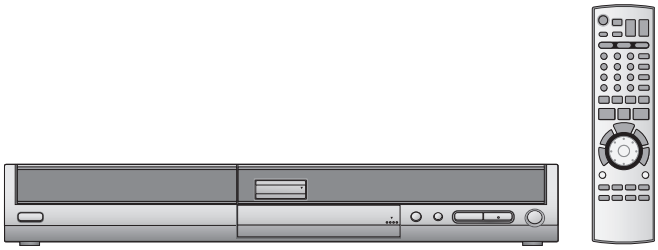
Operating Instructions

DVD Recorder

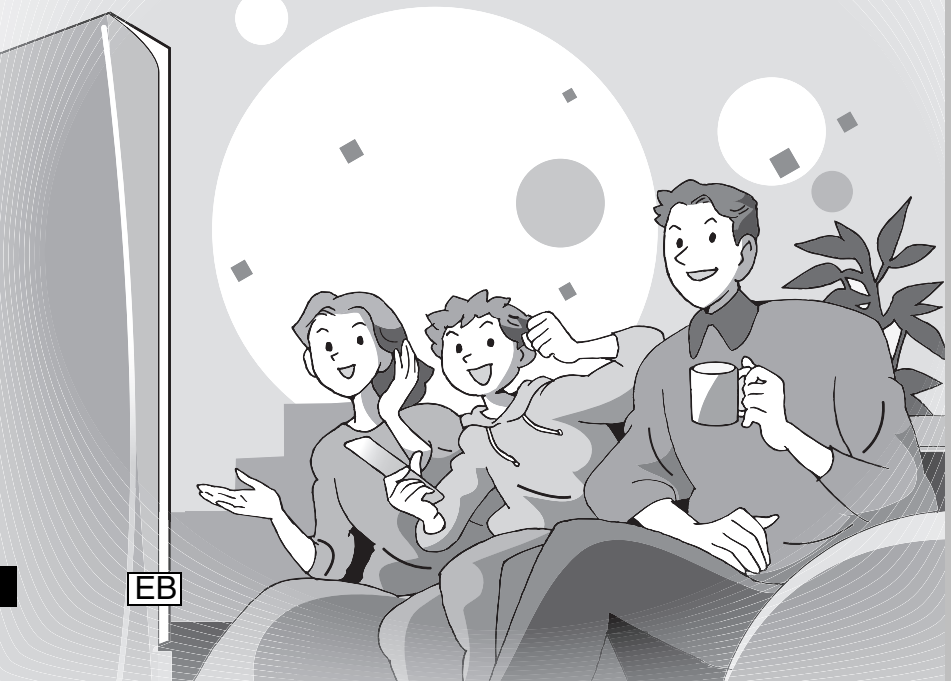
Model No. **DMR-EH50**



Panasonic

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

DIGA



EB

Region number supported by this unit

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

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

Example:

Dear customer

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

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

Note

"EB" on the packaging indicates the United Kingdom.

RQT8033-1B

CAUTION!

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

WARNING:

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

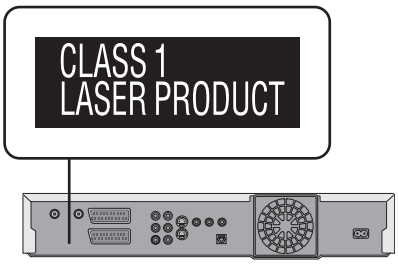
CAUTION!

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

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES. (➡page 71, Specifications—Others)

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

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



(Back of product)

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

(Inside of product)

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

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

Caution for AC Mains Lead

(For United Kingdom)

For your safety, please read the following text carefully.
This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♆ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.
If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

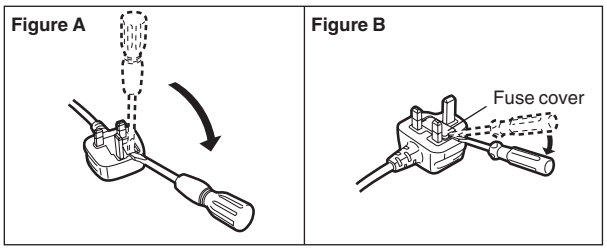
Before use

Remove the connector cover.

