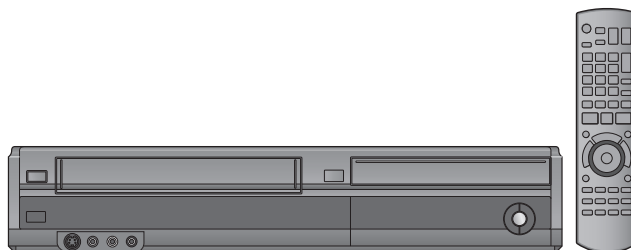


Operating Instructions

DVD Recorder

Model No. **DMR-EZ49V**

DIGA



Dear customer

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

Before connecting, operating or adjusting this product, please read the instructions completely.
Please keep this manual for future reference.



Notice for DVB functions

- This DVD recorder is for viewing and recording free to view channels only, not pay TV or encrypted channels.
- DVB and the DVB logos are trademarks of the DVB Project.

The GUIDE Plus+ system is available in the following countries:
(as of December 2009)

Germany/Austria/Italy/Spain

- This service may not be available in some areas in the above countries.
- There may be changes in the service areas.

- This unit does not support analogue broadcasts in Italy and Spain.

About descriptions in these operating instructions

- The illustrations in these Operating Instructions show images for Germany and Austria unless otherwise indicated.
- Pages to be referred to are indicated as "⇒ ○○".

Region number supported by this unit

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

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

Example:



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

CAUTION!

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

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR
PRODUCT DAMAGE,
•DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE,
DRIPPING OR SPLASHING AND THAT NO OBJECTS
FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE
PLACED ON THE APPARATUS.
•USE ONLY THE RECOMMENDED ACCESSORIES.
•DO NOT REMOVE THE COVER (OR BACK); THERE ARE
NO USER SERVICEABLE PARTS INSIDE. REFER
SERVICING TO QUALIFIED SERVICE PERSONNEL.

CAUTION!

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

CAUTION

Danger of explosion if battery is incorrectly replaced. Replace
only with the same or equivalent type recommended by the
manufacturer. Dispose of used batteries according to the
manufacturer's instructions.

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.
The mains plug of the power supply cord shall remain readily
operable.
To completely disconnect this apparatus from the AC Mains,
disconnect the power supply cord plug from AC receptacle.



DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. FDA 21 CFR/Class IIb	
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 ALTIINNA LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSATELTÄ. VÄRÖ ALTISTUMISTA SÄTEELLE.
WARNING-	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.
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ー光が出ます。 ビームを見たり、触れたりしないでください。VOL1J70

(Inside of product)

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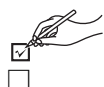
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Included accessories

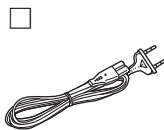


Please check and identify the supplied accessories.
(Product numbers correct as of November 2009. These may be subject to change.)



For Germany and Austria
(N2QAYB000467)
For Italy and Spain
(N2QAYB000468)

1 Remote control

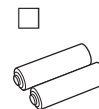


1 AC mains lead

For use with this unit only. Do not use it with other equipment. Also, do not use cords for other equipment with this unit.



1 RF coaxial cable

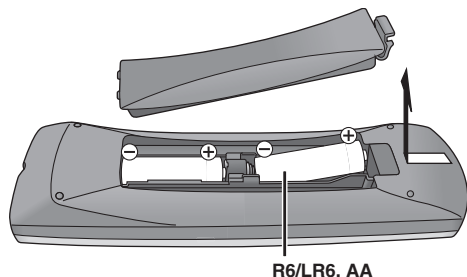


2 Batteries for remote control

The remote control information

■ Batteries

- Insert so the poles (+ and -) match those in the remote control.



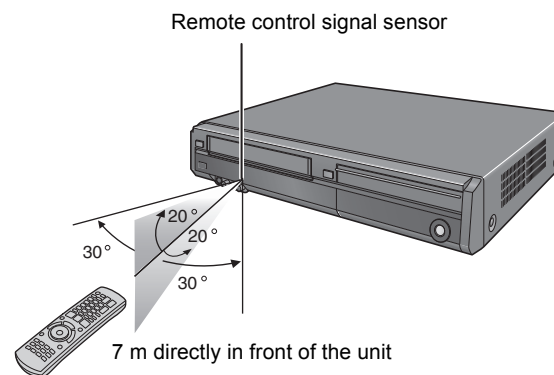
- Use alkaline or manganese batteries.
- Do not mix old and new batteries.
- Do not use different types at the same time.
- Do not heat or expose to flame.
- Do not leave the battery(ies) in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
- Do not take apart or short circuit.
- Do not attempt to recharge alkaline or manganese batteries.
- Do not use batteries if the covering has been peeled off.

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

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

Remote control operations (⇒ 6)

■ Use



The distance and angles are an approximate.

The precision parts in this unit are readily affected by the environment, especially temperature, humidity, and dust. Cigarette smoke also can cause malfunction or breakdown.

To clean this unit, wipe with a soft, dry cloth.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, carefully read the instructions that came with the cloth.

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

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

Use the **DVD lens cleaner** (not included) about once every year, depending on frequency of use and the operating environment. Carefully read the lens cleaner's instructions before use.

DVD lens cleaner: RP-CL720E

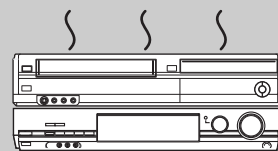
- This lens cleaner may not be for sale depending on the region.

To clean the video heads

Dirt on the video heads can cause poor recording and play. If the picture does not improve, use an optional head-cleaning cassette. If the problem persists, seek advice from a qualified service person.

- Do not place the unit on amplifiers or equipment that may become hot. The heat can damage the unit.
- The unit should not be installed or operated near large magnets or electromagnetic devices. Such devices can damage pre-recorded VHS recordings.
- Do not place any heavy objects on top of the unit.
- The unit should not be mounted in a vertical position. It's designed to operate in the horizontal position.

DO NOT



Note

Do not obstruct the rear panel's internal cooling fan.

■ Cautions about condensation

Condensation can cause unreliable playback of VHS recordings. Condensation may form in the following cases,

- The unit is brought from cold surroundings into a well-heated room.
- The unit is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.
- During rainy seasons.

In any of the above-mentioned conditions, do not operate the unit for at least 2 hours. The unit is not equipped with a moisture sensor.

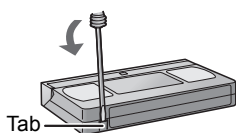
Before moving the unit, ensure the disc tray and cassette compartment are empty.

Failure to do so will risk severely damaging the disc, the video cassette and the unit.

Video Cassette Information

■ Video cassettes

- Break off the video cassette's tab to prevent accidental erasure. Cover the hole with a double layer of adhesive tape when you want to use the video cassette for recording again.
- You can use video cassettes with the VHS and S-VHS marks, but the unit is unable to make full use of the characteristics of S-VHS video cassettes.

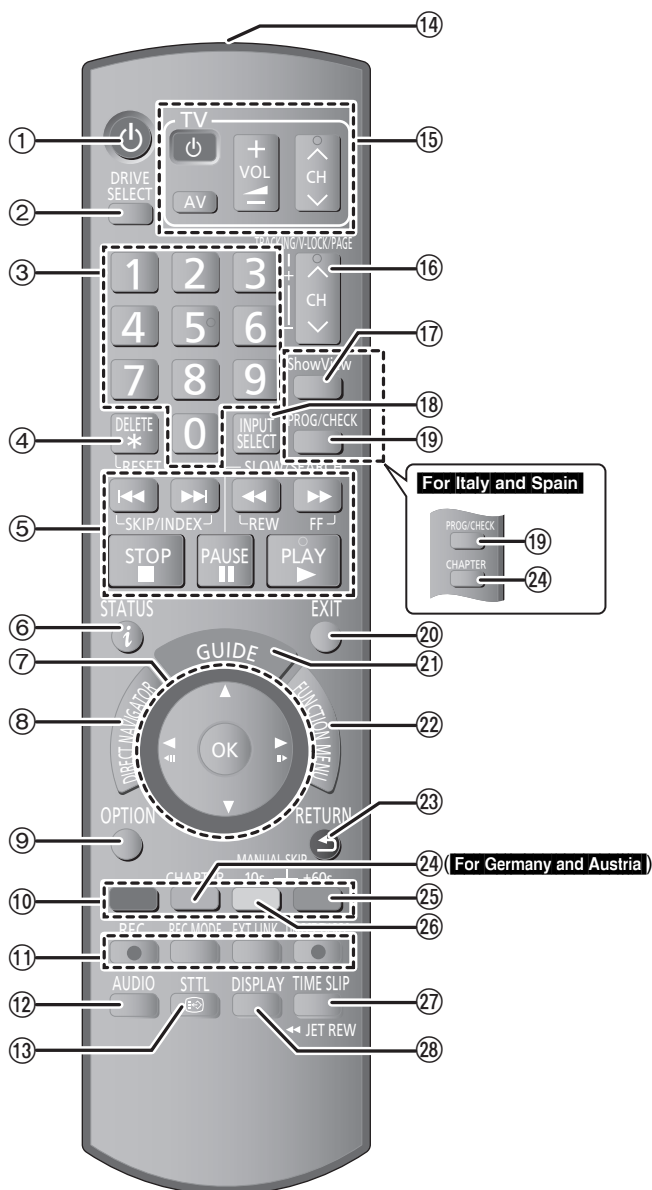


■ Video cassette care

- Poor quality or damaged video cassettes can cause the heads to become dirty and malfunction. Store your video cassettes carefully and discard them when they become dirty or damaged.
- Never use video cassettes on which juice has been spilled or those that are extremely damaged since this will not only cause the heads to become dirty, but will also make the unit malfunction.

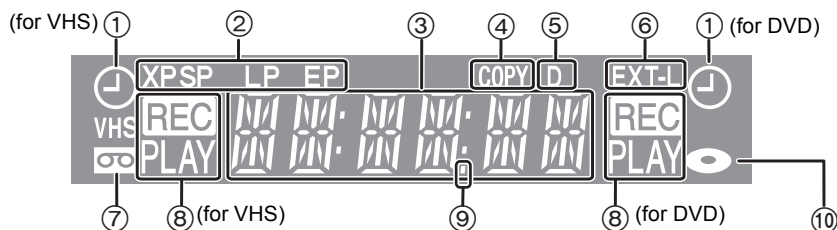
Remote control

Instructions for operations are generally described using the remote control.



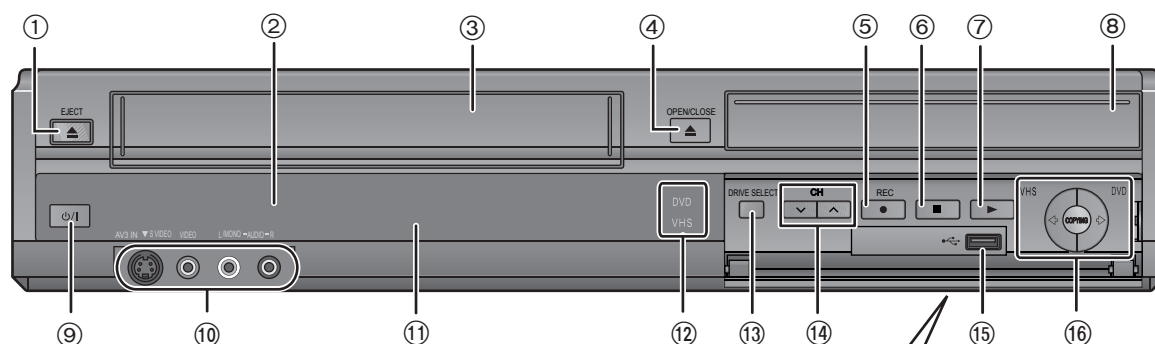
- ① Turn the unit on (⇒ 10)
- ② Select drive [DVD or VHS] (⇒ 18, 19)
Drive changes each time you press [DRIVE SELECT].
- ③ Select channels and title numbers, etc./Enter numbers
- ④ To delete unwanted recorded titles, timer programmes or still pictures/Reset the tape counter (⇒ 23, 31, 51, 57)
- ⑤ Basic operations for recording and play
- ⑥ Show digital channel information (⇒ 17)/Programme information within TV Guide screen (⇒ 33)/Show status messages (⇒ 57)
- ⑦ Selection/OK, Frame-by-frame (⇒ 34)
- ⑧ Show DIRECT NAVIGATOR (⇒ 35, 46)
- ⑨ Show OPTION menu (⇒ 32, 33, 46)
By using the OPTION button, you may access the various functions (Slideshow, Standby Settings, etc.) quickly and easily.
- ⑩ Colour buttons
– for TV Guide operations (⇒ 33)
– for switching the DIRECT NAVIGATOR screen (⇒ 35, 40)
– for switching VIDEO/Playlists (⇒ 52)
– for deactivating timer programme (⇒ 31)
– for selecting character type when entering text (⇒ 45)
– for tuning settings (⇒ 62)
- ⑪ Recording functions
 - [● REC] Start recording (⇒ 19)
 - [REC MODE] Change recording mode (⇒ 19)
 - [EXT LINK] Linked timer recordings with external equipment (⇒ 28)
 - [● DIRECT TV REC] Direct TV Recording (⇒ 42)
- ⑫ Select audio (⇒ 34, 37)
- ⑬ Show subtitles (Subtitles can be viewed if the digital broadcast programme has subtitles.) (⇒ 16)
- ⑭ Transmit the remote control signal
- ⑮ Television operations (⇒ 69)
- ⑯ Channel select/Change pages in the TV Guide system/TRACKING/V-LOCK (⇒ 16, 33, 37)
- ⑰ **For Germany and Austria** Show SHOWVIEW screen (⇒ 30)
- ⑱ Input select (AV1, AV2 or AV3) (⇒ 28, 29)
- ⑲ Show Timer Recording screen (⇒ 30)
- ⑳ Exit the menu screen
- ㉑ Show the TV Guide screen (⇒ 21, 33)
- ㉒ Show FUNCTION MENU (⇒ 44)
By using the FUNCTION MENU you may access the main functions (Playback, Recording, etc.) quickly and easily.
- ㉓ Return to previous screen
- ㉔ Create chapter (⇒ 34)
- ㉕ Skip approx. 1 minute forward (⇒ 34)
- ㉖ Skip approx. 10 seconds backward (⇒ 34)
- ㉗ Skip the specified time/Jet rewind button (JET REW) (⇒ 34, 36)
- ㉘ Show on-screen menu (⇒ 56)
Menu for disc playback and changing DVB multi audio or subtitle etc.

The unit's display



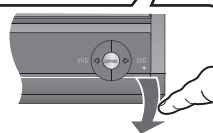
- ① Timer recording indicator
- ② Recording mode indicator (⇒ 25)
- ③ Main display
 - Current time
 - Disc recording and play counter
 - VHS recording and play counter
 - Miscellaneous messages, etc.
- ④ Copying indicator
- ⑤ Digital broadcast indicator
Lights when the unit is receiving digital broadcast.
- ⑥ Linked timer recordings with external equipment indicator
- ⑦ Tape indicator
- ⑧ Recording/Playback indicator
- ⑨ Remote control visual feedback
This flashes when it is operated by the remote control.
- ⑩ Disc indicator

Main unit



Opening the front panel

Press down on the — part with your finger.



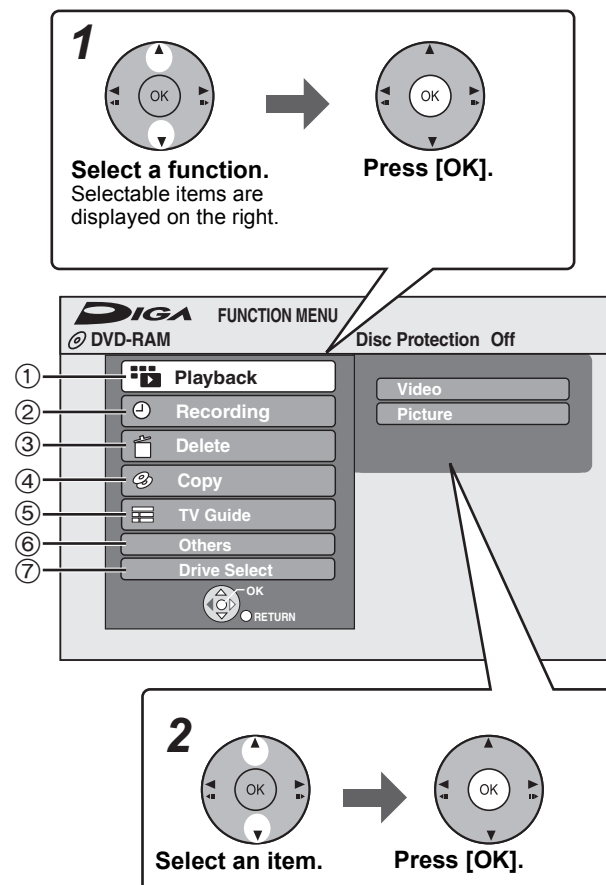
- ① Cassette eject (⇒ 15)
- ② Remote control signal sensor (⇒ 4)
- ③ Cassette compartment (⇒ 15)
- ④ Open/Close disc tray (⇒ 15)
- ⑤ Start recording (⇒ 19)/Specify a time to stop recording (⇒ 20)
- ⑥ Stop (⇒ 18, 19, 34)
- ⑦ Start play (⇒ 18)
- ⑧ Disc tray (⇒ 15)
- ⑨ **Standby/on switch (⏻/⏻) (⇒ 10)**
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.
- ⑩ Connection for VCR, camcorder etc. (⇒ 29)

- ⑪ Display (⇒ 6)
- ⑫ DVD/VHS drive indicator
Lights when the DVD or VHS drive is selected.
- ⑬ DRIVE SELECT (⇒ 18, 19)
Drive changes each time you press [DRIVE SELECT].
- ⑭ Channel select (⇒ 16)
- ⑮ USB port (⇒ 15)
- ⑯ One Touch Copying operation (⇒ 22)
 - From VHS to DVD
 - From DVD to VHS

Rear panel terminals (⇒ 8, 9, 70–72)

Easy access to various functions — FUNCTION MENU Display

"FUNCTION MENU" automatically appears when you turn the power on. (When "FUNCTION MENU Display" is set to "On" in the Setup menu)
You can access the main function quickly and easily.



① Playback Video (⇒ 18, 36) DivX (⇒ 39) Picture (⇒ 40) Music (⇒ 38) Top Menu (⇒ 18) Menu (⇒ 18)	Select when you wish to playback the contents. The DIRECT NAVIGATOR screen or menu screen etc. will be displayed.
For Germany and Austria ② Recording Timer Recording (⇒ 21, 30) ShowView Record (⇒ 30)	Select the recording method.
For Italy and Spain ② Recording (⇒ 21, 30)	
③ Delete Video (⇒ 23) Picture (⇒ 51)	Select the title or file type you wish to delete. The DELETE Navigator screen will be displayed.
④ Copy Advanced Copy (⇒ 52)	Select when you wish to copy in the way other than One Touch Copy (⇒ 22).
⑤ TV Guide (⇒ 21, 33)	Select when you wish to watch or record a programme. The TV Guide will be displayed.
⑥ Others Playlists (⇒ 48) Flexible Rec (⇒ 27) DVD Management (⇒ 58) Setup (⇒ 62)	Select and execute a function other than those above, such as recording or setting.
⑦ Drive Select DVD USB VHS	Change which drive is used.

Note

If you do not need to display FUNCTION MENU when turning the unit on, set "FUNCTION MENU Display" to "Off" in the Setup menu (⇒ 65).

STEP 1 Connection

Using a 21-pin Scart cable

- You can use a variety of Q Link functions by connecting the unit to a Q Link compatible television (⇒ 42).
- You can enjoy high-quality viewing by connecting the unit to an RGB compatible television (⇒ 86).

[Required setting]

"AV1 Output" in the Setup menu (⇒ 66)

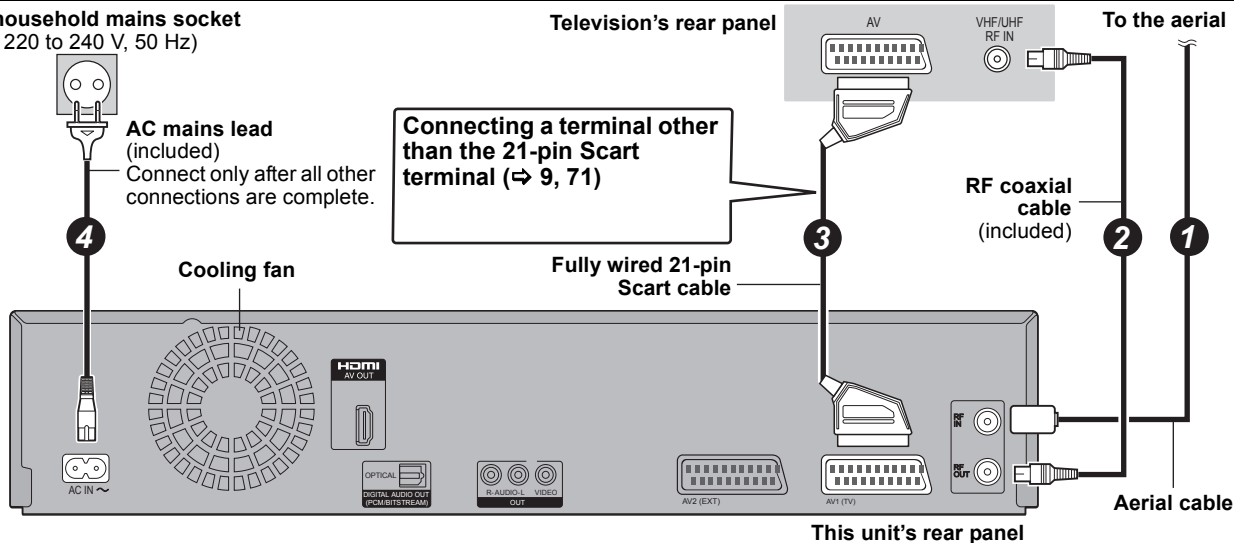
- Before connection, turn off all equipment and read the appropriate operating instructions.
- Select the connection pattern that matches your environment from pattern A–B. Confirm connections not listed below with your dealer.
- Refer to "Additional connections" (⇒ 70) for connection using other terminals and connection with other equipment.

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

To save power, unplug it from the household mains socket. This unit consumes a small amount of power, even when it is turned off [approx. 0.5 W ("Power Save in Standby" is activated and "RF OUT (Aerial Signal)" is set to "Off".)]

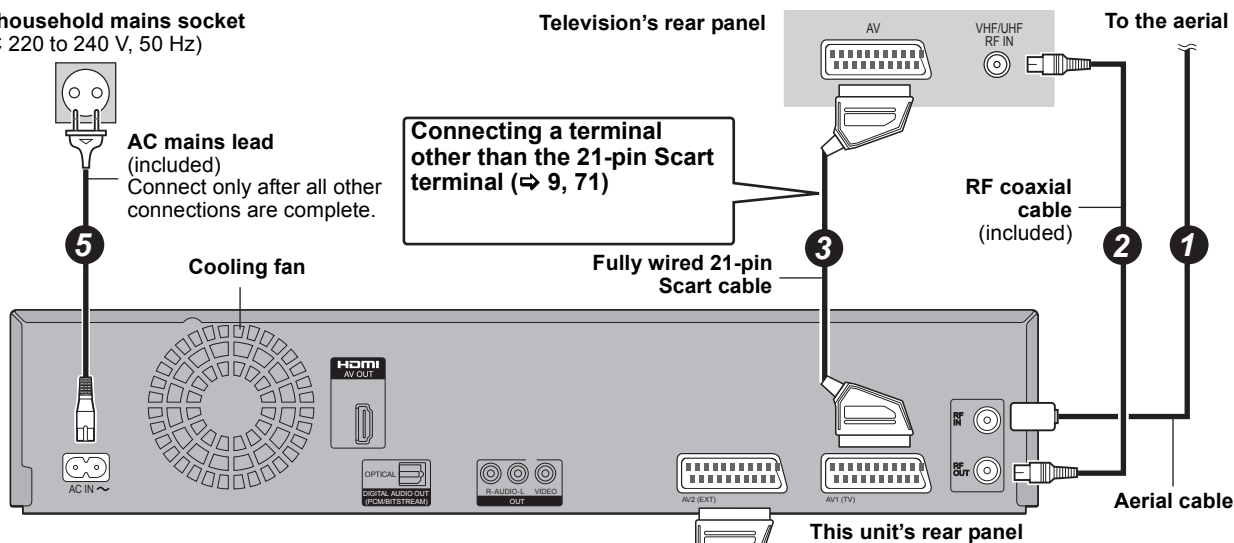
A Connecting a television

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



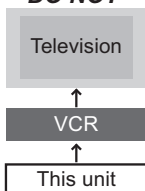
B Connecting a television and digital satellite receiver

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

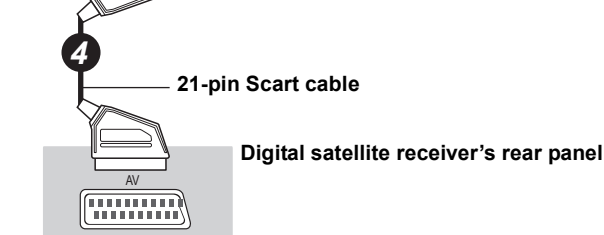


Connect the unit directly to the television
If you connect the unit through an AV selector or video cassette recorder to the television, video signal will be affected by copyright protection systems and the picture may not be shown correctly.

DO NOT



- When connecting to a television with a built-in VCR
Connect to the input terminals on the television side if there are both television and VCR input terminals.



[Required setting]

"AV2 Input" setting in the Setup menu (⇒ 66)

You can enjoy high-quality picture by adding the HDMI cable connection to the 21-pin Scart cable connection between this unit and your TV.

Connecting to a TV with an HDMI (High Definition Multimedia Interface) cable

When connected to an HDMI compatible unit, an uncompressed digital audio and video signal is transmitted. You can enjoy high quality, digital video and audio with just one cord. When connecting to an HDMI-compatible HDTV (High Definition Television), the output can be switched to 1080p, 1080i or 720p HD video.

- This unit incorporates HDMI™ (V.1.3a with Deep Colour) technology.
- Video sources converted to 1920×1080 resolution, while of high quality, will exhibit somewhat lower subjective image resolution than true, native 1080p full-HD sources. See dealer for details.
- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When setting video output to “1080p”, please use the HDMI cables 5.0 meters or less.

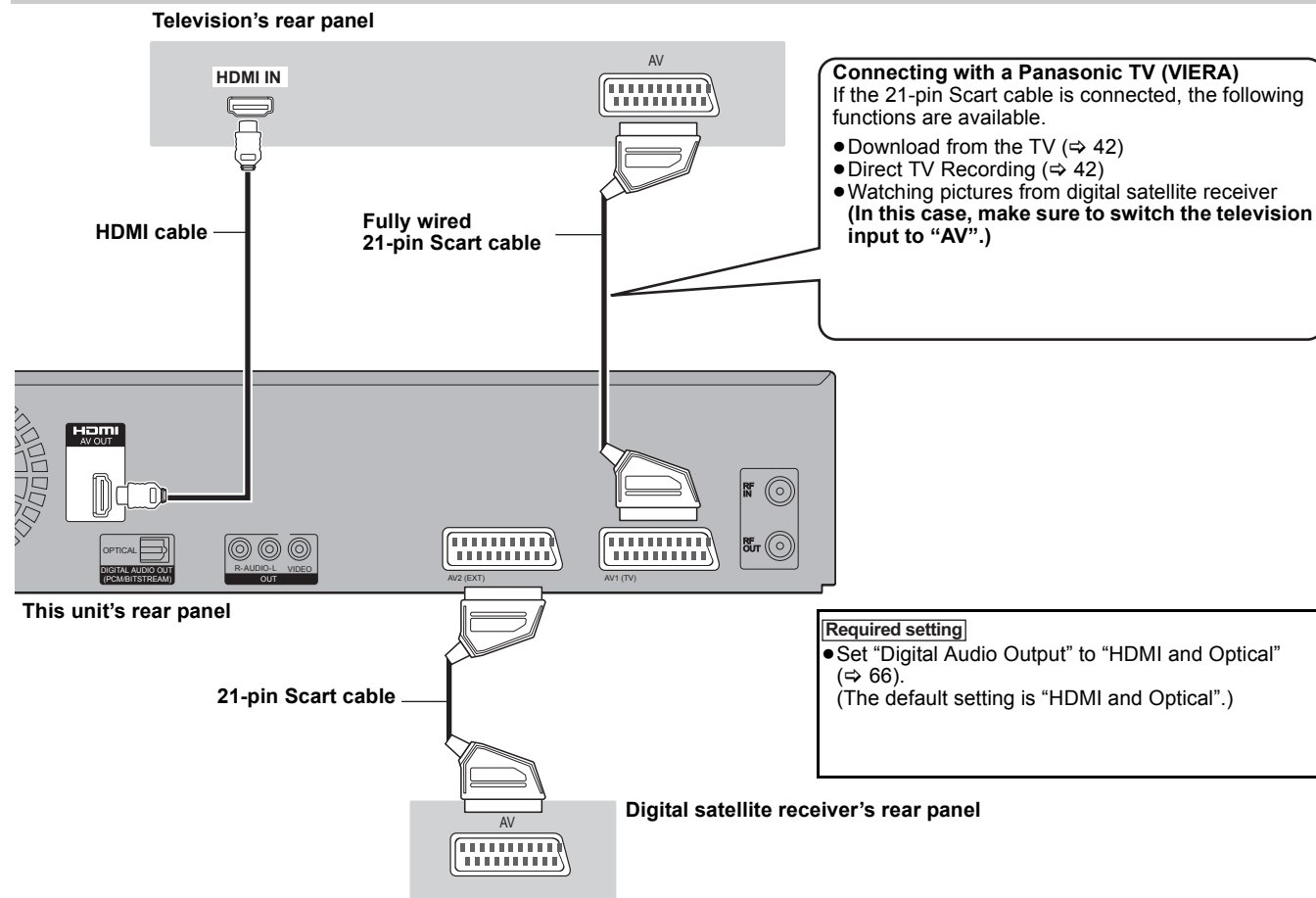
Regarding VIERA Link “HDAVI Control™” function

When connecting with a Panasonic TV (VIERA) or a receiver equipped with the “HDAVI Control” function, linked operations would be possible. [⇒ 42, Linked operations with the TV (VIERA Link “HDAVI Control™/Q Link)]

- Non-HDMI-compliant cables cannot be utilised.
- It is recommended that you use Panasonic's HDMI cable.

Recommended part number:

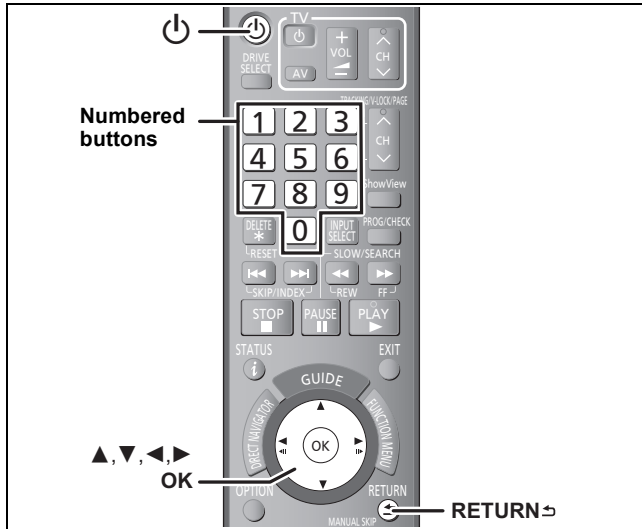
RP-CDHS15 (1.5 m), RP-CDHS30 (3.0 m), RP-CDHS50 (5.0 m), etc.



Note

- If you are connecting to a TV that is only compatible with 2 channel audio output, audio with 3 channels or more will be down mixed (⇒ 85) and output as 2 channels, even if connecting with an HDMI cable. (Some discs cannot be down mixed.)
 - You cannot connect this unit to DVI devices that are incompatible with HDCP.
- For units compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection that are equipped with a digital DVI input terminal (PC monitors, etc.):
- Depending on the unit, images may not be displayed properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)

STEP 2 Channel reception settings and TV aspect settings



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

When connecting to a television that has the VIERA Link or Q Link functions (⇒ 42), downloading from the television starts. You can download the tuning positions from the television for the channels in this unit's channel coverage.

If the Country setting menu appears on the television. Press [▲, ▼] to select the country and press [OK].

For Germany and Austria

The "Aktive Antenne" setting menu appears. Press [▲, ▼] to select "Ein" or "Aus" and press [OK]. When using indoor antenna that is not equipped with power supply, select "Ein".

If the Auto setup menu appears on the television. Press [▲, ▼] to select "Digitale & analoge Sender" or "Digitale Sender" and press [OK].

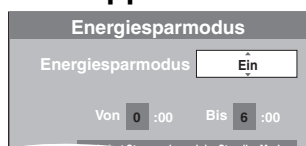
- **Digitale & analoge Sender (Digital & Analogue channels):**
Perform the analogue Auto-Setup after performing the DVB Auto Setup.
- **Digitale Sender (Digital channels):**
Perform the DVB Auto Setup. (analogue Auto-Setup is not performed)

"DVB Auto-Setup" starts.

The unit will search for the terrestrial digital channels. TV channels will be located and stored ready for use. This takes 5-10 minutes.

DVB Auto-Setup				
Suchlauf	Kan 5			69
Kanal	Sendernamen	Typ	Qualität	
1	ABC	TV	9	
2	ABC 2	Daten	9	

- 3 Press [▲, ▼] to select "Ein", "Aus" or "Zeitauswahl" and press [OK] when the "Energiesparmodus" setting menu appears.



- Ein (On):** It will go into the Power Save in Standby mode when the unit is in standby mode.
- Aus (Off):** It is possible to start quickly from the standby mode. (Quick Start mode)
- Zeitauswahl (On Timer):**
Press [▲, ▼, ◀, ▶] to set the start and stop time and then press [OK].
• "Energiesparmodus" is set to activate during the setting time period.

The features of the Power Save in Standby function when the unit is in standby mode are as below.

Energiesparmodus (Power Save in Standby)	Activated (Ein/ Zeitauswahl)*1	Deactivated (Aus)
Power consumption	Approx. 0.5 W*3	Approx. 14 W
Startup time	Not Quick	Quick*2
Watching the picture (e.g. Pay TV) from the device connected to AV2	Cannot do	Can do

*1 "Unit's Display" is set to "Automatic" in the Setup menu. (⇒ 65)

*2 It is possible to startup and start recording within several seconds.
– Depending on the type of TV or the connected terminal, it may take time to display the screen.

*3 When "RF OUT (Aerial Signal)" is set to "Off" in the Setup menu (⇒ 68)

If the TV aspect setting screen appears on the television.

Press [▲, ▼] to select the TV aspect and press [OK].

• 16:9:

When connected to a 16:9 widescreen television.

• Pan & Scan:

When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture (⇒ 85).



• Letterbox:

When connected to a 4:3 aspect television. 16:9 picture is shown in the letterbox style (⇒ 85).



When television picture appears, set up is complete.

If the confirmation screen of GUIDE Plus+ data download appears, perform the following steps.

(For information about GUIDE Plus+ system ⇒ 21)

- 4 Press [◀, ▶] to select "Ja" and press [OK].



- 5 Press the numbered buttons or [▲, ▼, ◀, ▶] to enter your postal code and press [OK].

GUIDE Plus+ data download starts. This takes about 30 minutes.

- 6 When the download has finished Press [OK].

Set up is complete.

To stop partway

Press [RETURN ↵].

■ If the clock setting menu appears

Set the clock manually (⇒ 67).

■ To confirm that stations have been tuned correctly (⇒ 63)

■ To restart set up (⇒ 62)





For Germany and Austria

On screen messages are displayed in German in the factory preset. After completing step 6, change the on-screen display to English in the following steps.

