35 |

▲
| Change | Start play and select the image |
| --:--.-- | of a thumbnail. |

Divide Title
RAM

You can divide a selected title. A divided title cannot be put 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.

DIRECT NAVIGATOR Divide Title
⊙DVD-RAM

| 03 Terra X | PLAY |

| Preview |
| Divide |

| Exit |
| 0:00.35 |

▲
| Divide |

Divide Title

Terra X

| Date | 10.3.2006 FRI | Time | 16:40 |
| Name | ARTE | | |

Once divided, this title cannot be recombined.

| Divide | Cancel |

SELECT ◄🔘►
ENTER─🔘● RETURN

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.
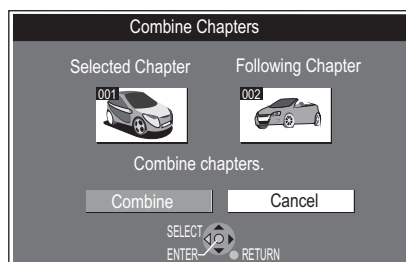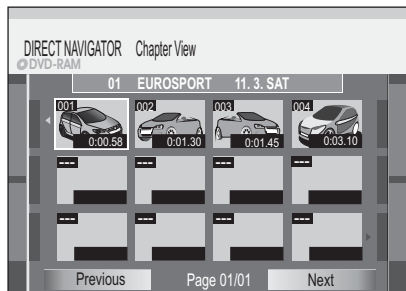Press **PAUSE ‖** again to clear the selection.

FUNCTIONS

⊙DVD

Editing chapters in the SUB MENU

Delete
Properties
Edit
Chapter View

Delete Chapter
Create Chapter
Combine Chapters
Title View

- 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**.

DIRECT NAVIGATOR Chapter View
⊙DVD-RAM

| 01 | EUROSPORT | 11. 3. SAT |

001 0:00.58	002 0:01.30	003 0:01.45	004 0:03.10
---	---	---	---
---	---	---	---

| Previous | Page 01/01 | Next |

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

Create Chapter   `RAM`

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

Selected Chapter	Following Chapter
001	002

Combine chapters.

| Combine | Cancel |

SELECT ◄⊙►
ENTER—⊙ RETURN

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

Title View Return to Title View   `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.
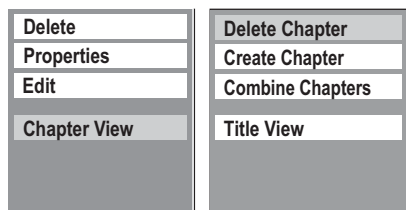Press **PAUSE ‖** again to clear the selection.

FUNCTIONS

```
┌──────────────────────────────────────┐
│ DivX Menu         Folder1  : DivX - Inhalt │
│ ⊙DVD(DivX)                             │
│   No.        Name of Title        Tree │
│ 001 AdrianaEvans_7Days.avi           ▶ │
│ 002 Madagascar - HD.avi              ▶ │
│ 003 Transporter2.avi                 ▶ │
│                                      ▶ │
│                                      ▶ │
│                                      ▶ │
│                                      ▶ │
│ ▼       Page 001/001    Total Title : 003 │
│ ⊙  ENTER                               │
│    RETURN                              │
└──────────────────────────────────────┘
```

```
┌──────────────────────────────────────┐
│ DivX Menu         Folder                │
│ ⊙DVD(DivX)                             │
│                                         │
│        ⊙ 26 Sep 2003    [ 0  1/1 ]     │
│        ├ DivX - ...                     │
│        ├ JPEG - ...                     │
│        └ MP3  - ...                     │
│                                         │
│                                         │
│ ⊙  ENTER                                │
│    RETURN                               │
└──────────────────────────────────────┘
```

```
┌──────────────────────────────────────┐
│                                         │
│      Play mode is set to  DivX          │
│      To play another type of file,      │
│      select the file type               │
│      from Menu in FUNCTIONS.            │
│                                         │
│                                         │
│         ENTER ⊙ RETURN                  │
└──────────────────────────────────────┘
```
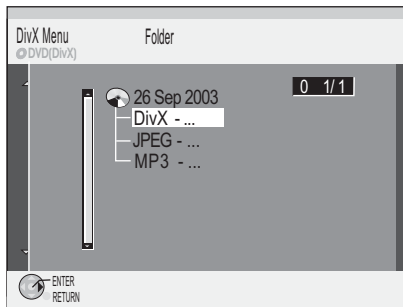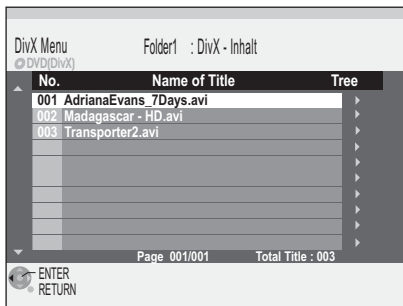
If you do not want to play DivX data, change the presetting in the FUNCTIONS menu to the desired format. [32]

DivX Format

Playable discs: DVD-R, CD-R/RW
Maximum number DivX files: 200
DivX file format: ".DIVX", ".divx", ".AVI", ".avi"
DivX version: 3.11, 4.x, 5.x
Maximum number of files: 4000
(MP3, JPEG, DivX and other file types)
Maximum number of folders: 300
(Including master folder)

Video
Number of streams: up to 1
Codec: DIV3, DIV4, DIVX, DV50
Picture size: from 32 x 32 to 720 x 576
Pictures per second: up to 30 fps

Audio
Number of streams: up to 8
Format: MP3, MPEG, Dolby Digital
Multi-channel: Dolby Digital is possible.
MPEG multi is converted to 2 ch

The sequence of files shown by this unit can differ from that on other units or computers. GMC (Global Motion Compensation) is not supported.

DivX playback
[-R] [CD]

DivX (Direct-Video-eXpress) is a format for saving compressed audio and video data and is developed by DivXNetworks. It is based on MPEG-4, but saves in a much more compact manner to approx. one-tenth the size of the uncompressed file format with satisfactory quality. Thus, the content of a DVD (approx. 8 GB) can be saved to a conventional CD-ROM (650 MB) in DivX format.

DivX files must always be played with the version with which they were compressed, since newer DivX versions are not compatible with older versions.

Starting playback
The disc only contains DivX data:
• Press **PLAY** ▶.
• Select a title with ▲▼ and confirm with **ENTER**.
  Playback begins.

Selecting a Folder
• Press ▶ to switch to [Tree].
• Select the desired Folder with ▲▼◄► and confirm with **ENTER**.
  The contents of the selected Folder are displayed.

In addition to DivX data, the disc also contains MP3- and/or JPEG data:
• Confirm the message regarding the preset play mode with **ENTER**.
• Press **PLAY** ▶.
• Select a title with ▲▼ and confirm with **ENTER**.
  Playback begins.

Repeat playback of DivX titles is not possible. During playback, you cannot launch titles using the number buttons.

A warning message appears if a Timer recording is programmed.

CD-R/CD-RW/DVD-R with DivX-, JPEG-, MP3 data can only be read. A disc that only contains DivX-, JPEG-, MP3 files from a PC can be played. If the disc contains titles in DVD Video Recording format (VR) and PC data, only the titles in VR format can be played back.

Playing DivX with limited playback options
[-R] [CD]

DivX Video On Demand is encrypted for copyright reasons. Register the unit in order to be able to play encrypted titles. Follow the online instructions during registration. You will need the registration code of the unit. [51]

After you have played an encrypted title for the first time, a new registration code appears in the DivX Registration menu. Do <u>not</u> use this new registration code to purchase other encrypted titles. If you obtain and play titles with this second code, the registration for the first code will expire. The titles obtained with it can no longer be played.
If you acquire a registration code which does not belong to this unit, you cannot play the contents.

• Press **PLAY** ▶.
• Select a title with ▲▼ and confirm with **ENTER**.
  The number of playback options for this title is displayed. It ends with 0.
• Select [Yes] with ◄► and confirm with **ENTER**.
  Playback begins.
  It is not possible to save a playback position.

Do <u>not</u> press the following buttons during playback:
⏻ **DVD/VHS**, **STOP** ■., **SKIP** |◄◄ ▶▶| , **SLOW/SEARCH** ◄◄▶▶
The number of playback options is reduced by 1 each time.

[DivX VIDEO] Official DivX CertifiedTM product.
        Plays DivX®5, DivX®4, DivX®3, and DivX® VOD video content (in compliance with DivX CertifiedTM technical requirements).
DivX, DivX Certified, and associated logos are trademarks of DivXNetworks, Inc. and are used under license.
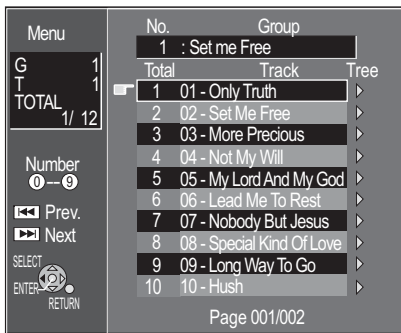
Menu

Select file type.