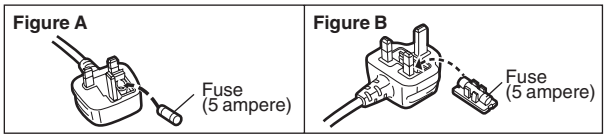
How to replace the fuse

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

1. Open the fuse cover with a screwdriver.



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



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Useful features

This DVD Recorder records high quality pictures to rapid random access capable HDD (Hard disk drive) and DVD-RAM. This has resulted in many new features that outperform older tape formats. The following information summarizes a few of these features.

Instant recording
You no longer need to search for empty disc space. By pressing the recording button, the unit finds available recording space and begins recording right away. There is no need to worry about overwriting already recorded content.

1 Sec. Quick Start for Recording on DVD-RAM and HDD
From the power off state, recording on DVD-RAM and HDD starts about 1 second after first pressing the Power button and then sequentially pressing the REC button (Quick Start Mode).

HDD recording
You can keep on recording your favorite programmes to an internal HDD that is able to record up to 142 hours [EP (8 Hours) mode]. You can also high speed transfer (dub) your favorite programmes to DVD-RAM, DVD-R, DVD-RW (DVD-Video format) or +R and create a backup disc.

SD card slot
The SD card slot of this unit lets you play digital camera photographs and transfer (dub) them from a card to DVD-RAM for easy storage without using a computer.

Instant play
There is no need to rewind or search forward. Direct Navigator guides you to the beginning of the recorded video immediately.

Chasing playback
There is no need to wait until recording is complete. Without stopping recording, you can play the video currently being recorded from its beginning.

Simultaneous Recording and Playback
While recording, you can play another video programme that was recorded previously.

Time Slip
During play, and also while recording, you can jump to the scene you wish to view by specifying the skip time.

HDD (Hard disk drive) handling care

The HDD is a high precision recording instrument and because of its long recording capability and high speed operation it is a very special device that is easily susceptible to damage.
As a basic rule, save important video content to a disc as backup.

■ The HDD is a device that is not built to withstand vibration/shock or dust

Depending on the setup environment and handling of the HDD some content may become damaged and play and recording may no longer be possible. Especially during operation, do not subject the unit to any vibration, shock, or remove the AC mains lead from the household mains socket. In the event of a power failure during recording or play, the content may be damaged.

■ The HDD is a temporary storage device

The HDD is not an everlasting storage device for recorded content. Use the HDD as a temporary storage place for one-off viewing, editing, or saving recorded content to a disc.

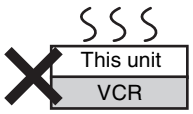
■ Immediately save (backup) all content as soon as you feel there may be a problem with the HDD

If there is an irregularity within the HDD, repetitive strange sounds or problems with picture (block noise, etc.) may result. Using the HDD in this condition may worsen the problem and in the worst case the HDD may no longer become usable. As soon as you notice this type of problem, transfer (dub) all content to disc and request service. Recorded content (data) on a HDD that has become unusable is unrecoverable.

- When the HDD has been automatically placed in the SLEEP mode (➡ below), or the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

■ Setup precautions

- **Do not place in an enclosed area so the rear cooling fan and the cooling vents on the side are covered up.**
- **Place the unit on a surface that is flat and not subject to vibration or impact.**
- **Do not place on anything that generates heat like a video cassette recorder, etc.**
- Do not place in an area often subject to temperature changes.



- Place in an area where condensation does not occur. Condensation is a phenomenon where moisture forms on a cold surface when there is an extreme change in temperature. Condensation may cause internal damage to the unit.

- **Conditions where condensation may occur**
  - –When there is an extreme change in temperature (moving from a very hot location to a very cold location, or vice versa, or when subjected to an air conditioner or when cooled air directly impacts the unit). When the HDD (warms during operation) is subjected to cold air, condensation may form on the inside of the HDD and may cause damage to the HDD heads, etc.
  - –When there is high humidity or a lot of steam in the room.
  - –During the rainy season.