- 1 Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select "Weit. Funktionen" and press [OK].
- 3 Press [▲, ▼] to select "Setup" and press [OK].
- 4 Press [▲, ▼] to select "Display" and press [▶].
- 5 Press [▲, ▼] to select "Sprachauswahl" and press [OK].
- 6 Press [▲, ▼] to select "English" and press [OK].
- 7 Press [EXIT].

Discs you can use for recording and play

(○: Possible, -: Impossible)

Disc type Standard symbol	Logo	Data that can be recorded and played	Rewritable	Play on other players*1	Recording 16:9 aspect picture*2	Recording both M 1 and M 2 for bilingual broadcasts*2 (Analogue broadcast only)	Copy-once recording (CPRM)
DVD-RAM RAM		Video Still picture	○	○	○	○	○ CPRM (⇒ 85) compatible discs only.
DVD-R -R before finalisation DVD-V after finalisation		Video	-	○	○	—*3 (Either one)	-
DVD-R DL -R DL before finalisation DVD-V after finalisation		Video	-	○	○	—*3 (Either one)	-
DVD-RW -RW(V) before finalisation DVD-V after finalisation		Video	○	○	○	—*3 (Either one)	-
+R +R before finalisation DVD-V after finalisation	-	Video	-	○	- (4:3 aspect)	—*3 (Either one)	-
+R DL +R DL before finalisation DVD-V after finalisation	-	Video	-	○	- (4:3 aspect)	—*3 (Either one)	-
+RW +RW	-	Video	○	○	- (4:3 aspect)	—*3 (Either one)	-

• The explanations concerning video cassettes are indicated by **VHS**.

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

Finalisation is needed for playback on other equipment (⇒ 60).
RAM can be played back on Panasonic DVD recorders and DVD-RAM compatible DVD players.

-R DL, **+R DL** or **+RW** can be played back only on equipment compatible with these discs.

*2 For further information (⇒ 24, Notes for recording)

*3 The audio selected in "Bilingual Audio Selection" (⇒ 65) is recorded.

- **RAM -RW(V) +R +R DL +RW** To use a new disc, formatting is necessary (⇒ 59).
- **+RW** If the disc failed to play on other equipment, we recommend you create top menu (⇒ 60).
- Use of Panasonic discs is recommended.
For available recording times for different discs under different recording modes, see "DVD recording modes and approximate recording times" (⇒ 25).
- Formatting and/or recording/initializing constraints may prevent you from playing or recording certain discs.
- Please see specifications (⇒ 84) for compatible disc versions and recording speeds.

■ When playing DVD-R DL (Dual Layer, single-sided) and +R DL (Double Layer, single-sided)

DVD-R DL (Dual Layer, single-sided) and +R DL (Double Layer, single-sided) discs have two writable layers on one side. When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers.

■ Recording format

This unit records video in the following formats.

DVD Video Recording format **RAM**

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

- You can delete unwanted parts of a title, create Playlists, etc.
- The broadcasts that allow "One time only recording" can be recorded to a CPRM compatible disc.

DVD-Video format **-R -R DL -RW(V)**

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

- The broadcasts that allow "One time only recording" cannot be recorded even if using a CPRM compatible disc.
- After finalising the disc, you can play the disc on DVD players and other equipment.

+VR (+R/+RW Video Recording) format **+R +R DL +RW**









This is a method for recording moving pictures to +R/+RW discs. You can playback such discs recorded in this method in a similar way as contents recorded in the DVD-Video format.

- The broadcasts that allow "One time only recording" cannot be recorded.
- After finalising the disc or creating the top menu, you can play the disc on DVD players and other equipment.

Note

- +R discs recorded with this unit and +R discs recorded with another Panasonic DVD Recorder may be incompatible. However, discs that are finalised are compatible and can be played.
- This unit cannot record NTSC signals to discs that already have PAL signal recordings.
- You may not be able to record depending on the condition of the discs and you may not be able to play due to the condition of the recording.

Play-only discs

Disc type	Logo	Standard symbol	Uses
DVD-Video	 	DVD-V	High quality movie and music discs
DVD-RW (DVD Video Recording format)		-RW(VR)	DVD-RW video recorded on another DVD recorder <ul style="list-style-type: none"> • You can play programmes that allow One time only recording if they have been recorded onto a CPRM compatible disc. • By formatting (⇒ 59) the disc, you can record onto it in DVD-Video format. • It may be necessary to finalise the disc on the equipment used for recording.
DVD-R DVD-R DL	 	DivX®/MP3/JPEG	<ul style="list-style-type: none"> • DVD-R and DVD-R DL with video recorded in DivX • DVD-R and DVD-R DL with music recorded in MP3 • DVD-R and DVD-R DL with still pictures recorded in JPEG
CD		CD	Recorded audio and music (including CD-R/RW*)
	—	DivX/MP3/JPEG	<ul style="list-style-type: none"> • CD-R and CD-RW with video recorded in DivX • CD-R and CD-RW with music recorded in MP3 • CD-R and CD-RW with still pictures recorded in JPEG
Video CD		VCD	<ul style="list-style-type: none"> • Recorded music and video (including CD-R/RW*)
SVCD			

* Close the session after recording. Play may be impossible on some discs due to the condition of the recording.

- The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
- Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed.

Discs that cannot be played

- 2.6 and 5.2 GB DVD-RAM, 12 cm
- 3.95 and 4.7 GB DVD-R for Authoring
- DVD-R, DVD-R DL, DVD-RW, +R, +R DL recorded on another unit and not finalised (⇒ 85)
- Discs recorded with AVCHD format
- DVD-Video with a region number other than "2" or "ALL"
- DVD-Audio
- Blu-ray, HD DVD
- DVD-ROM, +R (8 cm), CD-ROM, CDV, CD-G, Photo CD, CVD, SACD, MV-Disc, PD
- DVD-RAM with a cartridge (TYPE 1)

Types of disc for the type of connected TV

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

(○: Possible to view, —: Impossible to view)

TV type	Disc	Yes/No
Multi-system TV	PAL	○
	NTSC	○
PAL TV	PAL	○
	NTSC	○*1 (PAL60)
NTSC TV	PAL	—
	NTSC	○*2

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

*2 Select "NTSC" in "TV System" (⇒ 66).

- When playing back a disc, ensure that you match the "TV System" setting to the disc (PAL or NTSC) (⇒ 66).

USB memories you can use on this unit

Compatible USB memories	USB memories which are defined as USB mass storage class, and digital cameras that use PTP protocol: <ul style="list-style-type: none"> – USB memories that support USB 1.0/1.1 and USB 2.0 Full Speed/High Speed. • USB memories of up to 128 GB can be used. • USB memories that support bulk only transfer. • CBI (Control/Bulk/Interrupt) is not supported. • Digital Cameras which require additional programme installation when connected to a PC are not supported. • MTP (Media Transport Protocol) device is not supported. • A multi-port USB card reader is not supported. 		
Format	FAT16 and FAT32 file systems are supported. <ul style="list-style-type: none"> • UDF/NTFS/exFAT file system is not supported. • Depending on the sector size, some files may not work. • Only the first partition on USB memories with multi-partition is supported. 		
Indicated in these instructions by	USB		
Data that can be played or copied	(○: Possible, –: Impossible)		
File format	DivX	MP3	Still pictures (JPEG)
Playing	○*	○	○
Instructions	You can play DivX files recorded with a computer onto the USB memory (⇒ 39).	You can play MP3 files recorded with a computer onto the USB memory (⇒ 38).	You can play and copy to DVD-RAM still pictures recorded with a computer onto the USB memory (⇒ 40, 55).

* DivX VOD contents recorded on USB memories cannot be played back. (⇒ 39)

• Despite meeting the conditions mentioned above, there may be USB memories that cannot be used for this unit.

Note

• This unit's USB port does not support bus-powered USB device.

Regarding DivX files, Music files and still pictures (JPEG)

DivX

Playable media	-R -R DL CD USB ^{※1}
File format	DivX • Files must have the extension ".DIVX", ".divx", ".AVI" or ".avi".
Number of folders	Maximum number of folders recognizable: 300 folders (including the root folder)
Number of files	Maximum number of files recognizable ^{※2} : 200 files
Support version	Certified to the DivX Home Theater Profile V3.0. Video – Number of stream: Up to 1 – Codec: DIV3, DIV4, DIVX, DX50 – 16 × 16 to 720 × 576 (25 fps) – 16 × 16 to 720 × 480 (30 fps) – Aspect Ratio: 10:11, 40:33, 16:11, 12:11, 1:1 Audio – Number of stream: Up to 8 – Format: MP3, MPEG, Dolby Digital – Multi channel: Dolby Digital is possible. MPEG multi is 2 ch conversion. – Bitrate: 16 kbps to 320 kbps (MP3/MPEG), 32 kbps to 448 kbps (Dolby Digital) – Sampling frequency: 16 kHz/22.05 kHz/24 kHz/32 kHz/44.1 kHz/48 kHz (MP3/MPEG)/32 kHz/44.1 kHz/48 kHz (Dolby Digital)

MP3

Playable media	-R -R DL CD USB
File format	MP3 • Files must have the extension ".mp3" or ".MP3".
Number of folders (groups or albums)	Maximum number of folders (groups or albums) recognizable: 300 folders (groups or albums) (including the root folder)
Number of files (tracks)	Maximum number of files (tracks) recognizable ^{※2} : 3000 files (tracks)
Bit rates	32 kbps to 320 kbps
Sampling frequency	16 kHz/22.05 kHz/24 kHz/32 kHz/44.1 kHz/48 kHz
ID3 tags	compatible (USB)

• If there is a large amount of still picture data etc. within a MP3 file, play may not be possible.

Still pictures (JPEG^{※3})

Playable media	RAM -R -R DL CD USB
File format	JPEG • Files must have the extension ".jpg" or ".JPG".
Compatible pixels	Between 34×34 and 6400×6400 (Sub sampling is 4:2:2 or 4:2:0)
Number of folders ^{※4}	-R -R DL CD USB Maximum number of folders recognizable: 300 folders RAM This unit can handle a maximum of 300 folders
Number of files ^{※4}	-R -R DL CD USB Maximum number of files recognizable ^{※2} : 3000 files RAM This unit can handle a maximum of 3000 files
MOTION JPEG PROGRESSIVE JPEG	Not supported

※1 **USB** DivX VOD contents cannot be played back.

※2 Total number of recognizable file including MP3, JPEG, DivX and other types of files is 4000.

※3 It may take a few moments for still pictures to display.

※4 When there are many files and/or folders, some files may not display or be playable.

-R -R DL CD

- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- This unit is compatible with multi-session/border (except for DVD-R DL), but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (tracks) and/or folders (groups or albums) and some files (tracks) may not display or be playable.
- English alphabet and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups or albums) may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording conditions, the disc may not be played.

RAM

- Compatible formats: DCF^{※5} compliant (Content recorded on a digital camera, etc.)

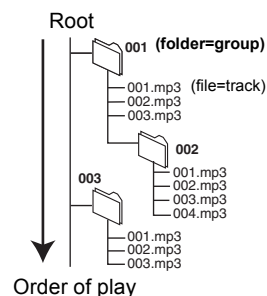
※5 Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).

■ Structure of folders displayed by this unit

You can play Music files (MP3) and still pictures (JPEG) on this unit by making folders as shown below. However depending on the method of writing data (writing software), play may not be in the order you numbered the folders.

Structure of MP3 folders

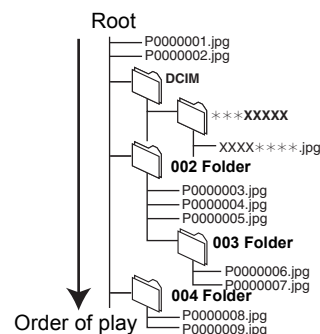
Prefix with 3-digit numbers in the order you want to play them.



Structures of still picture folders

-R -R DL CD USB

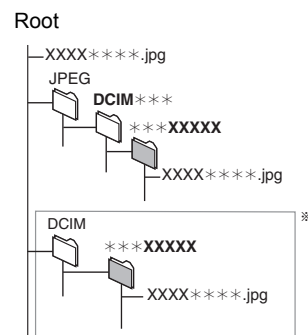
Files inside a folder are displayed in the order they were updated or taken.



RAM

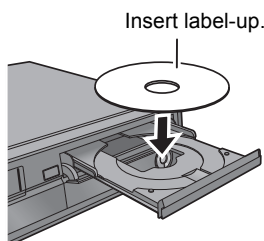
Folders can be created on other equipment.

- These folders cannot be selected as a copying destination.
- If a folder name or file name has been input using other equipment, the name may not be displayed properly or you may not be able to play or edit the data.



Inserting discs

- 1 Press **[▲ OPEN/CLOSE]** to open the tray.



- 2 Press **[▲ OPEN/CLOSE]** to close the tray.

Automatic drive select function

DVD-V VCD CD

- If the unit is stopped, it automatically switches to the DVD drive when a disc is inserted.

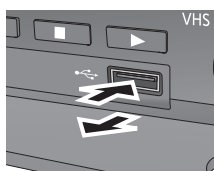
Note

- When using DVD-RAM or DVD-R, remove the disc from the cartridge. Cartridge discs cannot be used.
- **RAM** It is not possible to record or play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.

Inserting, removing the USB memory

Inserting the USB memory

- Before inserting any USB memory to this unit, ensure that the data stored therein has been backed up.
- Check the orientation of the USB connector and insert it straight in.
- Insert an USB device while the unit is stopped, so the "USB device" screen is displayed. Select an item and press **[OK]** to switch to the USB-related operations (⇒ 38, 55).



Removing the USB memory

- Complete all USB-related operations and pull the USB memory straight out.
- If a USB memory being accessed is pulled out, then the data may be damaged.

Inserting a video cassette

Insert a video cassette.

The surface on which you can see a roll of tape should face up. The unit is automatically turned on.

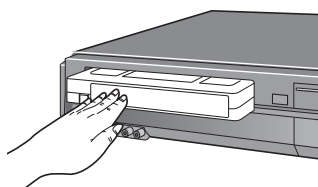
To eject:

From the main unit

- Press **[▲ EJECT]** on the main unit.

From the remote control

- Press **[DRIVE SELECT]** to select VHS drive and then press and hold **[■]** for about 3 or more seconds.



Disc care

How to hold a disc

Do not touch the recorded surface.



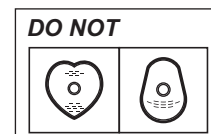
If there is dirt or condensation on the disc

Wipe with a damp cloth and then wipe dry.



Handling precautions

- Be careful about scratches and dirt.
- Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not drop stack, or impact discs. Do not place objects on them.
- Do not use the following discs:
 - Discs with exposed adhesive from removed stickers or labels (rental discs, etc.).
 - Discs that are badly warped or cracked.
 - Irregularly shaped discs, such as heart shapes.
- Do not place in the following areas:
 - In direct sunlight.
 - In very dusty or humid areas.
 - Near a heater.
 - Locations susceptible to significant difference in temperature (condensation can occur).
 - Where static electricity or electromagnetic waves occur.
- To protect discs from scratches and dirt, return them to their cases when you are not using them.

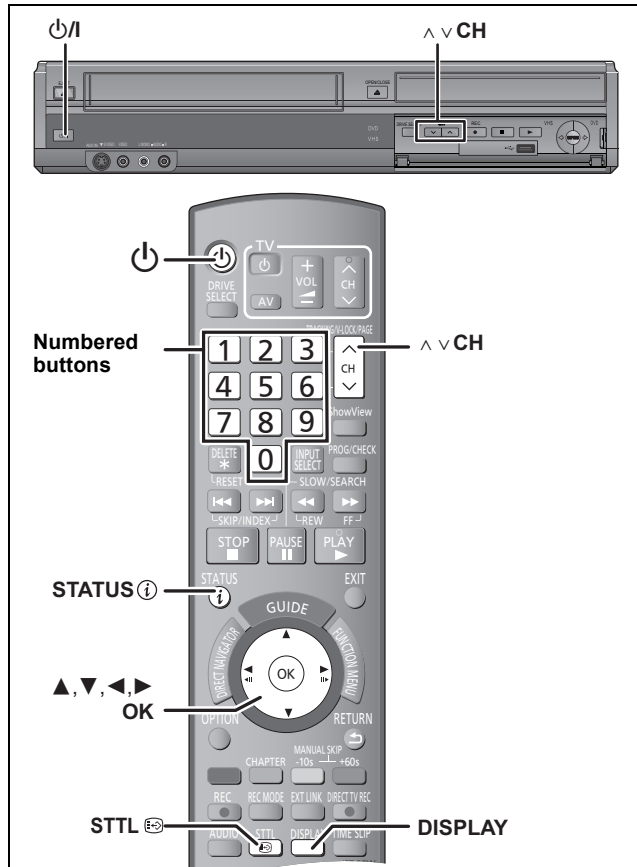


The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.

Examples of causes of such losses are

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

This DVD recorder has a tuner which allows it to directly receive and record analogue and digital terrestrial channels.



Select the channel

- 1 Turn on the television and select the appropriate AV input to suit the connections to this unit.
- 2 Press [⏻] to turn the unit on.
- 3 Press [^ V CH] to select the channel.
Everytime you change the station, digital channel information appears automatically.
Channels are displayed in the order of digital channels first, and then followed by analogue channels.



"D" means digital broadcasts.

- You can also select the channel with the numbered buttons.
e.g., 5: [0] ⇒ [0] ⇒ [5]
15: [0] ⇒ [1] ⇒ [5]
115: [1] ⇒ [1] ⇒ [5]

To show subtitle (Digital broadcast only)

When "Subtitle" appears in digital channel information (⇒ 17)

Press [STTL].

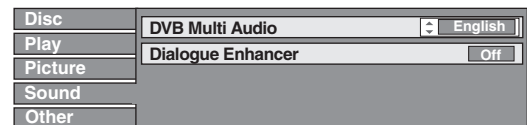
- Press again to hide the subtitle.
- Programmes are recorded with subtitle when you record them with the subtitle displayed (⇒ 20).

To select a language for DVB multi audio or DVB subtitle (Digital broadcast only)

When there are multiple audio or subtitle in the current channel, you can select a language.

- 1 Press [DISPLAY].
- 2 Press [▲, ▼] to select the "Sound" menu or "Other" menu and press [▶].
- 3 Press [▲, ▼] to select "DVB Multi Audio" or "DVB Subtitles" and press [▶].

e.g., DVB Multi Audio

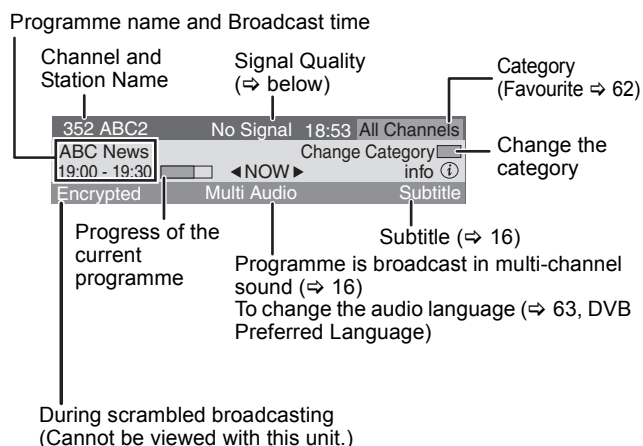


- 4 Press [▲, ▼] to select the language.

Digital channel information

While stopped

Press **[STATUS ⓘ]** to show the information screen.



To switch information of the current programme and the next programme

Press **[◀, ▶]**.

To show detailed information about the programme

Press **[STATUS ⓘ]** again (only when "info ⓘ" is displayed).

To hide the information screen

Press **[STATUS ⓘ]** once or twice.

Signal Quality

No Signal: The digital broadcast signal is not being received.

No Service: No broadcasts are currently available.

If "No Signal" is displayed:

- Check that the current digital broadcast channel is correctly broadcasting.

Note

You can also select the other channel when the information screen is displayed by pressing **[▲, ▼]** and **[OK]**.

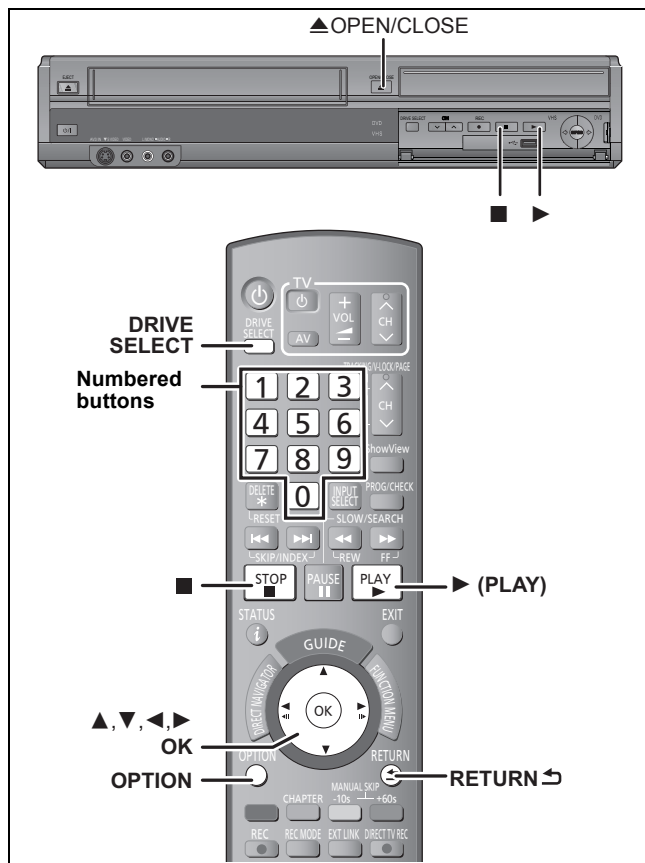
■ If New Channel Message appears

When a DVB channel is added, this unit will be informed automatically. Then the confirmation message appears. If you select "Yes" on the display, Auto-Setup starts (all channel settings are deleted. The timer recording programmes are also cancelled.).



The display/hide setting can be changed (⇒ 62, New Channel Message).

Refer to “Advanced disc playback” (⇒ 34) and “Advanced video cassette playback” (⇒ 36) for detail information.



Preparation

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

Playing discs

RAM -R -R DL -RW(V) +R +R DL +RW DVD-V -RW(VR) CD VCD

- 1 Press [DRIVE SELECT] to select the DVD drive.**
The DVD indicator lights up on the unit's display.
- 2 Press [OPEN/CLOSE] on the main unit to open the tray and insert a disc.**
 - Press the button again to close the tray.
- 3 Press [] (PLAY).**

RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR)
Play starts from the most recently recorded title.

DVD-V **VCD**

Play starts from the point specified by the disc.

CD

Play starts from the beginning of the disc.

Menu operation for other type of contents

- DivX (⇒ 39)
- MP3 (⇒ 38)
- Still pictures (JPEG) (⇒ 40)

Note

- During recording, timer recording standby or EXT LINK standby, this unit cannot play discs that do not match the "TV System" (PAL/NTSC) (⇒ 66) setting. Set "TV System" to match the discs before playing them.
- Depending on the disc, it may take time for the menu screen, pictures, sound, etc. to start.
- The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.

- **When a menu screen appears on the television**

DVD-V

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

- If you are instructed to press the “ENTER” button by the menu screen or the disc’s instruction document, press [OK].

VCD

Press the numbered buttons to select the item.

e.g., 5: [0] \Rightarrow [5] 15: [1] \Rightarrow [5]

- To return to the menu screen

DVD-V

- 1 Press [OPTION].
- 2 Press [▲, ▼] to select “Top Menu” or “Menu” and press [OK].

VCD

Press [RETURN ↵].

Note

Discs continue to rotate while menus are displayed. Press [■] when you have finished playback to protect the unit's motor, your television screen and so on.

Playing a video cassette

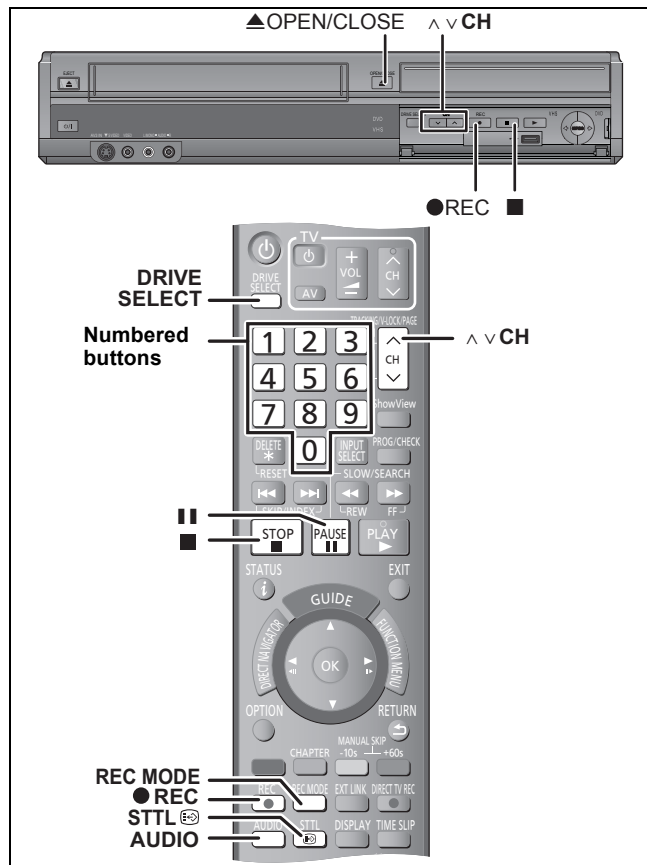
VHS

- 1 Press [DRIVE SELECT] to select the VHS drive.**
The VHS indicator lights up on the unit's display.
- 2 Insert a recorded video cassette (⇒ 15).**
Play starts automatically if you insert a cassette with the accidental erasure tab removed.
- 3 Press [▶] (PLAY).**

Note

- When the tape reaches its end, the unit automatically rewinds it to the beginning. This function does not work during timer recording, fast-forwarding and specified stop recording.
- Jet Search, cue, review or slow playback will be automatically cancelled after 10 minutes and for pause it will be cancelled after 5 minutes.
- When playing back a tape which was recorded on another VCR, it may be necessary to adjust the tracking (⇒ 37). In some cases the picture quality may still be inferior. This is due to format constraints.
- SECAM recorded VHS tapes cannot be played on this unit.

Refer to “Notes for recording” (⇒ 24) and “Advanced recording” (⇒ 25) for detail information.



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

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

Preparation

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

1 Press [DRIVE SELECT] to select the DVD or VHS drive.

The DVD or VHS indicator lights up on the unit's display.

2 If you selected the DVD drive

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

- Press the button again to close the tray.

If you selected the VHS drive

Insert a video cassette with an intact accidental erasure prevention tab.

3 Press [**▲ ▼ CH**] to select the channel.

Channels are displayed in the order of digital channels first, and then followed by analogue channels.

To select with the numbered buttons:

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



"D" means digital broadcasts.

4 Press [REC MODE] to select the recording mode.

- DVD recording modes and approximate recording times (⇒ 25)
 - VHS Recording Modes and Durations (⇒ 25)
- e.g.,

Recording Mode	
Rec Mode	Remain
XP	0:37
SP	1:15
LP	2:30
EP	5:00

- (Except for **VHS**) To record sound using LPCM (XP mode only): Set the "Audio Mode for XP Recording" to "LPCM" in the Setup menu (⇒ 65).

5 Press [**● REC**] to start recording.



- (Except for **VHS**) Recording will take place on open space. Data will not be overwritten.
- You cannot change the channel or recording mode during recording.
- You can record while the unit is in standby for timer recording. However, once the time for the timer recording to begin is reached, any recording taking place will stop and the timer recording will begin.
- **RAM VHS** (Analogue broadcast only) You can change the audio being received by pressing [AUDIO] during recording. (Does not affect the recording of audio.)
- **VHS**
 - Even if the video cassette is labelled "S-VHS", it is not possible to record in the S-VHS system with this unit. This unit records in the normal VHS system.
 - When recording is paused for 5 minutes or more, the unit returns to stop.

■ To pause recording

Press [**||**].

Press again to restart recording.

You can also press [**● REC**] to restart. (Title is not split into separate titles.)

■ To stop recording

Press [**■**].

Note

- **VHS** It is not possible to record SECAM signal on a video cassette.
- **USB** It is not possible to record on a USB memory.
- Video will not be recorded to DVD-R discs which include JPEG images.
- **-R -R DL -RW(V) +R +R DL +RW** It takes about 30 seconds for the unit to complete recording management information after recording finishes.
- **RAM -RW(V) +R +R DL +RW** To use a new disc, formatting is necessary.
- When recording a digital radio broadcast or a digital broadcast that is not being received correctly, the digital channel information (⇒ 17) is also recorded and remains visible during playback.


In order to play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL (recorded with this unit) on other DVD players, it is necessary to finalise them (⇒ 60).

In order to play +RW on other players, we recommend you to create a top menu (⇒ 60).

When recording digital broadcast with subtitle or multiple audio

If a programme to record has subtitle or multiple audio, you can record with subtitle or selected audio.

To record with subtitle

Before start recording, press [STTL ] to show the subtitle.

If the programme has multiple subtitle, select the desired language (⇒ 16).

- Subtitle cannot be switched after recording.

To record with the selected audio

Before start recording, select the desired language for audio (⇒ 16).

To specify a time to stop recording—One Touch Recording

During recording

Press [**● REC**] on the main unit to select the recording time.

- You can specify up to 4 hours later.

- The unit display changes as shown below.

OFF 0:30 → OFF 1:00 → OFF 1:30 → OFF 2:00
 ↑ Counter (cancel) ← OFF 4:00 ← OFF 3:00 ↵

- This does not work during timer recordings (⇒ 21, 30) or while using Flexible Recording (⇒ 27).
- This unit is turned to standby mode when this unit is not operated for approximately 5 minutes after completing One Touch Recording, if "Auto Standby after OTR" is set to "On" in the Setup menu. (Default setting: "On") (⇒ 68)

To cancel

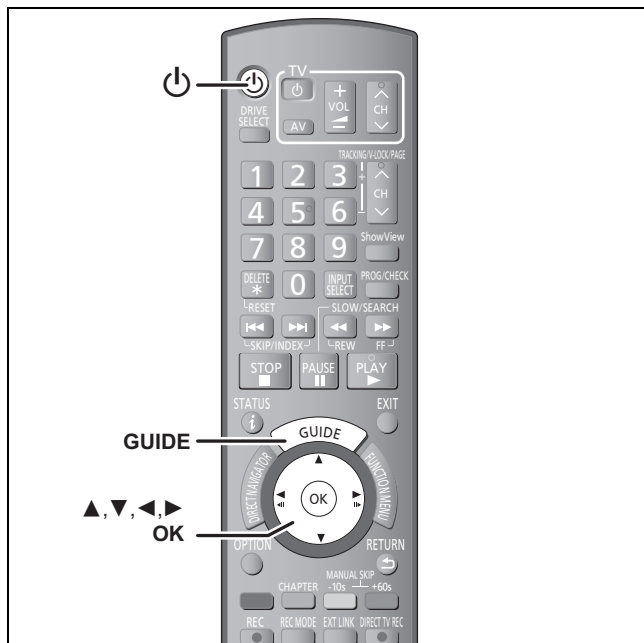
Press [**● REC**] on the main unit several times until the counter appears.

- The time to stop recording is cancelled; however, recording continues.

To stop recording

Press [**■**].

Refer to “Advanced timer recording” (⇒ 30–33) for detail information.



See also “Notes for recording” (⇒ 24).

Depending on the type of disc used for recording or the type of broadcast, there may be restrictions on the title you are trying to record.

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

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

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

- To use a new disc, formatting is necessary.

Note

You cannot switch subtitles during timer recording.

Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- If recording to DVD, insert a disc that you can use for recording (⇒ 11).
- If recording to VHS, insert a video cassette that you can use for recording.
- Make sure that the clock settings are correct (⇒ 67).

Using the TV Guide system to make timer recordings (Digital broadcast only)

TV Guide system provides programme information only from the digital broadcasts station displayed on the television like a TV programme magazine.

This unit receives the programme information differently according to where you live.

–Receiving with GUIDE Plus+ system

The GUIDE Plus+ system is available in the following countries: (as of December 2009)

Germany/Austria/Italy/Spain

- This service may not be available in some areas in the above countries.
- There may be changes in the service areas.
- Visit the following homepage for more information.
<http://www.europe.guideplus.com>

–Receiving from the broadcast station

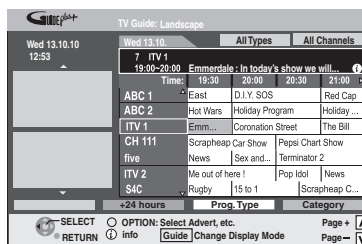
In the area where GUIDE Plus+ system is not available, TV Guide is displayed with the provided data from broadcast station.

Note

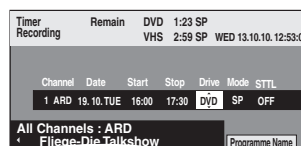
- TV Guide does not work if the clock is not set correctly.
- If the unit is disconnected from the AC mains, all programme data are not updated.
- **For Germany and Austria** Analogue broadcasts can be recorded manually or with the ShowView system (⇒ 30).
- GUIDE Plus+ system may not work properly if the wrong post code is entered.
- Depending on the region or language etc., the TV Guide screen may be different to the actual screen.

1 Press [GUIDE].

e.g.,



2 Press [▲, ▼, ◀, ▶] to select the future programme and press [OK].



- Make corrections if necessary using [▲, ▼, ◀, ▶] (⇒ 30, right column, step 3).
- If setting timer recording using the TV Guide system, the start recording time and finish recording time can be set to a margin of up to 10 minutes. (⇒ 64, Start Recording Time, Finish Recording Time)

3 Press [OK].

The timer programme is stored and the timer icon is displayed.



“⌚” lights on the unit’s display to indicate timer recording standby has been activated.

Repeat steps 2–3 to programme other recordings.

Press [⏻] to turn the unit off.

Note

- If “NTSC” has been selected for “TV System” (⇒ 66), the TV Guide system cannot be used.

■ To cancel a timer recording on the TV Guide screen

- 1 Press [▲, ▼, ◀, ▶] to select the programme in the TV Guide and press [OK]. “Selection Screen” appears.
- 2 Press [▲, ▼] to select “Delete” and press [OK].
- 3 Press [◀, ▶] to select “Yes” and press [OK]. (“⌚” in the TV Guide disappears.)

Note

- The receipt of the TV Guide system data is only possible via the aerial input of this unit. It is not possible to receive the data via the externally connected digital satellite receiver.

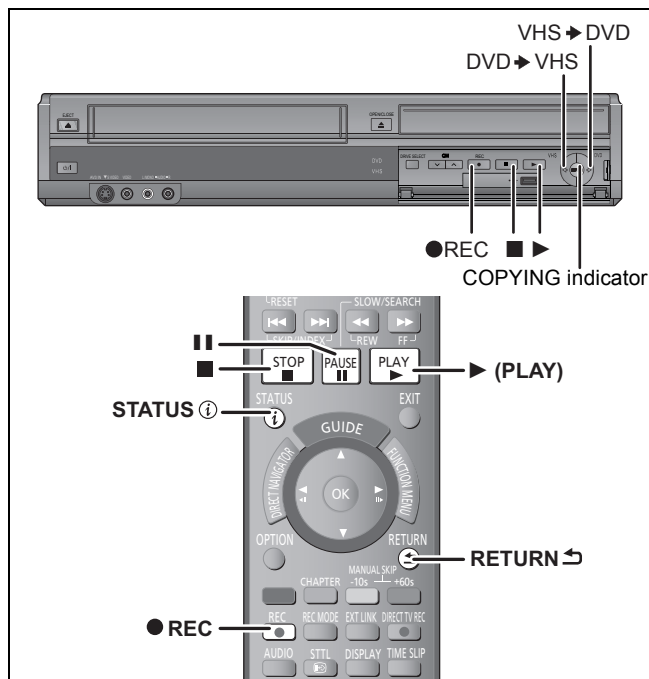
■ To cancel recording when recording has already begun (⇒ 31)

■ To release the unit from recording standby (⇒ 31)

■ Notes on timer recording (⇒ 31)

Copying Titles (One Touch Copy)

Refer to “Copying titles or playlists” (⇒ 52–54) for detail information.