DivX
MP3
JPEG

ENTER ⊙ RETURN
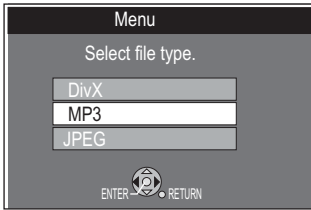
MP3 playback   ⌐R⌐ ⌐CD⌐

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 and/or 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**.
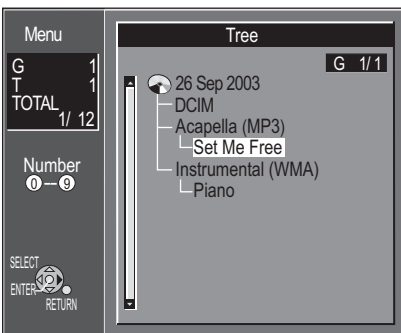• Select the desired file type with ▲▼ and confirm with **ENTER**.

Menu	No.	Group	
	1 : Set me Free		
G 1	Total	Track	Tree
T 1	1	01 - Only Truth	▷
TOTAL	2	02 - Set Me Free	▷
1/ 12	3	03 - More Precious	▷
	4	04 - Not My Will	▷
Number	5	05 - My Lord And My God	▷
⓪--⑨	6	06 - Lead Me To Rest	▷
	7	07 - Nobody But Jesus	▷
◄◄ Prev.	8	08 - Special Kind Of Love	▷
►► Next	9	09 - Long Way To Go	▷
	10	10 - Hush	▷
SELECT		Page 001/002	

SELECT ⊙ ENTER RETURN

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

Menu	Tree
G 1	G 1/1
T 1	🔘 26 Sep 2003
TOTAL	─DCIM
1/ 12	─Acapella (MP3)
	└Set Me Free
Number	─Instrumental (WMA)
⓪--⑨	└Piano

SELECT ⊙ ENTER RETURN

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.

Root

□ **001 (Folder=Group)**
  ─ 001 track.mp3 (File=Track)
  ─ 002 track.mp3
  ─ 003 track.mp3
    □ **002 Group**
      ─ 001 track.mp3
      ─ 002 track.mp3
      └ 003 track.mp3

▼ Playback sequence

Root
  ┌ P0000001.jpg
  ├ P0000002.jpg
  □ **002 Folder**
    ─ P0000003.jpg
    ─ P0000004.jpg
    ─ P0000005.jpg
      □ **003 Folder**
        ─ P0000006.jpg
        ─ P0000007.jpg
        ─ P0000008.jpg

▼ Playback sequence

The unit can process maximum 4000 files/tracks (MP3, JPEG, DivX and other file types) and 300 folders/groups (including master directory) from DVD-R and CD-R/RW.

MP3 folder structure   ⌐R⌐ ⌐CD⌐

The files must have the suffix ".mp3" or ".Mp3". During the recording, give the folders and file names 3-digit prefix numbers to stipulate the preferred playback sequence. Latin letters and Arabic characters are displayed correctly. Under certain circumstances, it is possible that other characters are not displayed correctly. ID3 tags or packet writing are not supported.
Playable discs: DVD-R, CD-R/RW
Maximum number of MP3 files: 3000
MP3 format: the discs must correspond to ISO9660 Level 1 or 2 formats apart from extended formats and Joliet.
Compatible compression rate: between 32 kbps and 320 kbps
Compatible scanning rate: 16 kHz, 22,05 kHz, 24 kHz, 32 kHz, 44,1 kHz and 48 kHz

JPEG folder structure   ⌐R⌐ ⌐CD⌐

The files must have the suffix ".jpg", ".JPG", ".tif" or ".TIF". A folder with all numbers "0" (e.g. DCIM000), cannot be shown. Depending on the recording status, it may not be possible to play the disc. Package Writing or MOTION JPEG are not supported.
JPEG format: the discs must correspond to the ISO9660 Level 1 or 2 formats apart from extended formats and Joliet.
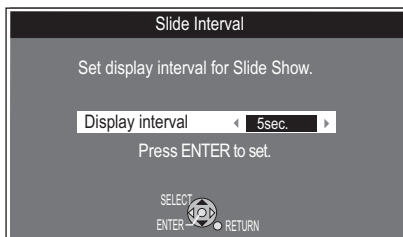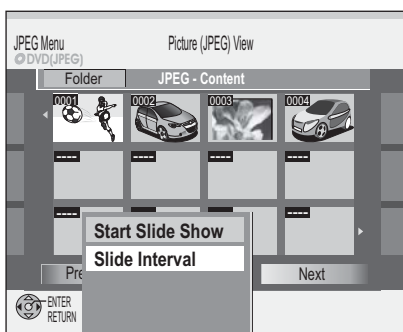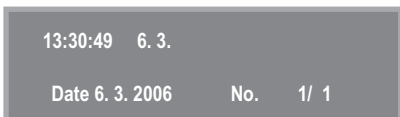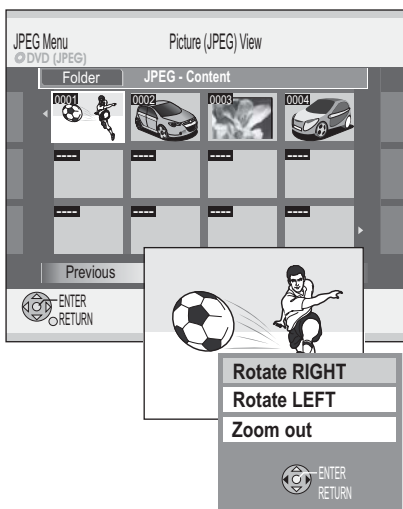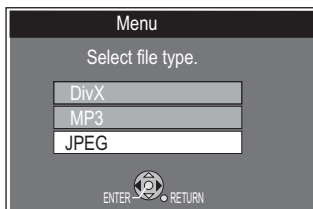**Playable discs:** DVD-R, CD-R/RW
Maximum number of JPEG files: 3000
File format: JPEG, TIFF (uncompressed RGB Chunky Format).
Number of pixels: 34x34 to 6144x4096 (sub-scanning 4:2:2 or 4:2:0).

If TIFF still pictures 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.

```
             Menu
         Select file type.

        DivX
        MP3
        JPEG


         ENTER      RETURN
```

```
JPEG Menu         Picture (JPEG) View
◎ DVD (JPEG)
     Folder    JPEG - Content
   0001      0002    0003     0004



      Previous
    ENTER
    RETURN

                Rotate RIGHT
                Rotate LEFT
                Zoom out

                    ENTER
                    RETURN
```

```
13:30:49    6. 3.

Date 6. 3. 2006      No.    1/ 1
```

```
JPEG Menu         Picture (JPEG) View
◎ DVD(JPEG)
     Folder    JPEG - Content
   0001      0002    0003     0004



        Start Slide Show
        Slide Interval
    Pre                      Next
    ENTER
    RETURN
```

```
             Slide Interval

     Set display interval for Slide Show.

     Display interval    ◄  5sec.  ►
          Press ENTER to set.


           SELECT
       ENTER      RETURN
```

JPEG/TIFF playback

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.

If your disc contains other formats such as MP3 or DivX 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**.

Picture playback

• Press **DIRECT NAVIGATOR**.

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

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 **STATUS** twice to launch the display.
• Press **STATUS** again to exit the display.

Select folder

• Select [Folder] with ▲ and confirm with **ENTER**.
• In the next menu, select the desired folder with ▲▼ and confirm with **ENTER**.

Start Slide Show
The pictures in the selected folder are automatically played back one after the other. The slide show ends after the last picture. The pictures in the folder are played in the selected display interval.

• Select [Folder] with ▲.
• Press **SUB MENU**.
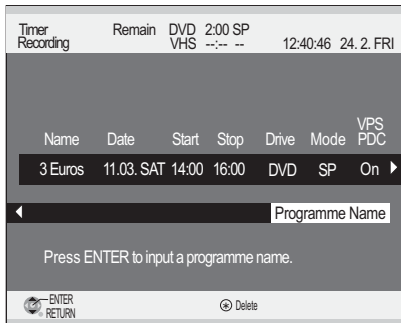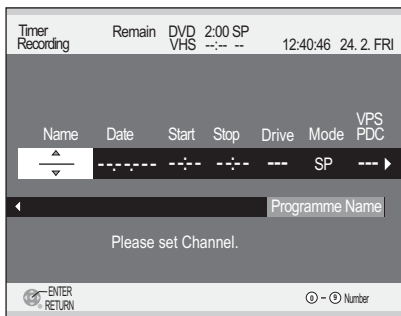• Select the desired option with ▲▼ and confirm with **ENTER**.

Slide Interval
The display duration for each picture is determined with Display interval.
• Select the display interval for the individual pictures with ◄►.
• Confirm with **ENTER**.