In the above situation, **without turning the unit on**, let the unit adjust to the room temperature and wait 2–3 hours until condensation is gone.

■ Cigarette smoke etc. causes malfunction or breakdown

The unit may breakdown if cigarette smoke or bug spray/vapor, etc. gets inside the unit.

■ While operating

- Do not move the unit or subject to vibration or impact. (The HDD may become damaged.)
- Do not remove the AC mains lead from the household mains socket, or flip the power breaker switch.

While the unit is on, the HDD is rotating at high speed. Sound or movement due to rotation is normal.

■ When moving the unit

① Turn the unit off. (Wait until “BYE” disappears from the display.)
② Remove the AC mains lead from the household mains socket.
③ Move only after the unit has come to a complete stop (approx. 2 minutes) in order to avoid subjecting to vibration and shock. (Even after turning the unit off, the HDD continues operating for a short time.)

■ HDD recording time remaining

This unit records using a VBR (Variable bit rate) data compression system to vary recorded data segments to match video data segments which may cause differences in the displayed amount of time and space remaining for recording.
If the remaining amount of time is insufficient, erase any unwanted titles to create enough space before you start recording. (Erasing a playlist will not increase the amount of time.)

■ When “HDD SLP (SLEEP)” appears on the unit’s display

The HDD has been automatically placed in the SLEEP mode. (The HDD continues to rotate at high speed while the unit is on. In order to extend the life of the HDD, the HDD will be placed in the SLEEP mode if no operation has been performed for 30 minutes while there is no disc on the disc tray.)

- Press [HDD] to activate.
- While in SLEEP mode play or recording may not start right away because the HDD takes time to be re-activated.
- When not using the unit, we recommend removing the disc in the tray in order to set the HDD to the SLEEP mode.

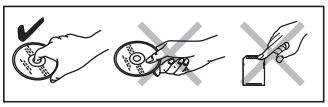
■ Indemnity concerning recorded content

Panasonic does not accept any responsibility for damages directly or indirectly due to any type of problems that result in loss of recording or edited content (data), and does not guarantee any content if recording or editing does not work properly. Likewise, the above also applies in a case where any type of repair is made to the unit (including any other non-HDD related component).

Disc and card handling

■ How to hold a disc or card

Do not touch the recorded surface or the terminal surface.

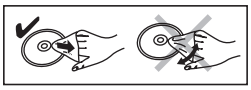


■ Concerning non-cartridge discs

Be careful about scratches and dirt.

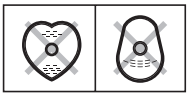
■ If there is dirt or condensation on the disc

Wipe with a damp cloth and then wipe dry.



■ Handling precautions

- Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not expose the terminals of the card to water, garbage or other strange things.
- 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 or cartridges 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.

Unit care

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 pleasure.

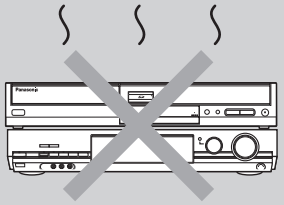
Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs.

Use the **DVD-RAM lens cleaner** about once every year, depending on frequency of use and the operating environment. Carefully read the lens cleaner's instructions before use.

Lens cleaner: LF-K123LCA1 or RP-CL720 (On sale from May 2005)

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

The heat can damage the unit.



Note

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

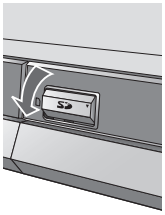
Before moving the unit, ensure the disc tray is empty. Failure to do so will risk severely damaging the disc and the unit.

Inserting, Removing the SD card

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

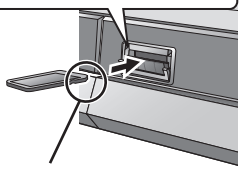
Opening the cover

Press down.



Inserting the card

Press on the centre of the card until it clicks into place.

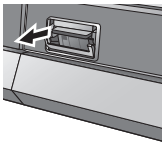


Insert the card label up with the cut-off corner on the right.
(Do not forget to close the cover. ➡ right)

If you are using a miniSD™ card, insert it into the miniSD™ card adaptor that comes with the card.
Insert and remove this adaptor from the unit.