VHS → DVD

VHS → RAM -R -R DL -RW(V) +R +R DL +RW

Copying automatically starts from the current position on the video cassette.

Preparation

Copy to:

- DVD: insert a disc that you can use for copying (⇒ 15).
- Confirm that there is enough remaining disc space.
- Select the recording mode. (⇒ 19, 25)

Copy from:

- VHS: insert the video cassette containing the programme to be copied (⇒ 15).

While both VHS and DVD are stopped

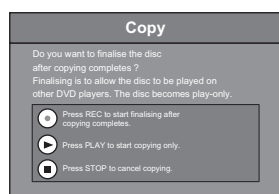
Press and hold [VHS → DVD] on the main unit for about 3 seconds or more (until “START” on the unit’s display terminates flashing).

- The “COPYING” indicator on the main unit lights.
- Check if copy starts properly.



When the finalise confirmation screen appears

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



- If you press [● REC], the disc will automatically be finalised after copying completes.
 - After finalising, the discs become play-only and you can also play them on other DVD equipment.
 - However, you can no longer record or edit.
 - The elapsed DVD recording time is displayed on the unit’s display.
 - You cannot change the drive during finalising.
- If you press [▶], you can start copying without finalising.
- If you press [■], you can cancel to copy.

DVD → VHS

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

All the titles recorded on the disc, the beginning of the selected title to the end of the disc or the beginning of the selected playlist to the last playlist is automatically copied to the video cassette.

Preparation

Copy to:

- VHS: insert a video cassette with an accidental erasure prevention tab (⇒ 15).
- Confirm that there is enough remaining tape space.
- Select the recording mode. (⇒ 19, 25)

Copy from:

- DVD: insert the disc containing the programme to be copied (⇒ 15).

1

When you copy a whole disc

Make sure that the DVD is stopped.

- Press [STATUS ⓘ] to check that the resume play function is not active on the DVD drive. If the DVD counter appears on the unit’s display, press [■] to clear the resume play position (⇒ 34).
- When the resume play function is active, the copy will start from the memorized position to the end of the disc.

When you copy a title from the beginning of the selected title to the end of the disc

When you copy a playlist from the beginning of the selected playlist to the last playlist

Play the desired title (⇒ 35) or playlist (⇒ 49).

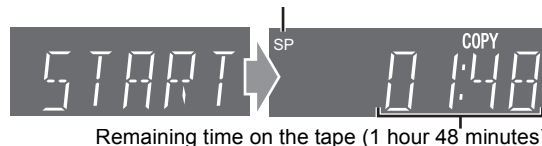
- You can copy (a title or playlist) while playback is paused by pressing [⏸].
- You cannot copy the playlist which is longer than 8 hours. (When you copy multiple playlists, the playlist which is longer than 8 hours is omitted.)

2

Press and hold [DVD → VHS] on the main unit for about 3 seconds or more (until “START” on the unit’s display terminates flashing).

- The “COPYING” indicator on the main unit lights.
- Check if copy starts properly.

Recording mode of VHS



To stop copying partway

Press [■] or press and hold [RETURN ↵] for about 3 seconds or more.

- However, you cannot stop finalising after it has started.
- Even if “Copy and finalise” is selected in the confirmation screen, the disc will not be finalised if you stop copying partway.

Note

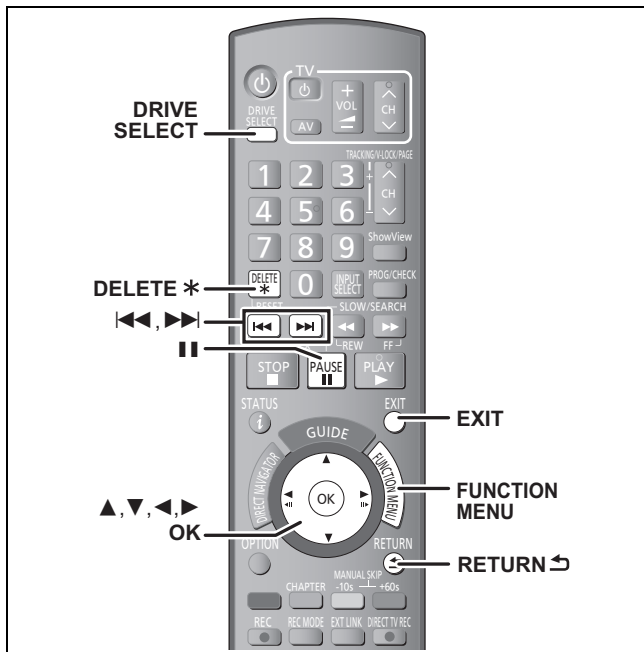
- Titles are copied at normal speed.
- When copying is not started or not executed, the “COPYING” indicator blinks for about 7 seconds. Check if the unit is properly prepared.
- -R -R DL -RW(V) +R +R DL You cannot copy the content of a finalised disc.

To copy from a finalised disc

(⇒ 54, Copying a finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL)

- You cannot copy Playlists with a play time more than 8 hours.
- SECAM recorded VHS tapes cannot be played on this unit.

To copy a SECAM recorded VHS tape (⇒ 29)



RAM -R -R DL -RW(V) +R +R DL +RW
(You cannot delete items on finalised discs.)

- **A title cannot be restored once it is deleted.** Make certain before proceeding.
- You cannot delete while recording or copying.

Preparation

- Press [DRIVE SELECT] to select the DVD drive.
- **RAM** Release protection (⇒ 58, Setting the protection).

Available disc space after deleting

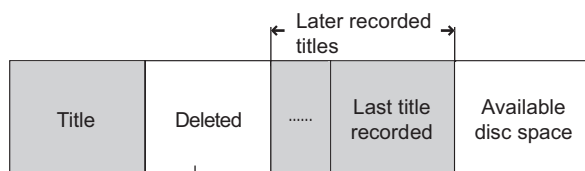
- **RAM** The space deleted becomes available for recording.

Available disc space increases after deleting any of these titles



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

Available disc space does not increase even after deleting

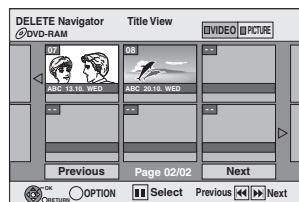


This space become available for recording after all the later recorded titles are deleted.

- **-R -R DL +R +R DL** Available space does not increase even after the contents are deleted.

Using the DELETE Navigator to delete

- 1 While stopped
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Delete” and press [OK].
- 3 Press [▲, ▼] to select “Video” and press [OK].



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

A check mark is displayed. Repeat this step until you select all necessary items.

- Press [II] again to cancel.

To show other pages

Press [◀, ▶] to show other pages.

You can confirm the titles, that you have selected using the option menu.

- Refer to option menu operations for the “Title View” (⇒ 46, step 4).

- 5 Press [OK].
- 6 Press [◀, ▶] to select “Delete” and press [OK].
The title is deleted.

To return to the previous screen







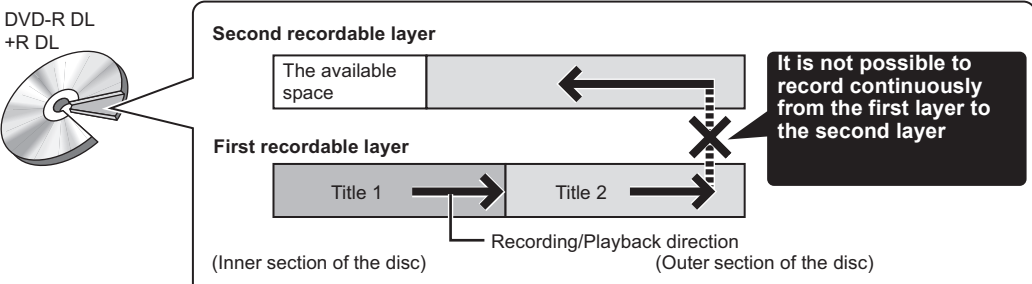
Press [RETURN ↵].

To exit the screen

Press [EXIT].

Deleting during play

- 1 While playing
Press [DELETE *].
- 2 Press [◀, ▶] to select “Delete” and press [OK].
The title is deleted.

Selecting Audio for Recording	<p>Broadcast in multi-channel sound (Digital broadcast only): You can select the audio language when receiving audio in multi channel broadcast ["Multi Audio" appears at the bottom of digital channel information display (⇒ 17)]. However, audio cannot be switched after recording.</p>  <p>Select the audio that you want to record in "DVB Multi Audio" in the on-screen menu (⇒ 57).</p>
	<p>Bilingual broadcasts (Analogue broadcast only): RAM VHS Both main and secondary audio can be recorded. You can change the audio during playback. (⇒ 34, Changing audio during play)</p> <p>However in the following cases, select whether to record the main or secondary audio:</p> <p>M 1 M 2 Hello Hallo</p>  <p>–Recording sound in LPCM (⇒ 65, Audio Mode for XP Recording)</p> <p>-R -R DL -RW(V) +R +R DL +RW Select the main or secondary audio before recording (⇒ 65, Bilingual Audio Selection)</p> <p>M 1 Hello</p>  <p>The selected audio only is recorded.</p> <p>RAM -R -R DL -RW(V) +R +R DL +RW VHS If you record from external equipment – Select "M 1" or "M 2" on the external equipment.</p>
About the aspect when recording a programme	<p>RAM -R -R DL -RW(V) VHS If "Aspect for Recording" in the Setup menu is set to "Automatic" (The default setting is "4:3" ⇒ 64), the programme will be recorded in the original aspect used when recording started (including when recording started at a commercial, etc.). If recorded with a different aspect, select the correct aspect ("16:9" or "4:3").</p> <p>However, in the following case, programme will be recorded in 4:3.</p> <p>-R -R DL -RW(V) Programme recorded using "EP" or "FR (recordings 5 hours or longer)" recording modes will be recorded in 4:3 aspect.</p> <p>+R +R DL +RW The programme will be recorded in 4:3 aspect.</p> 
When recording the "One time only recording" broadcasts	<p>It is not possible to record the broadcasts that allow "One time only recording" onto DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW or 8 cm DVD-RAM discs. Use the CPRM (⇒ 85) compatible DVD-RAM.</p> <p>RAM CPRM compatible discs only.</p> <p>-R -R DL -RW(V) +R +R DL +RW</p>  <p>● Even when copying to videotape the title may not be copied correctly because of the copy guard. ● You cannot copy a playlist created from "One time only recording" titles.</p>
Playing the disc on other DVD players	<p>-R -R DL -RW(V) +R +R DL The disc must be finalised after recording or copying (⇒ 60). It is necessary to finalise DVD-R, etc. on this unit after recording or copying titles to them. You can then play them as a commercially sold DVD-Video. However, the discs become play-only and you can no longer record or copy.* * You can record and copy again if you format DVD-RW.</p>  <p>+RW If the disc failed to play on other equipment, we recommend you create top menu (⇒ 60).</p>
Recording to DVD-R DL and +R DL	<p>DVD-R DL and +R DL discs have two layers of recording surface on one side.</p> <p>● It is not possible to record continuously from the first layer to the second layer. Recording stops when space on the first layer becomes full. You must close the first layer to start recording on the second layer (⇒ 61). Closing makes the first layer unavailable for recording (editing is still available). You cannot cancel closing. Make certain before proceeding.</p> 

- It is not possible to record to both the DVD and the VHS drive simultaneously.

DVD recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated.
(The times provided on this chart are an estimate.)

Recording Mode	DVD-RAM		DVD-R DVD-RW +R +RW (4.7 GB)	DVD-R DL ^{※3} , +R DL ^{※3} (8.5 GB)	
	Single-sided (4.7 GB)	Double-sided ^{※1} (9.4 GB)		First layer (L0)	Second layer (L1)
XP (High picture quality recording mode)	1 hour	2 hours	1 hour	55 min.	50 min.
SP (Standard recording mode)	2 hours	4 hours	2 hours	1 hour 50 min.	1 hour 40 min.
LP (Long recording mode)	4 hours	8 hours	4 hours	3 hours 40 min.	3 hours 20 min.
EP (Extra long recording mode)	8 hours (6 hours ^{※2})	16 hours (12 hours ^{※2})	8 hours (6 hours ^{※2})	7 hours 25 min. (5 hours 30 min. ^{※2})	6 hours 50 min. (5 hours 15 min. ^{※2})
FR (Flexible Recording Mode)	8 hours maximum	16 hours maximum	8 hours maximum	7 hours 25 min. maximum	6 hours 50 min. maximum

※1 It is not possible to record or play continuously from one side of a double sided disc to the other.

※2 When "Recording time in EP mode" is set to "EP (6 hours)" in the Setup menu (⇒ 64).

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

※3 Refer to "Recording to DVD-R DL and +R DL" (⇒ 24).

- **RAM** When recording to DVD-RAM using "EP (8 hours)" mode, play may not be possible on DVD players that are compatible with DVD-RAM. Use "EP (6 hours)" mode if playback may be on other equipment.

RAM -R -R DL -RW(V)

- You can record up to 99 titles on one disc.

+R +R DL +RW

- You can record up to 49 titles on one disc.

FR (Flexible Recording Mode)

You can set FR (Flexible Recording) mode when copying or programming timer recordings.

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

For example with a 90-minute recording to an unused DVD-RAM, the picture quality is adjusted to between "XP" and "SP".

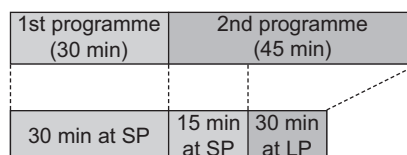
- All the recording modes from XP to EP appear in the display.

VHS Recording Modes and Durations

Recording Mode	Durations
SP (Standard recording mode)	You can record the length shown on the tape. ● If the image quality is important to you or if you wish to store the tape for a long period, select this mode.
LP (Long recording mode)	2 times the length of SP mode. ● LP cannot be selected when recording NTSC signals. ● The unit can play tapes recorded in LP mode on other equipment.
EP (Extra long recording mode)	3 times the length of SP mode.
AUTO	Automatically switches the recording mode to LP (NTSC to EP) mode during a timer recording if there is not enough tape left to record the programme in SP mode.

● AUTO Mode

Timer Recording



Video tape (e.g.: 60-minute cassette)

- The tape length must be set correctly (⇒ 67).
- Picture distortion may occur when the recording mode switches.
- This may not work correctly with some video cassettes.
- It may not work correctly when NTSC is set as the "TV System" (⇒ 66).

Note

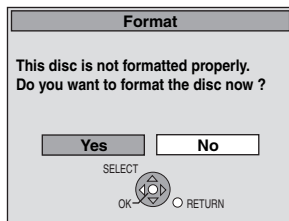
● To prevent recording errors:

Set a timer recording period slightly longer than the actual programme (to make sure the programme is recorded in full).
If setting timer recording using the TV Guide system, the start recording time and finish recording time can be set to a margin of up to 10 minutes. (⇒ 64, Start Recording Time, Finish Recording Time)

When the format confirmation screen is displayed

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

When you insert a new disc or a disc recorded on a computer or other equipment, a format confirmation screen is displayed. Format the disc to use it. However, all the recorded contents are deleted.



Press [**◀**, **▶**] to select “Yes” and press [OK].

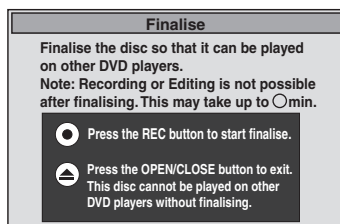
To format a disc

“Deleting all the contents—Format” (⇒ 59)

When removing a recorded disc

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

The following screen appears when you have not processed the disc for play on other equipment.



e.g. Disc recorded with Videos

■ To finalise the disc

Press [**● REC**] on the main unit.

- You cannot stop this process once you have started it.
- If you want to set play menu select or provide a disc name, select “Auto-Play Select” (⇒ 59) or “Disc Name” (⇒ 58) in “DVD Management” before finalising.

■ To open the tray without disc finalisation

Press [**▲ OPEN/CLOSE**] on the main unit.

Flexible Recording

(Recording that fits the remaining disc space)

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

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

■ Using “Flexible Rec” is convenient in these kinds of situations.

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

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

e.g., Recording a 90-minute programme to disc

If you select XP mode, the programme will not fit one disc.



If you try to record a 90-minute programme in XP mode, only the first 60 minutes will fit on the disc and the 30-minute balance will not get recorded.

- Another disc is necessary.

If you select SP mode, the programme will fit one disc.



However there will be 30 minutes remaining disc space.

If you select “Flexible Rec” the programme will fit one disc perfectly.

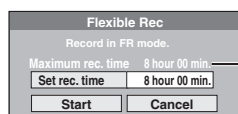


■ Necessary space for recording

Preparation

- Select the channel or the external input to record.
- Press [DRIVE SELECT] to select the DVD drive.

- 1 While stopped
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Others” and press [OK].
- 3 Press [▲, ▼] to select “Flexible Rec” and press [OK].



Maximum recording time
This is the maximum recording time in EP (8 hours) mode.

- 4 Press [◀, ▶] to select “hour” and “min.” and press [▲, ▼] to set the recording time.
 - You can also set the recording time with the numbered buttons.
 - You cannot record more than 8 hours.
- 5 When you want to start recording
Press [▲, ▼, ▶, ▶] to select “Start” and press [OK].

To exit the screen without recording

Press [RETURN ↵].

To stop recording partway

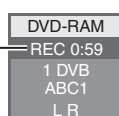
Press [■].

To show the remaining time

Press [STATUS ⓘ].

e.g.,
DVD-RAM

Remaining
time of
recording



Playing while you are recording

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

RAM

Press [▶] (PLAY) during recording.

There is no sound output while searching forward or backward.

To stop play

Press [■].

To stop recording

2 seconds after play stops, press [■].

To stop timer recording

2 seconds after play stops

- 1 Press [■].
- 2 Press [◀, ▶] to select “Stop Recording” and press [OK].

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

RAM VHS

- You can also change the drive and play while recording.
- You can play DVD or VHS while recording to the other drive. The recording will not be affected.
 - DVD playback (⇒ 18, 34, 35)
 - VHS playback (⇒ 18, 36)

Note

VHS cannot be output via “DVD priority out” while recording on DVD (⇒ 70). You can watch the VHS playback by connecting 21-pin Scart cable from AV1 on the unit to the television.

Preparation

- Select the appropriate AV input of the television.
- Press [DRIVE SELECT] to select the drive.

RAM

- 1 Press [DIRECT NAVIGATOR] during recording.
- 2 Press [▲, ▼, ▶, ▶] to select a title and press [OK].
 - There is no sound output while searching forward or backward.

VHS

Press [▶] (PLAY) during recording.

To stop play

Press [■].

To exit the DIRECT NAVIGATOR screen

Press [DIRECT NAVIGATOR].

To stop recording

After play stops

- 1 **RAM** Press [DIRECT NAVIGATOR] to exit screen.
- 2 Press [■].
- 3 If the recording stop confirmation screen is displayed, press [◀, ▶] to select “Yes” or “Stop Recording” and press [OK] to stop recording.

Note

“Chasing playback” and “Simultaneous rec and play” can only be used with programmes of the same encoding system (PAL/NTSC).

See also “Notes for recording” (⇒ 24).

Making timer recordings on the television

(e.g., of digital broadcasts)

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

To make a timer recording with your television, connect to a television with a Q Link function (⇒ 42) that you can use for setting timer recordings using a fully wired 21-pin Scart cable (⇒ 8).

- 1 Make timer programming on the TV.**
- 2 Turn off this unit.**

The start and end of recording is controlled by the TV.

To stop recording

Press [■].

Note

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

RAM To divide the titles, go to “Divide Title” (⇒ 47).

Recording from digital satellite receiver

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

Preparation

- Connect a digital satellite receiver to this unit’s input terminals (⇒ 8).
- Set “AV2 Input” to match the connected equipment in the Setup menu (⇒ 66).
- When the output signal from the external equipment is NTSC, change the “TV System” to “NTSC” in the Setup menu (⇒ 66).
- Press [DRIVE SELECT] to select the DVD or VHS drive.

- 1 While stopped**
Press [INPUT SELECT] to select “AV2”.
- 2 Press [REC MODE] to select the recording mode.**
- 3 Select the channel on the other equipment.**
- 4 Press [● REC].**

Recording starts.

To skip unwanted parts

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

To stop recording

Press [■].

Note

- This unit cannot record NTSC signals to discs that already have PAL signal recordings.

Linked timer recordings with external equipment (digital satellite receiver) — EXT LINK

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

To record programmes from digital satellite receiver using timer programming

Preparation

- Make sure you connect the AV2 input terminal of this unit to the Scart terminal of a VCR or a digital satellite receiver with a 21-pin Scart cable (⇒ 72).
- Set “AV2 Input” to match the connected equipment in the Setup menu (⇒ 66).
- Set “Ext Link” to match the connected equipment in the Setup menu (⇒ 66).

- 1 Make timer programming on the external equipment.**
- 2 Press [DRIVE SELECT] to select the DVD or VHS drive.**
Insert a disc or video cassette with enough remaining blank space (⇒ 15).
- 3 Press [EXT LINK].**

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

To cancel the external control

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

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

Note

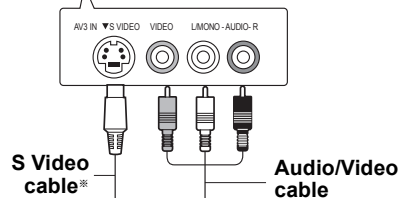
- This function does not work when “TV System” is set to “NTSC” in the Setup menu (⇒ 66).
- This function does not work with some equipment. Refer to the equipment’s operating instructions.
- The beginnings of recordings may not be recorded correctly in some cases.
- Programmes are recorded as one title on this unit when the end time of the earlier timer recording and the start time of the later timer recording are close to each other.
- RAM** To divide the titles, go to “Divide Title” (⇒ 47).
- When this unit is in EXT LINK standby (“EXT-L” is shown on the unit’s display), the TV Guide data cannot be downloaded.
- While the unit is in EXT LINK standby mode or recording, video picture is from the AV2 input terminal irrespective of “AV1 Output” setting (⇒ 66).
- **(Except for VHS)** During EXT LINK standby mode or recording, playback is only available if you select the DVD drive in the step 2 above.
- When “EXT-L” lights on the unit’s display, Direct TV Recording is unavailable.
- While the unit is in EXT LINK standby mode or recording, most operations on this unit are prohibited ([▲ OPEN/CLOSE], [⏏/I] etc.). When you operate, press [EXT LINK] to cancel EXT LINK standby mode or recording (This unit turns on and “EXT-L” disappears.).

Copying from a video cassette recorder

e.g., Connecting to the AV3 input terminals on the front

- Turn off the unit and other video equipment before connecting.
- Connect to terminals of the same colour.
- Refer to "Connecting a television and VCR or digital satellite receiver" when connecting to the AV2 input terminals on the rear panel. (⇒ 72)

This unit



Other video equipment



Connect to Audio/Video output terminals.

If the audio output of the other equipment is monaural
Connect to L/MONO on the AV3 input terminals at the front.

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

About the aspect when recording a programme (⇒ 24)

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

Preparation

- Press [DRIVE SELECT] to select the DVD or VHS drive.
- Press [REC MODE] to select the recording mode.
- When recording bilingual programmes, select "M 1" or "M 2" on the external equipment (⇒ 24, Notes for recording).
- When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the Setup menu (⇒ 66). This unit cannot record NTSC signals to discs that already have PAL signal recordings.
- To reduce noise in input from a video cassette recorder, set "Copy NR" to "On" in the on-screen menu (⇒ 56).
- Check the time on the unit is correct.

1 While stopped

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

e.g., If you have connected to AV3 input terminals, select "AV3".

Recording to DVD

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

Perform step 1 (⇒ above).

2 Start play on the other equipment.

3 When you want to start recording

Press [● REC].

Recording starts.

Recording to VHS

VHS

Perform step 1 (⇒ above).

2 Press [▶] (PLAY).

Start playing the video cassette and find the recording start point.

3 Press [II], then press [● REC].

Put the unit in recording standby mode.

4 Start play on the external device.

5 Press [II] at the point where you want to start recording.

To skip unwanted parts

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

To stop recording

Press [■].

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

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

- Using Flexible Recording (⇒ 27), you can record the content of a video cassette (approx. 1–8 hours) to a 4.7 GB disc with the best possible quality of recording without wasting disc space.

Note

- If it becomes time for a timer recording to start while copying, the recording will start and the copying will stop.
- If video is copied from another piece of equipment to this unit, then the video quality will be degraded.
- VHS It is not possible to record SECAM signal on a video cassette.

Advanced timer recording

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

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

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

- To use a new disc, formatting is necessary.

Note

You cannot switch subtitles during timer recording.

Preparation

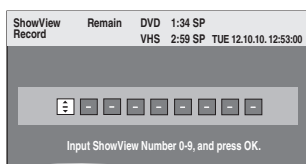
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- If recording to DVD, insert a disc that you can use for recording (⇒ 11).
- Make sure that the clock settings are correct (⇒ 67).

Using SHOWVIEW number to make timer recordings (Analogue broadcast only)

For Germany and Austria

Entering SHOWVIEW numbers is an easy way of timer recording. You can find these numbers in TV listings in newspapers or magazines.

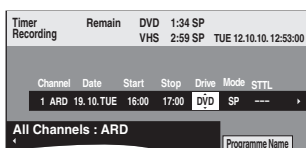
1 Press [ShowView].



2 Press the numbered buttons to enter the SHOWVIEW number.

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

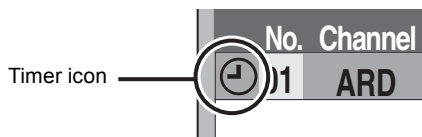
3 Press [OK].



- Make corrections if necessary using [▲, ▼, ◀, ▶] (⇒ right, step 3).
- When "--" appears in the "Channel" column, you cannot set timer recording. Press [▲, ▼] to select desired programme position. After you have entered the information of a TV station, it is kept in the unit's memory.

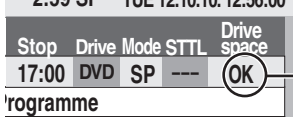
4 Press [OK].

The timer programme is stored and the timer icon is displayed.



"⊙" lights on the unit's display to indicate timer recording standby has been activated.

e.g.,

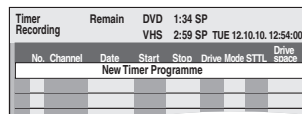


Check to make sure "OK" is displayed (⇒ 31).

Repeat steps 1–4 to programme other recordings. Press [⏻] to turn the unit off.

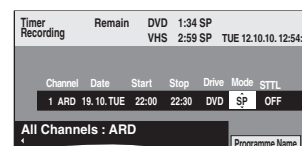
Manually programming timer recordings

1 Press [PROG/CHECK].



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

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



- When "Channel" is selected, you can press the "Blue" button to change the category [e.g., TV, Radio, Favourite (⇒ 62)] and then press [▲, ▼] to select the channel you want to record.
- Press and hold [▲, ▼] to alter the Start (Start time) and Stop (Finish time) in 30-minute increments.
- You can also set Channel (Programme position/TV Station Name), Date, Start (Start time), and Stop (Finish time) with the numbered buttons.
- **Date:** Current date up to one month later minus one day
- **Daily timer:** SUN-SAT → MON-SAT → MON-FRI
- **Weekly timer:** SUN → --- → SAT
- You can also press [DRIVE SELECT] to select the recording drive.
- You can also press [REC MODE] to change the recording mode.
- **Programme Name**
Press [◀, ▶] to select "Programme Name" and press [OK]. (⇒ 45, Entering text)
- **STTL (Subtitles)** (Digital broadcast only)
AUTO ↔ OFF
When the "Channel" column is set in AV1, AV2 or AV3, this setting is unavailable.
You can also press [STTL ⊕ ⊖] to switch "STTL" setting. When there are multiple languages, select the subtitle (⇒ 63, DVB Preferred Language).

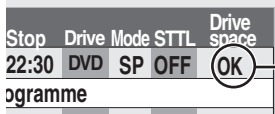
4 Press [OK].

The timer programme is stored and the timer icon is displayed.



"⊙" lights on the unit's display to indicate timer recording standby has been activated.

e.g.,



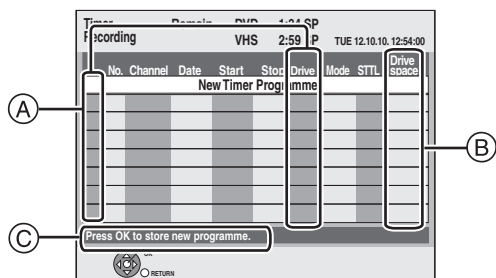
Check to make sure "OK" is displayed (⇒ 31).

Repeat steps 2–4 to programme other recordings. Press [⏻] to turn the unit off.

Check, change or delete a programme, or resolve overlapping

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

Press [PROG/CHECK].



A Icons

- ⌚ Timer recording standby is activated.
- This programme is currently recording.
- ⌚ Programmes are overlapped. Recording of the programme with the later start time starts when the earlier programme finishes recording.
- ⊖ You stopped a daily or weekly timer recording. The icon disappears the next time the timer programme starts recording.
- 💿 The disc was full so the programme failed to record.
- 🔒 The programme was copy-protected so it was not recorded.
- ✗ The programme did not complete recording because the disc is dirty or some other reason.

Drive Recording drive is set to DVD or VHS.

B Message displayed in the "Drive space" line (Except for VHS)

When the drive is set to VHS, "—" is displayed.

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

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

! : It may not be possible to record because:

- the disc is write-protected.
- there is not enough space left.
- the number of possible titles has reached its maximum.
- programmes are overlapped.
- programmes are deactivated.

C Channel name, programme name and other information are displayed.

■ To change a programme

Press [▲, ▼] to select the programme and press [OK]. (⇒ 30)

■ To delete a programme

Press [▲, ▼] to select the programme and press [DELETE *].

You can also delete a programme with the following steps

- 1 Press [▲, ▼] to select the programme and press [OPTION].
- 2 Press [▲, ▼] to select "Delete" and press [OK].

■ To release the unit from recording standby

Press [▲, ▼] to select the programme and press the "Red" button.

- The timer icon "⌚" disappears from the timer recording list.
- You cannot cancel timer recording standby mode as long as even one timer icon "⌚" remains in the timer recording list.
- Press the "Red" button again to activate timer recording standby.

■ To resolve overlapping

Press [▲, ▼] to select the programme with ⌚ and press [OK].

- If the "Overlapped Timer Recording" screen appears (⇒ right)
- If the on-screen instructions do not appear, change or delete the overlapped programme.

■ To exit the timer recording list

Press [PROG/CHECK].

Note

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

To cancel recording when recording has already begun

- 1 While the unit is on
Press [■].



- 2 Press [◀, ▶] to select "Stop Recording" and press [OK].

If you stop a timer recording, it will be cancelled. However, if you have set a weekly or daily timer recording, the recording will start from the next time the timer recording is set.

If the "Overlapped Timer Recording" screen appears

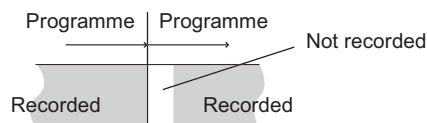
If you set a timer recording that will overlap with other timer recordings, the "Overlapped Timer Recording" screen appears to help you resolve the overlapping. Follow the on-screen instructions.

Language for digital broadcast with multi-audio or multi-subtitle (Digital broadcast only)

In timer recording of digital broadcast with multi-audio or multi-subtitle, audio and subtitle language to be recorded will follow the setting of "DVB Preferred Language" in the Setup menu (⇒ 63).

Notes on timer recording

- When a timer recording is set, DVDs that were recorded using a different TV System (PAL/NTSC) cannot be played unless the TV System is changed in the Setup menu (⇒ 66) or the timer recording has completed or has been cancelled.
- Timer recordings are activated regardless of whether the unit is turned on/off.
- Timer recordings begin when the set time is reached even when playing.
- Timer recordings do not begin while editing or copying in normal speed mode (⇒ 52).
- If the unit is turned on when timer recording begins, it remains turned on after recording finishes. It does not turn off automatically. You can turn the unit off during timer recording.
- When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes.



Selecting the programme from the desired programme type or category

This function lets you display a TV Guide list sorted by programme type, etc.

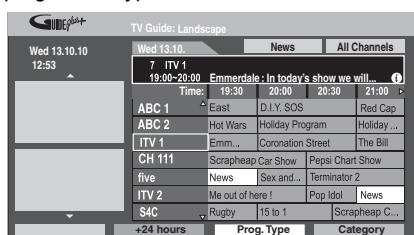
While the TV Guide list is displayed

- 1 Press the “Yellow” or “Blue” button.
- 2 Press [▲, ▼, ◀, ▶] to select the desired item.



- 3 Press [OK].

- A list appears with all programmes of the selected item.
- When you select the Landscape view, the unit displays programmes in grey that do not belong to the selected programme type.



e.g.,
Programme type, “News” is selected in step 2 of Landscape view.

Note

The broadcasters allocate individual programmes to topic areas. This function does not work properly unless the information which distinguishes the programme type and categories sent from broadcast stations is correct.

- 4 Press [▲, ▼, ◀, ▶] to select the programme and press [OK].

When “Timer Recording” screen appears. (⇒ 21, Timer recording, step 3)

When “Selection Screen” screen appears.

- “View” ⇒ 16, Watching Television
- “Rec.” ⇒ 21, Timer recording, step 3
- “Delete” ⇒ Timer recordings can be cancelled.

Press [◀, ▶] to select “Yes” and press [OK].
The timer icon disappears.

To return to the previous TV Guide list before you have selected the programme type or categories

Select “All Types” of the programme type and “All Channels” of the categories in step 2 above.

To return to the previous screen

Press [RETURN ↵].

To exit the screen

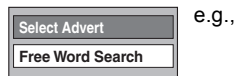
Press [EXIT].

Searching desired programmes on TV Guide list by words

By entering words, you can search for programmes from the TV Guide list using the programme information.

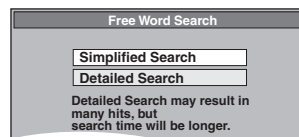
While the TV Guide list is displayed

- 1 Press [OPTION].



- 2 Press [▲, ▼] to select “Free Word Search” and press [OK].
- 3 Enter the word you would like to search for and set.

Entry method ⇒ 45, Entering text



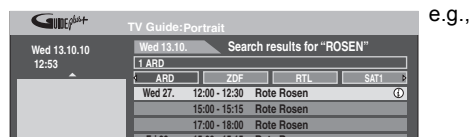
- 4 Press [▲, ▼] to select “Simplified Search” or “Detailed Search” and press [OK].

Simplified Search:

It searches the programme names only.

Detailed Search:

It searches all the information on the programmes. It might take more time to search the desired programme.



Search results appear.

- 5 Press [▲, ▼, ◀, ▶] to select the programme and press [OK].

When “Timer Recording” screen appears. (⇒ 21, Timer recording, step 3)

When “Selection Screen” screen appears.

- “View” ⇒ 16, Watching Television
- “Rec.” ⇒ 21, Timer recording, step 3
- “Delete” ⇒ Timer recordings can be cancelled.

Press [◀, ▶] to select “Yes” and press [OK].
The timer icon disappears.

To return to the previous screen*

Press [RETURN ↵].

* It may return to the TV Guide screen.

To exit the screen

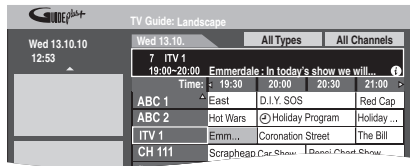
Press [EXIT].

Operations in the TV Guide system

Press [GUIDE] to switch between Landscape view and Portrait view.

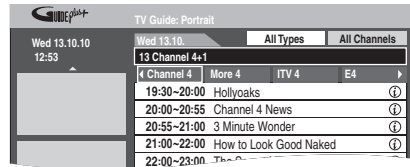
Landscape view

e.g.,



Portrait view

e.g.,



■ To view a programme list for another day

- Jump ahead 24 hours
Press the "Green" button to jump ahead by one day.
- Jump back 24 hours
Press the "Red" button.
You can only jump back to the current date. Past information cannot be viewed.