☞ FUNCTIONS   ▭▭▭▭⇒

```
Timer          Remain  DVD  2:00 SP
Recording              VHS  --:-- --     12:40:46  24. 2. FRI


                                                   VPS
      Name    Date    Start  Stop  Drive  Mode    PDC
      ▲
      ▼               --:--  --:--  ---    SP     --- ▶

◀                                          Programme Name

              Please set Channel.

    ⟳ ENTER                                  ⓪ – ⑨ Number
       RETURN
```

```
Timer          Remain  DVD  2:00 SP
Recording              VHS  --:-- --     12:40:46  24. 2. FRI


                                                   VPS
      Name     Date      Start  Stop  Drive  Mode  PDC
    3 Euros  11.03. SAT  14:00  16:00  DVD    SP   On ▶

◀                                          Programme Name

      Press ENTER to input a programme name.

    ⟳ ENTER                                  ⊕ Delete
       RETURN
```

```
Timer          Remain  DVD  2:00 SP
Recording              VHS  --:-- --     12:40:46  24. 2. FRI
```

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:

```
              Timer Recording

      This programme has been stored.

      Insert a recordable cassette.
      Cannot set timer standby mode.


                    ⟳
              ENTER ⟳ RETURN
```

● **Recording**

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. If you selected VPS/PDC [On], recording mode FR is not possible.
             : Recording mode VHS: SP, LP, EP, AUTO
  VPS/PDC   : [On] [Off/–]: If you selected [On], timer programmings will only be deleted from the list two days after recording.

• To enter the title of the recording, select [Programme Name] with ◄► and confirm with **ENTER**.
• Enter the desired name in the Programme Name menu.   📖 27
• 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 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 finalised. 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 Set Top Box (DVB-T) or 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 ▲▼.
  VPS/PDC   : This feature cannot be used.

VPS/PDC feature
If the broadcaster sends VPS/PDC signals, the beginning and end of a recording are synchronised with the current broadcast time. The programme start time must be correctly set to the VPS/PDC start time listed in the magazine.

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.

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.
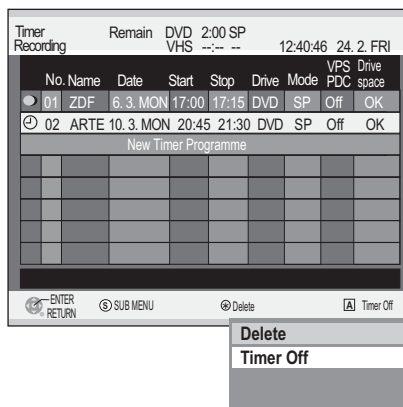
<PROG/CHECK> **Checking or changing timer recordings**

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 Recording		Remain	DVD 2:00 SP VHS --:-- --			12:40:46	24. 2. FRI	
No.	Name	Date	Start	Stop	Drive	Mode	VPS PDC	Drive space
● 01	ZDF	6. 3. MON	17:00	17:15	DVD	SP	Off	OK
🕐 02	ARTE	10. 3. MON	20:45	21:30	DVD	SP	Off	OK
		New Timer Programme						

ENTER RETURN   Ⓢ SUB MENU   ⊕ Delete   Ⓐ Timer Off

Delete
Timer Off

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.
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 **A** 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 ✱.

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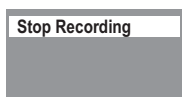
Stop Recording
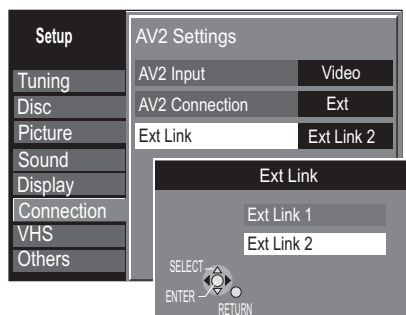
Stop Recording
You can stop a current timer recording.
• Select the current timer recording with ▲▼.
• Press **SUB MENU**.
• Select [Stop Recording] and confirm with **ENTER**.
  The timer recording ends and is thereby deleted.
  If you stop a regular timer programming (e.g. a weekly recording), it is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

Description of the symbols on page 15.

Setup	AV2 Settings	
Setup	AV2 Settings	
Tuning	AV2 Input	Video
Disc	AV2 Connection	Ext
Picture	Ext Link	Ext Link 2
Sound		
Display	**Ext Link**	
Connection	Ext Link 1	
VHS	Ext Link 2	
Others		

SELECT
ENTER
RETURN

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 socket 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**.
- Press **RETURN** multiple times to return to the television picture.

  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.

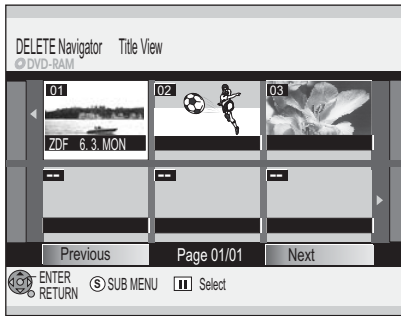**Switching the DVD Recorder to recording standby mode**
- Select recording drive DVD or VHS with **DRIVE SELECT**.
- Press **EXT LINK**.
  Recording standby mode for **EXT LINK**-controlled recordings is activated. The selected drive and EXT-L appear on the display.

  The recording begins if an appropriate signal is received from a connected unit. As long as this signal 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.

👉 **FUNCTIONS**   ▭▭▭▭➪   🗑 **Delete**

DELETE Navigator   Title View
⊙DVD-RAM

| 01 | 02 ⚽🏃 | 03 🌸 |
ZDF 6. 3. MON		

| Previous | Page 01/01 | Next |

ENTER
RETURN   Ⓢ SUB MENU   ▯▯ Select

| Properties | Set up Protection |
| Edit | Cancel Protection |
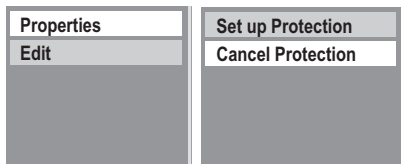
Deleting titles and pictures

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 ☑

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

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	
Cancel All	
1 Copy Direction	Source DVD
DVD → VHS ▶	Destination VHS
2 Copy Mode	
VIDEO SP	
3 Create List 0	
Start Copying	Select the copy direction

1 Copy Direction ◀

▼

Source	DVD
Destination	VHS

Press **ENTER** to change the setting.

2 Copy Mode ◀

▼

Format	VIDEO
Recording Mode	SP

Press **ENTER** to change the setting.

3 Create List ◀

▼

Destination Remaining: 1:59
Size: 0:24(24%)

▲ No.	Size	Name of item
01	0:12 SP (12%)	Terra X
☑ 02	0:12 SP (12%)	heute
New item (Total = 2)		

Delete All	
Add	Page 01/01
Delete	Create copy list.
Move	

Create List
⊚ DVD-RAM   Ⓐ VIDEO Ⓑ Playlists

001	002	003
ZDF 12.9. THU	SAT1 23.9. FRI	ZDF 1.10. FRI
TERRALUNA	AUTOMARKT	
004	---	---

Pr	Properties	Next
⟳ ENTER	Other View	
RETURN		

Copying with a copy list

RAM +RW(V) -RW(VR) ⇨ VHS
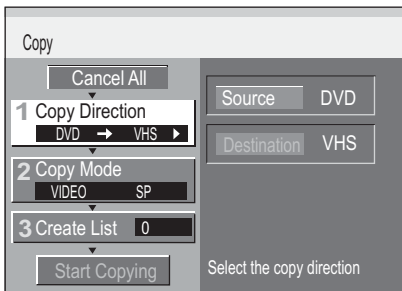
- Press **FUNCTIONS**.
- Select [Copy] with ▲▼ and confirm with **ENTER**.
- Select the desired option with ▲▼.

Cancel All
All created settings are cancelled!
- Select [Yes] with ◀ and confirm with **ENTER**.
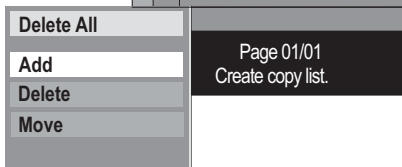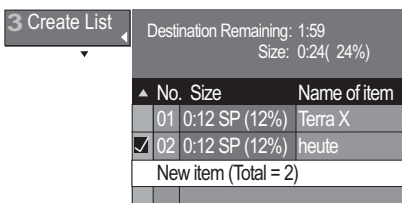
1 Copy Direction
- Select [Source] with ▶ and confirm with **ENTER**.
- Select DVD with ▲▼ and confirm with **ENTER**. The destination drive is detected automatically.
- Return to [Copy Direction] with ◀ and select [Copy Mode] with ▼.

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.
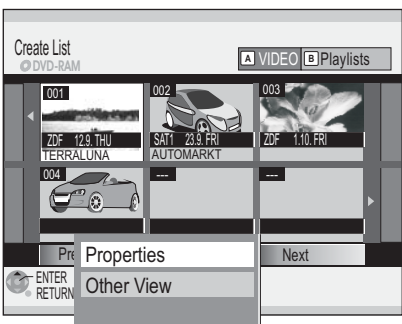
You can display the recording properties in the Create List screen or switch between VIDEO and Playlists.
- Press **SUB MENU**.

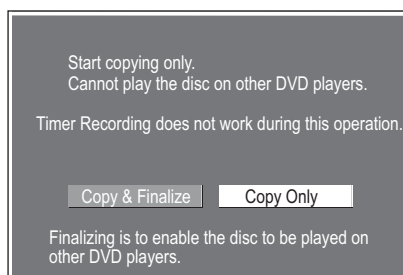### Display properties
- Confirm [Properties] with **ENTER**.