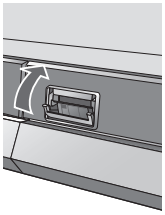
Removing the card

❶ Press on the centre of the card.
❷ Pull it straight out.



Closing the cover

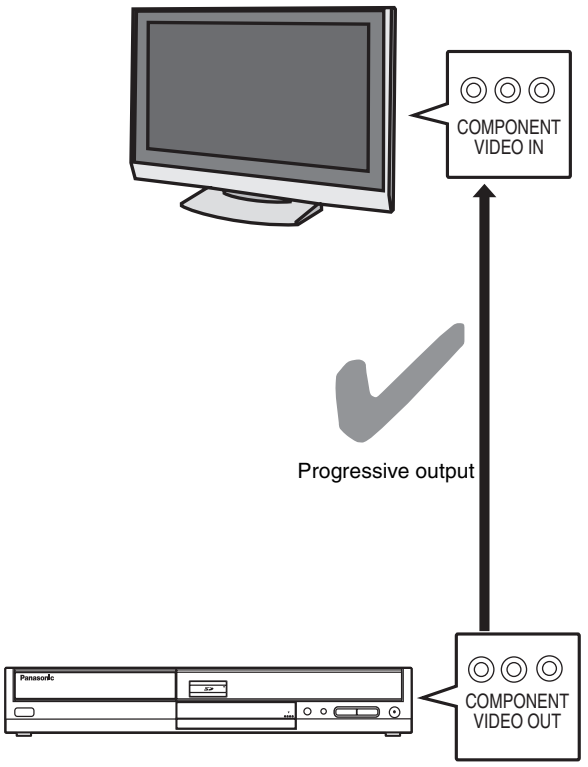
Push up.



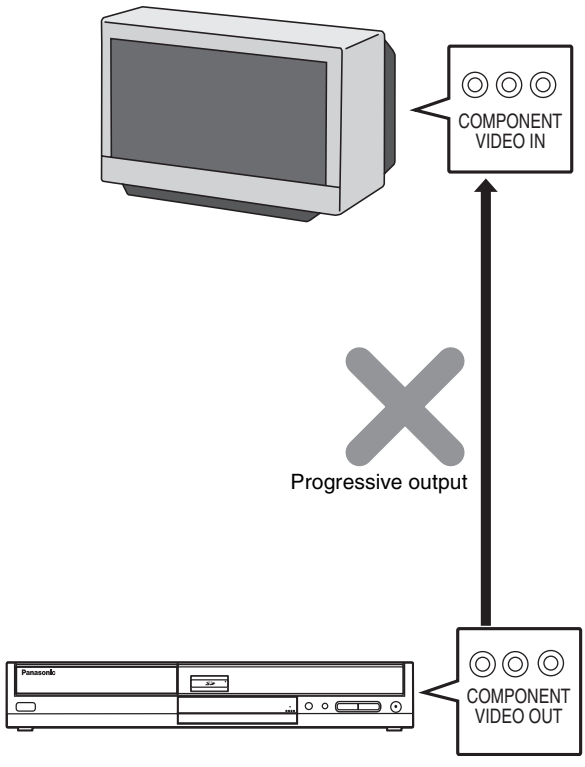
●You can use SD Memory Cards with capacities from 8 MB to 1 GB (➡ 11).

Note to owners of progressive compatible PAL system televisions

●If you have an LCD/plasma television or LCD projector
Using progressive output, you can enjoy high-resolution video recorded on media such as DVD-Video. Connect this unit’s component video output terminals to your television and turn on the progressive output setting (➡ 16, 22).