■ To browse through the TV Guide list

Press [\wedge \vee CH].

■ To see programme information

(Programmes with the ⓘ symbol)

Press [STATUS ⓘ].

Additional information (programme name, programme duration, broadcast time, description, etc.) is available for these programmes. Press [\blacktriangle , \blacktriangledown] to scroll up and down.

To show other pages

Press [CH \wedge] (Previous) or [\vee CH] (Next).

Press [STATUS ⓘ] again to return to the programme list.

■ View advertisement

[GUIDE Plus+ system (\Rightarrow 21) only]

- 1 Press [OPTION].*
 - 2 Press [\blacktriangle , \blacktriangledown] to select "Select Advert", then press [OK].
The advertisement screen is displayed.
- * While the advertisement information is not captured, "Enter Words" screen is displayed. (\Rightarrow 32, Searching desired programmes on TV Guide list by words)
- Some advertisements are for future programmes and you can set the timer recording of the programmes using the advertisement screen.
Follow the on-screen instructions.
 - To display the latest advertisement, you will need to update the information.
To update the information continuously, this unit must be left in standby mode at night.
 - If advertisement is not displayed correctly, check the correct post code is entered in the Setup menu (\Rightarrow 68, Post Code).

To change advertisements

Press [\blacktriangle , \blacktriangledown].

Note

- **For Germany and Austria** When the TV Guide displays "No info for analogue channels"
Information for analogue channels is not displayed in the TV Guide for the digital broadcasts.
Set the timer recording manually or with the SHOWVIEW system (\Rightarrow 30).
- When the TV Guide displays the empty TV Guide list
Some digital broadcast may not send programme information.
Set the timer recording manually (\Rightarrow 30).

TV Guide data download

In the area where GUIDE Plus+ system is available:

- Download manually from "GUIDE Plus+ Data Download Now" in the Setup menu (\Rightarrow 68).
- Download automatically in standby mode*.


In the area where GUIDE Plus+ system is not available:

- Download automatically while the unit is on.
- Download automatically in standby mode* if "TV Guide Download in Standby" is set to "On" in the Setup menu (\Rightarrow 68).

* To select the time to download in standby mode (\Rightarrow 68, TV Guide/Software search period)

Operation during play

• Depending on the media, some operations may not be possible.

Stop	<p>Press [■]. The stopped position is memorized.</p> <p>Resume play function Press [▶] (PLAY) to restart from this position.</p> <p>Stopped position</p> <ul style="list-style-type: none"> • If [■] is pressed several times, the position is cleared in some cases. • The position is cleared if the tray is opened. • CD VCD and MP3/DivX : The position is cleared if the unit is turned off.
Pause	<p>Press [II]. Press [II] again or [▶] (PLAY) to restart play.</p>
Search	<p>Press [◀◀] or [▶▶].</p> <ul style="list-style-type: none"> • The speed increases up to 5 steps. (+R +R DL +RW up to 3 steps) • Press [▶] (PLAY) to restart play. • Audio is heard during first level search forward. • CD and MP3 : Audio is heard during all levels of search. • DivX : Audio is not heard during all levels of search.
Skip	<p>During play or while paused, press [◀◀] or [▶▶]. Skip to the title, chapter or track you want to play.</p> <ul style="list-style-type: none"> • Each press increases the number of skips. • DivX : Press [◀◀] to return to the beginning of the title currently playing.
Starting from a selected title	<p>Press the numbered buttons. Play starts from the selected title, chapter or track.</p> <ul style="list-style-type: none"> • DivX e.g., 5: [0] ⇒ [0] ⇒ [5] 15: [0] ⇒ [1] ⇒ [5] • MP3 e.g., 5: [0] ⇒ [0] ⇒ [0] ⇒ [5] 15: [0] ⇒ [0] ⇒ [1] ⇒ [5] • Other discs Input a 2-digit number e.g., 5: [0] ⇒ [5] 15: [1] ⇒ [5] • This works only when stopped (the screen on the right is displayed on the television) with some discs. • VCD (with playback control) If you press the numbered buttons while stopped (the above screen is displayed on the television) you can cancel PBC. (Elapsed play time appears on the unit's display.) 
Quick View	<p>Press and hold [▶] (PLAY). Play speed is quicker than normal.</p> <ul style="list-style-type: none"> • Press again to return to normal speed.
Slow-motion	<p>While paused, press [◀◀] or [▶▶]. The speed increases up to 5 steps.</p> <ul style="list-style-type: none"> • Press [▶] (PLAY) to restart play. • VCD Forward direction [▶▶] only. • The unit will pause if slow-motion play is continued for approximately 5 minutes (excluding DVD-V VCD).
Frame-by-frame	<p>While paused, press [◀] (◀II) or [▶] (II▶). Each press shows the next frame.</p> <ul style="list-style-type: none"> • Press and hold to change in succession forward or backward. • Press [▶] (PLAY) to restart play. • VCD Forward direction [▶] (II▶) only.

Skipping the specified time (Time Slip)

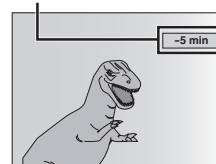
RAM
-R **-R DL**
-RW(V) **+R**
+R DL
(This function does not work with finalised discs.)
+RW **-RW(VR)**

- 1 Press [TIME SLIP].
- 2 Press [▲, ▼] to select the time and press [OK].

Play skips the specified time.

- Each time you press [▲, ▼], the time increases [▲] or decreases [▼] by 1-minute intervals. (Press and hold for 10-minute intervals.)

This automatically disappears after approximately 5 seconds. To show the screen again press [TIME SLIP] again.



Manual Skip

RAM
-R **-R DL**
-RW(V) **+R**
+R DL
(This function does not work with finalised discs.)
+RW **-RW(VR)**

1-minute skip function:

Press [MANUAL SKIP +60s].

Each time you press, play skips forward approximately 1 minute.

10-second skip back function:

Press [MANUAL SKIP -10s].

Each time you press, play skips backward approximately 10 seconds.

Create Chapter

RAM
(⇒ 46, Chapter)

Press [CHAPTER].

Chapters are divided at the point pressed.

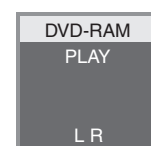
- Press [◀◀, ▶▶] to skip to the start of a chapter.
- Chapters cannot be created during EXT LINK standby.

Changing audio during play

Press [AUDIO].

RAM **-RW(VR)** **VCD**, **DivX** and analogue broadcast

LR→L→R



e.g., "L R" is selected

DVD-V

You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language (⇒ 56, Soundtrack).



e.g., English is selected.

Note

You cannot change the audio type in the following cases.

- When a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW disc is in the disc tray while DVD drive is selected.
- When the recording mode is XP and "Audio Mode for XP Recording" is set to "LPCM" (⇒ 65).

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

You can quickly find the recorded titles and easily play them.

1 Press [DIRECT NAVIGATOR].

RAM When “VIDEO” is not selected, press the “Red” button to select “VIDEO”.

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

You can also select titles with the numbered buttons.

e.g., 5: [0] ⇒ [5] 15: [1] ⇒ [5]








To show other pages

Press [▲, ▼, ◀, ▶] to select “Previous” or “Next” and press [OK].
• You can also press [◀◀, ▶▶] to show other pages.

To exit the screen

Press [DIRECT NAVIGATOR].

DIRECT NAVIGATOR screen icons

	Currently recording.
	Title protected.
	Title that was not recorded due to recording protection (Digital broadcasts etc.)
	Title cannot be played [When data is damaged etc.]
	Title with “One time only recording” restriction (⇒ 85, CPRM)
 (NTSC)	Title recorded using a different encoding system from that of the TV system currently selected on the unit.
 (PAL)	• Alter the “TV System” setting on this unit to suit (⇒ 66).

Operations

Stop	Press [■].
Pause	Press [II]. Press [II] again or [▶] (PLAY) to restart play.
Fast-forward/Rewind	While stopped Press [◀◀] (backward)/[▶▶] (forward).
Cue/Review	During play Tap or keep pressing [◀◀] (backward)/[▶▶] (forward). • If you keep pressing these buttons, normal playback restarts by releasing them. • Tap [▶] (PLAY) to restart normal playback.
Jet Search	During play Tap [◀◀] (backward)/[▶▶] (forward) once (approx. 27 times speed) or twice (approx. 35 times speed). You can increase Cue/Review search speed. • Press [▶] (PLAY) to restart normal playback. • You can select search speed to view the recorded picture. • The picture recorded in EP or AUTO mode may be distorted if it is played at approx. 35 times speed. A vertical scroll may occur. It is not a malfunction but if it happens, change to approx. 27 times speed. • The picture may not be in colour or may be distorted depending on the TV.
Slow	During play Press and hold [II] for about 2 seconds or more. • Press [▶] (PLAY) to restart normal playback.
Jet Rewind	To perform a Higher Speed Rewind Press [◀◀ JET REW]. • Depending on the tape or an operating condition, the rewind speed may change somewhat. • The tape counter is reset to "0:00.00" when the tape is rewound to the beginning. • Depending on the tape, this function may not work.
Repeat Playback	During play or while stopped Keep pressing [▶] (PLAY) for about 5 or more seconds. • The "R ▶" indication appears on the TV screen. • At the end of the programme, the tape rewinds to the beginning and plays it again (it only works if there is at least 5 seconds blank space at the end of the programme). This repeats until you make another operation. • Press [▶] (PLAY) to restart normal playback.



Adjusting the playback picture

Manual tracking

The unit usually makes tracking adjustments, but you may need to do it manually if noise appears on a tape recorded on other equipment.

During play

Press [TRACKING/V-LOCK +] or [TRACKING/V-LOCK -].

Repeat until the noise disappears.

To return to auto tracking

Press both [TRACKING/V-LOCK +] and [TRACKING/V-LOCK -] simultaneously.

To remove the noise from a paused picture

Start slow play, then adjust the tracking.

Note

- This function may not work with some tapes.
- You can also adjust the tracking with [CH \wedge \vee] on the main unit.

Vertical locking adjustment

Adjust the vertical synchronization to stop the picture from jiggling while paused.

While paused

Press [TRACKING/V-LOCK +] or [TRACKING/V-LOCK -].

Repeat until the jiggling stops.

To return to the standard position

Press both [TRACKING/V-LOCK +] and [TRACKING/V-LOCK -] simultaneously.

Note

- This function may not work with some tapes.
- You can also adjust the vertical synchronization with [CH \wedge \vee] on the main unit.

VHS Index Search System (VISS)

The unit automatically records special index signals on the tape every time a recording is started (via [● REC], or timer recording). The index search function makes use of these index signals to let you find the beginning of a desired programme quickly and easily.

While stopped or during normal play

Press [◀◀] or [▶▶].

- Each press increases the number of skips.



To cancel the index search

Press [■].

Note

- Up to 20 index signals can be searched for in both directions.
- If you press either one of the buttons too much, you can control the number of skips by pressing the opposite button.
- This feature may not work correctly if the index signals are too close together. Make recordings of at least 5 minutes.

Changing audio

During play

Press [AUDIO].

The audio changes as follows:

LR (Stereo) → L → R → No display (Normal audio track)



S-VHS Quasi Playback (SQPB)

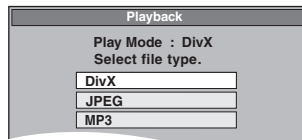
It is also possible to play back tapes recorded in the S-VHS system.

- Some picture noise may occur depending on the type of tape used.
- It is not possible to fully obtain the high resolution that S-VHS is capable of.
- It is not possible to record in the S-VHS system with the unit.

Showing the menu screen

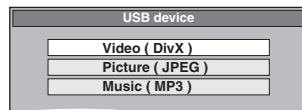
-R -R DL CD

- 1 Insert the disc.
- 2 If the menu screen appears, press [▲, ▼] to select the item and press [OK].
e.g., **CD**

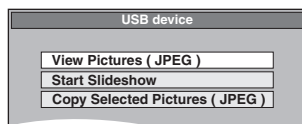


USB

- 1 Insert the USB memory.
- 2 Press [▲, ▼] to select a file type and press [OK].
e.g.,



- 3 If the menu screen appears, press [▲, ▼] to select the item and press [OK].
e.g., Picture



■ Showing the menu with FUNCTION MENU Display

e.g. selecting a file to play

- 1 Press [RETURN ↵] several times to exit the menu.
- 2 Press [FUNCTION MENU].
- 3 **-R -R DL CD**
 - ① Press [▲, ▼] to select "Playback" and press [OK].
 - ② Press [▲, ▼] to select file type and press [OK].

USB

- ① Press [▲, ▼] to select "Drive Select" and press [OK].
- ② Press [▲, ▼] to select "USB" and press [OK].
- ③ Press [▲, ▼] to select file type ("Video (DivX)", "Picture (JPEG)" or "Music (MP3)") and press [OK].

If you select "Picture (JPEG)" in step ③,

- ④ Press [▲, ▼] to select the item ("View Pictures (JPEG)", "Start Slideshow" or "Copy Selected Pictures (JPEG)") and press [OK].

Playing Music files

-R -R DL CD USB

You can play **MP3** files recorded with a computer onto a DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

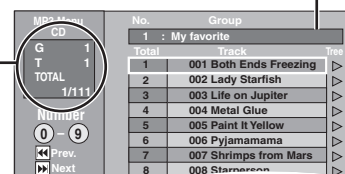
- You cannot play **MP3** files on the USB memory while recording or copying.

1 Show MP3 Menu screen.

(⇒ left, Showing the menu screen)

Selected group

G: Group No.
T: Track No. in the group
TOTAL:
Track No./Total tracks in all groups



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

Play starts on the selected track.

- "C" indicates the track currently playing.

- You can also select the track with the numbered buttons.

e.g., 5: [0] ⇒ [0] ⇒ [0] ⇒ [5]
15: [0] ⇒ [0] ⇒ [1] ⇒ [5]

To stop playing

Press [■].

To show other pages

Press [◀, ▶].

To exit the screen

Press [DIRECT NAVIGATOR].

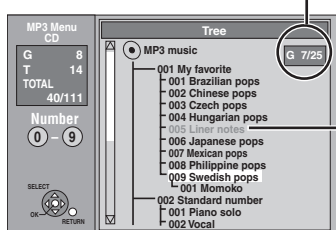
Using the tree screen to find a group

1 While the file list is displayed

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

Selected group No. /Total groups

If the group has no track, "—" is displayed as group number.



You cannot select groups that contain no compatible files.

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

The file list for the group appears.

To return to the previous screen

Press [RETURN ↵].

Playing DivX video contents

-R -R DL CD USB

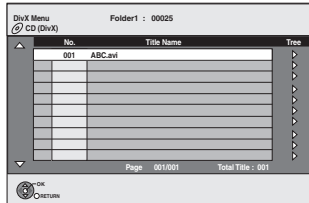
ABOUT DIVX VIDEO:

DivX® is a digital video format created by DivX, Inc. This is an official DivX Certified device that plays DivX video. Visit www.divx.com for more information and software tools to convert your files into DivX video.

You can play DivX video contents recorded with a computer onto DVD-R, DVD-R DL, CD-R/CD-RW and USB memory.

1 Show DivX Menu screen.

(⇒ 38, Showing the menu screen)



: Resume play function
(⇒ 34)

- Files are treated as titles.
- Press **[▶]** (PLAY) if the DivX Menu screen is not displayed.

2 Press **[▲, ▼]** to select the title and press **[OK]**.

Play starts on the selected title.

- You can also select the title with the numbered buttons.
e.g., 5: [0] ⇒ [0] ⇒ [5]
15: [0] ⇒ [1] ⇒ [5]

To stop playing

Press **[■]**.

To show other pages

Press **[◀, ▶]**.

To exit the screen

Press **[DIRECT NAVIGATOR]**.

Note

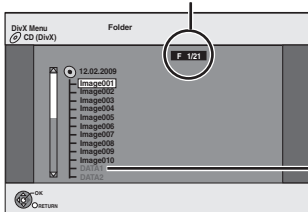
- Picture sizes set at the recording time may prevent the unit from showing pictures in the adequate aspect. You may be able to adjust the aspect through the TV.
- Successive play is not possible.
- Playback is not possible if recording is performed on the DVD or VHS drive.

Using the tree screen to find a folder

1 While the file list is displayed

Press **[▶]** while a title is highlighted to display the tree screen.

F: Selected folder no./Total folder no. including DivX title.



You cannot select folders that contain no compatible files.

2 Press **[▲, ▼]** to select a folder and press **[OK]**.

The file list for the folder appears.

To return to the previous screen

Press **[RETURN ↵]**.

Regarding DivX VOD content

-R -R DL CD

ABOUT DIVX VIDEO-ON-DEMAND:

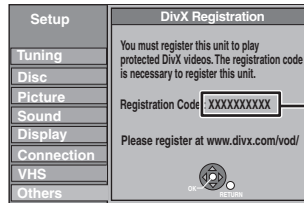
This DivX Certified® device must be registered in order to play DivX Video-on-Demand (VOD) content.

To generate the registration code, locate the DivX VOD section in the device setup menu.

Go to vod.divx.com with this code to complete the registration process and learn more about DivX VOD.

Display the unit's registration code.

(⇒ 68, "DivX Registration" in "Others" tab)



DivX Registration screen before registration

10 alphanumeric characters

- After playing DivX VOD content for first time, the registration code is not displayed.
- If you purchase DivX VOD content using a registration code different from this unit's code, you will not be able to play this content.

Cancel the unit's registration

(⇒ 68, DivX Registration)

Press **[◀, ▶]** to select "Yes" in "DivX Registration".

Use the deregistration code to cancel the registration in www.divx.com.

Regarding DivX content that can only be played a set number of times

Some DivX VOD contents can only be played a set number of times. When you play this content, the number of times already played and initially playable number of times is displayed.

- The remaining number of plays decreases each time a programme is played. However, when playing from the point where play was previously stopped, the remaining number of plays does not decrease due to the resume play function.

Playing still pictures

RAM -R -R DL CD USB

- You cannot play still pictures while recording or copying.

1 Show Album View screen.

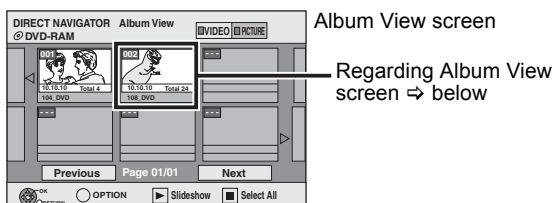
-R -R DL CD USB

(⇒ 38, Showing the menu screen)

RAM

While stopped

- 1 Press [DRIVE SELECT] to select the drive.
- 2 Press [DIRECT NAVIGATOR].
When "PICTURE" is not selected, press the "Green" button to select "PICTURE".



DIRECT NAVIGATOR screen icons

Picture and folder protected

To show other pages

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

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

2 Press [▲, ▼, ◀, ▶] to select the album and press [OK].

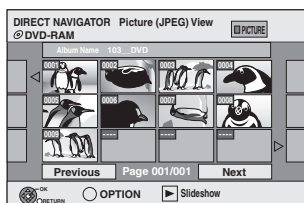
You can also select album with the numbered buttons.

e.g.,

5: [0] ⇒ [0] ⇒ [5]

15: [0] ⇒ [1] ⇒ [5]

115: [1] ⇒ [1] ⇒ [5]



e.g., DVD-RAM

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

You can also select still pictures with the numbered buttons.

e.g.,

5: [0] ⇒ [0] ⇒ [0] ⇒ [5]

115: [0] ⇒ [1] ⇒ [1] ⇒ [5]

15: [0] ⇒ [0] ⇒ [1] ⇒ [5]

1115: [1] ⇒ [1] ⇒ [1] ⇒ [5]

- Press [◀, ▶] to display the previous or next still picture.
- Useful functions during still picture play (⇒ 41)

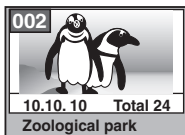
To return to the Album View screen or Picture (JPEG) View screen

Press [RETURN ↵].

To exit the screen

Press [DIRECT NAVIGATOR].

■ Regarding Album View screen



Shooting date/Number of pictures/Album name

- Depending on the digital camera, the editing software on the PC etc., the information about the recording date may not be displayed. In this case, the date will appear as [--.--.--].

Start Slideshow

RAM -R -R DL CD USB

You can display still pictures one by one at a constant interval with favourite music.

1 While the Album View screen is displayed Press [▲, ▼, ◀, ▶] to select the album.

2 Press [▶] (PLAY).

You can also start Slideshow by pressing [OPTION] and press [▲, ▼] to select "Start Slideshow" and then press [OK].

To select multiple albums for starting Slideshow:

- ① Press [▲, ▼, ◀, ▶] to select the album.
- ② Press [II].
A check mark appears.
• Press [II] again to cancel the selection.
- ③ Repeat steps ①-② until you select all necessary albums.
- ④ Perform step 2.

To select all albums for starting Slideshow:

- ① Press [■] in step 1.
- ② Press [◀, ▶] to select "Yes" and press [OK].
- ③ Perform step 2.

USB

To start Slideshow on the menu screen:

- ① Insert the USB memory.
The menu is automatically displayed. (⇒ 38)
- ② Press [▲, ▼] to select "Start Slideshow", and press [OK].

Useful functions during still picture play

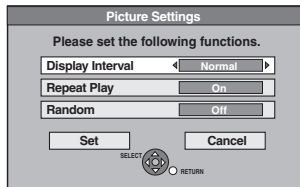
Slideshow Settings

While the Album View screen is displayed (⇒ 40)

- 1 Press [OPTION].
- 2 Press [▲, ▼] to select "Slideshow Settings" and press [OK].
- 3 Press [▲, ▼] to select "Picture Settings" or "Background Music Settings" and press [OK].
- 4 Press [▲, ▼] to select the item and press [◀, ▶] to select the setting.
After finishing settings, press [▲, ▼, ▶, ▶] to select "Set" and press [OK].

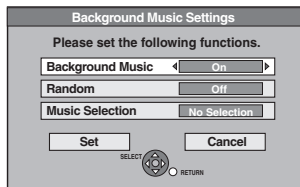


Picture Settings



- Display Interval: Selects the desired interval. ("Normal", "Long" or "Short")
- Repeat Play: Selects "On" to play pictures in the selected album repeatedly.
- Random: Selects "On" to play pictures in the selected album at random.

Background Music Settings

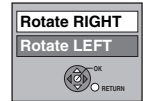


- Background Music: Selects "On" to play Slideshow with Background Music.
Selects "Off" to play Slideshow without Background Music.
- Random: Selects "On" to play Background Music at random.
- Music Selection:
- ① Press [▲, ▼] to select "Music Selection" and press [OK].
 - ② Press [▲, ▼] to select the storage location of Background Music and press [OK].
 - ③ Press [▲, ▼] to select an album for Background Music and press [OK].

Rotate RIGHT/Rotate LEFT

While playing

- 1 Press [OPTION].
- 2 Press [▲, ▼] to select "Rotate RIGHT" or "Rotate LEFT" and press [OK].

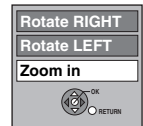


- Rotation information will not be stored.
 - R R DL CD USB Still pictures
 - When disc or album is protected
 - When played on other equipment
 - When copying pictures

Zoom in/Zoom out

While playing

- 1 Press [OPTION].
- 2 Press [▲, ▼] to select "Zoom in" and press [OK].



- To return the picture to its original size, press [▲, ▼] to select "Zoom out" in step 2 and press [OK].
- When zooming in, the picture may be cut off.
- The enlargement information will not be stored.
- The "Zoom in/Zoom out" function is only available for still pictures smaller than 640 × 480 pixels.

Properties

While playing

Press [STATUS ⓘ] twice.

e.g.,
DVD-RAM

18:53:50	11.10.	Folder - Picture No.	103 - 0006	
Date	1.1.2010	No.	3 / 9	

Shooting date

To exit the picture properties screen

Press [STATUS ⓘ].

Note

- Music albums on the same media cannot be used as the Background Music. (Even if a music album on the same media is selected, the music is not played.)
- DTS-CD cannot be played back as Slideshow Background Music.
- "Rotate RIGHT/Rotate LEFT" or "Zoom in/Zoom out" does not work during Slideshow.

Linked operations with the TV (VIERA Link “HDAVI Control™”/Q Link)

You can enjoy linked operations with the TV and receiver by using “HDAVI Control” or Q Link.

What is VIERA Link “HDAVI Control”?

VIERA Link “HDAVI Control” is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) or receiver under “HDAVI Control”. You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details.

- VIERA Link “HDAVI Control”, based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed.

- **This unit supports “HDAVI Control 5” function.**

“HDAVI Control 5” is the newest standard (current as of December, 2009) for Panasonic's HDAVI Control compatible equipment. This standard is compatible with Panasonic's conventional HDAVI equipment.

- Please refer to individual manuals for other manufacturers' equipment supporting VIERA Link function.

Preparation

- 1 Connect this unit to your TV using an HDMI cable and a fully wired 21-pin Scart cable (⇒ 9), or to your receiver using an HDMI cable (⇒ 71).
- 2 Set “VIERA Link” to “On” (⇒ 66). (The default setting is “On”.)

- 3 Set the “HDAVI Control” operations on the connected equipment (e.g., TV).

- **Set the input channel on VIERA to suit the terminal to be used as “HDAVI Control”.**

- 4 Turn on all “HDAVI Control” compatible equipment and select this unit's input channel on the connected TV so that the “HDAVI Control” function works properly.

Also when the connection or settings are changed, repeat this procedure.

What is Q Link?

Q Link is a convenient function that offers linked operations of this unit and a Panasonic TV. You can use this function by connecting the equipment with a fully wired 21-pin Scart cable.

Preparation

- Connect this unit to your TV with a fully wired 21-pin Scart cable (⇒ 8).

For your reference

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

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

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

What you can do with “HDAVI Control” and Q Link

VIERA Link **Q Link**

Download from the TV^{※1}

When you connect the unit to a TV for the first time, the station list data etc. are automatically copied from the TV to the unit and the TV stations are assigned to the programme positions on the unit in the same order as on the TV (⇒ 10).

Easy playback

When the TV is on and the following operations are performed, the TV's input will automatically switch to HDMI input mode (**VIERA Link**) or AV input mode (**Q Link**) and the TV displays the corresponding action. (Picture or sound may not be available for the first few seconds.)

Press **[FUNCTION MENU]**^{※2}, **[▶]** (**PLAY**)^{※3}, **[DIRECT NAVIGATOR]**, **[GUIDE]**, **[ShowView]**^{※4}, **[PROG/CHECK]** etc.

Power on link

When the TV is off and the following operations are performed, the TV will automatically turn on and displays the corresponding action. (Picture or sound may not be available for the first few seconds.)

Press **[FUNCTION MENU]**^{※2}, **[▶]** (**PLAY**)^{※3}, **[DIRECT NAVIGATOR]**, **[GUIDE]**, **[ShowView]**^{※4}, **[PROG/CHECK]** etc.

- **DVD-V** **CD** **VCD** **VHS** **SVCD** and **MP3**

The TV is automatically turned on when you insert the discs or VHS.

Power off link

When you set the TV to standby mode, the unit is also automatically set to standby mode. The unit is automatically set to standby mode even if the FUNCTION MENU etc. is displayed during playback or when the unit set to a timer recording.

Even if the TV is set to standby mode, the unit will not be set to standby mode at the same time when recording, copying, finalising etc.

- When this unit is connected to an “HDAVI Control” compatible Panasonic receiver with an HDMI cable, the receiver will also turn off.

Direct TV Recording^{※1}

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

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

- **Depending on the TV type connected with this unit, this function may not work.**

Press and hold [● DIRECT TV REC] for 1 second.

Recording starts.

To stop recording

Press **[■]**.

- If you switch TV channels while using Direct TV Recording, the Direct TV Recording may stop.
- When “EXT-L” lights on the unit's display (⇒ 28), Direct TV Recording is unavailable.

^{※1} **VIERA Link** This function is available with the TV that supports “HDAVI Control 3” or later.

^{※2} This button is available only when this unit is on.

^{※3} When this button is pressed, the playback image is not immediately displayed on the screen and it may not be possible to watch the contents from where playback started.

In this case, press **[◀◀]** or **[◀◀]** to go back to where playback started.

^{※4} **For Germany and Austria**

Note

- These functions may not work normally depending on the equipment condition.
- About “HDAVI Control” function, read the manual of the connected equipment (e.g., TV) too.

Easy control only with VIERA remote control

VIERA Link

If you connect this unit to the TV that supports "HDAVI Control 2" or later with an HDMI cable, you can enjoy using more convenient functions. You can operate this unit using buttons on the TV remote control.

The buttons that you can use for this unit vary depending on the TV. For details, refer to the operating instructions of the TV.

Use the remote control supplied with this unit if you cannot operate this unit using buttons on the TV remote control.

- The operation of this unit may be interrupted when you press incompatible buttons on the TV remote control.
- The TV displays the TV tuner's picture when the linked operation is finished.

Using the FUNCTION MENU to operate this unit^{*1}

Refer to the TV operating instructions for operating the TV.

1 Display this unit's "FUNCTION MENU" using the TV remote control.

- If this unit is set to standby mode, it will automatically turn on.

2 Select the item you want to operate with the TV remote control, and press [OK].

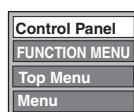
- About the FUNCTION MENU Display (⇒ 7, 44, 65).

Using the OPTION menu window to operate this unit^{*1}

By using the TV remote control, you can play discs using the "Control Panel" (⇒ below) and display the Top Menu for DVD-Video.

1 Press [OPTION].

e.g.,



Note

You cannot use the OPTION menu while the Top Menu for DVD-Video is displayed and while DVD-Video is being copied.

2 Select an item then press [OK].

Switch to TV	Displayed when watching with the tuner of this unit. It will return to the TV picture.
Control Panel	Control Panel is displayed (⇒ below).
FUNCTION MENU	FUNCTION MENU is displayed (⇒ above).
Top Menu DVD-V	Top menu is displayed (⇒ 18).
Menu DVD-V	Menu is displayed (⇒ 18).
Standby Settings	"Standby Settings" screen is displayed (⇒ 67).
Slideshow	"Album View" screen is displayed (⇒ 40).
Rotate RIGHT (JPEG) Rotate LEFT (JPEG)	Rotate the still picture (⇒ 41).
Zoom in (JPEG) Zoom out (JPEG)	Enlarge or shrink the still picture (⇒ 41).

■ Using the Control Panel

Using the Control Panel, you can operate search backward, search forward, stop, etc. with the TV remote control.

Select "Control Panel" and press [OK] in step 2 (⇒ above).

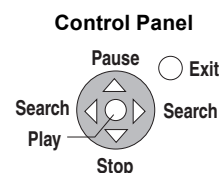
The Control Panel is displayed (⇒ right).

- When playing a title or DVD-Video, etc.

– [▲]: Pause, [▼]: Stop, [◀]: Search backward, [▶]: Search forward, [OK]: Play, [EXIT]: Exit the Control Panel.

- While playing still pictures

– [▼]: Stop, [◀]: View previous picture, [▶]: View next picture, [EXIT]: Exit the Control Panel.



^{*1} This function is available with the TV that supports "HDAVI Control 2" or later.

■ When you want to leave the TV on and set only this unit to standby mode

Press [⏻] on this unit's remote control and set to standby mode.

■ When not using "HDAVI Control"

Set "VIERA Link" in the Setup menu to "Off" (⇒ 66).

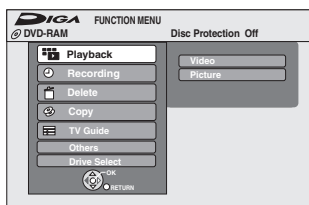
FUNCTION MENU Display

By using the FUNCTION MENU you may access the main functions quickly and easily.

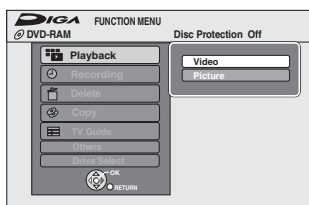
If “FUNCTION MENU Display” is set to “On” in the Setup menu, FUNCTION MENU automatically appears when you turn the power on. (⇒ 65)

1 Press [FUNCTION MENU].

Functions displayed depend on the selected drive or type of disc.



2 Press [▲, ▼] to select a function and press [OK].



- If you press [RETURN ↵], you can return to the previous screen.

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

- Refer to “Easy access to various functions — FUNCTION MENU Display” about each function. (⇒ 7)

To exit the FUNCTION MENU

Press [FUNCTION MENU].

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

You can give names to recorded titles, etc.

Also, you can search desired programmes on TV Guide by entering key words. (⇒ 32, Free Word Search)

1 Show Enter Title Name screen etc.

Title (timer recording)

Select "Programme Name".

(⇒ 30, Manually programming timer recordings, step 3)

Free Word Search

Select "Free Word Search". (⇒ 32, "Searching desired programmes on TV Guide list by words", step 2)

Title

Select "Enter Title Name". (⇒ 46, step 4)

Playlist

Select "Enter Name". (⇒ 49, step 5)

Album of still pictures

Select "Enter Album Name".

(⇒ 50, Editing still pictures (JPEG), step 3)

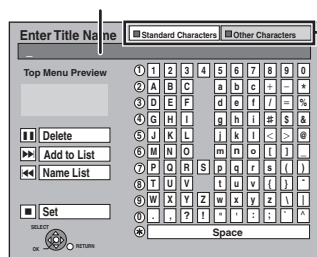
Disc

Select "Disc Name". (⇒ 58, Providing a name for a disc, step 1)

Favourite 1-4

Press the "Red" button. (⇒ 62, To change the name of a Favourite in the "Favourite" column, step 2)

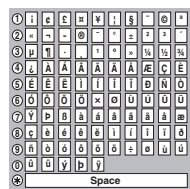
Name field: shows the text you have entered



Press the "Red" button or "Green" button to select character type and press [OK].

"Standard Characters":
(⇒ left, Alphabet characters, etc.)

"Other Characters":
(⇒ below, Umlaut characters, accented characters, etc.)



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

Repeat this step to enter other characters.

• To delete a character

Press [▲, ▼, ◀, ▶] to select the character in the name field and press [III]. (The selected characters are deleted.)

• Using the numbered buttons to enter characters

e.g., entering the letter "R"

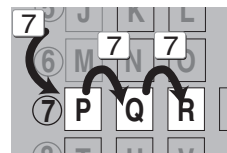
① Press [7] to move to the 7th row.

② Press [7] twice to highlight "R".

③ Press [OK].

• To enter a space

Press [DELETE ✕] and press [OK].



3 Press [■] (Set).

To end partway

Press [RETURN ↵].

Text is not added.

■ To add a name to the list

You can add frequently used names and recall them later.

Maximum number of added names: 20

Maximum number of characters per name: 44

After entering the name (steps 1-2).

1 Press [▲, ▼, ◀, ▶] to select "Add to List" and press [OK].

• You can also press [▶▶] to select "Add to List".

2 Press [◀, ▶] to select "Add" and press [OK].

• Press [RETURN ↵] to cancel.

■ To recall an added name

1 Press [▲, ▼, ◀, ▶] to select "Name List" and press [OK].

• You can also press [◀◀] to select "Name List".

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

■ To delete an added name

1 Press [▲, ▼, ◀, ▶] to select "Name List" and press [OK].

• You can also press [◀◀] to select "Name List".

2 Press [▲, ▼, ◀, ▶] to select the name to be deleted.

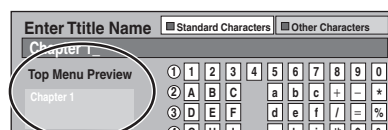
3 Press [OPTION] to show "Delete Name" and press [OK].

4 Press [◀, ▶] to select "Delete" and press [OK].

5 Press [RETURN ↵].

For your reference

If you enter a long name, only part of it is shown in the Top Menu after finalisation (⇒ 60). When entering a title name, the name that will appear in the Top Menu can be previewed in "Top Menu Preview" window.



Note

- If a name is long, parts of it may not be shown in some screens.
- The number of characters that can be entered depends on what kind of things you name.