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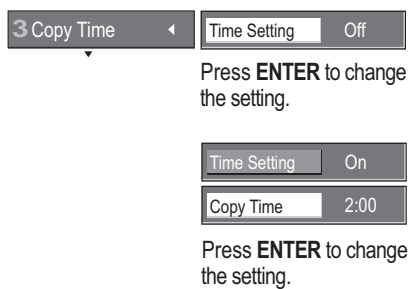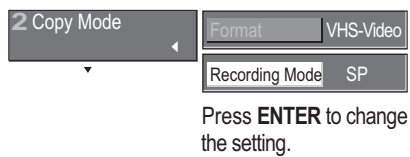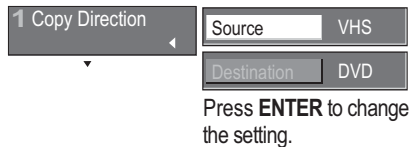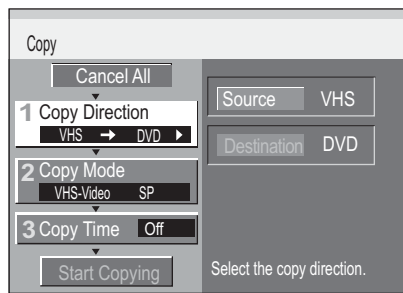- Select [Other View] with ▲▼ and confirm with **ENTER**.
- Confirm Playlists or VIDEO with **ENTER**.

  You can also switch between VIDEO and Playlists with the **A** and **B** buttons.
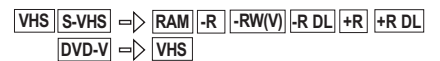

Editing several elements ☑
Select the desired title with ▲▼◀▶ and press **PAUSE ❚❚**.
A check appears. Repeat this process to select other titles.
Press **PAUSE ❚❚** again to clear the selection.

☞ **FUNCTIONS** ▭▭▭▭⟹

📀 **Copy**

Copy
- Cancel All
  ▾
1 Copy Direction
  VHS ➡ DVD ▶
2 Copy Mode
  VHS-Video SP
3 Copy Time Off
  Start Copying

Source VHS
Destination DVD

Select the copy direction.

1 Copy Direction ◀
  ▾

Source VHS
Destination DVD

Press **ENTER** to change the setting.

2 Copy Mode ◀
  ▾

Format VHS-Video
Recording Mode SP

Press **ENTER** to change the setting.

3 Copy Time ◀
  ▾

Time Setting Off

Press **ENTER** to change the setting.

Time Setting On
Copy Time 2:00

Press **ENTER** to change the setting.

Start copying only.
Cannot play the disc on other DVD players.

Timer Recording does not work during this operation.

Copy & Finalize | Copy Only

Finalizing is to enable the disc to be played on other DVD players.

Time-triggered copying VHS S-VHS ⟹ RAM -R -RW(V) -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 or DVD 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**.

Finalising -R -RW(V) +R -R DL +R DL
Before copying starts, you can select whether you want to finalise 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 finalised after copying.
  Finalisation 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

VHS   DVD
    ◀ COPYING ▶
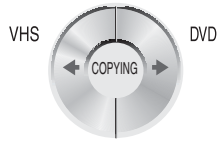
COPYING

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.

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 **AUDIO**.

- 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.

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

Before copying starts, you can select whether you want to automatically finalise the disc after copying.
- Press **PLAY** if the disc only needs to be copied.
- Press **REC** if the disc needs to be finalised after copying.
  Finalisation cannot be cancelled.
- Press **STOP** to stop copying.

Copy

Do you want to finalize the disc after copying completes ?
Finalizing is to allow the disc to be played on other DVD players. The disc becomes play-only.

⦿ Press REC to start finalizing after copying completes.

▶ Press PLAY to start copying only.

■ Press STOP to cancel copying.

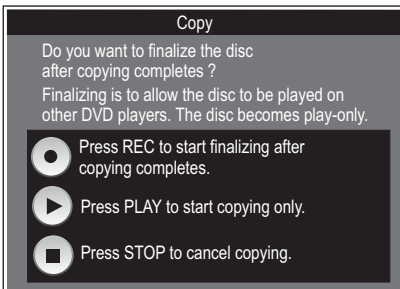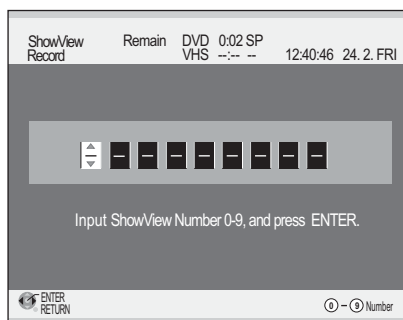### Copying from DVD to VHS   RAM -R -RW(V) +R -RW(VR) -R DL +R DL +RW ⇒ VHS

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 **AUDIO**.

- 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.
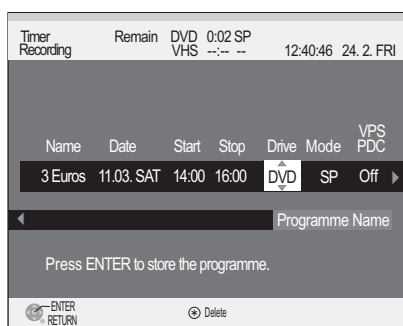
FUNCTIONS   ◉DVD ▭VHS

```
ShowView     Remain  DVD  0:02 SP
Record               VHS  --:-- --
                                      12:40:46  24. 2. FRI



        ⬍ – – – – – – – – –



    Input ShowView Number 0-9, and press ENTER.


  ⦿ ENTER
     RETURN                        ⓪ – ⑨ Number
```

ShowView Record

Entering a ShowView number 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 [ShowView Record] with **ENTER**.
- Enter the ShowView number with the number buttons.
  Delete a number with ◄.
- Confirm the ShowView number with **ENTER**.

```
Timer        Remain  DVD  0:02 SP
Recording            VHS  --:-- --
                                      12:40:46  24. 2. FRI



                                                   VPS
    Name    Date     Start  Stop  Drive Mode       PDC
  3 Euros  11.03. SAT 14:00 16:00  DVD   SP   Off ▶
  ◀                              Programme Name

    Press ENTER to store the programme.

  ⦿ ENTER
     RETURN             ⊗ Delete
```

The Timer Recording screen appears with the transferred data. Missing or incorrectly transferred data can be corrected as described on page 34.
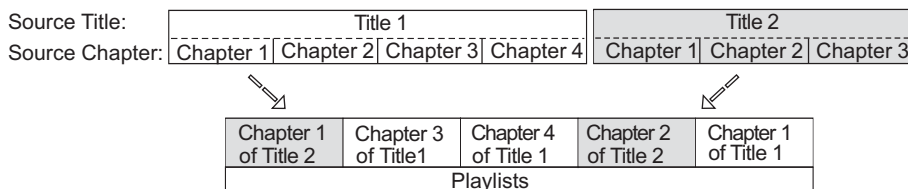
- Press **ENTER** to save the programme.

SHOWVIEW™ is a trademark of Gemstar Development Corporation.
The SHOWVIEW system is manufactured under licence from Gemstar Development Corporation.

FUNCTIONS

☞ **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.

Source Title:	Title 1				Title 2		
Source Chapter:	Chapter 1	Chapter 2	Chapter 3	Chapter 4	Chapter 1	Chapter 2	Chapter 3

Chapter 1 of Title 2	Chapter 3 of Title1	Chapter 4 of Title 1	Chapter 2 of Title 2	Chapter 1 of Title 1
Playlists				
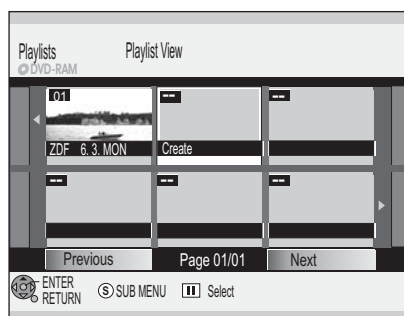
Insert a recorded disc.
If you activated write-protection, deactivate it.   `RAM`
• Press **FUNCTIONS**.
• Select [To Others] with ▲▼ and confirm with **ENTER**.
• Select [Playlists] with ▲▼ and confirm with **ENTER**.

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**.
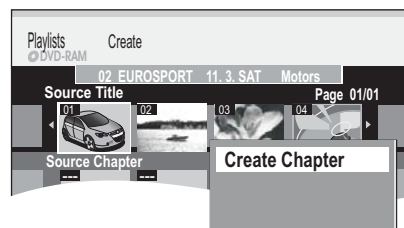
1 Selecting a **Source Title**
   • Select the desired source title with ◄► and press **SUB MENU**.
   • Confirm [Create Chapter] with **ENTER**.
     A complete source title can be inserted directly into Chapters in Playlists with **ENTER**.
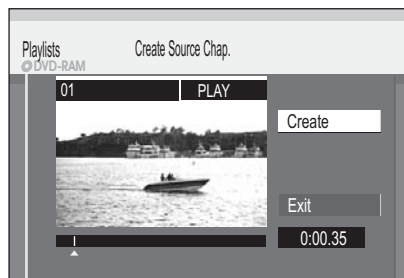
2 Creating a **Source Chapter**
   • Select the chapter section with **ENTER**. The length of the chapter sections is displayed as a time entry.
   • Stop playback with **PAUSE** ❙❙.
   • Locate the position for an exact chapter marker with ◄◄ ►►.
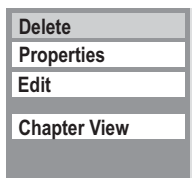   • Select [Exit] with ▼ and confirm with **ENTER**.