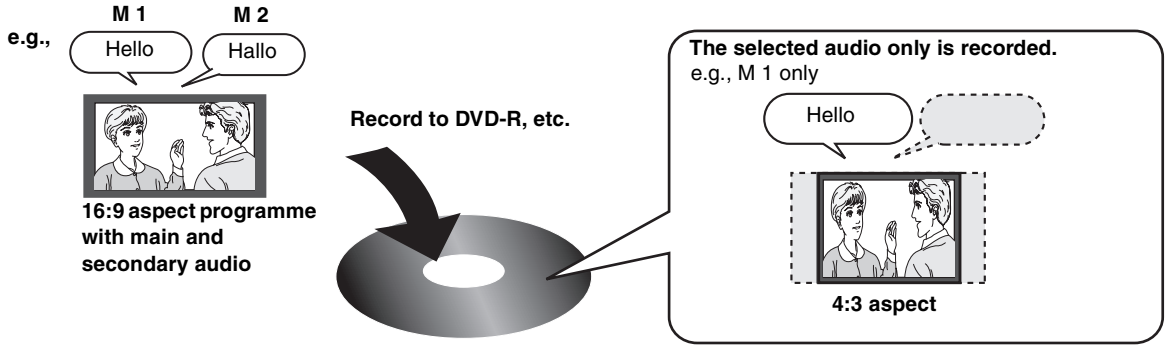
●If you have a regular television (CRT: cathode ray tube)
Use component output with progressive “Off” (Factory setting ➡ 59), even if it is progressive compatible, because progressive output can cause some flickering. This is the same for multi system televisions using PAL mode.



Restrictions with DVD-R, etc.※

- 16:9 aspect programmes are recorded in 4:3 aspect.
- The main (M 1) or secondary audio (M 2) only can be recorded for bilingual broadcasts.
- Playing the disc on other DVD players is not possible before finalizing.

※ DVD-R, DVD-RW and +R are collectively referred to as "DVD-R, etc." on this page.



Therefore, follow the steps below when you use DVD-R, etc.

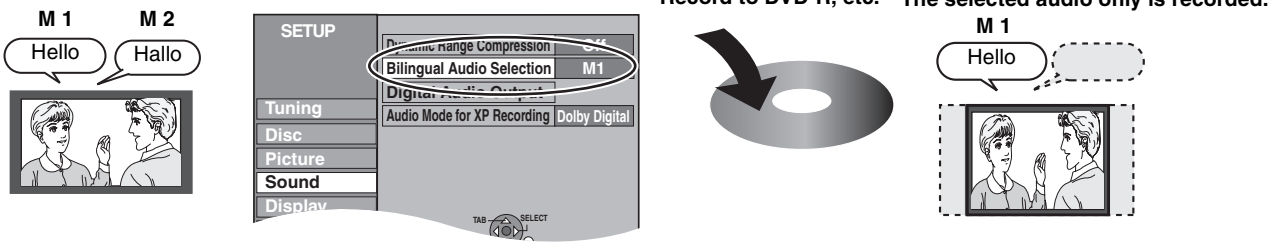
■ When recording a bilingual programme to DVD-R, etc.

Select the audio to record before recording or transferring (dubbing).

Some television programmes are broadcast with main (M 1) or secondary audio (M 2). You have to select the audio recording type before recording or transferring (dubbing) them to DVD-R, etc.

- If you do not connect external equipment

Select "M 1" or "M 2" in "Bilingual Audio Selection" in the SETUP menu (➡ 58).



- If you connect external equipment
  –Select "M 1" or "M 2" on the external equipment.

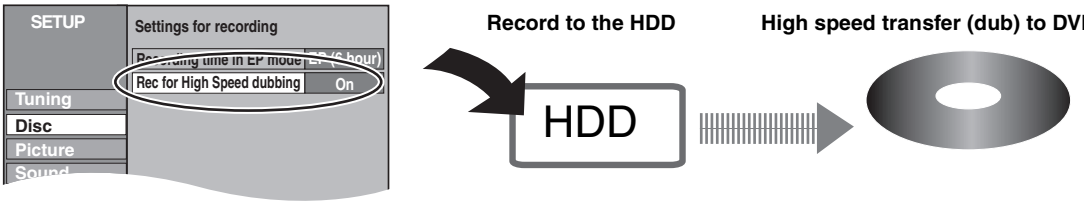
■ When you want to transfer (dub) titles in high speed mode from the HDD to DVD-R, etc.

Set "Rec for High Speed dubbing" to "On" before recording to the HDD (➡ 26).

You can transfer (dub) titles in high speed mode (max. speed is 64×※); however, the following settings are necessary before recording to the HDD.