Editing titles/chapters

RAM **-R** **-R DL** **-RW(V)** **+R** **+R DL** (You cannot edit finalised discs.)
+RW **-RW(VR)**

Chapter

Each section between the division points becomes a chapter.



RAM You can change the order of chapters and create a Playlist (⇒ 48).

“Chapter Creation” in the Setup menu (⇒ 64)

“Automatic”:

Detects changes (special mute points like the start and the end of the programme) in the scene during recording and sets chapter start points on them automatically.

- Depending on the programme to be recorded or the Recording Mode, the chapter start points may not be created correctly.

“5 minutes”:

Sets chapter start points automatically during recording at approximately 5-minute interval.

- The maximum number of items on a disc:

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

– Titles: 99 (**+R** **+R DL** **+RW** 49 titles)

– Chapters: Approx. 1000 (**+R** **+R DL** **+RW** Approx. 254)

(Depends on the state of recording.)

Note

- Once deleted, divided or partially deleted, recorded content cannot be restored to its original state. Make certain before proceeding.
- You cannot edit during recording or copying, etc.
- Restricted recording information remains even after editing (e.g. dividing a title etc).
- +R** **+R DL** Each time you edit a title the information is saved to the free space on the disc. If you do this numerous times, the amount of free space decreases.

Editing titles/chapters and playing chapters

You can modify (remove unnecessary parts, divide, etc.) recorded programmes.

Preparation

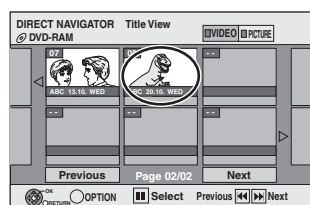
- Turn on the television and select the appropriate AV input to suit the connection to this unit.
- Turn the unit on.
- Press [DRIVE SELECT] to select the drive containing the recorded title to be edited.
- RAM** Release protection (⇒ 58, Setting the protection).

1 During play or while stopped

Press [DIRECT NAVIGATOR].

RAM When “VIDEO” is not selected, press the “Red” button to select “VIDEO”.

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



Title View screen

To show other pages

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

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

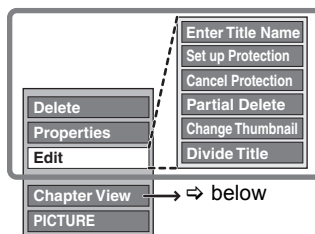
Multiple editing

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

3 Press [OPTION].

4 Press [▲, ▼] to select the operation and press [OK].

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



Refer to “Title operations” (⇒ 47).

■ If you select “Chapter View”

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

To start play ⇒ Press [OK].

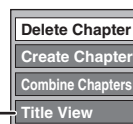
To edit ⇒ Step 6.



Chapter View screen

- To show other pages/Multiple editing (⇒ above)

6 Press [OPTION], then [▲, ▼] to select the operation and press [OK].



Refer to “Chapter operations” (⇒ 47).

- You can go back to Title View.

To return to the previous screen


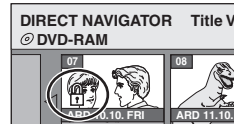


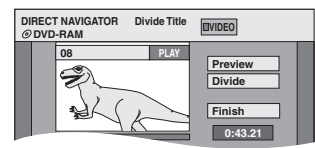
Press [RETURN ↵].

To exit the screen

Press [DIRECT NAVIGATOR].

Title operations


After performing steps 1–4 (⇒ 46)

Delete* RAM -R -R DL -RW(V) +R +R DL +RW	<p>Press [◀, ▶] to select “Delete” and press [OK].</p> <ul style="list-style-type: none"> Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding. The available recording space on DVD-R, DVD-R DL, +R or +R DL does not increase when you delete titles. Available recording space on DVD-RW (DVD-Video format) and +RW increases only when the last recorded title is deleted. It does not increase if other titles are deleted (⇒ 23). 	
Properties RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR)	<p>Information (e.g., time and date) is shown.</p> <ul style="list-style-type: none"> Press [OK] to exit the screen. 	
Enter Title Name RAM -R -R DL -RW(V) +R +R DL +RW	<p>You can give names to recorded titles. (⇒ 45, Entering text)</p>	
Set up Protection* Cancel Protection* RAM +R +R DL +RW	<p>If set, this will protect the title from accidental deletion.</p> <p>Press [◀, ▶] to select “Yes” and press [OK].</p> <p>The lock symbol appears when the title is protected.</p>	
Partial Delete RAM (⇒ below, For your reference)	<p>You can remove unnecessary part of the recording.</p> <ol style="list-style-type: none"> Press [OK] at the start point and end point of the section you want to delete. Press [▲, ▼] to select “Finish” and press [OK]. <ul style="list-style-type: none"> Select “Next” and press [OK] to delete other sections. Press [◀, ▶] to select “Delete” and press [OK]. 	
Change Thumbnail RAM -R -R DL -RW(V) +R +R DL +RW (⇒ below, For your reference)	<p>You can change an image to be shown as the thumbnail picture in the Title View.</p> <ol style="list-style-type: none"> Press [▶] (PLAY) to start play. Press [OK] when the image you want to use as a thumbnail is shown. <p>To change the thumbnail Restart play and press [▲, ▼] to select “Change”, then press [OK] at the point you want to change.</p> Press [▲, ▼] to select “Finish” and press [OK]. 	
Divide Title RAM (⇒ below, For your reference)	<p>You can divide a title into two.</p> <ol style="list-style-type: none"> Press [OK] at the point you want to divide the title. Press [▲, ▼] to select “Finish” and press [OK]. Press [◀, ▶] to select “Divide” and press [OK]. <p>To confirm the division point Press [▲, ▼] to select “Preview” and press [OK]. (The unit plays 10 seconds before and after the division point.)</p> <p>To change the division point Restart play and press [▲, ▼] to select “Divide”, then press [OK] at the point where you want to divide the title.</p> <p>Note</p> <ul style="list-style-type: none"> The divided titles retain the title name and CPRM property (⇒ 85) of the original title. Video and audio just before and after the dividing point may momentarily cut out. 	

* Multiple editing is possible.

Chapter operations

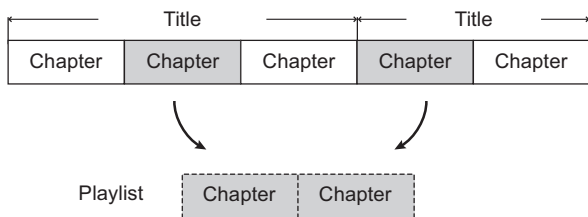
After performing steps 1–6 (⇒ 46)

Delete Chapter* RAM	<p>Press [◀, ▶] to select “Delete” and press [OK].</p> <ul style="list-style-type: none"> Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding. Select “Combine Chapters” (⇒ below) when you only want to delete the division point between chapters. (The recorded contents will not be deleted.) 	
Create Chapter RAM (⇒ below, For your reference)	<p>Select the point where you want to start a new chapter while viewing the title.</p> <ol style="list-style-type: none"> Press [OK] at the point you want to divide. <ul style="list-style-type: none"> Repeat this step to divide at other points. Press [▲, ▼] to select “Finish” and press [OK]. 	
Combine Chapters RAM	<p>Press [◀, ▶] to select “Combine” and press [OK].</p> <ul style="list-style-type: none"> The selected chapter and following chapter are combined. 	

* Multiple editing is possible.

For your reference	<ul style="list-style-type: none"> Use Search (⇒ 34), Time Slip (⇒ 34) to find the desired point. To find the desired point correctly, use Slow-motion (⇒ 34) and Frame-by-frame (⇒ 34). To skip to the start or end of a title/chapter, press [◀◀] (start) or [▶▶] (end).
---------------------------	---

You can arrange the chapters (⇒ 46) to create a Playlist.



- Playlists are not recorded separately so this doesn't use much capacity.
- Editing chapters in a Playlist does not modify the source titles and source chapters.
- You cannot create or edit Playlists while recording or copying.

RAM

- The maximum number of items on a disc:
 - Playlists: 99
 - Chapters in Playlists: Approx. 1000 (Depends on the state of recording.)
- If you exceed the maximum numbers of items for a disc, all the items entered will not be recorded.

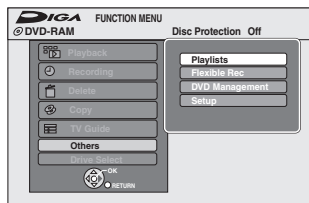
Creating Playlists

RAM

Preparation

- Turn on the television and select the appropriate AV input to suit the connection to this unit.
- Turn the unit on.
- Release protection (⇒ 58, Setting the protection).
- Playlists must be made in accordance with the encoding system currently selected in "TV System" (⇒ 66).

- 1 While stopped**
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select "Others" and press [OK].**
- 3 Press [▲, ▼] to select "Playlists" and press [OK].**

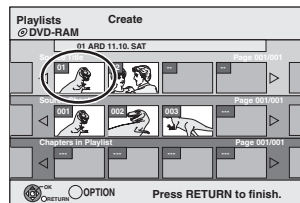


- 4 Press [▲, ▼, ◀, ▶] to select "Create" and press [OK].**



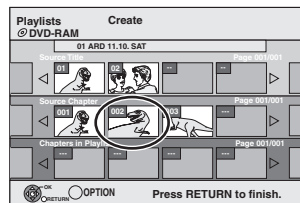
- 5 Press [◀, ▶] to select the source title and press [▼].**

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



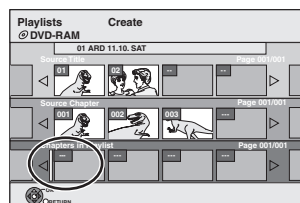
- 6 Press [◀, ▶] to select the chapter you want to add to a Playlist and press [OK].**

Press [▲] to cancel.



- You can also create a new chapter from the source title. Press [OPTION] to select "Create Chapter" and press [OK] (⇒ 47, Create Chapter).

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



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

- 8 Press [RETURN ↵].**

All the selected scenes become the Playlist.

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Editing and playing Playlists/chapters

RAM

-RW(VR) (Play only)

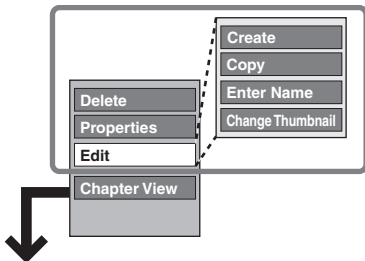
- 1 While stopped
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select "Others" and press [OK].
- 3 Press [▲, ▼] to select "Playlists" and press [OK].
- 4 Press [▲, ▼, ◀, ▶] to select the Playlist.
To start play ⇒ Press [OK].
To edit ⇒ Step 5.



Playlist View screen

• To show other pages/Multiple editing (⇒ 46)

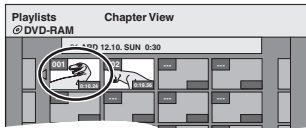
- 5 Press [OPTION], then [▲, ▼] to select the operation and press [OK].
• If you select "Edit", press [▲, ▼] to select the operation and press [OK].



Refer to "Playlist operations".

■ If you select "Chapter View"

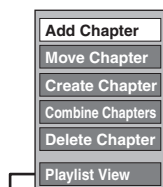
- 6 Press [▲, ▼, ◀, ▶] to select the chapter.
To start play ⇒ Press [OK].
To edit ⇒ Step 7.



Chapter View screen

• To show other pages/Multiple editing (⇒ 46)

- 7 Press [OPTION], then [▲, ▼] to select the operation and press [OK].



Refer to "Chapter operations".

• You can go back to Playlist View.

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Playlist operations

After performing steps 1–5 (⇒ left)

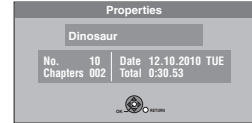
Delete*
RAM

Press [◀, ▶] to select "Delete" and press [OK].
Once deleted, the Playlists are lost and cannot be restored.
Make certain before proceeding.

Properties
RAM -RW(VR)

Playlist information (e.g., total time and date) is shown.

• Press [OK] to exit the screen.



Create
RAM

(⇒ 48, Creating Playlists, Step 5–8)

Copy*
RAM

Press [◀, ▶] to select "Copy" and press [OK].
• The copied Playlist becomes the newest one in "Playlist View" screen.

Enter Name
RAM

You can give names to Playlists.
(⇒ 45, Entering text)

Change Thumbnail
RAM

(⇒ 47, Change Thumbnail)

* Multiple editing is possible.

Chapter operations

RAM

After performing steps 1–7 (⇒ left)

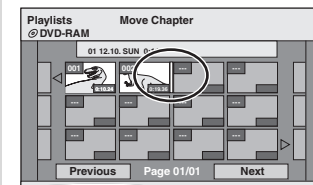
• Editing chapters in a Playlist does not modify the source titles and source chapters.

Add Chapter

(⇒ 48, Creating Playlists, Step 5–7)

Move Chapter

Press [▲, ▼, ◀, ▶] to select the position to insert the chapter and press [OK].



Create Chapter

(⇒ 47, Create Chapter)

Combine Chapters

(⇒ 47, Combine Chapters)

Delete Chapter*

(⇒ 47, Delete Chapter)
The Playlist itself is deleted if you delete all the chapters in it.

* Multiple editing is possible.

Editing still pictures (JPEG)

RAM

- You can edit pictures and albums.
- You cannot edit still pictures recorded on DVD-R DL, CD-R/CD-RW and USB memory.

Preparation

- Press [DRIVE SELECT] to select the DVD.
- Release protection (⇒ 58, Setting the protection).

1 Press [DIRECT NAVIGATOR].

When "PICTURE" is not selected, press the "Green" button to select "PICTURE".

2 Editing an album:

Select the album to be edited and press [OPTION].

- When you want to create an album using "Create Album", press [OPTION] without selecting album.

Editing a still picture:

- ① Select the album which contains the still picture to edit and press [OK].
- ② Select the still pictures to edit and press [OPTION].

To show other pages

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

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

Multiple editing

Select with [▲, ▼, ◀, ▶] and press [■]. (Repeat.)

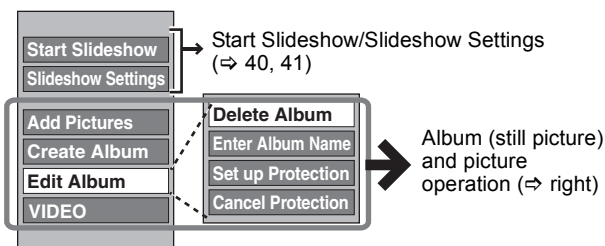
A check mark appears. Press [■] again to cancel.

To select all albums

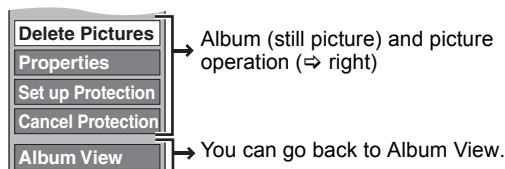
Press [■]. After confirmation message appears, press [◀, ▶] to select "Yes".

3 Press [▲, ▼] to select the operation and press [OK].

■ To edit the album



■ To edit still picture



To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [DIRECT NAVIGATOR].

Album (still picture) and picture operation

After performing steps 1–3 (⇒ left)

Delete Pictures*

Delete Album*

RAM

Press [◀, ▶] to select "Delete" and press [OK].

- Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.
- When deleting an album, files other than the still picture files inside the album will also be deleted. (This does not apply to folders under the album concerned.)

Enter Album Name

RAM

You can give names to albums. (⇒ 45, Entering text)

- Album names input using this unit may not be displayed on other equipment.

Set up Protection*

Cancel Protection*

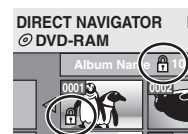
RAM

If set, this will protect the still picture or album from accidental deletion.

Press [◀, ▶] to select "Yes" and press [OK].

The lock symbol appears when the still picture or album is protected.

- Even if the protection setting is used by this unit to protect an album, the album may be deleted by another unit.



Properties

RAM

-R

-R DL

CD

USB

Information (e.g., image size and file size) is shown.

- To exit the Properties screen, press [OK].

Add Pictures

Create Album

RAM

- ① Press [◀, ▶] to select "Start" or "Yes" and press [OK].
- ② Press [▲, ▼, ◀, ▶] to select the album that contains the still picture you want to add and press [OK].
- ③ Press [▲, ▼] to select the item and press [OK].
 - If "Select pictures to copy" is selected: Select the still picture you want to add and press [OK].
 - If "Copy all pictures" is selected: All the still pictures in the album will be copied.
- ④ Press [◀, ▶] to select "Yes" or "No" and press [OK].
 - If you want to continue copying, select "Yes" and go to step ②.

Only for "Create Album"

- ⑤ Press [◀, ▶] to select "Yes" or "No" and press [OK].
 - If "Yes" is selected: You can give names to albums. (⇒ 45, Entering text)
 - If "No" is selected: The album name is automatically given.

* Multiple editing is possible.

Note

- Timer recordings do not start when performing "Add Pictures" or "Create Album".
- "Add Pictures" is available only for the folders conforming to DCF.

Deleting still pictures using DELETE Navigator

RAM

- 1** While stopped
Press [FUNCTION MENU].
- 2** Press [▲, ▼] to select “Delete” and press [OK].
- 3** Press [▲, ▼] to select “Picture”.
- 4** Press [OK].
- 5** Deleting an album
Press [▲, ▼, ◀, ▶] to select the item and press [DELETE *].

Deleting a still picture

- ① Press [▲, ▼, ◀, ▶] to select the album which contains the still picture to delete and press [OK].
- ② Press [▲, ▼, ◀, ▶] to select the still picture and press [OK].

You can confirm the item that you have selected using the option menu.

- Refer to option menu operations (⇒ 50, step 3)

To show other pages

Press [◀◀, ▶▶] to show other pages.

Multiple deleting

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

- 6** Press [◀, ▶] to select “Delete” and press [OK].
The item is deleted.

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Before copying

When copying a title with main and secondary audio (Analogue broadcast only)

- Select the audio type for recording bilingual broadcast from “Bilingual Audio Selection” (⇒ 65) when:
 - Copying to a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW.
 - When “Audio Mode for XP Recording” is set to “LPCM” (⇒ 65) and you are copying in XP mode.

Note

- Titles and playlists recorded using a different encoding system (PAL or NTSC) from the TV system currently selected on the unit cannot be copied.

Preparation

- Insert a disc that you can use for copying (⇒ 11, 15).
- Confirm that there is enough remaining disc space.

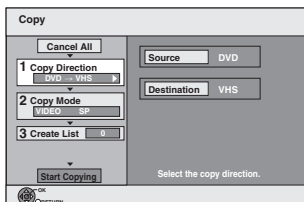
Copying Titles or Playlists (DVD → VHS)

RAM -RW(VR) +RW → VHS

You can order titles and playlists as desired for copy to tape.

See also “Before copying” (⇒ above).

- 1 While stopped**
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Copy” and press [OK].**
- 3 Press [▲, ▼] to select “Advanced Copy” and press [OK].**



- If you are not going to change the registered list press [▼] several times (⇒ step 7).

4 Set the copy direction.

- If you are not going to change the copying direction, press [▼] (⇒ step 5).
- ① Press [▲, ▼] to select “Copy Direction” and press [►].
- ② Press [▲, ▼] to select “Source” and press [OK].
- ③ Press [▲, ▼] to select the drive and press [OK].
The same drive as the copy source cannot be selected.
- ④ Press [◀] to confirm.

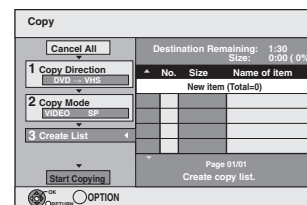
5 Set the recording mode.

- If you are not going to change the recording mode, press [▼] (⇒ step 6).
- ① Press [▲, ▼] to select “Copy Mode” and press [►].
- ② Press [▲, ▼] to select “Recording Mode” and press [OK].
- ③ Press [▲, ▼] to select the mode and press [OK].
- ④ Press [◀] to confirm.

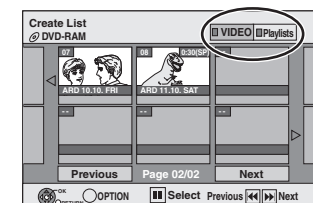
6 Register titles and playlists for copy.

- If you are going to copy a registered list without making any changes to it (⇒ step 7).

- ① Press [▲, ▼] to select “Create List” and press [►].



- ② Press [▲, ▼] to select “New item” and press [OK].
- ③ Press the “Red” button to select “VIDEO” or press the “Green” button to select “Playlists”.



- ④ Press [▲, ▼, ◀, ▶] to select the title or playlist and press [II].

A check mark is displayed. Repeat this step until you select all necessary items.

- Press [II] again to cancel.
- The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
- When you switch between the “VIDEO” and “Playlists” tab, the check mark is cancelled.
- To show other pages (⇒ below)

- ⑤ Press [OK].
- To edit the copying list (⇒ 53)
- ⑥ Press [◀] to confirm.

7 Press [▲, ▼] to select “Start Copying” and press [OK].

8 Press [◀, ▶] to select “Yes” and press [OK] to start copying.

To show other pages

- Press [▲, ▼, ◀, ▶] to select “Previous” or “Next” and press [OK].
- You can also press [◀◀, ▶▶] to show other pages.

To stop copying

Press and hold [RETURN ↵] for 3 seconds.
(You cannot stop while finalising.)

To return to the previous screen

Press [RETURN ↵].

Copying list icons and functions

Copying list indicators



Title with "One time only recording" restriction
(⇒ 24, When recording the "One time only recording" broadcasts)



Title or playlist contains still picture(s)
• Still picture(s) cannot be copied.

(NTSC)

Title or playlist recorded using a different encoding system from that of the TV system currently selected on the unit.

(PAL)

• Titles and playlists displaying these marks cannot be selected.

Data size of each registered item

Destination	Size	Name of item
No.	Size	Name of item
	New item	(Total=0)

Size:

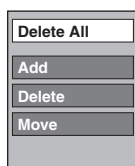
- Data size recorded to the copy destination
- The total data size will change according to the recording mode.
- The total data size shown may be larger than the sum of the data sizes for each registered item, because of data management information being written to the copy destination, etc.

To edit the copying list

Select the item in step 6–⑤ (⇒ 52)

① Press [OPTION].

② Press [▲, ▼] to select the operation and press [OK].



Delete All:

Delete all items registered on the copying list.
Press [◀, ▶] to select "Yes" and press [OK].

Add:

Add new items to the copying list.

- Press [▲, ▼, ◀, ▶] to select the title or playlist and press [III].
A check mark is displayed. Repeat this step until you select all necessary items.
• Press [III] again to cancel.
- Press [OK].

Delete:

Delete the selected items.

Press [◀, ▶] to select "Yes" and press [OK].

Move:

Move selected items or change the order of items on the copying list.
Press [▲, ▼] to select the destination and press [OK].

To cancel all registered copying setting and lists

After performing steps 1–3 (⇒ 52)

1 Press [▲, ▼] to select "Cancel All" and press [OK].

2 Press [◀, ▶] to select "Yes" and press [OK].

- The settings and lists may be cancelled in the following situations.
 - When a title or a playlist has been recorded or deleted at the copy source
 - When steps have been taken, for instance, to turn off the unit, open the tray, change the copy direction, etc.

Copying Titles or Playlists (VHS → DVD)

VHS → RAM -R -R DL -RW(V) +R +R DL +RW

Preparation:

- Insert a disc and video cassette that you can use for copying (⇒ 15).
- Confirm that there is enough remaining disc space.
- When copying an NTSC tape to a DVD, change the "TV System" to "NTSC" in the Setup menu (⇒ 66). This unit cannot record NTSC signals to discs that already have PAL signal recordings.

After performing steps 1–5 ("Format" is automatically set to "VHS-Video") (⇒ 52, Copying Titles or Playlists (DVD → VHS))

1 Set "Copy Time".

- If you are not going to change the setting (⇒ step 2)

- Press [▲, ▼] to select "Copy Time", then press [▶].
- Press [▲, ▼] to select "Time Setting", then press [OK].

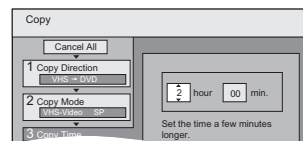
- Setting the unit to copy all the content on the video cassette

- Press [▲, ▼] to select "Off", then press [OK].
- Press [◀] to confirm.

- Setting the unit to copy according to the set time

③ Press [▲, ▼] to select "On", then press [OK].

④ Press [▲, ▼] to select "Copy Time", then press [OK].



⑤ Press [◀, ▶] to select "hour" and "min.", then press [▲, ▼] to set the recording time.

⑥ Press [OK].

⑦ Press [◀] to confirm.

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

2 Press [▲, ▼] to select "Start Copying", then press [OK].

3 Press [◀, ▶] to select "Yes" and press [OK] to start copying.

- Copying continues until the set time even if the playback of the programme you wish to copy finishes. Note that copying is automatically stopped when the tape reaches the end or the remaining capacity of the copy destination is filled.

VHS → -R -R DL -RW(V) +R +R DL

Press [◀, ▶] to select "Copy & Finalise" or "Copy Only" and press [OK].

- If "Copy & Finalise" is selected

After finalising, the discs become play-only and you can also play them on other DVD equipment. However, you can no longer record or edit.

To stop copying

Press and hold [RETURN ↵] for 3 seconds.

(You cannot stop while finalising.)

To return to the previous screen

Press [RETURN ↵].

Note

- To play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL on other players, it is necessary to finalise them after copy.

About FR mode

When "Time Setting" is set to "Off" in step 1 (⇒ left):

- The recording mode is automatically selected by estimating the remaining capacity of the disc for copying of only the recorded parts in the video cassette (unrecorded parts will not be recorded).
- When you press [OK] to start copy, the tape is automatically fast-forwarded to the end and then fast-rewound to the beginning before the copying is actually started. It may take time to start copy. If the remaining capacity of the disc is insufficient, the copying will be stopped in the middle.
- The recording is divided into titles every time the tape index signals are detected.

When "Time Setting" is set to "On" in step 1 (⇒ left):

- The recording mode is automatically determined by estimating the remaining capacity of the disc for copying of the contents equivalent to the recording time set from the start point of the copying on the video cassette (unrecorded parts will also be recorded).
- The recording is not divided into titles.

Copying a finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL

DVD-V → VHS

You can copy the content of finalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, and +R DL to the VHS.

While playing a disc, the content being played is copied to the VHS according to the set time.

- Operations and on screen displays during copy are also recorded.
- Almost all DVD-Video on sale have been treated to prevent illegal copying, and cannot be copied.
- The following cannot be copied: Video CD, Audio CD and so on.

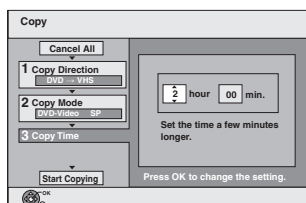
Preparation

- Insert the finalised disc (⇒ 15).

After performing steps 1–5 (“Format” is automatically set to “VHS-Video”) (⇒ 52, Copying Titles or Playlists (DVD → VHS))

1 Set “Copy Time”.

- If you are not going to change the setting (⇒ step 2)
 - 1 Press [▲, ▼] to select “Copy Time” and press [▶].
 - 2 Press [▲, ▼] to select “Time Setting” and press [OK].
- Setting the unit to copy all the content on the disc
 - 3 Press [▲, ▼] to select “Off” and press [OK].
 - 4 Press [◀] to confirm.
Copy will continue until there is not enough available recording space on the VHS.
- Setting the unit to copy according to the set time
 - 3 Press [▲, ▼] to select “On” and press [OK].
 - 4 Press [▲, ▼] to select “Copy Time” and press [OK].



- 5 Press [◀, ▶] to select “hour” and “min.” and press [▲, ▼] to set the recording time.
 - 6 Press [OK].
 - 7 Press [◀] to confirm.
Copying to the VHS continues for the set time even after the content being played finishes.
- Set a few minutes longer than the source title, in order to include the operation time before play begins.
 - You can also set the recording time with the numbered buttons.

2 Press [▲, ▼] to select “Start Copying” and press [OK].

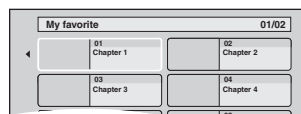
3 Press [◀, ▶] to select “Yes” and press [OK] to start copying.

The disc top menu is displayed.

- Disc play automatically begins from title 1 when “Title 1” is selected from the “Auto-Play Select” menu when finalising the disc (⇒ 59).

4 When the top menu is displayed

Press [▲, ▼, ◀, ▶] to select the title you want to start copying, and press [OK].



While playing in order, all the titles after the selected title are recorded until the set time. (After the last title on the disc has finished playing the top menu is recorded until the set time is reached.)

To return to the previous screen

Press [RETURN ↵].

To stop copying

Press [■].

You can also press and hold [RETURN ↵] for 3 seconds to stop copying.

- If stopped partway, copying will be up to that point.

Note

- The screen on the right is recorded at the beginning.
- The content is recorded as 1 title from the start of copy to the end.
- If play does not begin automatically or if the top menu does not display automatically, press [▶] (PLAY) to start.
- Even if you copy a high quality video/audio DVD, the original picture and audio quality cannot be exactly replicated.
- If you want to copy a title from a finalised DVD-RW (DVD Video Recording format), create a copy list and then copy (⇒ 52, Copying Titles or Playlists (DVD → VHS)).



Copying still pictures

RAM USB → RAM

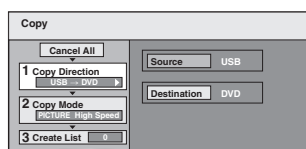
RAM → RAM

After performing steps 1–3
(⇒ 52, Copying Titles or Playlists (DVD → VHS))

1 Set “Source” and “Destination” to “DVD”. (Go to step 4)

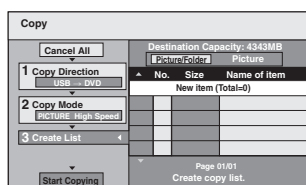
USB → RAM

- While stopped
Insert the USB memory (⇒ 15).
The menu is automatically displayed. (⇒ 38)
- Press [▲, ▼] to select “Picture (JPEG)” and press [OK].
- Press [▲, ▼] to select “Copy Selected Pictures (JPEG)” and press [OK].
“Source”, “Destination”, “Format” and “Recording Mode” are automatically set to “USB”, “DVD”, “PICTURE” and “High Speed” respectively.



4 Register still pictures for copy.

- If you are going to copy a registered list without making any changes to it (⇒ step 5).
- You can register still pictures or still picture folders.
- Still pictures and folders cannot be registered on the same list.



To register individual still pictures

- Press [▲, ▼] to select “Create List” and press [▶].
- Press [▲, ▼] to select “New item” and press [OK].
- Press [▲, ▼, ◀, ▶] to select the still picture and press [■].
A check mark is displayed. Repeat this step until you select all necessary items.
• Press [■] again to cancel.
• The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
• To show other pages (⇒ right)
• To select another folder (⇒ right)
- Press [OK].
• To edit the copying list (⇒ right)
- Press [◀] to confirm.

To register on a folder by folder basis

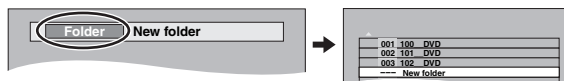
- Press [▲, ▼] to select “Create List” and press [▶].
- Press [▲, ▼] to select “Picture/Folder” and press [OK].



- Press [▲, ▼] to select “Folder” and press [OK].
- Press [▲, ▼] to select “New item” and press [OK].
- Press [▲, ▼] to select the folder and press [■].
A check mark is displayed. Repeat this step until you select all necessary folders.
• Press [■] again to cancel.
• The items will be copied in the order of the copying list. If you want to specify the order, repeat selecting one item at a time.
• To show other pages (⇒ right)
- Press [OK].
- Repeat steps ④–⑥ until you select all necessary folders.
• To edit the copying list (⇒ right)
- Press [◀] to confirm.

5 Press [▲, ▼] to select “Start Copying” and press [OK].

- Only when copying individual still pictures.
When specifying another folder as the copying destination, select “Folder”.



6 Press [◀, ▶] to select “Yes” and press [OK] to start copying.

To stop copying

Press and hold [RETURN ↵] for 3 seconds.

To return to the previous screen

Press [RETURN ↵].

Note

- Copy Mode is fixed at “PICTURE High Speed”.
- The structure of folders on the USB memory may not be the same at the copy destination.
- The sequence in which the still pictures are registered on the copy list may not be the same at the copy destination.
- If the space on the destination drive runs out or the number of files/folders to be copied exceeds the maximum (⇒ 14), copying will stop midway through.
- You cannot copy the information about the picture rotation.

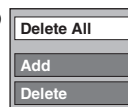
To show other pages

Press [▲, ▼, ◀, ▶] to select “Previous” or “Next” and press [OK].
• You can also press [◀◀, ▶▶] to show other pages.

To edit the copying list

Select the item in step 4–④ (for a still picture) or 4–⑥ (for a folder) (⇒ left)

- Press [OPTION].
- Press [▲, ▼] to select the operation and press [OK].



Delete All:

Delete all items registered on the copying list.
Press [◀, ▶] to select “Yes” and press [OK].

Add:

Add new items to the copying list.

- Press [▲, ▼, ◀, ▶] to select the still picture or folder and press [■].
A check mark is displayed. Repeat this step until you select all necessary items.
• Press [■] again to cancel.
- Press [OK].

Delete:

Delete the selected items.
Press [◀, ▶] to select “Yes” and press [OK].

To cancel all registered copying settings and lists

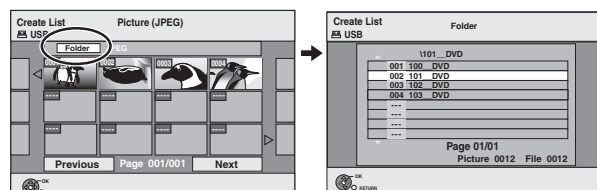
After performing steps 1–3 (⇒ left)

- Press [▲, ▼] to select “Cancel All” and press [OK].
 - Press [◀, ▶] to select “Yes” and press [OK].
- The settings and lists may be cancelled in the following situations.
– When a still picture, etc. has been recorded or deleted at the copy source
– When steps have been taken, for instance, to turn off the unit, remove the USB memory, open the tray, etc.

To select another folder

After performing step 4–② (⇒ left, To register individual still pictures)

- Press [▲, ▼, ◀, ▶] to select “Folder” and press [OK].
- Press [▲, ▼] to select the folder and press [OK].



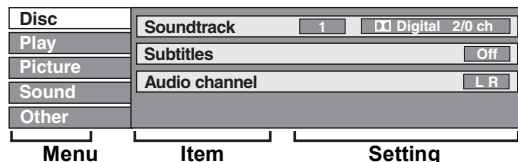
You can also select folders with the numbered buttons.

- The still pictures of different folders cannot be registered on the same list.

Using on-screen menus

Common procedures

1 Press [DISPLAY].



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

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

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

4 Press [▲, ▼] to select the setting.

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

To clear the on-screen menus
Press [DISPLAY].

Disc menu—Setting the disc content

Soundtrack*

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

The disc's audio attributes appear.

DVD-V

Select the audio and language (⇒ right, Audio attribute, Language).

VCD (SVCD) and DivX

Select the soundtrack number.

- Soundtrack numbers are displayed even when there is only one audio type.

Subtitles*

DVD-V

Turn the subtitle on/off and select the language (⇒ right, Language).

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

Turn the subtitle on/off.

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

VCD (SVCD) and DivX

Turn the subtitle on/off and select "Text" or the subtitle number.

- "Text" or subtitle numbers are displayed even if there are not multiple subtitles.

Angle* DVD-V

Change the number to select an angle.

Audio channel RAM -RW(VR) VCD and DivX

(⇒ 34, Changing audio during play)

Source Select (DivX)

- Automatic:**

The constructing method of the DivX contents is automatically distinguished and output.

- Interlace:**

Select when the disc contents were recorded using interlace.

- Progressive:**

Select when the disc contents were recorded using progressive.

PBC (Playback control ⇒ 85) VCD

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

* With some discs, you may only be able to make changes using the menus (⇒ 18) on the disc.