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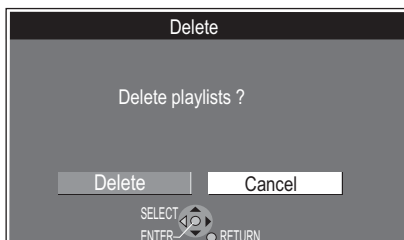- Select [Playlists] with ▲▼ and confirm with **ENTER**.

Playback   `RAM` `-RW(VR)`
- Select a playlist with ▲▼◄► and start playback with **ENTER**.

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

Delete
Properties
Edit
Chapter View

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**.

```
            Delete
     
     Delete playlists ?
     
     
       Delete        Cancel
         SELECT
       ENTER ── RETURN
```

Properties   `RAM` `-RW(VR)`
Information on the playlist, such as chapter, date and time, is displayed.
- Select [Properties] with ▲▼ and confirm with **ENTER**.

```
            Properties
     
       Terra X
     
     No.      03      Date   10.3.2006 FRI
     Chaptersl 005    Total  1:15.35
     
          ENTER ── RETURN
```
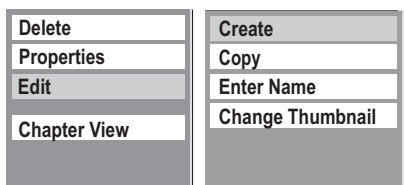
Editing playlists in the SUB MENU.   `RAM`

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

Delete		Create
Properties		Copy
Edit		Enter Name
Chapter View		Change Thumbnail

Create
Please read Creating a playlist.

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

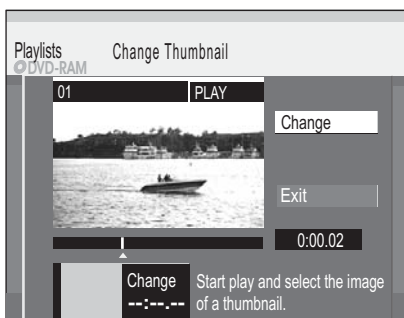**Enter Name**   ⎸27⎹
Change or enter the title of the programme. If you enter a long name, it is only
partially displayed.

Change Thumbnail
You can select any position in a title as the thumbnail for the Playlist View.
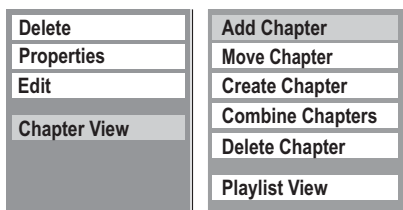- Press **PLAY ►** to start playback.
- At the position to be displayed as the new thumbnail, confirm [Change] with
  ENTER. The selected thumbnail is displayed.
- Confirm [Exit] with **ENTER**.
  The selected thumbnail is added to the Playlist View.

```
Playlists   Change Thumbnail
⊙DVD-RAM
  01            PLAY
                        Change
     
                        Exit
     
                        0:00.02
     
     Change   Start play and select the image
     --:--.--  of a thumbnail.
```

```
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.
```

⊙**DVD**

☞ **FUNCTIONS** ⇨ | To Others | ⇨ | Playlists |

Delete	Add Chapter
Properties	Move Chapter
Edit	Create Chapter
Chapter View	Combine Chapters
	Delete Chapter
	Playlist View

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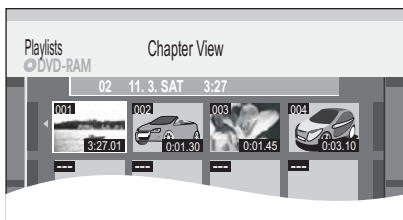
- Select the desired chapter with ▲▼◄► and press **SUB MENU** again.
- Select the desired option in the sub menu with ▲▼ confirm with **ENTER**.

Playlists   Chapter View
⊙DVD-RAM
02 11. 3. SAT   3:27
001 002 003 004
3:27.01 0:01.30 0:01.45 0:03.10
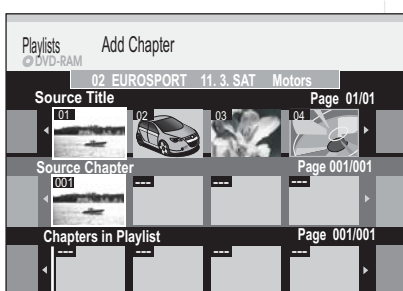
Add Chapter
You can create a new chapter from the Source Title.
- Select a Source Title with ▲▼◄► and press ▼.
- Select a Source Chapter with ◄► and confirm with **ENTER**.
  Cancel the process with ▲.
- Select the position where the chapter is to be inserted with ◄► and confirm with **ENTER**.
- Repeat the steps to add another chapter.
  You can select other source titles with ▲.
- Exit the menu with **RETURN**.

Playlists   Add Chapter
⊙DVD-RAM
02 EUROSPORT 11. 3. SAT   Motors
Source Title   Page 01/01
01 02 03 04
Source Chapter   Page 001/001
001 --- --- ---
Chapters in Playlist   Page 001/001
--- --- --- ---

Move Chapter
- Select the position where the chapter is to be moved to with ▲▼◄► and confirm with **ENTER**.
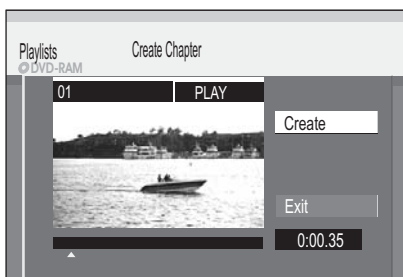
Create Chapter
Divide the title into chapters. Identify the points where a new chapter is to start. The chapters can be selected later during playback with **SKIP** ◄◄ ►► .
- Press **ENTER** at the position where you want to create the chapter. Repeat this step to create a chapter at another location.
- Select [Exit] with ▼ and confirm with **ENTER**.
  A short section of the recording right before the separation point may be lost.

Playlists   Create Chapter
⊙DVD-RAM
01   PLAY
Create
Exit
0:00.35
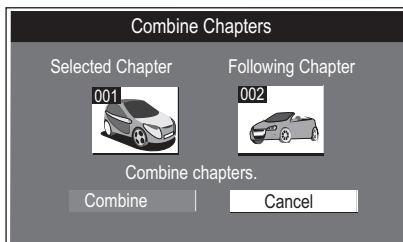
Combine Chapters
- Select [Combine] with ◄ and confirm with **ENTER**.
  The selected chapter is combined with the next chapter.

Combine Chapters
Selected Chapter   Following Chapter
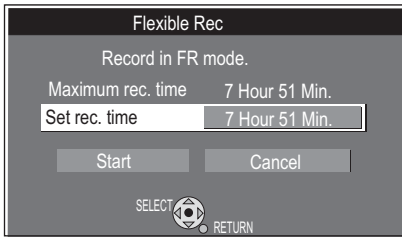001   002
Combine chapters.
Combine   Cancel

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 ⇨ **Flexible Rec**

```
          Flexible Rec
        Record in FR mode.
  Maximum rec. time    7 Hour 51 Min.
  Set rec. time        7 Hour 51 Min.
       Start              Cancel

          SELECT
                        RETURN
```

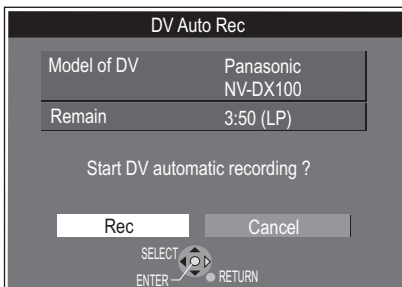When a timer recording starts, recording in FR mode is cancelled.

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.
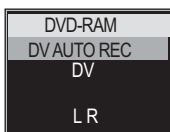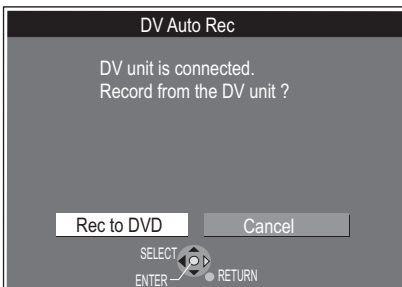
Displaying the available recording time
- Press **STATUS** multiple times.

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

```
          DV Auto Rec
  Model of DV       Panasonic
                    NV-DX100
  Remain            3:50 (LP)

     Start DV automatic recording ?

       Rec              Cancel

          SELECT
          ENTER         RETURN
```

With a DVD-RAM, the DV Auto Rec. screen appears after connecting the unit.
- Select [Rec to DVD] with ◄► and confirm with **ENTER**.
- Confirm [Recording] with **ENTER**. Recording begins.

```
          DV Auto Rec

     DV unit is connected.
     Record from the DV unit ?




     Rec to DVD          Cancel

          SELECT
          ENTER         RETURN
```

```
       DVD-RAM
      DV AUTO REC
         DV

        L R
```

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

It is not possible to copy from DV IN to VHS cassette. 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 socket.
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] | 49 |
  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**.
- 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**.
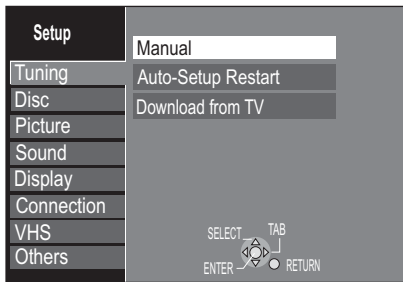
Manual recording via DV input   RAM -R -RW(V) +R -R DL +R DL +RW

- 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** ■ .
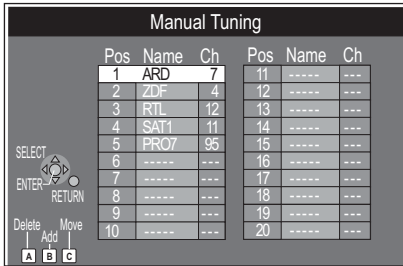- End playback on the DV unit.