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

Audio attribute

LPCM/Digital/DTS/MPEG:

Signal type

k (kHz):

Sampling frequency

b (bit):

Number of bits

ch (channel):

Number of channels

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	

Play menu—Change the play sequence

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

Repeat Play

- All

CD VCD

- Chapter

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

DVD-V -RW(VR)

- Group

MP3 (except USB)

- PL (Playlist)

RAM -RW(VR)

- Title

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

DVD-V -RW(VR)

- Track

CD VCD and MP3 (except USB)

Select "Off" to cancel.

Picture menu—Change the picture quality

Playback NR

Reduces noise and picture degradation while playing.

- On:**

Reduces noise and picture degradation.

- Off:**

Video is played back as it is.

Copy NR

Reduces the noise while copying (Except analogue channels).

- Automatic:**

Noise reduction only works on picture input from a video tape.

- On:**

Noise reduction works for input video.

- Off:**

Noise reduction is off. You can record the input signal as it is.

Sound menu—Change the DVB multi audio and sound effect

DVB Multi Audio

[Digital channel only]

If more than one audio channel is output, you can set the desired channel before recording.

- DVB Multi Audio cannot be selected during playback or recording.
- Depending on the broadcast, the items that can be selected will differ.
- English
- Italian
- Spanish
- Basque
- Corsican
- German
- French
- Catalan
- Galician
- Original*

* "Original" is displayed when the original language is available in a broadcast.

Dialogue Enhancer

RAM **-R** **-R DL** **-RW(V)** **+R** **+R DL** **+RW** **DVD-V**
-RW(VR) and **DivX**

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

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

Other menu—Change the DVB subtitle and display position

DVB Subtitles

[Digital channel only]

You can set the desired subtitles if more than one subtitle track can be selected.

- DVB Subtitles cannot be selected during playback or recording.
- Depending on the broadcast, the items that can be selected will differ.
- English
- Italian
- Spanish
- Basque
- Corsican
- German
- French
- Catalan
- Galician
- Original*

* "Original" is displayed when the original language is available in a broadcast.

Position

1–5:

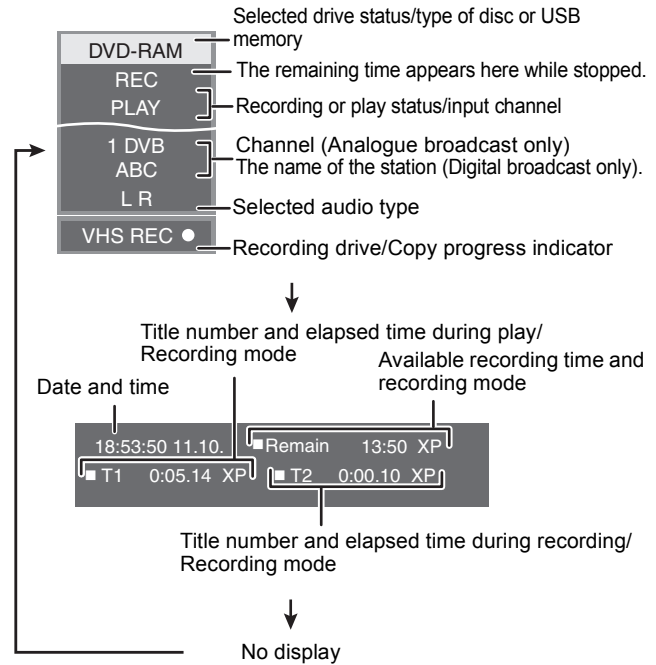
The higher the setting the lower the on-screen menu moves.

Status messages

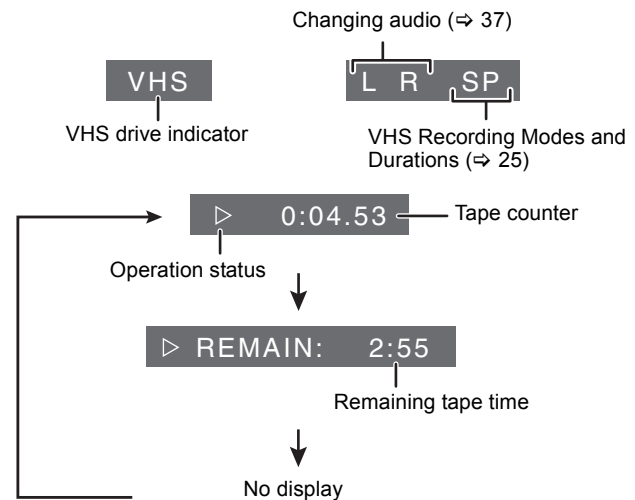
Press [STATUS].

The display changes each time you press the button.

(e.g., **RAM**)



(**VHS** during playback)



Remaining tape time display

- The displayed time is approximate.
- The displayed time will be incorrect if you set the wrong tape length in "Tape Length" in the Setup menu (⇒ 67) and if the tape is of poor quality.

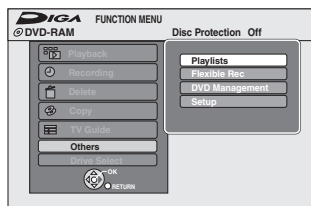
RAM -R -R DL -RW(V) +R +R DL +RW -RW(VR)

Common procedures

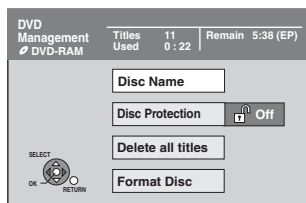
Preparation

- Press [DRIVE SELECT] to select the drive.

- 1 While stopped
Press [FUNCTION MENU].
- 2 Press [▲, ▼] to select “Others” and press [OK].



- 3 Press [▲, ▼] to select “DVD Management” and press [OK].
e.g., **RAM**



Setting the protection

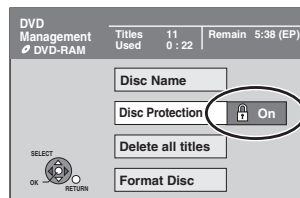
RAM

Preparation

- Press [DRIVE SELECT] to select the DVD drive.

After performing steps 1–3 (⇒ left)

- 1 Press [▲, ▼] to select “Disc Protection” and press [OK].
- 2 Press [◀, ▶] to select “Yes” and press [OK].



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

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Providing a name for a disc

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

You can provide a name for each disc.

Preparation

- Press [DRIVE SELECT] to select the DVD drive.
- **RAM** Release protection (⇒ above, Setting the protection).

After performing steps 1–3 (⇒ left)

- 1 Press [▲, ▼] to select “Disc Name” and press [OK].

(⇒ 45, Entering text)

- The disc name is displayed in the DVD Management window.
- **-R -R DL -RW(V) +R +R DL** With a finalised disc, the name is displayed on the Top Menu.
- **+RW** The disc name is displayed only if you play the disc on other equipment after creating top menu.



To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Deleting all titles and playlists—Delete all titles

RAM

Preparation

- Press [DRIVE SELECT] to select the DVD drive.
- **RAM** Release protection (⇒ 58, Setting the protection).

After performing steps 1–3 (⇒ 58, Common procedures)

- 1 Press [**▲**, **▼**] to select “Delete all titles” and press [OK].
- 2 Press [**◀**, **▶**] to select “Yes” and press [OK].
- 3 Press [**◀**, **▶**] to select “Start” and press [OK].
A message appears when finished.
- 4 Press [OK].

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Note

- Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.
- Deleting all video titles will result in all playlists also being deleted.
- Still picture data (JPEG) or computer data cannot be deleted.
- Delete does not work if one or more titles are protected.

Deleting all the contents—Format

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

+R +R DL (New disc only)

Preparation

- Press [DRIVE SELECT] to select the DVD drive.

Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding. The contents are deleted when you format a disc even if you have set protection.

After performing steps 1–3 (⇒ 58, Common procedures)

- 1 Press [**▲**, **▼**] to select “Format Disc” and press [OK].
- 2 Press [**◀**, **▶**] to select “Yes” and press [OK].
- 3 Press [**◀**, **▶**] to select “Start” and press [OK].
A message appears when formatting is finished.
- 4 Press [OK].

Note

- Formatting normally takes a few minutes; however, it may take up to a maximum of 70 minutes (**RAM**).
 - Do not disconnect the AC mains lead while formatting. This can render the disc unusable.
- Note**
- When a disc has been formatted using this unit, it may not be possible to use it on any other equipment.
 - **-R -R DL CD** Formatting cannot be performed.
 - You can format DVD-RW only as DVD-Video format on this unit.

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Selecting whether to show the Top Menu first—Auto-Play Select

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

You can select whether to show the top menu after finalising.

Preparation

Press [DRIVE SELECT] to select the DVD drive.

After performing steps 1–3 (⇒ 58, Common procedures)

- 1 Press [**▲**, **▼**] to select “Auto-Play Select” and press [OK].
- 2 Press [**▲**, **▼**] to select “Top Menu” or “Title 1” and press [OK].

Top Menu: The top menu appears first.

Title 1: The disc content is played without displaying the top menu.

Enabling discs to be played on other equipment—Finalise

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

Make selections from “Auto-Play Select” (⇒ 59) before finalising the disc.

Preparation

Press [DRIVE SELECT] to select the DVD drive.

After performing steps 1–3 (⇒ 58, Common procedures)

- 1 Press [▲, ▼] to select “Finalise” and press [OK].
- 2 Press [◀, ▶] to select “Yes” and press [OK].
- 3 Press [◀, ▶] to select “Start” and press [OK].

A message appears when finalising is finished.

Note

- You cannot cancel finalising.
- Finalising takes up to 15 minutes.
(**-R DL +R DL** Finalising takes up to 60 minutes.)
- Do not disconnect the AC mains lead while finalising.
This will render the disc unusable.

- 4 Press [OK].

Note

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

After finalising

- **-R -R DL +R +R DL** The disc becomes play-only and you can no longer record or edit.
- **-RW(V)** You can record and edit the disc after formatting (⇒ 59) although it becomes play-only after finalising.
- Chapters are created automatically (**-R -R DL -RW(V)**: about 5-minute chapters*/**+R +R DL**: about 8-minute chapters*).
* This time varies greatly depending on the condition and mode of recording.
- There is a pause of several seconds between titles and chapters during play.

	Before finalising	After finalising
Recording/Editing/Entering name	○	—
Play on other players	—	○

- You cannot finalise discs recorded on other manufacturer's equipment.
- Discs finalised on this unit may not be playable on other players due to the condition of the recording.

Visit Panasonic's homepage for more information about DVDs.
<http://www.panasonic-europe.com>

Creating Top Menu—Create Top Menu

+RW

+RW discs contain no Top Menu data. Top Menu is a convenient function. We recommend you create the menu before playing a +RW disc on other equipment.

You cannot use the Top Menu for playing on this unit.

Make selections from “Auto-Play Select” (⇒ 59) before creating top menu.

Preparation

Press [DRIVE SELECT] to select the DVD drive.

After performing steps 1–3 (⇒ 58, Common procedures)

- 1 Press [▲, ▼] to select “Create Top Menu” and press [OK].
- 2 Press [◀, ▶] to select “Yes” and press [OK].
- 3 Press [◀, ▶] to select “Start” and press [OK].

Creating Top Menu starts. You cannot cancel creating. Creating Top Menu can take a few minutes.

- 4 Press [OK].

Note

- You can record or edit discs after creating the Top Menu. But the created menu is deleted when you record or edit disc. In such cases, create the Top Menu again by using “Create Top Menu”.

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Close First Layer

-R DL +R DL

DVD-R DL and +R DL discs have two layers of recordable surfaces on one side. This unit does not offer seamless recording between the two layers. Recording stops when space on the first layer is full. The first layer must be closed to start recording on the second layer. Closing the first layer makes it unavailable for recording (editing is still possible). You cannot cancel closing. Make certain before proceeding.

After performing steps 1–3 (⇒ 58, Common procedures)

1 Press [▲, ▼] to select “Close First Layer” and press [OK].

2 Press [◀, ▶] to select “Yes” and press [OK].

3 Press [◀, ▶] to select “Start” and press [OK].

- Closing the layer starts. You cannot cancel closing.
- Closing a layer can take a few minutes or up to a maximum of 30 minutes, depending on the remaining space on the disc.

Note

- Do not disconnect the AC mains lead while closing. This can render the disc unusable.

4 Press [OK].

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

■ To confirm the remaining recording time on the layer



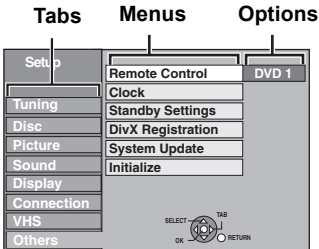
Note

- You cannot close the first layer when there are no recordings on it.

Changing the unit's settings

You can change the unit's settings using Setup menu.
 • The settings remain intact even if you switch the unit to standby.

Common procedures

- 1 While stopped
Press [FUNCTION MENU].
 - 2 Press [▲, ▼] to select "Others" and press [OK].
 - 3 Press [▲, ▼] to select "Setup" and press [OK].
- 
- 4 Press [▲, ▼] to select the tab and press [▶].
 - 5 Press [▲, ▼] to select the menu and press [OK].
 - 6 Press [▲, ▼] to select the option and press [OK].

To return to the previous screen

Press [RETURN ↵].

To exit the screen

Press [EXIT].

Tuning

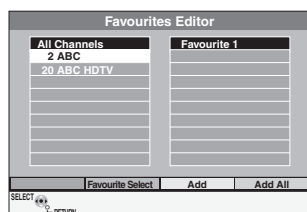
(All factory default settings are indicated with underlined text.)

Favourites Edit

You can create four Favourites of channels for making viewing and recording easier. Editing these Favourites does not affect the channel setting itself.

- Timer recording may not work correctly if you edit the Favourite during timer recording standby.

Press the "Green" button to select the Favourite.



To add channels to a Favourite

- ① Press [▲, ▼] to select the channel in the "All Channels" column and press the "Yellow" button.
 - Repeat this step to add other channels.
 - Press the "Blue" button to add all the available channels to the Favourite. (This function is available only when no channels have been added to the Favourite.)
- ② Press [OK] to save the Favourite.

To change the order of channels of a Favourite

- ① Press [▶]*.
- ② Press [▲, ▼] to select the channel in the "Favourite" column to move and press the "Green" button.
- ③ Press [▲, ▼] to select the new position of the channel and press the "Green" button.
 - Repeat the steps ② – ③ to move other channels.
- ④ Press [OK] to save the Favourite.

To delete channels on a Favourite

- ① Press [▶]*.
- ② Press [▲, ▼] to select the channel in the "Favourite" column and press the "Yellow" button.
 - Repeat this step to delete other channels.
 - Press the "Blue" button to delete all the channels from the Favourite.

- ③ Press [OK] to save the Favourite.
 Deleting a channel from a Favourite does not affect the channel itself. You can still select the channel from the "All Channels" category.

To change the name of a Favourite in the "Favourite" column

- ① Press [▶]*.
- ② Press the "Red" button.
 (⇒ 45, Entering text)

* When the station name of the "All Channels" column is highlighted

Auto Setup Restart Download from TV

You can restart auto channel setting if set up (⇒ 10) fails for some reason.

Select "Download from TV" when you connect the unit to a Q Link compatible TV with a fully wired 21-pin Scart cable or a VIERA Link (HDAVI Control 3 or later) compatible TV with an HDMI cable.

When the confirmation screen appears

Press [◀, ▶] to select "Yes" and press [OK].

You can also use the following method to restart Auto Setup.

When the unit is on and stopped

Press and hold [▼ CH] and [CH ▲] on the main unit until the Active Antenna setting menu (For Germany and Austria) or Country setting screen (For Italy and Spain) appears.

All the settings except for the ratings level, ratings PIN, clock settings and remote control code, etc. return to the factory preset. The timer recording programmes are also cancelled.

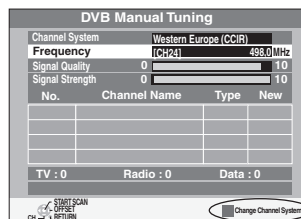
For Germany and Austria

Settings for Digital Channels

Press [OK] to show the following settings.

DVB Manual Tuning

You can set channels manually that the DVB Auto Setup could not complete successfully.



If there is no signal quality and/or signal strength, press the "Red" button and select the correct channel system.

- ① Press [▲, ▼] to select the channel you want to set.
- ② Press [◀, ▶] to adjust the frequency.
 - The frequency rises and falls in steps of 0.5 MHz.
 - Adjust the frequency by checking the signal strength and signal quality displays.
 [Refer to "Signal Condition" (⇒ 63) for signal quality and signal strength.]
- ③ Press [OK] to start scan.
 The set channel is displayed in the table.
- ④ Press [EXIT] and press [^ ▼ CH] to check that applicable channels have been selected.

Add New DVB Channels

You can search for newly added terrestrial digital channels to receive.

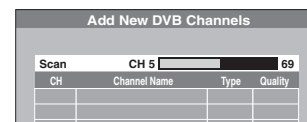
The unit starts searching for newly available terrestrial digital channels. This takes about 5 minutes.

A message is displayed when the search is finished.

"No new DVB channels found."

is displayed when no new channels can be found.

Press [OK] to save the newly found channels.



New Channel Message (⇒ 17)

When a new DVB channel is added this unit will be informed automatically. Then the confirmation message appears. If you select "Yes" on the display, Auto-Setup starts (all channel settings are deleted. The timer recording programmes are also cancelled.).

[Automatic]

[Off]

The Channel Messages are not shown.

■ Signal Condition

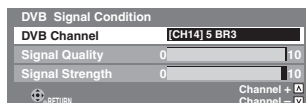
You can check the quality and strength of digital broadcast signals.

The quality and strength of the signal are shown.

Press [Δ ∇ CH] to select the channel.

When "Signal Condition" is displayed in grey and cannot be selected:

- 1 Press [EXIT] to exit the screen.
- 2 Press [Δ ∇ CH] to select a digital channel. "D" appears on the unit's display.
- 3 Display the Setup menu again (\Rightarrow 62).



Signal Quality

Below 2 (display red):

The signal quality is so poor that there may be interference in the pictures and sound.

2–5 (display orange):

The signal quality is basically adequate, but brief interference in the pictures and sound is possible in isolated case.

Over 5 (display green):

Optimum picture and sound quality.

Signal Strength

The display for signal strength is grey. "0" means signal strength 0%, "10" means signal strength 100%.

If the signal is too strong, the display will change from grey to red. Reduce the signal amplification at your aerial.

- When the signal is weak:
 - adjust the aerial reception with "DVB Manual Tuning" in the Setup menu (\Rightarrow 62).
 - check that the current digital broadcast channel is correctly broadcasting.

■ DVB Preferred Language

You can select up to 2 different subtitles and audio tracks to be used when audio and subtitles digital broadcasts are received.

Select the order of priority. If the selected language is not available, then the language included in the broadcast programme is selected.

Multi Audio

Multi Audio (alternative)

[English] ^{*1}	[German] ^{*2}	[Italian]	[French]
[Spanish]	[Catalan]	[Basque]	[Galician]
[Corsican]	[Original] ^{*3}		

Subtitles

Subtitles (alternative)

[English] ^{*1}	[German] ^{*2}	[Italian]	[French]
[Spanish]	[Catalan]	[Basque]	[Galician]
[Corsican]	[Original] ^{*3}		

^{*1} For Italy and Spain. The default setting.

^{*2} For Germany and Austria. The default setting.

^{*3} The language specified as "Original" by the broadcast channel.

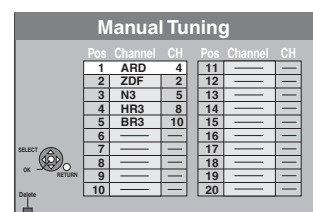
■ Settings for Analogue Channels

For Germany and Austria

Press [OK] to show the following setting.

Manual Tuning

You can delete analogue channels and set the analogue channel details.



To delete a programme position

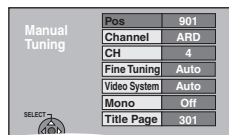
Press [Δ , ∇ , \triangleleft , \triangleright] to select a programme position and press the "Red" button.

Note

- This unit does not support SECAM L, L'.

To change the tuning settings for individual programme position

- ① Press [Δ , ∇ , \triangleleft , \triangleright] to select a programme position and press [OK].



- ② Press [Δ , ∇] to select an item and press [\triangleright].

Pos
Programme position in the table (You cannot change the programme position.)
Channel
To enter or change the Channel of a TV station Press [Δ , ∇ , \triangleleft , \triangleright] to enter station name and press [OK]. If the station name needs a blank space, select the blank between "Z" and "*".
CH
To enter newly available TV stations or change the CH number of an already tuned TV station Press [Δ , ∇] or the numbered buttons to enter the CH number of the desired TV station. Wait a few moments until the desired TV station has been tuned. After the desired TV station is tuned, press [OK].
Fine Tuning
To obtain the best tuning condition Press [Δ , ∇] to adjust the best tuning condition and press [OK]. • Press [\triangleright] to return to "Auto".
Video System
To select the video system type Press [Δ , ∇] to select "PAL" or "SECAM" if the picture lacks colour, and press [OK]. • Auto This unit automatically distinguishes PAL and SECAM signals. • PAL For receiving PAL signals. • SECAM For receiving SECAM signals.
Mono
To select the type of sound to be recorded Press [Δ , ∇] to select "On" if the stereo sound is distorted due to inferior reception conditions, or if you want to record the normal (mono) sound during a stereo or bilingual broadcast, and press [OK].
Title Page
To enter the Teletext title page for a channel Entering title page number allows the unit to automatically record programme and station names. Press [Δ , ∇] or numbered buttons to enter the number and press [OK]. • To find the correct title page for the station, refer to its Teletext TV guide.

You can make the following two settings by selecting the external input channel (AV1, AV2, AV3) in step ①.

- Video System (Auto/PAL/SECAM)
In order to record properly, make the appropriate settings to match the connected equipment.
- Title Page (Auto/Off)

Disc

(All factory default settings are indicated with underlined text.)

Settings for Playback

- Press [OK] to show the following settings.

Ratings

Set a ratings level to limit DVD-Video play. Follow the on-screen instructions. Enter a 4-digit PIN with the numbered buttons when the PIN screen is shown.

Do not forget your PIN.

Setting ratings (When level 8 is selected)

- [8 No Limit] All DVD-Video can be played.
- [1 to 7] Prohibits play of DVD-Video with corresponding ratings recorded on them.
- [0 Lock All] Prohibits play of all DVD-Video.

- Changing settings (When level 0 to 7 is selected)

- [Unlock Recorder] [Change PIN]
- [Change Level] [Temporary Unlock]

Soundtrack

- [English]^{*1} [German]^{*2} [French] [Italian]
- [Spanish] [Dutch] [Swedish]
- [Original] The original language of each disc will be selected.
- [Other * * * *]^{*3}

Subtitles

- [Automatic] If the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc.
- [English] [German] [French] [Italian]
- [Spanish] [Dutch] [Swedish]
- [Other * * * *]^{*3}

Menus

- [English]^{*1} [German]^{*2} [French] [Italian]
- [Spanish] [Dutch] [Swedish]
- [Other * * * *]^{*3}

^{*1} **[For Italy and Spain]** The default setting.

^{*2} **[For Germany and Austria]** The default setting.

^{*3} [Other * * * *]

Enter a code (⇒ 74) with the numbered buttons. When the selected language is not available on the disc, the default language is played. There are discs where you can only switch the language from the menu screen (⇒ 18).

DVD-V

Choose the language for audio, subtitle and disc menus.

- Some discs start in a certain language despite any changes you make here.
- In case of English/French/German/Italian/Spanish languages, when you make download from TV, or Country setting (**[For Italy and Spain]**) of Auto-Setup, the language ("Soundtrack"/"Menus") will be same and "Subtitles" will set to "Automatic".

Settings for Recording

- Press [OK] to show the following settings.

Recording time in EP mode

Select the maximum number of hours for recording in EP mode (⇒ 25, DVD recording modes and approximate recording times).
[EP (6 hours)] You can record for 6 hours on an unused 4.7 GB disc.
[EP (8 hours)] You can record for 8 hours on an unused 4.7 GB disc.

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

Aspect for Recording

Sets the aspect ratio when recording or copying.

- [Automatic] The programme will be recorded in the original aspect used when recording started (including when recording started at a commercial, etc.).
- [16:9] [4:3]

- In the following cases, even when set to "Automatic" or "16:9", recordings will be made or copied in 4:3.
– **-R -R DL -RW(V)** When the recording mode is set to "EP" or "FR (recordings 5 hours or longer)" mode.
– When recording or copying to a +R, +R DL and +RW.

Chapter Creation

Set the automatic Chapter Creation method. (⇒ 46)

- [Automatic] [5 minutes]
- [Off] No chapter start points are set.

Start Recording Time

This function sets the timer recording to start earlier than the TV Guide time.

- [1 min earlier] [3 min earlier] [5 min earlier]
- [10 min earlier] [Off]

Finish Recording Time

This function sets the timer recording to stop later than the TV Guide time.

- [1 min later] [3 min later] [5 min later]
- [10 min later] [Off]

Picture

(All factory default settings are indicated with underlined text.)

Comb Filter

Select the picture sharpness when recording. The setting is fixed with "On" if you set "TV System" to "NTSC" (⇒ 66).

- [On] Pictures become clear and vivid. Normally, use this setting.
- [Off] Select it when recording noisy pictures.

Still Mode

Select the type of picture shown when you pause play (⇒ 85, Frames and fields).

- [Automatic]
- [Field] Select if jittering occurs when "Automatic" is selected. (The picture is coarser.)
- [Frame] Select if small text or fine patterns cannot be seen clearly when "Automatic" is selected. (The picture is clearer and finer.)

Seamless Play

Select the play mode between Playlist chapter segments and partially deleted titles.

- [On] The chapters in Playlists are played seamlessly. This does not work when there are several audio types included on the Playlists and when using Quick View (⇒ 34). Additionally, the positioning of chapter segments may change slightly.
- [Off] The points where chapters in Playlists change are played accurately, but the picture may freeze for a moment.

Sound

(All factory default settings are indicated with underlined text.)

Dynamic Range Compression

DVD-V (Dolby Digital only)

Change the dynamic range for late night viewing.

[On] [Off]

Bilingual Audio Selection

(Analogue broadcast only)

Select whether to record the main or secondary audio type when:

- Recording or copying to a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW.
- Recording or copying sound in LPCM (⇒ below, "Audio Mode for XP Recording").

[M 1] [M 2]

- You cannot select the audio on this unit when recording from an external source, such as when copying from a video cassette recorder. Select the audio on the other equipment.

Digital Audio Output

Change the settings when you have connected equipment through this unit's Digital Audio Output terminal (⇒ 70, 71).

- Press [OK] to show the following settings.

PCM Down Conversion

Select how to output audio with a sampling frequency of 96 kHz.

- Signals are converted to 48 kHz despite the settings below if the signals have a sampling frequency of over 96 kHz, or the disc has copy protection.

[On] Signals are converted to 48 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz.)

[Off] Signals are output as 96 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz.)

Dolby Digital*

Select how to output the signal.

Select "Bitstream" if the connected equipment decodes the signal.

Select "PCM" if this unit decodes the signal and outputs it as 2 channels.

- Not making the proper settings may result in noise.

[Bitstream] When connected to equipment with a built-in Dolby Digital decoder.

[PCM] When connected to equipment without a built-in Dolby Digital decoder.

DTS*

Select how to output the signal.

Select "Bitstream" if the connected equipment decodes the signal.

Select "PCM" if this unit decodes the signal and outputs it as 2 channels.

channels.

- Not making the proper settings may result in noise.

[Bitstream] When connected to equipment with a built-in DTS decoder.

[PCM] When connected to equipment without a built-in DTS decoder.

MPEG*

Select how to output the signal.

Select "Bitstream" if the connected equipment decodes the signal.

Select "PCM" if this unit decodes the signal and outputs it as 2 channels.

- Not making the proper settings may result in noise.

[Bitstream] When connected to equipment with a built-in MPEG decoder.

[PCM] When connected to equipment without a built-in MPEG decoder.

* Refer to the operating instructions for connected devices to verify whether or not they can decode each of the audio formats.

Audio Mode for XP Recording

Choose the audio type when recording or copying with XP mode.

[Dolby Digital] (⇒ 85) [LPCM] (⇒ 85)

- The picture quality of LPCM recordings may be lower than that of normal XP mode recordings.
- The audio recording becomes Dolby Digital even if you selected LPCM when using a recording mode other than XP.
- When recording a bilingual broadcast, select the type of audio in advance from "Bilingual Audio Selection" (⇒ above).

Display

(All factory default settings are indicated with underlined text.)

Language

Choose the language for these menus and on-screen messages.

For Germany and Austria

[English] [Deutsch]

For Italy and Spain

[English] [Deutsch] [Français] [Italiano]

[Español]

On-Screen Messages

Choose the approximate time until the digital channel information screen (⇒ 17) disappears automatically.

The length of time the control panel (⇒ 43) is displayed can also be changed, but "Off" does not work.

[Off] (The digital channel information is not displayed.)

[3 sec.] [5 sec.] [7 sec.] [10 sec.]

For Germany and Austria

Grey Background

Select "Off" if you do not want to have the unit show the grey background when tuner reception is weak.

[On] [Off]

Unit's Display

Changes the brightness of the unit's display.

This setting is fixed with "Automatic" if you set "Power Save in Standby" to "On" or "On Timer" (⇒ 67).

[Bright] [Dim]

[Automatic] The display turns dark during play and disappears when the unit is turned off. When "Power Save in Standby" is activated (⇒ 67), power consumption while in standby mode is reduced.

Screen Saver

[On] When this unit is not operated for approximately 5 minutes while the screen is being displayed, the screen saver is displayed. To return to the previous screen, press [OK].

[Off]

FUNCTION MENU Display

[On] When the unit is turned on, the FUNCTION MENU will be displayed. (⇒ 7)

[Off]

Connection

(All factory default settings are indicated with underlined text.) Depending on the connected equipment, some items may be shaded in grey on the display and cannot be selected, or you may not be able to change the settings.

TV Aspect

Set to match the type of television connected.

[16:9] When connected to a 16:9 widescreen television.

[Pan & Scan] When connected to a 4:3 aspect television, side picture is trimmed for 16:9 picture.



[Letterbox] When connected to a 4:3 aspect television, 16:9 picture is shown in the letterbox style.



TV System

Change the setting to match the equipment you are connecting with.

[PAL] • Select when connecting to a PAL or Multi-system television. Titles recorded using NTSC are played as PAL 60.
• Select to record television programmes and PAL input from other equipment.

[NTSC] • Select when connecting to a NTSC television. Television programmes cannot be recorded properly.
• Select to record NTSC input from other equipment.

Note

- This unit cannot record NTSC signals to discs that already have PAL signal recordings.
- If "NTSC" has been selected, the TV Guide system cannot be used.
- During recording, timer recording standby or EXT LINK standby, this unit cannot play discs that do not match the "TV System" (PAL/NTSC) setting. Set "TV System" to match the discs before playing them.

To change the setting all at once (PAL ↔ NTSC)

While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit at the same time for 5 or more seconds.

HDMI Settings

- Press [OK] to show the following settings.

HDMI Video Format

You can only select items compatible with the connected equipment. This setting normally does not need to be changed. However if you are concerned about output picture quality, it may be improved by changing the setting.

- To enjoy High Quality Video up-converted to 1080p, you need to connect the unit directly to 1080p compatible HDTV. If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.

[576i / 480i] [576p / 480p] [720p] [1080i]

[1080p] When setting video output to "1080p", we recommend using High Speed HDMI Cables that have the HDMI logo (as shown on the cover) and are less than 5 meters to prevent video distortion etc.

[Automatic] Automatically selects the output resolution best suited to the connected television (1080p, 1080i, 720p, 576p / 480p or 576i / 480i).

Aspect for 4:3 Video

To play a 4:3 title when connected with an HDMI cable, set how to show pictures on a 16:9 widescreen television.

[4:3] Picture output expands left or right.



[16:9] Picture is output as original aspect with side panels.



Digital Audio Output

[HDMI and Optical]

[Optical Only] Select when this unit is connected to an amplifier with an optical digital audio cable and connected to a TV with an HDMI cable and you want to enjoy the highest quality of audio from discs (⇒ 70).

VIERA Link

Set to use "HDAVI Control" function when connected with an HDMI cable to a device that supports "HDAVI Control".

[On]

[Off] Select when you do not want to use "HDAVI Control".

AV1 Output

Set according to the terminal of the connected TV.

If this unit is connected with an HDMI cable, you cannot select "RGB 1" or "RGB 2".

[Video]

Select when a TV that can receive a composite signal is connected.

[RGB 1]

Select when a TV that can receive an RGB signal is connected. If you always would like to view the picture from the unit in RGB signal, select this mode. The TV screen will automatically switch to display the picture from the unit when the unit is turned on.

[RGB 2]

Select when a TV that can receive an RGB signal is connected. If you would like to switch to display the picture from the unit only when playback or viewing menus, select this mode.

AV2 Settings

Set to match the connected equipment.

- Press [OK] to show the following settings.

AV2 Input

Set to "RGB / Video" or "RGB" when receiving or recording RGB output from external equipment.

[RGB / Video] [RGB] [Video] [S Video]

Ext Link

This setting cannot be made when the "TV System" is set to "NTSC" (⇒ 66).

[Ext Link 1] When a digital satellite receiver which transmits a special control signal recordings via the 21-pin Scart cable is connected. Start and stop timings of recording are controlled by the control signal.

[Ext Link 2] When external equipment with a timer function is connected. When it turns on, recording starts. When it turns off, recording stops.

For Germany and Austria

Active Antenna

[On] Select this when you will use indoor antenna that is not equipped with power supply.

[Off]

VHS

(All factory default settings are indicated with underlined text.)

Tape Length

Set the length of the tape you are using so the unit can show the correct remaining time.

[Auto (E-240)]	The unit automatically distinguishes E30, -60, -90, -120, -180, and -240 tapes.
[E-195]	For E195 tape
[E-260]	For E260 tape
[E-300]	For E300 tape

Playback Colour System

[Automatic]	Differentiates between PAL and MESECAM.
[PAL]	If the PAL system is used.
[MESECAM]	If the MESECAM system is used.

SQPB

To play back video cassettes recorded in S-VHS format (SQPB; S-VHS Quasi Playback)

[Automatic]	This unit automatically detects the format in which the recording was made and selects the same format for playback. However, picture distortion may occur. Therefore, set to "On" or "Off".
[On]	Use this setting when playing back a cassette tape recorded in the S-VHS format.
[Off]	Use this setting when playing back a cassette tape recorded in the VHS format only.

Others

(All factory default settings are indicated with underlined text.)

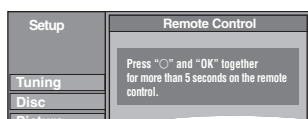
Remote Control

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

[DVD 1]	[DVD 2]	[DVD 3]
---------	---------	---------

Use "DVD 1", the factory set code, under normal circumstances.

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



To change the code on the remote control

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

When the following indicator appears on the unit's display

The unit's remote control code

Change the code on the remote control to match the main unit's (⇒ step ②).



Note

Executing "Shipping Condition" in the Setup menu returns the main unit code to "DVD 1". Change the remote control code to 1 (⇒ step ②).

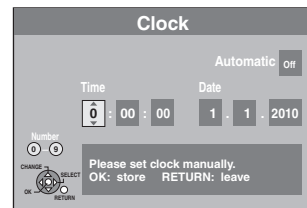
Clock

This unit usually obtains time and date information from digital broadcasts and automatically corrects the time several times a day. However, if the time is not set correctly, use the settings listed in the method below.

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

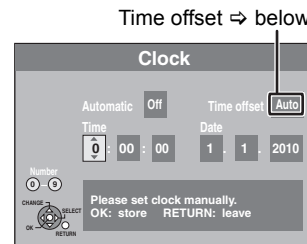
For Germany and Austria

e.g., This screen appears while receiving a digital broadcast.



For Italy and Spain

e.g., This screen appears while receiving a digital broadcast.



- Press [◀, ▶] to select the item you want to change. The items change as follows:
Hour ↔ Minute ↔ Second ↔ Day ↔ Month ↔ Year
- Press [▲, ▼] to change the setting. You can also use the numbered buttons for setting.
- Press [OK] when you have finished the settings. The clock starts.

Note

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

For Italy and Spain

To change the time offset

When the time is not correct, set "Time offset" (from -2h to +2h).

- Press [▲, ▼] to select "On" of "Automatic" and press [OK] in step ①. Auto clock setting starts. This takes a few minutes. "Automatic clock setting completed." screen is displayed.
- Press [▶].
- Press [▲, ▼] to select the correct time offset and press [OK].
- Press [RETURN ↵].

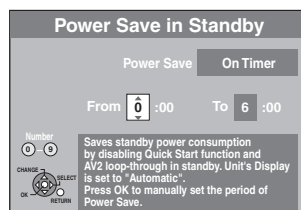
Standby Settings

- Press [OK] to show the following settings.

Power Save in Standby

[On]	It will go into the Power Save in Standby mode when the unit is in standby mode.
[Off]	It is possible to start quickly from the standby mode. (Quick Start mode)
[On Timer]	"Power Save in Standby" is set to activate during the setting time period. (⇒ below)

- Press [▲, ▼] to select "On Timer" and press [OK].



- Press [▲, ▼] to set the start time (hour).
- Press [◀, ▶] to select the stop time and press [▲, ▼] to set the stop time (hour).
- Press [OK] when you have finished the settings.
 - You can also use the numbered buttons for setting.
 - You can set start and stop time by the hour.
 - If the clock has not been set, "Power Save in Standby" is activated at all hours.

Auto Standby

Set the time to automatically turn the unit off.
After the unit has finished operating, the unit will be turned off once the set time has passed.

[30 minutes] [1 hour] [2 hours] [4 hours]
[6 hours]
[Off] The unit will not automatically turn off.

Auto Standby after OTR

[On] This unit is turned to standby mode when this unit is not operated for approximately 5 minutes after completing One Touch Recording (⇒ 20).

[Off]

Auto Standby after Copy

[On] This unit is turned to standby mode when this unit is not operated for approximately 5 minutes after completing copy (⇒ 52-55).

[Off]

RF OUT (Aerial Signal)

[On] Broadcast signals are output from this unit.
TV can receive broadcast signals even if this unit is in standby mode when connecting TV with this unit using the RF cable (⇒ 72).

[Off] Press [◀, ▶] to select "Yes" when the confirmation message is displayed.
Broadcast signals are not output from this unit to reduce standby power consumption.

- Power consumption is lowered additionally when "Power Save in Standby" is activated.
- If this unit turns into standby mode when connecting TV with this unit using the RF cable, proper broadcast images do not appear on TV.

DivX Registration

You need this registration code to purchase and play DivX Video-on-Demand (VOD) content (⇒ 39).

System Update

In order to update this unit's software, the TV Guide download, and to support system changes made by broadcasts, this unit periodically performs software updates.
Press [OK] to show the following settings.

- Update data and TV Guide download information are sent by an unscheduled digital broadcast. In order to receive these updates, you must be able to receive digital broadcasts.
- An update will take approximately 60 minutes. While the update is in progress, "SW-DL" appears on the unit's display. You cannot operate the unit until the update is complete. Removing the AC mains lead while the update is in progress may damage the unit.
- TV Guide download will take approximately 60 minutes. While the TV Guide download is in progress, "GUIDE" appears on the unit's display. The TV Guide download can be interrupted by switching on the unit.

TV Guide Download in Standby

[On] When you set this unit to standby mode, TV Guide data is downloaded automatically.

[Off]

- In the area where GUIDE Plus+ system is available, the setting is fixed to "On" automatically.

Software Update in Standby

[On] When you set this unit to standby mode, software updates are downloaded automatically.

[Off]

TV Guide/Software search period

Selects the time to automatically perform TV Guide download and updates when the unit is set to standby mode. This can only be set when "TV Guide Download in Standby" or "Software Update in Standby" is set to "On".

- If there is a programmed recording set for the time you have selected, the programmed recording will be given priority.

In the area where GUIDE Plus+ system is not available:

[Automatic]*
[02:00–06:00] [06:00–10:00] [10:00–14:00]
[14:00–18:00] [18:00–22:00] [22:00–02:00]

In the area where GUIDE Plus+ system is available:

[Automatic]* [Daytime] (06:00-22:00)

- * The unit will give priority to searching for TV Guide download and update data at midnight.

Software Update Search Now

Start the search for new software manually.
A new software version is announced by a message. Do not turn your unit off during the update. This could result in the loss of data. A message shows that the update has finished.

- If applicable update data is found, press [◀, ▶] to select "Yes" and press [OK].

For Germany, Austria, Italy and Spain

GUIDE Plus+ Data Download Now

Start downloading GUIDE Plus+ data.
If this is performed in standby mode for timer recording, timer recording may not work correctly.

For Germany, Austria, Italy and Spain

GUIDE Plus+ System Information

You can check the condition of GUIDE Plus+ system of this unit.

For Germany, Austria, Italy and Spain

Post Code

You can input the postal code which is necessary to download area specific information of GUIDE Plus+ system.

Initialize

- Press [OK] to show the following settings.

Shipping Condition*

All the settings except for the language settings, ratings level, ratings PIN, Slideshow Settings, and clock settings, etc. return to the factory preset.

[Yes] [No]

Default Settings*

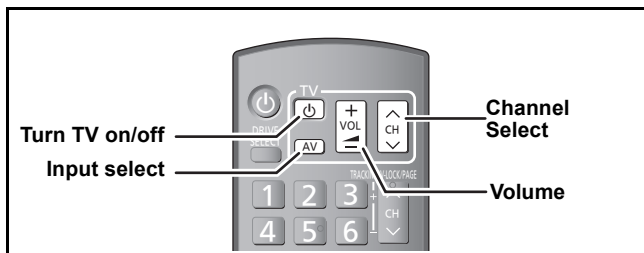
All the settings other than the tuning settings, clock settings, country settings (**For Italy and Spain**), language settings, disc language settings, ratings level, ratings PIN, remote control code, etc. return to the factory presets.

[Yes] [No]

- * The timer recording programmes are also cancelled.

Television operation

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



- 1 **Point the remote control at the television**
While pressing [TV], enter the code with the numbered buttons.
e.g., 01: [0] ⇒ [1] 10: [1] ⇒ [0]

Manufacturer and Code No.

Brand	Code	Brand	Code
Panasonic	01/02/03/04	METZ	05/28
AIWA	35	MITSUBISHI	05/19/20/47
AKAI	27/30	MIVAR	24
BEJING	33	NEC	36
BEKO	05/71/72/73/74	NOBLEX	33
BENQ	58/59	NOKIA	25/26/27/60/61
BP	09	NORDMENDE	10
BRANDT	10/15	OLEVIA	45
BUSH	05	ONWA	30/39/70
CENTREX	66	ORION	05
CHANGHONG	69	PEONY	49/69
CURTIS	05	PHILCO	41/48/64
DAEWOO	64/65	PHILIPS	05/06/46
DESMET	05	PHONOLA	05
DUAL	05	PIONEER	37/38
ELEMIS	05	PROVIEW	52
FERGUSON	10/34	PYE	05
FINLUX	61	RADIOLA	05
FISHER	21	SABA	10
FUJITSU	53	SALORA	26
FUNAI	63/67	SAMSUNG	32/42/43/65/68
GOLDSTAR	05/50/51	SANSUI	05
GOODMANS	05	SANYO	21/54/55/56
GRADIENTE	36	SCHNEIDER	05/29/30
GRUNDIG	09	SEG	05/69/75/76/77/78
HIKONA	52	SELECO	05/25
HITACHI	05/22/23/40/41	SHARP	18
INNO HIT	05	SIEMENS	09
IRRADIO	30	SINUDYNE	05
ITT	25	SONY	08
JINGXING	49	TCL	31/33/66/67/69
JVC	17/30/39/70	TELEFUNKEN	10/11/12/13/14
KDS	52	TEVION	52
KOLIN	45	TEX ONDA	52
KONKA	62	THOMSON	10/15/44
LG	05/50/51	TOSHIBA	16/57
LOEWE	07/46	WHITE WESTINGHOUSE	05
MAG	52	YAMAHA	18/41

2 Test by turning on the television and changing channels.

- Repeat the procedure until you find the code that allows correct operation.
- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

Note

- If your television brand has more than one code listed, select the one that allows correct operation.

Child Lock

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

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



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

To cancel the Child Lock

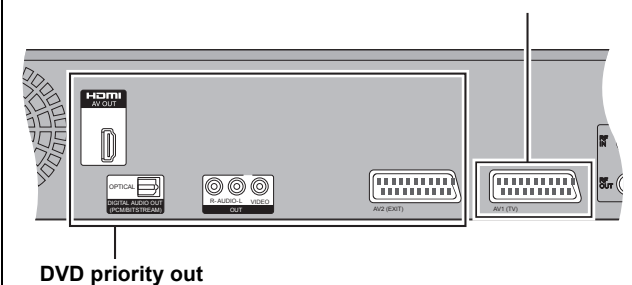
Press and hold [OK] and [RETURN ↵] simultaneously until "X HOLD" disappears.

DVD output and DVD/VHS output

The unit has DVD/VHS common out terminals and DVD priority out terminals.

- The DVD priority out terminals can also output the VHS signal. However this is not possible during DVD recording or DVD timer recording.

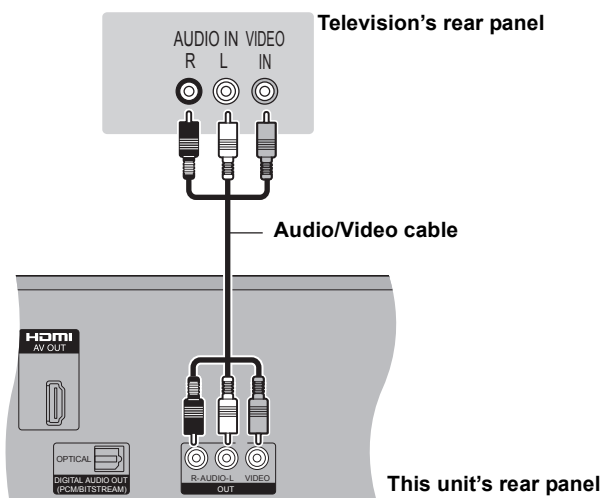
DVD/VHS common out



DVD priority out

Connecting a television with AUDIO/VIDEO

- Connect to terminals of the same colour.



Connecting an amplifier with a digital input terminal

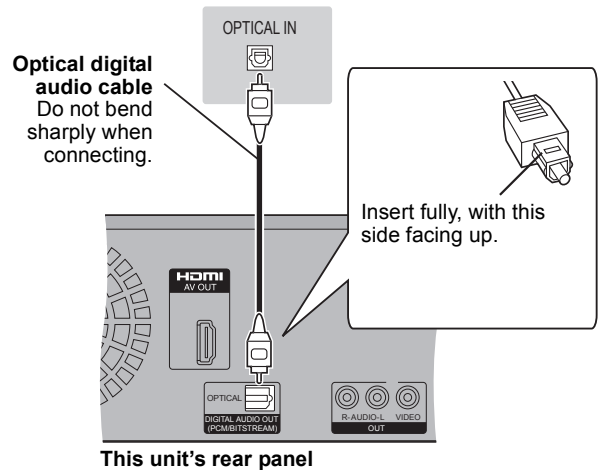
- To enjoy multi-channel surround sound DVD-Video, connect an amplifier with Dolby Digital, DTS and MPEG decoders.

Required setting

"Digital Audio Output" in the Setup menu (⇒ 65)

- When this unit is connected to an amplifier with an optical digital audio cable and connected to a television with an HDMI cable, you can enjoy the highest quality of audio from the disc by setting "Digital Audio Output" to "Optical Only" in the Setup menu (⇒ 66). In this case audio is only output from the amplifier not the television.
- Before purchasing an optical digital audio cable (not included), check the terminal shape of the connected equipment.
- You cannot use DTS Digital Surround decoders not suited to DVD.

Amplifier's rear panel

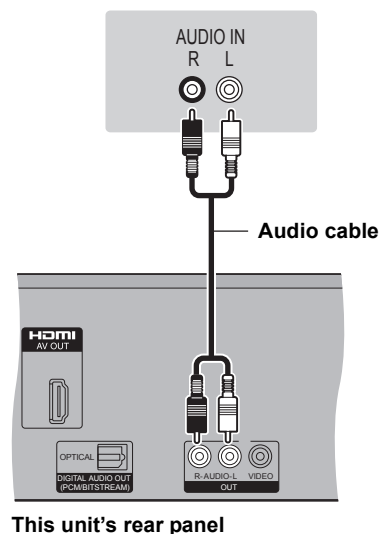


This unit's rear panel

Connecting a stereo amplifier

- Connect to terminals of the same colour.

Amplifier's rear panel



This unit's rear panel

Connecting with an HDMI compatible television and receiver

When connected to an HDMI compatible unit, an uncompressed digital audio and video signal is transmitted. You can enjoy high quality, digital video and audio with just one cord. When connecting to an HDMI-compatible HDTV (High Definition Television), the output can be switched to 1080p, 1080i or 720p HD video.

- This unit incorporates HDMI™ (V.1.3a with Deep Colour) technology.
- Video sources converted to 1920×1080 resolution, while of high quality, will exhibit somewhat lower subjective image resolution than true, native 1080p full-HD sources. See dealer for details.
- Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover).
- When setting video output to “1080p”, please use the HDMI cables 5.0 meters or less.

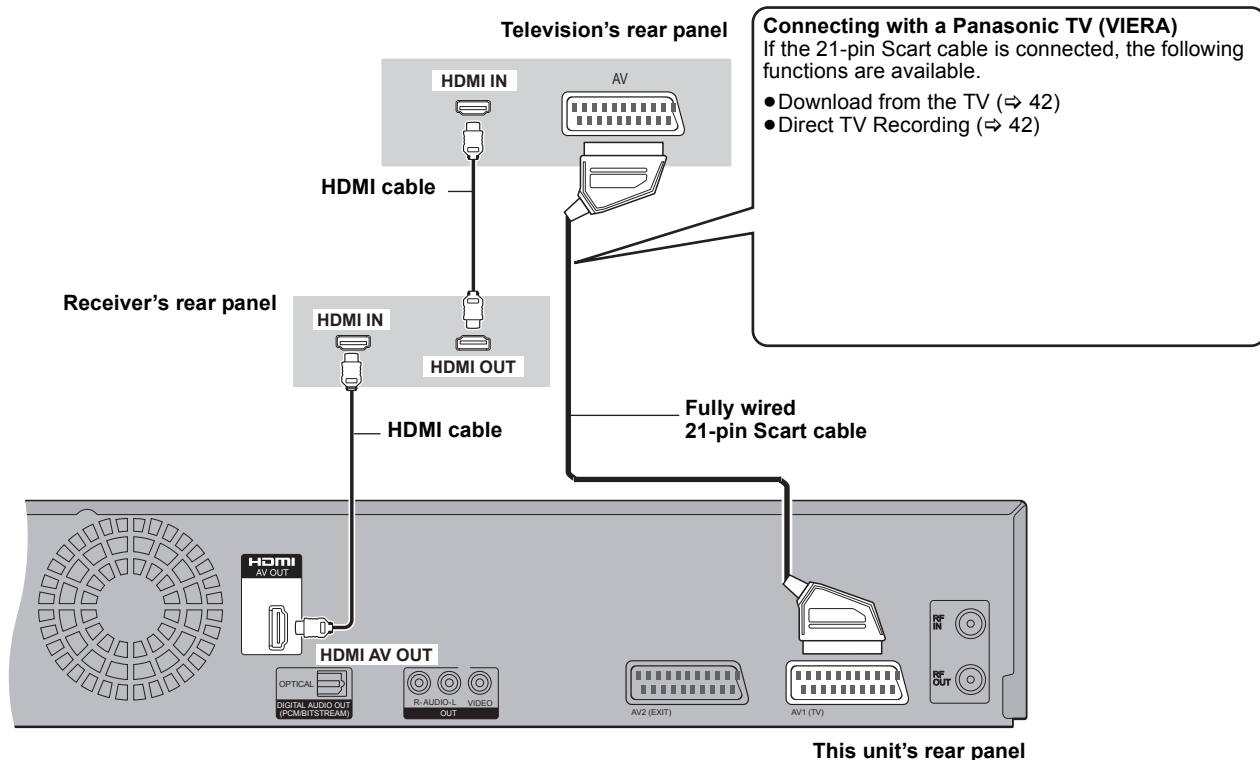
Regarding VIERA Link “HDAVI Control™” function

When connecting with a Panasonic TV (VIERA) or a receiver equipped with the “HDAVI Control” function, linked operations would be possible. [⇒ 42, Linked operations with the TV (VIERA Link “HDAVI Control™/Q Link)]

- **Non-HDMI-compliant cables cannot be utilised.**
- **It is recommended that you use Panasonic's HDMI cable.**

Recommended part number:

RP-CDHS15 (1.5 m), RP-CDHS30 (3.0 m), RP-CDHS50 (5.0 m), etc.



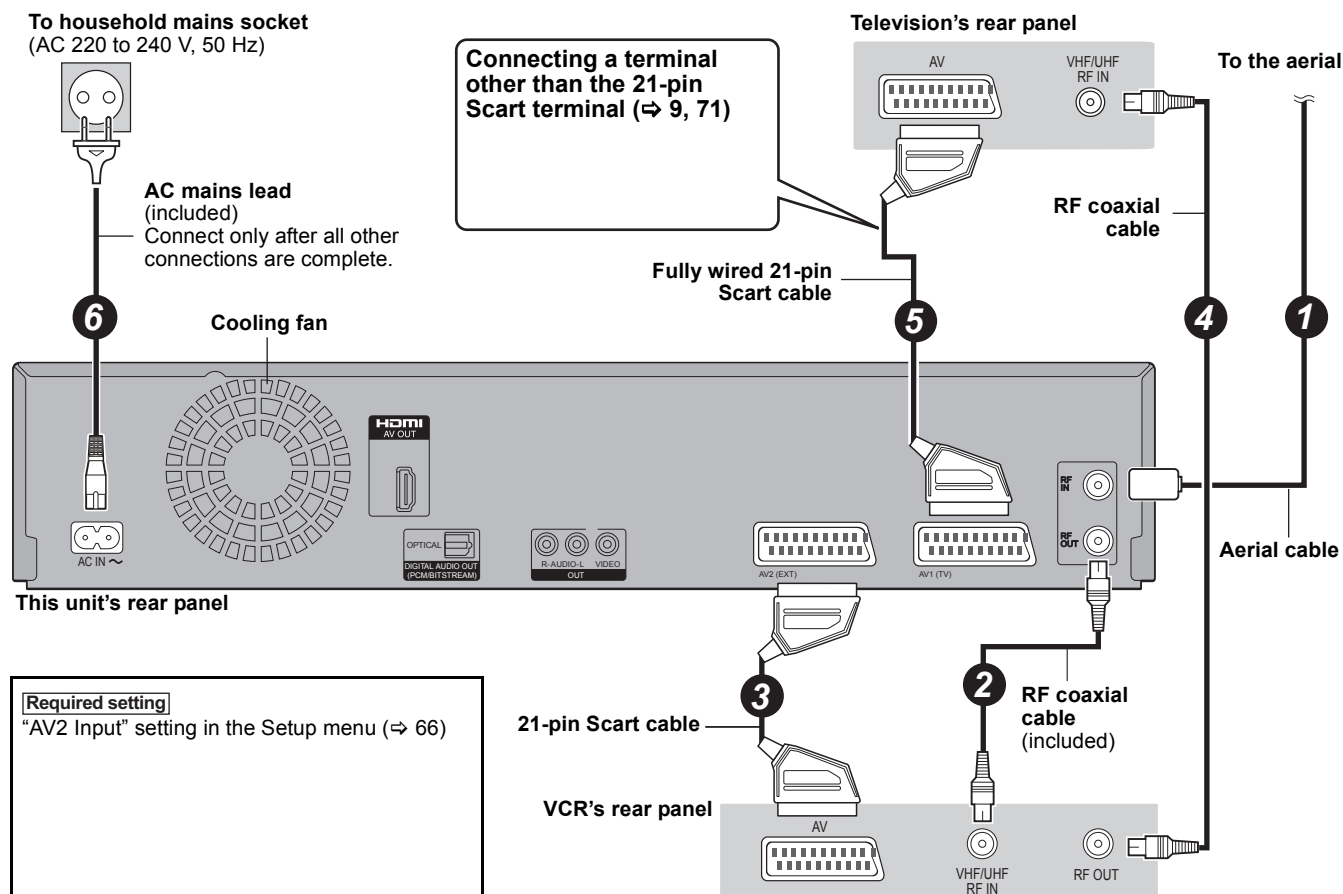
Required setting

- Set “Digital Audio Output” to “HDMI and Optical” (⇒ 66).
 (The default setting is “HDMI and Optical”).

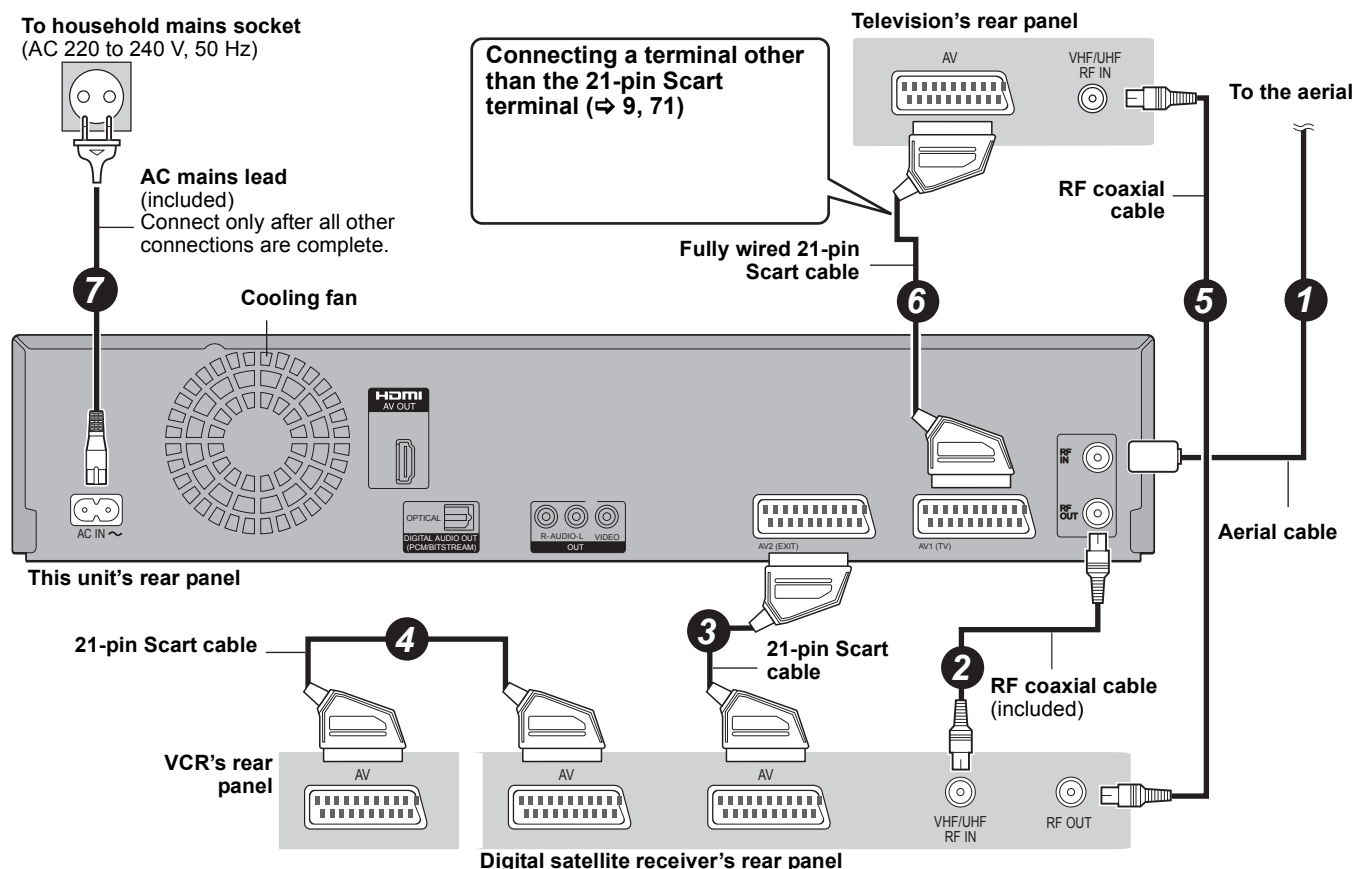
Note

- If you are connecting to a TV that is only compatible with 2 channel audio output, audio with 3 channels or more will be down mixed (⇒ 85) and output as 2 channels, even if connecting with an HDMI cable. (Some discs cannot be down mixed.)
 - You cannot connect this unit to DVI devices that are incompatible with HDCP.
- For units compatible with HDCP (High-Bandwidth Digital Content Protection) copyright protection that are equipped with a digital DVI input terminal (PC monitors, etc.):
 Depending on the unit, images may not display properly or at all when connecting with a DVI/HDMI switching cable. (Audio cannot be output.)

Connecting a television and VCR



Connecting a television and VCR or digital satellite receiver



Required setting
"AV2 Input" setting in the Setup menu (⇒ 66)
Connect the unit directly to the television (⇒ 8, B)

Refer to the following items if you have any doubts about unit operations.

Set up

Which aerial is suitable for receiving digital terrestrial broadcasts?

- You can use your current aerial. Room rod aerials are also suitable. Use an indoor antenna if the reception is poor. Consult your local TV aerial installer.

Can this unit receive or record High Definition (HD) broadcasts?

- No, this unit cannot receive or record High Definition (HD) broadcasts.

What equipment is necessary to play multi channel surround sound?

- You cannot playback multi-channel sound on this unit without other equipment. You must connect this unit with an HDMI cable or an optical digital cable to an amplifier with a built-in (Dolby Digital, DTS or MPEG) decoder. (⇒ 70, 71)

Are the headphones and speakers directly connected to the unit?

- You cannot directly connect them to the unit. Connect through the amplifier etc. (⇒ 70)

Is my television progressive output compatible?

- All Panasonic televisions that have 576 (625)/50i · 50p, 480 (525)/60i · 60p input terminals are compatible. Consult the manufacturer if you have another brand of television.

Disc

Can I play DVD-Video and Video CDs bought in another country?

- You cannot play DVD-Video if their region number does not include "2" or "ALL". Refer to the disc's jacket for more information. (⇒ Cover)

Can a DVD-Video that does not have a region number be played?

- The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number. You also cannot play discs that do not conform to a standard.

Please tell me about disc compatibility with this unit.

- This unit records and plays DVD-RAM, DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW, and plays DVD-RW (DVD Video Recording format). (⇒ 11–12)
- This unit also records and plays high speed recording compatible DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW discs.

Please tell me about CD-R and CD-RW compatibility with this unit.

- This unit plays CD-R/CD-RW discs which have been recorded in one of the following standards: CD-DA, Video CD, SVCD (conforming to IEC62107), DivX, MP3 and still pictures (JPEG). (⇒ 12, 14)
- You cannot write to a CD-R or CD-RW with this unit.

Recording

Can I record from a commercially purchased video cassette or DVD?

- Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.

Can DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW recorded on this unit be played on other equipment?

- You can play on compatible equipment such as DVD players after finalising the disc on this unit. However, depending on the condition of the recording, the quality of the disc and capabilities of the DVD player, play may not be possible.
- If you play a DVD-R DL, +R DL or +RW, use compatible equipment.

Can a digital audio signal from this unit be recorded to other equipment?

- You can record if using the PCM signal. When recording DVD, change the "Digital Audio Output" settings to the following in the Setup menu. (⇒ 65)
 - PCM Down Conversion: On
 - Dolby Digital/DTS/MPEG: PCMHowever, only as long as digital recording from the disc is permitted and the recording equipment is compatible with a sampling frequency of 48 kHz.
- You cannot record MP3 signals.

(Analogue broadcast only)

Can I switch to bilingual broadcast during recording?

- With DVD-RAM and VHS, you can. Just press [AUDIO]. (⇒ 34, 37)
- With DVD-R, DVD-RW (DVD-Video format), +R, +RW you cannot. Change before recording with "Bilingual Audio Selection" in the Setup menu. (⇒ 65)

TV Guide

Is it possible to programme a recording, with a start and end time that are different from the TV Guide system?

- You can manually change the start and end time of programmes in the Timer Recording menu. (⇒ 30)
- If setting timer recording using the TV Guide system, the start recording time and finish recording time can be set to a margin of up to 10 minutes. (⇒ 64, Start Recording Time, Finish Recording Time)

Can I receive TV Guide system data via a connected digital satellite receiver or a Set Top Box?

- No, only via the built-in tuner. To perform timer recordings with digital satellite receivers or Set Top Boxes, please use the External Link feature or your unit's manual timer programming. (⇒ 28, 30)

How can I cancel a Timer programming?

- Press [PROG/CHECK] and select the desired entry and then press [DELETE *]. (⇒ 31)

What happens when I unplug the unit from the household mains socket?

- The TV Guide data will not be updated.
- If the unit is disconnected from the household mains socket for a longer period of time, the TV Guide data will be lost.
- Clock setting will be erased and timer recording will not work.

What happens if my postal code changes, e.g. if I move?

- TV Guide data may not be downloaded correctly. Change "Post Code" in the Setup menu. If necessary, perform a full Auto-Setup. Saved TV Guide data may be lost. (⇒ 62, 68)

USB

What can or cannot be done using the USB port on this unit?

- You can play DivX (except for DivX VOD contents), MP3 or still picture (JPEG) files on a USB memory. (⇒ 38)
- You can copy still pictures (JPEG) files on a USB memory to the DVD-RAM. (⇒ 55)
- Data on a disc cannot be transferred to a USB memory.
- Data on a USB memory cannot be edited or a USB memory cannot be formatted on this unit.
- Some USB memories cannot be used with this unit. (⇒ 13)

TV Channels

Please tell me about TV reception channels.

- Channel coverage depends on the tuner system you use. Refer to the following list of TV Reception Channels.

List of TV Reception Channels

Tuner System	Channel Coverage	VHF	UHF	CATV
PAL-B,G,H ^{*1}	CCIR	E2 – E12 A – H2 (Italy)	21 – 69	S01 – S05 (S1 – S3) S1 – S20 (M1 – U10) S21 – S41
DVB-T ^{*1}	Germany Austria	5 – 12 5 – 12	21 – 69 21 – 69	—
DVB-T ^{*2}	Italy Spain Switzerland	D – H2 5 – 12 5 – 12	21 – 69 21 – 69 21 – 69	—

^{*1} For Germany and Austria

^{*2} For Italy and Spain

Language code list Enter the code with the numbered buttons.


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

On the television

This unit is not authorised to play this protected DivX video.	<ul style="list-style-type: none"> You are trying to play the DivX VOD content that was purchased with a different registration code. You cannot play the content on this unit. (DivX) (⇒ 39)
Cannot finish recording completely. Copy-protect signal was detected.	<ul style="list-style-type: none"> The programme was copy-protected.
Disc is full, or maximum number of titles are recorded. Cannot finish recording completely.	<ul style="list-style-type: none"> The disc may be full. The maximum number of programme has been exceeded. (⇒ 25) RAM -RW(V) +RW Create space by deleting any unnecessary titles. [Even if you delete recorded content from the DVD-R, DVD-R DL, +R or +R DL there is no increase in disc space. Available space on DVD-RW (DVD-Video format) and +RW increases only when the last recorded title is deleted.] (⇒ 23, 47, 59) Use a new disc.
Cannot record. Maximum number of titles exceeded.	
Cannot playback. TV system is different from the setting. To playback, please change the TV System in Setup.	<ul style="list-style-type: none"> You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the "TV System" setting on this unit to suit. (⇒ 66)
Cannot play on this unit.	<ul style="list-style-type: none"> You tried to play a non-compatible image. (⇒ 14)
No cassette.	<ul style="list-style-type: none"> There is no video cassette in the tape deck when playing or recording TV programmes. Insert a video cassette. (⇒ 15)
No Disc	<ul style="list-style-type: none"> The disc may be upside down.
No folders.	<ul style="list-style-type: none"> There is no compatible folder in this unit. (⇒ 14)
Not enough space in the copy destination.	<ul style="list-style-type: none"> Create space by deleting any unnecessary items. (⇒ 23, 47, 59) Delete one or more items registered on the copy list to ensure that the "Destination Capacity:" is not exceeded. (⇒ 53, 55)
Now recording on DVD. To watch pictures on VHS, use AV1 socket, and switch to an appropriate AV channel on your TV.	<ul style="list-style-type: none"> The VHS plays back while recording on DVD. You can watch the VHS playback by connecting 21-pin Scart cable from AV1 on the unit to the television. VHS cannot be output via "DVD priority out" while recording to DVD. (⇒ 70)
The cassette is write-protected.	<ul style="list-style-type: none"> A video cassette without a secure accidental erasure prevention tab is inserted when recording programmes. Use a video cassette with a secure accidental erasure prevention tab. (⇒ 5)
This is a non-recordable disc.	<ul style="list-style-type: none"> The disc may be dirty or scratched. (⇒ 15) The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalised DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW. (⇒ 11) You inserted an unformatted DVD-RAM, DVD-RW, +R, +R DL or +RW. (⇒ 59)
Unable to format.	
This disc is not formatted properly. Format it using DVD Management in FUNCTION MENU.	
Rental Expired.	<ul style="list-style-type: none"> The DivX VOD content has zero remaining plays. You cannot play it. (DivX) (⇒ 39)
⊘	<ul style="list-style-type: none"> The operation is prohibited by the unit, disc or video cassette.

On the unit's display

The following messages or service numbers appear on the unit's display when something unusual is detected during startup and use.