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

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.
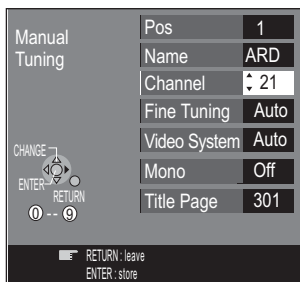
FUNCTIONS

☞ **FUNCTIONS** ⇨ | To Others | ⇨ | **Setup** |

Setup	
	Manual
Tuning	Auto-Setup Restart
Disc	Download from TV
Picture	
Sound	
Display	
Connection	SELECT TAB
VHS	
Others	ENTER RETURN

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.
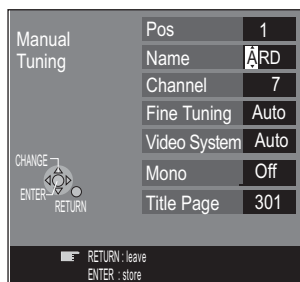- Press **RETURN** multiple times to exit the menus.

Manual Tuning

Pos	Name	Ch	Pos	Name	Ch
1	ARD	7	11	-----	---
2	ZDF	4	12	-----	---
3	RTL	12	13	-----	---
4	SAT1	11	14	-----	---
5	PRO7	95	15	-----	---
6	-----	---	16	-----	---
7	-----	---	17	-----	---
8	-----	---	18	-----	---
9	-----	---	19	-----	---
10	-----	---	20	-----	---

SELECT
ENTER RETURN
Delete Add Move
Ⓐ Ⓑ Ⓒ

▲▼ 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**.
  Interference to the picture may be minimised with Fine Tuning.

Manual Tuning		
	Pos	1
	Name	ARD
	Channel	↕ 21
	Fine Tuning	Auto
	Video System	Auto
CHANGE	Mono	Off
ENTER RETURN	Title Page	301
⓪ -- ⑨		

■ RETURN : leave
ENTER : store

Options available for tuning the channels				
Pos	◀▶	⇕ [1-99]	**ENTER**	Station position in the station table.
Name	▶	⇕ [A-Z, 0-9, -, +, *]	**ENTER**	Set the station name.
Channel	◀▶	⇕ [1-99]	**ENTER**	Set the channel.
Fine Tuning	◀▶	⇕ [Auto] [Man.] ⇕ [Man.]	**ENTER**	Fine tune picture interference.
Video System	◀▶	△ [Auto] [PAL] [SECAM]	**ENTER**	Set the telelvision system.
Mono	◀▶	⇕ [On] [Off]	**ENTER**	Switch from stereo to mono
Title Page	◀▶	⇕ [100-899]	**ENTER**	Select the video text page which supplies the station information.

Manual Tuning		
	Pos	1
	Name	⒜RD
	Channel	7
	Fine Tuning	Auto
	Video System	Auto
CHANGE	Mono	Off
ENTER RETURN	Title Page	301

■ RETURN : leave
ENTER : store

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 ⒜RD.
- Change the letter with ▲▼.
- Select the next letter with ▶, A⒭D.
- 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 **A** button to delete the station.
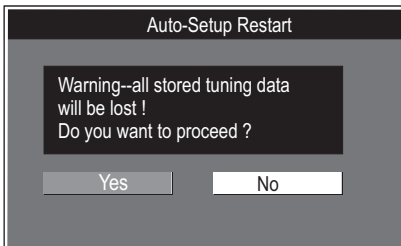 The station position settings are deleted.

Inserting a new station position
If the station table was not created with Q Link or a similar feature.
- Select the station position before which the new station position is to be inserted with ▲▼◀▶.
- Press the **B** button. A new station position is inserted.
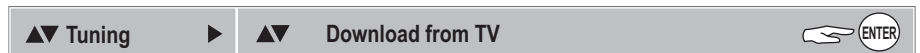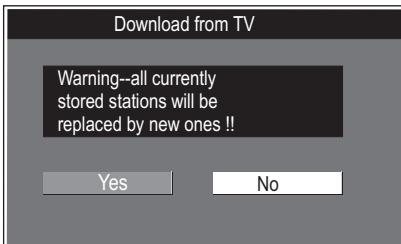
Moving television stations
If the station table was not created with Q Link or a similar feature.
- Select the station that you want to move with ▲▼◀▶.
- Press the **C** button.
- Select a new position with ▲▼ and confirm with **ENTER**.

FUNCTIONS

◉ **DVD** ▭ **VHS**

☞ **FUNCTIONS** ⇒ | To Others | ⇒ | **Setup** |

Auto-Setup Restart

Warning--all stored tuning data will be lost !
Do you want to proceed ?

| Yes | No |

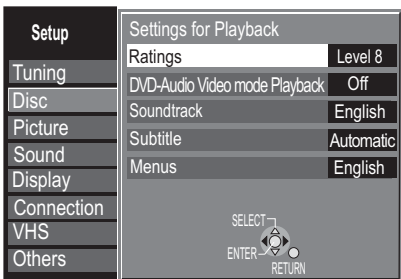| ▲▼ Tuning | ▶ | ▲▼ Auto-Setup Restart | ☞ ENTER |

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.

Download from TV

Warning--all currently stored stations will be replaced by new ones !!

| Yes | No |

| ▲▼ 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] and confirm with **ENTER** or press **RETURN**.
• To prematurely end the data transfer, press **RETURN**.

| ▲▼ Disc | ▶ | ▲▼ Setting | ☞ ENTER | ▲▼ Option | ☞ ENTER |

Setup
Settings for Playback
Ratings — Level 8
DVD-Audio Video mode Playback — Off
Soundtrack — English
Subtitle — Automatic
Menus — English

Tuning / Disc / Picture / Sound / Display / Connection / VHS / Others

SELECT
ENTER
RETURN

| **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

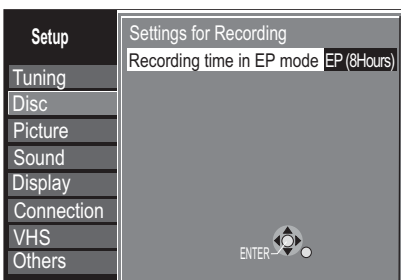| Unlock Recorder | Return to level 8 |
Change Password	Change the password
Change Level	Change the authorisation level
Temporary Unlock	You can temporarily authorise a disc for playback.

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.

Setup
Settings for Recording
Recording time in EP mode — EP (8Hours)

Tuning / Disc / Picture / Sound / Display / Connection / VHS / Others

ENTER

| **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	Slovac	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	Sundanese	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	Quechua	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

☞ **FUNCTIONS** ⇨ | To Others | ⇨ | **Setup** |

Setup		
	Comb Filter	On
Tuning	Still Mode	Automatic
Disc		
Picture		
Sound		
Display		
Connection		
VHS		
Others		

TAB — SELECT
◁◉▷ RETURN

▲▼ 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].

A full picutre 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 picutre and the picture quality is poorer.

☞ **FUNCTIONS** ⇨ | To Others | ⇨ | Setup |

Setup		
	Dynamic Range Compression	Off
Tuning	Bilingual Audio Selection	M 1
Disc	Digital Audio Output	
Picture	Audio Mode for DV Input	Stereo 1
Sound		
Display		
Connection		
VHS		
Others		

SELECT ─ TAB / ENTER ─ RETURN

▲▼ 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 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

Setup		
	Digital Audio Output	
Tuning	PCM Down Conversion	Off
Disc	Dolby Digital	Bitstream
Picture	DTS	Bitstream
Sound	MPEG	PCM
Display		
Connection		
VHS		
Others		

Dolby Digital
Bitstream
PCM

SELECT ─ / ENTER ─ RETURN

Setup		
	Language	English
Tuning	On-Screen Messages	Automatic
Disc	Grey Background	On
Picture	FL Display	Bright
Sound		
Display		
Connection		
VHS		
Others		

TAB ─ SELECT / ─ RETURN

▲▼ Display ▶	▲▼ Setting ☞ ENTER	▲▼ Option ☞ ENTER
Language	**[English]**	

Select the menu language.

On-Screen Messages | **[Automatic] [Off]**

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] [Automatic]**

Dim: Changes the brightness of the display on the unit.

Automatic: 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.

FUNCTIONS

☞ FUNCTIONS ⇨ | To Others | ⇨ | Setup |

Setup		
Setup	TV Aspect	4:3
Tuning	Progressive	Off
Disc	TV System	PAL
Picture	AV1 Output	Video
Sound	AV2 Settings	
Display		
Connection		
VHS	SELECT ─ TAB	
Others	ENTER ─ RETURN	

▲▼ 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.

Progressive	**[On] [Off]**

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

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.

AV-Link function

Switching between television reception and the signal from the DVD Recorder. This function is only possible if the AV1 Output is set to [Video (with component)] or [RGB 2 (without component)].
DVD recorder signal: Press **ENTER** + **0**.
DVD appears on the display.
Television reception: Press the buttons again.
TV appears on the display.

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

Video (with component): Factory-default settings

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 or on-screen display.
If RGB 1 or 2 is set, there is no signal available on COMPONENT VIDEO OUT.

Setup		
Setup	AV2 Settings	
Tuning	AV2 Input	Video
Disc	AV2 Connection	Ext
Picture	Ext Link	Ext Link 2
Sound		
Display	AV2 Input	
Connection	Video	
VHS	S Video	
Others		
	SELECT ─	
	ENTER ─ RETURN	

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

AV2 Input	**[Video] [S Video]**

Video, S Video: The input is switched to the selected signal.

AV2 Connection	**[Decoder] [Ext]**

Decoder: When a decoder is connected.
Ext: When a satellite receiver is connected etc.

Ext Link	**[Ext Link 1] [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).
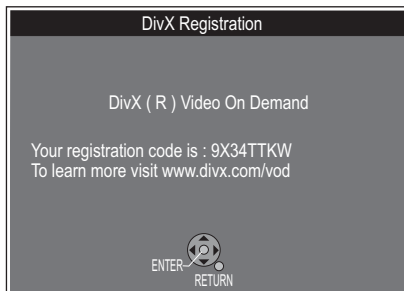
☞ FUNCTIONS ⇨ | To Others | ⇨ | Setup |

Setup		
Setup	Tape Length	Auto (E-240)
Tuning	Playback Colour System	Automatic
Disc	SQPB	Automatic
Picture		
Sound		
Display		
Connection		
VHS		
Others		

TAB — SELECT — RETURN

▲▼ 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.		
Playback Colour System		**[Automatic] [PAL] [MESECAM]**
Automatic: Differentiates between PAL and MESECAM. **PAL**: If the PAL system is used. **MESECAM**: If the MESECAM system is used.		
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.		

Setup		
Setup	Remote Control	DVD 1
Tuning	Clock	
Disc	Power Save	Off
Picture	Quick Start	On
Sound	DivX Registration	
Display	Initialize	
Connection		
VHS		
Others		

TAB — SELECT — RETURN

DivX Registration
DivX (R) Video On Demand
Your registration code is : 9X34TTKW To learn more visit www.divx.com/vod
ENTER — RETURN

▲▼ Others ▶	▲▼ Setting ☞ ENTER	▲▼ Option ☞ ENTER
Remote Control		**[DVD 1] [DVD 2] [DVD 3]**
Change the code of the remote control so that you can simultaneously operate another Panasonic DVD unit.		📖 6
Clock		
Set the date and time.		📖 11
Power Save		**[On] [Off]**
On: Power-save feature in Standby mode. The brightness of the display field in power-save mode cannot be changed. The Quick Start setting is set to [Off]. If you want to connect an external unit via the AV2 Scart socket, the DVD Recorder must be switched back on from Standby mode. **Off**: The brightness of the display field can be changed.		
Quick Start		**[On] [Off]**
On: The unit switches on from Standby mode in approx. 1 second. In Standby mode, more power is used and Power Save is set to [Off].		
DivX Registration		
In order play purchased or borrowed DivX files on this unit, you need the individual registration code for the unit. The code is displayed here. Please write it down.		
Initialize		**[Shipping Condition] [Default Settings]**
Shipping Condition: All settings, except for the security levels with the associated password and the time settings are reset to the factory-default settings. **Default Settings**: All settings, except for the programmed channels, time, country, language and disc-language settings, the security levels including password and the remote control code are reset to the factory-default settings.		
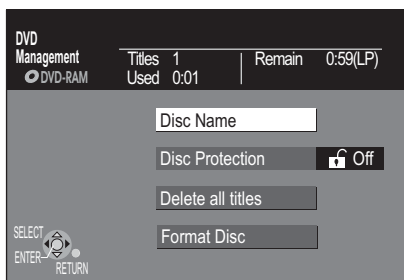
FUNCTIONS   ⊙**DVD**

☞**FUNCTIONS** ⇨ [To Others] ⇨ [**DVD Management**]

```
DVD
Management    Titles  1        | Remain  0:59(LP)
⊙DVD-RAM      Used  0:01       |

              ┌─────────────────────┐
              │ Disc Name           │
              └─────────────────────┘
              ┌─────────────────────┐
              │ Disc Protection   🔓 Off │
              └─────────────────────┘
              ┌─────────────────────┐
              │ Delete all titles   │
SELECT        └─────────────────────┘
ENTER         ┌─────────────────────┐
      RETURN  │ Format Disc         │
              └─────────────────────┘
```

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   `27`
• Enter the name. The name is displayed in the DVD Management.
  You cannot name a disc after it has been finalised.

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        │
├──────────────────────────────────┤
│                                  │
│ All titles and playlists will be deleted. │
│ Is it OK to start deleting all titles ?   │
│                                  │
│   ┌────────┐      ┌────────┐     │
│   │  Yes   │      │   No   │     │
│   └────────┘      └────────┘     │
└──────────────────────────────────┘
```
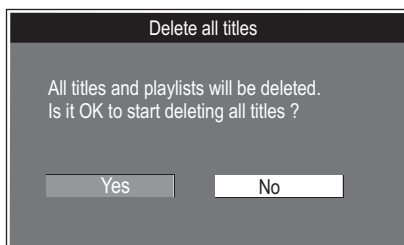
Delete all Titles   `RAM`
• Confirm [Delete all Titles] with **ENTER**.
• In the next screen, select [Yes] with ◄ and confirm with **ENTER**.
• In the security question, select [Start] with ◄ and confirm with **ENTER**.
  All titles and playlists are deleted and cannot be restored. Protected discs or titles
  cannot be deleted.

```
┌──────────────────────────────────┐
│           Format Disc            │
├──────────────────────────────────┤
│                                  │
│ All contents will be deleted even if protected. │
│ Start formatting ?               │
│                                  │
│   ┌────────┐      ┌────────┐     │
│   │ Start  │      │ Cancel │     │
│   └────────┘      └────────┘     │
└──────────────────────────────────┘
```

Do not unplug the unit while the disc is being
formatted or finalised.
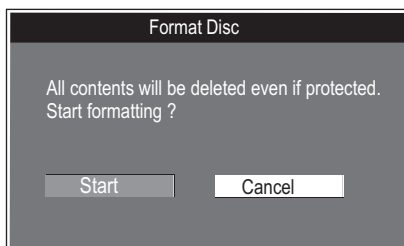
Format Disc   `RAM` `-RW(V)` `+RW` `-RW(VR)`   `+R` `+R DL` Only for new discs
Some discs are not formatted. They must be formatted before they can be used in
this unit. The formatting process deletes all data from the disc. The estimated
duration of the formatting process is displayed in the menu.
• 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**.
• Press **RETURN** to stop the formatting process.

Formatting can be cancelled and restarted. The formatting process deletes all data,
including the recordings created with this unit.

☞ **FUNCTIONS** ⇨ | To Others | ⇨ | **DVD Management** |

```
DVD
Management    Titles  1          Remain  0:59(LP)
⊙+R DL        Used   0:01        of the first layer

              Disc Name

              Auto-Play Select        Top Menu

              Finalize

              Close First Layer

SELECT
ENTER
          RETURN
```
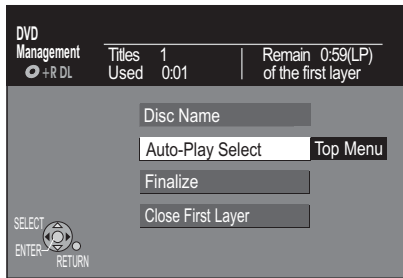
Auto-Play Select   `-R` `-RW(V)` `+R` `-R DL` `+R DL` `+RW`

Before finalisation, 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

Finalizing is necessary for compatible
playback. It will take approximately 4 minutes.
Finalize the disc ?


      Yes                No
```
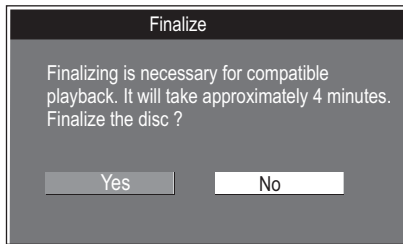
Finalize   `-R` `-RW(V)` `+R` `-R DL` `+R DL`

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

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

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

```
           Close First Layer

The first layer will be non-recordable
after this operation.
It will take approximately 24 min.
Close the first layer ?


      Yes                No
```
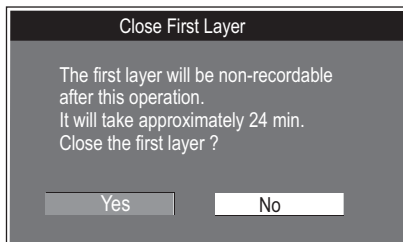
Close First Layer   `-R DL` `+R DL`

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

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

```
DVD
Management    Titles  1          Remain  0:59(LP)
⊙+RW          Used   0:01

              Disc Name

              Auto-Play Select        Top Menu

              Create Top Menu

              Format Disc
SELECT
ENTER
          RETURN
```
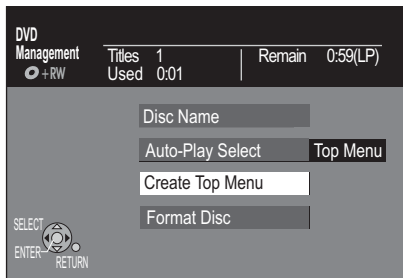
Create Top Menu   `+RW`

With a DVD+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**.