DVD □ ("□" stands for a number.)	<ul style="list-style-type: none"> The remote control and main unit are using different codes. Change the code on the remote control.  Press and hold [OK] and the indicated number button at the same time for more than 5 seconds. (⇒ 67)
GUIDE	<ul style="list-style-type: none"> TV Guide data is being downloaded. (⇒ 68)
HARD ERR*	<ul style="list-style-type: none"> If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.
NoCASSETTE*	<ul style="list-style-type: none"> You have not inserted a video cassette for the recording. (⇒ 5)
NoERAS	<ul style="list-style-type: none"> You cannot delete items on this disc. The disc may be damaged. Use a new disc.
NoREAD	<ul style="list-style-type: none"> The disc is dirty or badly scratched. The unit cannot record, play, or edit. (⇒ 15) This message may appear when the DVD lens cleaner has finished cleaning. Press [▲ OPEN/CLOSE] on the main unit to eject the disc. (⇒ 5)
NoWRIT	<ul style="list-style-type: none"> You cannot write to this disc. The disc may be damaged. Use a new disc.
PLEASE WAIT*	<ul style="list-style-type: none"> There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.
PROG FULL*	<ul style="list-style-type: none"> There are already 16 timer programmes. Delete unnecessary timer programmes. (⇒ 31)
PROTECT*	<ul style="list-style-type: none"> You have inserted a video cassette without the accidental erasure prevention tab. Use a video cassette with an accidental erasure prevention tab. (⇒ 5)
REMOVE	<ul style="list-style-type: none"> The USB device is drawing too much power. Remove the USB device and turn the unit off.
SP 35:50 LP 151h "SP", "LP" and the numbers are examples.	<ul style="list-style-type: none"> Available space on the disc. The example "SP 35:50" is displayed when less than 100 hours are available and the example "LP 151h" is displayed when over 100 hours are available. "SP" and "LP" are recording modes, "35:50" means "35 hours 50 minutes" and "151h" means "151 hours".
SW-DL	<ul style="list-style-type: none"> The unit is performing a software update. (⇒ 68)
UNFORMAT*	<ul style="list-style-type: none"> You inserted an unformatted DVD-RAM, DVD-RW, +RW, an unused +R, +R DL or DVD-RW (DVD-Video format) that has been recorded on other equipment. Format the disc to use it. However all the recorded contents on the disc are deleted. (⇒ 59)
UNSUPPORT*	<ul style="list-style-type: none"> You have inserted a disc the unit cannot play or record on. (⇒ 11–12) You tried to operate with a non-compatible USB memory. (⇒ 13)
F74	<ul style="list-style-type: none"> The HDMI connection could not be authenticated due to a transfer malfunction. Consult the dealer where the unit was purchased.
F75	<ul style="list-style-type: none"> The HDMI connection could not be authenticated due to an internal data malfunction. Consult the dealer where the unit was purchased.
U50 For Germany and Austria	<ul style="list-style-type: none"> A short circuit was detected in the aerial input. Please check your aerial.
U59	<ul style="list-style-type: none"> The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.
U61	<ul style="list-style-type: none"> (When a disc is not inserted) Displays when a malfunction has occurred. This is displayed when the unit is in the recovery process to return to normal operation. Once the display clears you can use the unit again. If it remains displayed, consult the dealer where the unit was purchased.
U76	<ul style="list-style-type: none"> HDMI cannot be output because this unit is connected to a model that does not support copyright protection.
U80 U81 U99	<ul style="list-style-type: none"> The unit fails to operate properly. Press [⏻/I] on the main unit to switch the unit to standby mode. Now press [⏻/I] on the main unit again to turn the unit on.
U88	<ul style="list-style-type: none"> (When a disc is inserted) Displays when there was something unusual detected with the disc while recording, playback or copy. This is displayed when the unit is in the recovery process to return to normal operation. Once the display clears you can use the unit again. (⇒ 77) If it remains displayed, consult the dealer where the unit was purchased.
H□□ or F□□	<ul style="list-style-type: none"> There is something unusual. (The service number displayed after H and F depends on the unit's condition.) Check the unit using the troubleshooting guide. If the service number does not disappear, do the following. (⇒ 77–83) <ol style="list-style-type: none"> Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it. Press [⏻/I] to turn the power on. (The unit may be fixed.) If the service number does not disappear despite after doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.
X HOLD	<ul style="list-style-type: none"> The Child Lock function is activated. Press and hold [OK] and [RETURN ↵] at the same time until "X HOLD" disappears. (⇒ 69)

* The message are alternately displayed.

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, consult your dealer for instructions.

The following do not indicate a problem with this unit:

- Regular disc/video cassette rotating sounds.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions in reception due to periodic satellite broadcasting breaks.
- Operations are slow to respond when "Power Save in Standby" is activated.
- Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)
- The unit freezes due to one of its safety devices being activated. (Press and hold [⏻/I] on the main unit for 3 seconds.)
- When the unit is turned on or off, there may be an unexpected sound.

Power

No power.

The unit does not turn on pressing [⏻].

- Insert the AC mains lead securely into a known active household mains socket. (⇒ 8, 72)
- Linked timer recordings with external equipment is in recording standby ("EXT-L" on the unit's display blinks when [⏻] is pressed). Press [EXT LINK] to cancel the recording standby. (⇒ 28)

The unit switches to standby mode.

- One of the unit's safety devices is activated. Press [⏻/I] on the main unit to turn the unit on.

The power is turned off automatically.

- If you connected this unit to a "HDAVI Control" compatible TV with an HDMI cable, or connected this unit to a Q Link-compatible TV with a fully wired 21-pin Scart cable, this unit will be automatically set to standby mode when the TV is set to standby mode. (⇒ 42)

This unit turns off when the TV input is switched.

- This is a normal phenomenon when using VIERA Link (HDAVI Control 4 or later). For details please read the operating instructions for the TV.

Displays

The display is dim.

- Change "Unit's Display" in the Setup menu. (⇒ 65)

"0:00" is flashing on the unit's display.

- Set the clock. (⇒ 67)

The time recorded on the disc and the available time shown do not add up.

The displayed time of this unit is different from the actual recording time or MP3 recording time.

- Times shown may disagree with actual times.
- Available recording space on DVD-RW (DVD-Video format) or +RW increases only when the last recorded title is deleted. It does not increase if other titles are deleted.
- Even if you delete recorded content from the DVD-R, DVD-R DL, +R or +R DL, there is no increase in disc space.
- More disc space than the actual recording time is used after recording or editing the DVD-R, DVD-R DL, +R or +R DL 200 times or more.
- While searching, the elapsed time may not display correctly.

The clock is not correct.

- Under adverse reception conditions, etc., the automatic time correction function may not work. In this case, "Automatic" is automatically turned to "Off". If re-setting the Auto Clock Setting does not work, set the time manually. (⇒ 67)

Compared to the actual recorded time, the elapsed time displayed is less. (Only when recording in NTSC)

- The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to 1 second. There will be a slight difference between the time displayed and the actual elapsed time (e.g., actual 1 hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.

The tape counter is not changing.

- The tape counter does not change while playing unrecorded parts. The "second" display changes as follows: (e.g., Blank after 1 h 36 min.)



- The unit's display also appears like this if the tape is dirty or damaged. Consult your dealer if this is the case.

"U88" is displayed and the disc cannot be ejected.

- The unit is carrying out the recovery process. Do the following to eject the disc.
 - 1 Press [⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/I] on the main unit for about 3 seconds. The unit is forcibly switched to standby.
 - 2 While the unit is off, press and hold [■] and [CH ^] on the main unit at the same time for about 5 seconds. Remove the disc.

TV screen and video

Television reception worsens or becomes impossible after connecting the unit.

- This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers. If it is not solved by using a signal booster, consult the dealer.
- Broadcast signals may not be output from this unit's RF OUT terminal. Select "On" in "RF OUT (Aerial Signal)" in the Setup menu. (⇒ 68)

The digital channel information or control panel does not appear. Status messages do not appear.

- Select the length of time (3–10 sec.) in the "On-Screen Messages" in the Setup menu. (⇒ 65)
- The digital channel information will not appear during playback or recording.
- Analogue broadcasts do not support the digital channel information.
- The control panel is only displayed when connected to a TV supporting "HDAVI Control 2" or later. (⇒ 43)

Some functions of DVB-T do not work.

- The unit does not necessarily support all DVB-T functions such as MHP (Multimedia Home Platform) etc. New functions introduced by broadcasters cannot be guaranteed to work.

For Germany and Austria

The grey background does not appear.

- Select "On" in "Grey Background" in the Setup menu. (⇒ 65)

Screen size is wrong.

- Check the settings for "TV Aspect" in the Setup menu. (⇒ 66)
- If you connect an HDMI cable, set "Aspect for 4:3 Video" to "16:9" in the Setup menu. (⇒ 66)

The recorded title's screen size is wrong.

- Set the "Aspect for Recording" to "4:3". (⇒ 24, 64)
- 16:9 aspect programmes are recorded in 4:3 aspect in the following cases.
 - **-R -R DL -RW(V)** If you recorded or copied using "EP" or "FR (recordings 5 hours or longer)" recording mode.
 - If you recorded or copied to a +R, +R DL or +RW.
 - If you recorded with the "Aspect for Recording" set to "4:3" in the Setup menu.

When you want to record 16:9 programme in the same aspect, set the "Aspect for Recording" to "16:9". (⇒ 64)

- By setting "Aspect for Recording" to "Automatic", there is a chance that the recording will be made using the wrong aspect. Match the aspect settings to the broadcast when recording. (⇒ 64)

It may be possible to adjust the display mode on the TV. Refer to your television's operating instructions.

Picture does not appear during timer recording.

- Timer recordings work regardless whether the unit is on or off. To confirm the timer recording is going to work properly, turn the unit on.

The screen changes automatically.

- When "Screen Saver" in the Setup menu is set to "On", the display may turn to the screen saver mode automatically if there is no operation for 5 minutes or more. (⇒ 65) Press [OK] to return to the previous screen.

There is a lot of after-image when playing video.

- Set "Playback NR" in the Picture menu to "Off". (⇒ 56)

There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.

- The effect is less perceivable with some types of video.

The images from this unit do not appear on the television. Picture is distorted.

- Make sure that the television is connected to the AV1 terminal, VIDEO OUT terminal or HDMI terminal on this unit. (⇒ 8, 9, 70, 71, 72)
- Make sure that the television's input setting (e.g., AV 1) is correct.
- The unit's "TV System" setting differs from the TV system used by the disc now playing. While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit for 5 or more seconds. The system switches from PAL to NTSC or vice versa. (⇒ 66)
- When this unit is connected with an HDMI cable, use a disc that matches with this unit's TV system.
- Picture may not be seen when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.

The picture is distorted during play, or video will not play correctly.

- You may be playing a TV programme recorded with poor reception or unfavourable weather conditions.
- The picture may be distorted or a black screen may appear briefly between recorded titles in the following situations:
 - between titles recorded with different recording modes.
 - between scenes recorded with different aspect ratios.
 - between scenes recorded with different resolutions.
 - between playlist chapters.

Sound

No sound.

Low volume.

Distorted sound.

Cannot hear the desired audio type.

- Check the connections and the "Digital Audio Output" settings. Check the input mode on the amplifier if you have connected one. (⇒ 8, 9, 65, 66, 70, 71, 72)
- Press [AUDIO] to select the audio. (⇒ 34)
- Audio may not be output due to how files were created. (DivX)
- Audio may not be heard when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.
- The sound effects will not work when the bitstream signal is output from the HDMI AV OUT terminal or the OPTICAL DIGITAL AUDIO OUT terminal.
- To output audio from a device connected with an HDMI cable, set "Digital Audio Output" to "HDMI and Optical" in the Setup menu. (⇒ 66)
- Depending on the connected equipment, the sound may be distorted if this unit is connected with an HDMI cable.
- (Analogue broadcast only) If recording to a DVD-RAM, you can only record either the main or secondary audio of a bilingual broadcast.


Cannot switch audio.

- You cannot switch the audio in the following cases.
 - When a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW disc is in the disc tray while DVD drive is selected.
 - When the recording mode is XP and "Audio Mode for XP Recording" is set to "LPCM". (⇒ 65)
- The amplifier is connected using an optical digital cable or an HDMI cable. You cannot switch the audio if "Dolby Digital" is set to "Bitstream". Set "Dolby Digital" to "PCM" or connect using audio cables. (⇒ 65, 70, 71)
- There are discs for which audio cannot be changed because of how the disc was created.

Operation

Cannot operate the television.

The remote control doesn't work.

- Change the manufacturer code. Some televisions cannot be operated even if you change the code. (⇒ 69)
 - The remote control and main unit are using different codes. Change the code on the remote control. (⇒ 67)
Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.
- 
- The batteries are depleted. Replace them with new ones. (⇒ 4)
 - You are not pointing the remote control at the main unit's remote control signal sensor during operation. (⇒ 4)
 - Coloured glass may obstruct the signal reception/transmission.
 - Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.
 - It may be necessary to set the code on the remote control again after changing the batteries. (⇒ 67)
 - It may be necessary to set the manufacturer code again after changing the batteries. (⇒ 69)
 - The child lock function is activated. (⇒ 69)

The unit is on but cannot be operated.

- Recording drive or playback drive has not been selected properly. (⇒ 18, 19)
- Some operations may be prohibited by the disc.
- The unit is hot ("U59" appears on the display). Wait for "U59" to disappear.
- One of the unit's safety devices may have been activated. Reset the unit as follows:
 - 1 Press [⏻] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻] on the main unit for about 3 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.
 - 2 Press [⏻] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.

Cannot eject disc.

- The unit is recording.
- Linked timer recordings with external equipment is in recording standby ("EXT-L" on the unit's display blinks when [⏻] is pressed). Press [EXT LINK] to cancel the recording standby. (⇒ 28)
- The unit may have a problem. While the unit is off, press and hold [■] and [CH ^] on the main unit at the same time for about 5 seconds. Remove the disc and consult the dealer. If the Child Lock function is activated, above operation does not work. Cancel the Child Lock function. (⇒ 69)

Cannot tune channels.

Cannot download channel presets from the television.

- Check the connections. (⇒ 8, 72)
- You must connect to a Q Link compatible TV with a fully wired 21-pin Scart cable or a VIERA Link (HDAVI Control 3 or later) compatible TV with an HDMI cable.

Startup is slow.

- Deactivate "Power Save in Standby" in the Setup menu. (⇒ 67)
- Startup takes time in the following situations:
 - A disc other than a DVD-RAM is inserted.
 - The clock is not set.
 - Immediately after a power failure or the AC mains lead is connected.
 - When the unit is connected with an HDMI cable.

Recording, timer recording and copying

Cannot record. Cannot copy.

- You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto. (⇒ 11)
- The disc is unformatted. Format the disc. **RAM -RW(V) +R +R DL +RW** (⇒ 59)
- The disc is protected with DVD Management. (⇒ 58)
- The accidental erasure prevention tab has been removed. Cover the hole with adhesive tape. (⇒ 5)
- Some programmes have limitations on the number of times they can be recorded (CPRM). (⇒ 85)
- You cannot record when there is not enough space or when the number of titles has reached its limit. Delete unwanted titles or use a new disc. (⇒ 23, 47, 59)
- You cannot record and copy on finalised discs. However, you can record and copy again if you format DVD-RW.
- Due to peculiarities of DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW you may be unable to record onto them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of fifty times.
- DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW recorded on this unit may not be recordable on other Panasonic DVD Recorders.
- This unit cannot record NTSC signals to discs that already have PAL signal recordings. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.
- Some broadcasts are copyright protected.

Cannot record from external equipment.

- Check that the connection is correct. (⇒ 29, 72)
- Select the AV2 input.

Timer recording does not work properly.

- The timer programme is incorrect or different timer programme times overlap. Correct the programme. (⇒ 31)
- The programme is not in timer recording standby. (The timer icon "⊙" in the timer recording list is not on.) (⇒ 31)
- Set the clock. (⇒ 67)
- The programme information in the TV Guide system may not be correct. It is recommended to modify the start and end times to allow a margin of a few minutes, or set "Start Recording Time" and "Finish Recording Time" in the Setup menu. (⇒ 30, 64)

Timer recording does not stop even when [■] is pressed.

- When using the linked timer recording with external equipment, press [EXT LINK]. ("EXT-L" disappears.) (⇒ 28)
- If you start recording immediately after turning on the unit while "Power Save in Standby" is not activated (Quick Start mode), you cannot then stop recording for a few seconds.

The timer programme remains even after recording finishes.

- The timer programme remains if set to daily or weekly.

A part or whole of a recorded title has been lost.

- If there is a power failure or the plug is disconnected from the household mains socket while recording or editing, the title may be lost or the disc may become unusable. You will have to format the disc (**RAM -RW(V) +RW**) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs. (⇒ 59)

The programme name and the recorded title do not match.

- There was a programme change after timer recording was set but the recorded title still has the old programme name.

An unusually loud sound is coming from the rotating DVD-R, etc.

- When recording to a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW, the sound of the disc rotating may be louder than normal, however, this is not a problem.

Play

Play fails to start even when [▶] (PLAY) is pressed.

Play starts but then stops immediately.

- Insert the disc correctly with the label facing up. (⇒ 15)
- The disc is dirty. (⇒ 15)
- You tried to play a blank disc or disc unplayable on this unit. (⇒ 11–12)
- You tried to play a +RW that needs to be finalised on the equipment used for recording.
- When recording to DVD-RAM using "EP (8 hours)" mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use "EP (6 hours)" mode. (⇒ 64)
- If playing DivX VOD content, refer to the homepage where you purchased it. (DivX) (⇒ 39)
- Make sure that the TV is turned on. If the menu or messages are displayed, follow the on-screen instructions.

Audio and video momentarily pause.

- This occurs between playlist chapters.
- This occurs as scenes change during Quick View.
- **-R DL +R DL** When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers. (⇒ 11)

DVD-Video is not played.

- You have set a ratings level to limit DVD-Video play. Change this setting. (⇒ 64)
- Ensure disc is for the correct DVD-Video region number, and is not defective. (⇒ Cover)

Alternative soundtrack and subtitles cannot be selected.

- The languages are not recorded on the disc.
- You may not be able to use the on-screen menus to change the soundtrack and subtitles on some discs. Use the disc's menus to make changes. (⇒ 18)

No subtitles.

- Subtitles are not recorded on the disc.
- Turn the subtitles on and select "Text" or the subtitle number. (⇒ 56)

Angle cannot be changed.

- Angles can only be changed during scenes where different angles are recorded.

You have forgotten your ratings PIN. You want to cancel the ratings level.

- The ratings level returns to the factory preset. While the disc tray is open, press [DRIVE SELECT] to select the DVD drive, then press and hold [● REC] and [▶] on the main unit at the same time for 5 or more seconds ("INIT" will appear on the unit's display).

Quick View does not work.

- This does not work when audio is other than Dolby Digital.
- This does not work when recording is in XP or FR mode.

The resume play function does not work.

- Memorized positions are cancelled when
 - press [■] several times.
 - open the disc tray.
 - [CD] [VCD] [USB] turn off the unit.
 - if a recording or timer recording was executed.

The Video CD picture does not display properly.

- When connecting to Multi-system TV, select "NTSC" in "TV System" in the Setup menu. (⇒ 66)
- When connecting to PAL TV, the lower part of the picture cannot be displayed correctly during search.

Time Slip, Manual Skip, etc. does not work.

- These functions do not work with finalised discs.
- Time Slip does not work when the unit's "TV System" settings are different from the title recorded on the disc. (⇒ 66)

It takes time before play starts.

- This is normal on DivX video. (DivX)

Picture stops.

- Picture may stop if the DivX files are greater than 4 GB. (DivX)

Cannot see the beginning of the title played.

- (If connecting to a TV that supports VIERA Link with an HDMI cable)
When [▶] (PLAY) is pressed on this unit's remote control, you may not be able to see the beginning of the title played until the picture is displayed on the TV. Using [◀◀], return to the beginning of the title.

Edit

Available disc space does not increase even after deleting a title.

- Available disc space does not increase after deleting on DVD-R, DVD-R DL, +R or +R DL. (⇒ 23)
- Disc space increases only when the last recorded title is deleted on DVD-RW (DVD-Video format) and +RW. The disc space does not increase when any other titles are deleted.

Cannot format.

- The disc is dirty. Wipe with a damp cloth and then wipe dry. (⇒ 15)
- You tried formatting a disc that you may not be able to use in this unit. (⇒ 11–12)

Cannot create chapters.

Cannot mark the start point or the end point during "Partial Delete" operation.

- The unit writes the chapter division information to the disc when you turn it off or remove the disc. The information is not written if there is an interruption to the power before this.
- These operations are not possible with still pictures.
- You cannot set points if they are too close to each other. You cannot set an end point before a start point.

Cannot delete chapters.

- When the chapter is too short to delete, use "Combine Chapters" to make the chapter longer. (⇒ 47)

Cannot create a Playlist.

- You cannot select all the chapters at once in a title if the title also includes still pictures. Select them individually.

Music

ID3 tag of a MP3 file is not completely displayed.

- Only the track name ([USB]) can be displayed with this unit.

Still pictures

Cannot display DIRECT NAVIGATOR screen.

- This screen cannot be displayed during recording or copy or while the unit is standing by for linked timer recording with external equipment.

Copying, deleting and setting protection takes a long time.


- When there are a lot of folders and files, it may sometimes take a few hours.
- When repeating copying or deleting, it may sometimes take a long time. Format the disc. (⇒ 59)

Still pictures (JPEG) do not playback normally.

- The images that were edited on the PC, such as PROGRESSIVE JPEG etc., may not playback. (⇒ 14)

VHS

On-screen display indicators do not appear.

- Select a setting other than "Off" in "On-Screen Messages" in the Setup Menu. (⇒ 65)
 - Press [STATUS >] to show the on-screen display indicators.
 - The on-screen indicator for video cassette playback will not be displayed when this unit is connected to the TV with the DVD priority out terminals.

The grey background appears during playback.

- You are playing a blank or poor quality portion of the tape.
- You can damage the unit if you play dirty or damaged tapes and this can cause the grey background to appear.

Cannot hear the desired audio type.

- Press [AUDIO] to select the audio. (⇒ 37)

There is noise when playing a video tape.

- Adjust the tracking. (⇒ 37)
- The tape is old or damaged.

The playback screen flickers.

- The video head is dirty. (⇒ 5)
- The tape is old or damaged.
- Check the "SQPB" setting. (⇒ 67)

flashes when I try to start recording. Cannot record.

- A video cassette is not inserted. Insert a video cassette with an accidental erasure prevention tab. (⇒ 5)
- The accidental erasure prevention tab has been removed. Cover the hole with adhesive tape. (⇒ 5)

USB

The contents of the USB memory cannot be read.

- Remove the USB memory from the USB port and then insert again. If this does not solve the problem, turn off and turn on the unit again.
- Check that the USB memory is inserted correctly. (⇒ 15)
- The format of the USB memory or of its contents is not compatible with the unit. (The contents on the USB memory may be damaged.) (⇒ 13, 14)
- The USB memory contains a folder structure and/or file extensions that are not compatible with this unit. (⇒ 14)
- Turn off and then turn on the unit again.
- USB memories connected using a USB extension cable or a USB hub may not be recognized by this unit.
- Some USB memories cannot be used with this unit. (⇒ 13)
- If inserted during playback, recording or copying etc., the USB memory may not be recognized by this unit.

TV Guide

The TV Guide System does not receive any data.

- Check whether TV Guide system setup was performed in full.
- Check whether the clock is properly set. (⇒ 67)
- If signal quality is bad (ghost images or limited reception), the TV Guide system may not be able to receive any data.
- In the area where GUIDE Plus+ system is available, check whether correct post code is entered. (⇒ 68)

"No Data" is displayed for some or all stations.

- Some stations are not supported by the TV Guide system.
- Analogue broadcasts are not supported by the TV Guide system.
- Programme the Timer recording manually or via SHOW/VIEW **(For Germany and Austria)**. (⇒ 30)

The TV Guide information is not displayed properly.

- There was a programme change. Check the current programme, e.g. on the Web site for the TV Guide system provider or station provider.
- Programme information about analogue broadcasts is not displayed.

The TV Guide data transfer was interrupted.

- The TV Guide system shows the data that was received up to the interruption.
- The programme information may be incomplete.

The TV Guide data is not updated.

- The unit must be in standby mode in order to update the data. If the unit is in EXT LINK mode (EXT-L lights up in the display), then the data update may also not work.
- Make sure that the time is set correctly.
- Make sure that "TV Guide Download in Standby" is set to "On". (⇒ 68)

Digital broadcast

Digital broadcasts cannot be received.

- Digital broadcast may not have started in your region yet.
- The aerial may not be pointing in the direction of the TV station, or the direction of the aerial may have changed due to strong winds or vibration. If problem persists consult your local TV aerial installer.
- **For Germany and Austria** Switch "Active Antenna" to "On" in the Setup menu if you are using an indoor antenna. (⇒ 66)

After DVB Auto Setup only some or no DVB channels are found.

- Check to ensure your area is covered by DVB transmissions.
- Check that the aerial and antenna cable are designed for DVB. If you live within 5-10 km of DVB transmission towers, a combined VHF/UHF aerial should be adequate. Outside this area, separate VHF and UHF aerials provide superior reception performance. (⇒ 8)

Picture regularly breaks up on some channels. "No Signal" message is displayed.

- Check "Signal Condition". If "Signal Quality" or "Signal Strength" are displayed in red or constantly changing, check aerial. If problem persists consult your local TV aerial installer. (⇒ 63)
- Check that the aerial and antenna cable are designed for DVB.
- Interference (known as impulse noise) from household appliances such as light switches, fridges etc. may cause picture break up and/or audio distortion. Use a high quality quad shielded coaxial cable fly lead between this unit and antenna wall socket to minimise impulse noise pickup. If problem persists consult your local TV aerial installer.
- Check aerial connection.
- Adjust the aerial reception with "DVB Manual Tuning" in the Setup menu. (⇒ 62)

Picture very infrequently breaks up on some or all channels.

- Electrical atmospheric interference caused by local or distant lighting storms or heavy rain with wind in "leafy" locations may cause pictures to break up and audio to mute or distort momentarily.
- Impulse noise interference from an infrequently used electrical appliance, or a passing vehicle or lawn mower with a "noisy" ignition system.

VIERA Link

VIERA Link doesn't work.

- Check the HDMI cable connection. Check that "HDMI" is displayed on the front display when the power for the main unit is set to On.
- Make sure that "VIERA Link" is set to "On". (⇒ 66)
- Check the "HDAVI Control" settings on the connected device.
- Some functions may not work if depending on the version of "HDAVI Control" of the connected equipment. This unit supports "HDAVI Control 5" functions.
- If the connection for the equipment connected with HDMI was changed, or if there was a power failure or the plug was removed from the household mains socket, "HDAVI Control" may not work.
In this case, perform the following operations.
 - 1 When the HDMI cable is connected to all equipment with the power on, turn the TV (VIERA) on again.
 - 2 Change the TV (VIERA) settings for the "HDAVI Control" function to off, and then set to on again. (For more information, see the VIERA operating instructions.)
 - 3 Switch the VIERA input to HDMI connection with this unit, and after this unit's screen is displayed check that "HDAVI Control" is working.

The operation on this unit (music playback etc.) is interrupted.

- The operation on this unit may be interrupted when you press buttons on the TV remote control that do not work for VIERA Link functions.

To reset this unit

To return all the settings other than the main ones to the factory preset

- Select "Yes" in "Shipping Condition" in the Setup menu. All the settings except for the ratings level, ratings PIN, language settings and clock settings, etc. return to the factory preset. The timer recording programmes are also cancelled. (⇒ 68)
- Select "Yes" in "Default Settings" in the Setup menu. All the settings other than the tuning settings, clock settings, country settings (**For Italy and Spain**), language settings, disc language settings, ratings level, ratings PIN, remote control code, etc. return to the factory presets. The timer recording programmes are also cancelled. (⇒ 68)
- Press and hold [v CH] and [CH ^] on the main unit until the Active Antenna setting menu (**For Germany and Austria**) or Country setting screen (**For Italy and Spain**) appears.
All the settings except for the ratings level, ratings PIN, clock settings and remote control code, etc. return to the factory preset. The timer recording programmes are also cancelled.

To reset the ratings level settings

- While the disc tray is open, press [DRIVE SELECT] to select the DVD drive, then press and hold [● REC] and [▶] on the main unit at the same time for 5 or more seconds.

To restore the unit if it freezes due to one of the safety devices being activated

- Press and hold [⏻/I] on the main unit for 3 seconds. (The settings remain.)

Other

After performing an update, you can no longer receive broadcasts.

- Depending on the content of the update, some settings may have returned to the preset values. Fix the settings again.

Specifications

Recording system DVD-RAM : DVD Video Recording format
 DVD-R : DVD-Video format
 DVD-R DL (Dual Layer) : DVD-Video format
 DVD-RW : DVD-Video format
 +R
 +R DL (Double Layer)
 +RW

Recordable discs

DVD-RAM: 2X SPEED (Ver. 2.0),
 2-3X SPEED (Ver. 2.1), 2-5X SPEED (Ver. 2.2)
 DVD-R: 1X SPEED (Ver. 2.0), 1-4X SPEED (Ver. 2.0),
 1-8X SPEED (Ver. 2.0), 1-16X SPEED (Ver. 2.1)
 DVD-R DL (Dual Layer): 2-4X SPEED (Ver. 3.0), 2-8X SPEED (Ver. 3.0)
 DVD-RW: 1X SPEED (Ver. 1.1), 1-2X SPEED (Ver. 1.1),
 2-4X SPEED (Ver. 1.2), 2-6X SPEED (Ver. 1.2)
 +R: 2.4X SPEED (Ver. 1.0), 2.4-4X SPEED (Ver. 1.1),
 2.4-8X SPEED (Ver. 1.2), 2.4-16X SPEED (Ver. 1.3)
 +R DL: 2.4X SPEED (Ver. 1.0), 2.4-8X SPEED (Ver. 1.1)
 +RW: 2.4X SPEED (Ver. 1.1), 2.4-4X SPEED (Ver. 1.2)

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

Playable discs

DVD-RAM : DVD Video Recording format, JPEG
 DVD-R : DVD-Video format, MP3^{*1}, JPEG^{*1}, DivX^{*1}
 DVD-R DL (Dual Layer) : DVD-Video format,
 MP3^{*1}, JPEG^{*1}, DivX^{*1}
 DVD-RW : DVD-Video format, DVD Video Recording format
 +R, +R DL (Double Layer), +RW
 DVD-Video, CD-Audio (CD-DA), Video CD, SVCD^{*2}
 CD-R/CD-RW : CD-DA^{*1}, Video CD^{*1}, SVCD^{*1&2}, MP3^{*1},
 JPEG^{*1}, DivX^{*1}

Optical pick-up System with 1 lens, 2 integration units
 (662 nm wavelength for DVDs, 780 nm wavelength for CDs)

LASER specification

Class 1 LASER Product (Pickup)
 Wave length:

CD 780 nm wave length
 DVD 662 nm wave length

Laser power:

No hazardous radiation is emitted with the safety protection

Audio

Recording system: Dolby Digital 2ch, Linear PCM (XP mode)
 Audio in: AV1/AV2 (21 pin), AV3 (pin jack)
 Input level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
 Input impedance: More than 10 kΩ
 Audio out: AV1/AV2 (21 pin), Audio Out (pin jack)
 Output level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
 Output impedance: Less than 1 kΩ
 Digital audio out: Optical terminal (PCM, Dolby Digital, DTS, MPEG)

HDMI Output

19 pin type A: 1 pc
 HDMI™ (V.1.3a with Deep Colour)

• This unit supports "HDAVI Control 5" function.

Video

Video system:

SECAM (only input)/PAL colour signal, 625 lines, 50 fields
 NTSC colour signal, 525 lines, 60 fields

Recording system: MPEG2 (Hybrid VBR)

Video in (PAL/SECAM/NTSC):

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

S-Video in (PAL/SECAM/NTSC):

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

RGB In (PAL):

AV2 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination

Video Out (PAL/NTSC):

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

RGB Out (PAL/NTSC):

AV1 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination

VHS

Recording format:

VHS Video Cassette System Standard with FM audio

Heads:

4 Helical Scan Heads for Video
 2 Helical Scan Heads for FM audio
 1 Fixed Head for Normal audio

Tape speed/Recording time (with E-240 tape):

PAL: SP: 23.39 mm/s, 240 min
 LP: 11.7 mm/s, 480 min
 EP: 7.8 mm/s, 720 min
 NTSC: SP: 33.35 mm/s, 168 min
 EP: 11.12 mm/s, 505 min

Television system

Tuner system	Channel coverage
PAL-B,G,H ^{*1} (CCIR)	VHF: E2-E12, A-H2 (Italy) UHF: 21-69 CATV: S01-S05 (S1-S3), S1-S20 (M1-U10), S21-S41
DVB-T ^{*1} (Germany/Austria)	VHF: 5-12 UHF: 21-69
DVB-T ^{*2} (Italy)	VHF: D-H2 UHF: 21-69
DVB-T ^{*2} (Spain/Switzerland)	VHF: 5-12 UHF: 21-69

^{*1} For Germany and Austria

^{*2} For Italy and Spain

RF converter output:

Not provided

Active Antenna output (For Germany and Austria):

5 V switched, 50 mA max.,
 over current protected.

USB port

USB standard:

Type A : 1 pc

Format:

USB 2.0 High Speed
 FAT16, FAT32

Others

Region code:

2

Operating temperature:

5 °C to 40 °C

Operating humidity range:

10 % to 80 % RH (no condensation)

Power supply:

AC 220 to 240 V, 50 Hz

Power consumption:

Approx. 35 W

Dimensions (W×H×D):

430 mm×84 mm×335 mm
 (excluding the projecting parts)
 430 mm×84 mm×346 mm
 (including the projecting parts)

Mass:

Approx. 5.4 kg

Power consumption in standby mode:

**Approx. 0.5 W ("Power Save in Standby" is activated and
 "RF OUT (Aerial Signal)" is set to "Off")**
Approx. 14 W ("Power Save in Standby" is not activated.)

Note

Specifications are subject to change without notice.

^{*1} Finalising is necessary for compatible playback.

^{*2} Conforming to IEC62107

This unit is not compatible with "Chaoji Video CD" available on the
 market including CVD, DVCD and SVCD that do not conform to
 IEC62107.

Bitstream

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

CPRM (Content Protection for Recordable Media)

CPRM is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

Decoder

A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

Deep Colour

This unit incorporates HDMI™ (V.1.3a with Deep Colour) technology that can reproduce greater colour gradation (4096 steps) when connected to a compatible TV. You can enjoy exceptionally rich, natural-looking colours, with smooth, detailed gradation and minimal colour banding. [A lower colour gradation (256 steps), without Deep Colour, will be reproduced if connected to a TV which does not support Deep Colour. The unit will automatically set appropriate output to suit the connected TV.]

DivX

DivX is a popular media technology created by DivX, Inc. DivX media files contain highly compressed video with high visual quality that maintains a relatively small file size.

Dolby Digital

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

Down-mixing

This is the process of remixing the multi-channel audio found on some discs into two channels. It is useful when you want to listen to the 5.1-channel audio recorded on DVDs through your television's speakers. Some discs prohibit down-mixing and this unit can then only output the front two channels.

Drive

In the instance of this unit, this refers to the disc (DVD) and video cassette (VHS). These perform the reading and writing of data.

DTS (Digital Theater Systems)

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

Dynamic range

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

Film and video

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

Film: Recorded at 25 frames per second (PAL discs) or 24 frames per second (NTSC discs). (NTSC discs recorded at 30 frames per second as well.) Generally appropriate for motion picture films.

Video: Recorded at 25 frames/50 fields per second. (PAL discs) or 30 frames/60 fields per second (NTSC discs). Generally appropriate for TV drama programmes or animation.

Finalise

A process that makes play of a recorded CD-R, CD-RW, DVD-R, etc. possible on equipment that can play such media. You can finalise DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL on this unit. After finalising, the disc becomes play-only and you can no longer record or edit. However, finalised DVD-RW can be formatted for recording again.

Folder

This is a place on the disc where groups of data are stored together. In the case of this unit, it refers to the place where still pictures (JPEG) are stored.

Formatting

Formatting is the process of making media such as DVD-RAM recordable on recording equipment. You can format DVD-RAM, DVD-RW (only as DVD-Video format) and +RW or unused +R and +R DL on this unit. Formatting permanently deletes all contents.

Frames and fields

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



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

HDMI (High-Definition Multimedia Interface)

Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable. This unit supports high-definition video output [720p (750p), 1080i (1125i), 1080p (1125p)] from HDMI AV OUT terminals. To enjoy high-definition video a high definition compatible television is required.

JPEG (Joint Photographic Experts Group)

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

LPCM (Linear PCM)

These are uncompressed digital signals, similar to those found on CDs.

MPEG2 (Moving Picture Experts Group)

A standard for efficiently compressing and expanding colour video. MPEG2 is a compression standard used for DVD and satellite based digital broadcasting. This unit records programmes using MPEG2.

MP3 (MPEG Audio Layer 3)

An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality.

Pan&Scan/Letterbox

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

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



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



Playback control (PBC)

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

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

Protection

You can prevent accidental deletion by setting writing protection or deletion protection.

RGB

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

Sampling frequency

Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

Signal Quality

This is the guide for checking the aerial direction. The numbered values displayed do not indicate the strength of the signal, but the quality of the signal (the signal to noise ratio, or "S/N"). The channels you can receive are affected by weather conditions, seasons, time (day/night), region, length of the cable that is connected to the aerial, etc.

Thumbnail

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

1080i

In one high definition image, 1080 (1125) alternating scan lines pass every 1/50th of a second to create an interlace image. Because 1080i (1125i) more than doubles current television broadcasts of 480i (525i), the detail is much clearer and creates a more realistic and rich image.

1080p

In one high definition image, 1080 (1125) scan lines pass at the same time every 1/50th of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

720p

In one high definition image, 720 (750) scan lines pass at the same time every 1/50th of a second to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

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

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

Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you 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.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

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]

These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



Note for the battery symbol (bottom two symbol examples):

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

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