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.

Disc				
Play	Soundtrack	1 DEU	☐☐ Digital	2/0ch
Picture	Subtitle		Off	1 DEU
Sound	Audio channel			L R
Other				

DISPLAY
B
- Press **DISPLAY** to launch the menu.
- Press **DISPLAY** again to exist the menu.
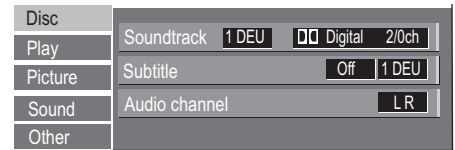
Subtitles, sound track and recording angle can only be selected if they were recorded on the disc. For some discs, they can only be changed via the disc menus. When bilingual recordings are played back, "1+1 ch" is displayed.

▲▼ 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 channals, k (kHz): scan frequency, b (bit): number of bits |VCD| |DivX| 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 DAN: Danish THA : Thai FRA : French POR: Portuguese POL : Polish DEU: German RUS: Russian CES : Czech ITA : Italian JPN : Japanese SLK : Slovak ESP : Spanish CHI : Chinese HUN: Hungarian NLD : Dutch KOR: Korean FIN : Finnish SVE : Swedish MAL: Malay * : Others NOR: Norwegian VIE : Vietnamese * Others: Enter the appropriate language code. ☐47
	Audio Channel	**L+R / L / R** |RAM| |-RW(VR)| |VCD| |DivX| Change audio during playback.
	Source select	|DivX| The unit detects whether the DivX content was recorded as full or half picture.
		[Automatic]
		[Progressive] **[Interlace]**	The picture may look blurry, but the overall quality is very good. Contains only half the information of a full picture (Interlace) and the picture quality is poorer.
	Angle	|DVD-A| |DVD-V| Select another recording angle.
	Still Picture	|DVD-A| Select the still image playback type.
		[Slide Show] **[Page]**	Disc playback in the original sequence. Select the still image number and playback. RANDOM: Playback in random order. Return to the standard page: Select [Return] and press **ENTER**.
	PBC	|VCD| |DivX| 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
	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) DivX 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

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 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 ▶ **Unit not functioning.**	▷ 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.	**36**
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 child protection is activated. • Switch off child protection.	**6**

If you need help

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.	**16**
DVD-Video will not play.	▷ Some DVD-Videos cannot be played if the security level has been changed.	**47**
No reaction when PLAY ► is pressed.	▷ ⊘ appears on the screen. The procedure is being prevented by the unit or the disc. ▷ Child protection has been activated.	**18** **6**
A title or chapter is not played back after being selected.	▷ Some titles or chapters of DVD-Videos are not played back if the security level has been changed.	**47**
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.	**47** **54** **18**
The angle cannot be changed.	▷ The angle perspective can only be changed for scenes that were recorded from different angles.	**54**
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.	**22** **52** **52** **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.	**52**
Timer Recording is not functioning.	▷ The Timer programming is defective, different Timer programmes overlap each other. Correct the programming. ▷ Check the clock setting.	**35** **51**
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.	**36**

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.	**12** **13**

Specifications

Power supply:	AC 220V-240V 50 Hz
Power consumption:	26 W (approx. 2 W in power save mode)

Dimensions:	approx. 430 mm (W) x 84 mm (H) x 351 mm (D)
Weight:	approx. 5.4 kg
Operating temperature:	5°C - 40°C
Operating humidity:	35% - 80% RH (no condensation)

	DVD		**VHS**
Recording format	DVD-RAM: DVD Video Recording format DVD-R: DVD-Video format, MP3, JPEG, DivX DVD-R DL: DVD-Video format DVD-RW: DVD-Video format, DVD Video Recording format +R, +RW, +R DL	**Recording format**	VHS video cassette system standard with FM audio (PAL, MESECAM, NTSC,)

Recording discs
Playback discs
	DVD-RAM: Ver.2.0, Ver.2.1 /3X Rev.1.0,
	             Ver.2.2 /5X Rev.2.0
	DVD-R: for General
	             Ver.2.0, Ver.2.0 /4X Rev.1.0,
	             Ver.2.x /8X Rev.3.0,
	             Ver.2.x/16X Rev.6.0
	DVD-R DL: Ver.3.0, DL Ver.3.x/4X Rev.1.0
	DVD-RW: Ver.1.1, Ver.1.x /2X Rev.1.0,
	             Ver.1.x /4X Rev.2.0, Ver.1.x/6X Rev.3.0
	DVD+R: Ver.1.0, Ver.1.1, Ver.1.2, Ver.1.3
	DVD+R DL: Ver.1.0
	DVD+RW: Ver.1.1, Ver.1.2/4X

Playback discs	DVD-Video, DVD-Audio, CD-Audio (CD-DA), Video-CD, CD-R/RW (CD-DA, Video CD, SVCD, MP3/JPEG/DivX formatted discs), SVCD that are IEC62107-compliant
LASER specification Wave length: Laser output: **Norsk:**	LASER product of class 1 662 nm for DVD, 780 nm for CD No dangerous radiation due to the safety device. Bølgelengde: 662 nm (DVD), 780 nm (CD) Laserstyrke: Ingen farlig stråling sendes ut.
Optical pick-up:	System with 1 lens, 2 integration units
Other	Regional code: 2
DV input	IEEE 1394 Standard (4-pin)
TV system	PAL: 625/50 / SECAM (input only) NTSC: 525/60

Video and sound heads	4 rotating video heads, 2 rotating Hi-Fi heads 1 fixed head for normal audio

Recording mode
Recording time
	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.
	                (for E-240 cassettes)

Video Data
Horizontal Resolution
Signal to Noise Ratio
 	
Frequency Response
 	
Audio Data
Dynamic Range
Frequency Response
 	
Signal-to-noise ratio
 	
Cross talk
Wow and Flutter
	SP: more than 240 lines
	SP: more than 43 dB, LP: more than 40 dB,
	EP: more than 38 dB
	SP, LP: 0 ±2 dB at 2 MHz (0 dB at 0.1 MHz),
	EP: 0 ±3 dB at 2 MHz (0 dB at 0.1 MHz)
	
	HiFi: more than 90 dB (Cinch)
	HiFi: 20 Hz-20 kHz (0 ±3 dB)
	Normal: SP: 80 Hz-8 kHz (-1 ±5 dB)
	          LP: 80 Hz-5 kHz (0 ±5 dB)
	          EP: 80 Hz-3 kHz (0 ±5 dB)
	HiFi: more than 65 dB
	Normal: SP: more than 43 dB, LP, EP: more than 41 dB
	more than 50 dB at 1 kHz (HiFi)
	HiFi: Less than 0.005 Wrms
	Normal: SP: 0.2% max. LP, EP: 0.4% max.

TV system	PAL/SECAM: 625/50 NTSC: 525/60

Video interface **Input** AV1 SCART AV2 SCART AV3 VIDEO AV3 S VIDEO **Output** AV1 SCART AV2 SCART VIDEO S VIDEO COMPONENT VIDEO OUT	Input impedance: 75 Ohm. Video: 1 Vp-p Video: 1 Vp-p, Y: 1 Vp-p C: 0.3 Vp-p (PAL-Burst), Video: 1 Vp-p Y: 1 Vp-p, C: 0,3 Vp-p (PAL-Burst) For 75 Ohm termination. Video: 1 Vp-p; RGB: 0,7 Vp-p (625/50) only DVD Video: 1 Vp-p Video: 1 Vp-p Y: 1 Vp-p, C: 0,3 Vp-p (PAL-Burst) Y: 1 Vp-p, P$_B$: 0,7 Vp-p, P$_R$: 0,7 Vp-p (PAL: 625i/625p, NTSC: 525i/525p)
Audio interface **Recording System:** **Input** AV1 SCART AV2 SCART AV3 AUDIO **Output** AV1 SCART AV2 SCART AUDIO OPTICAL	Dolby Digital 2ch Input impedance: more than 10 kOhm. Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz The output impedance of each output socket is less than 1 kOhm. Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz Standard: 0.5 Vrms, full scale: 2 Vrms at 1 kHz Standard: 0.5 Vrms, full scale: 2 Vrms ar 1 kHz Optical connection (PCM, Dolby Digital, DTS, MPEG)
Tuner Tuner system Channel area	An integrated tuner (for both DVD and VCR) PAL-BGH, SECAM-BG VHF: CH E2-E12 A-H2 (Italy), UHF: CH 21-69 CATV: S01-S05 (S1-S3), S1-S20 (M1-U10), S21-S41

Quick Start for Recording (Quick Start: [On])
1 sec Quick Start for Recording on DVD-RAM (when connecting to TV using SCART, Component Video, Video or S-Video terminals)
From power off mode, recording on DVD-RAM starts about 1 sec after first pressing **Standby/On** and then sequentially pressing **REC**.

Note: The values given for weight and dimension are approximate values. Specifications can change without notice.

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