※ Depending on the disc, max. speed may vary.

Set "Rec for High Speed dubbing" to "On" (➡ 26).

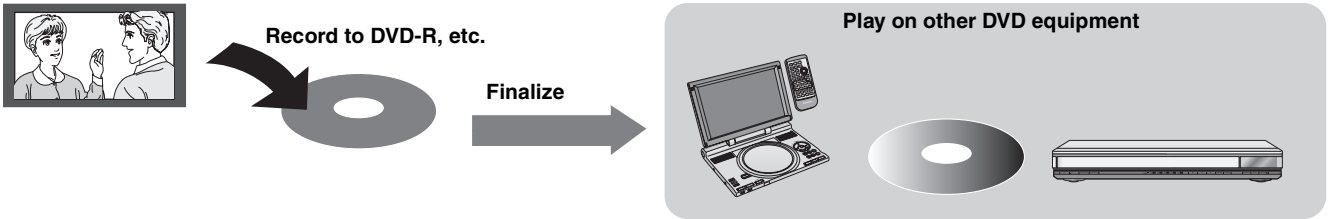


■ Playing the disc on other DVD players

The disc must be finalized after recording or transferring (dubbing) (➡ 54).

It is necessary to finalize DVD-R, etc. on this unit after recording or transferring (dubbing) 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 transfer (dub).※

※You can record and transfer (dub) again if you format DVD-RW.



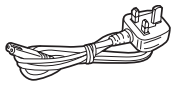
Included accessories

Please check and identify the supplied accessories.
Use numbers when asking for replacement parts.
(Product numbers correct as of February 2005. These may be subject to change.)

☐

1 Remote control
(EUR7729KE0)

☐



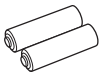
1 AC mains lead
(RJA0044-3C)

- 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 lead
(VJA1089)

☐



2 Batteries
for remote control

☐

1 Audio/video cable
(VJA0788-D)

■ Sales and Support Information

Customer Care Centre

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

Direct Sales at Panasonic UK

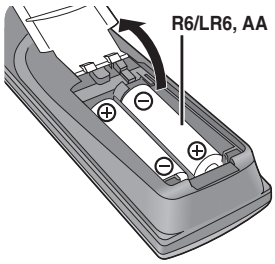
- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday–Thursday 9:00am–5:30pm, Friday 9:30am–5:30pm (Excluding public holidays).
- Or go on line through our Internet Accessory ordering application at www.panasonic.co.uk.
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

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

The remote control information

■ Batteries

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



- Do not use rechargeable type batteries.
- Do not mix old and new batteries.
- Do not use different types at the same time.
- Do not heat or expose to flame.
- Do not take apart or short circuit.
- Do not attempt to recharge alkaline or manganese batteries.
- Do not use batteries if the covering has been peeled off.

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

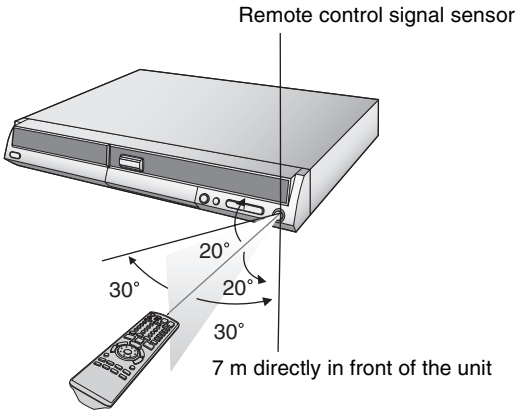
Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

Remote control operations (➡ 12)

Note

If you cannot operate the unit or television using the remote control after changing the batteries, please re-enter the codes (➡ 23).

■ Use



HDD and discs you can use for recording and play

Disc type	Hard disk drive (HDD) ●80 GB	DVD-RAM ●4.7 GB/9.4 GB, 12 cm ●2.8 GB, 8 cm	DVD-R (DVD-Video format) ●4.7 GB, 12 cm ●1.4 GB, 8 cm
Logo	–	DVD RAM RAM4.7	DVD R R4.7
Indicated in these instructions by	HDD	RAM	-R before finalization DVD-V after finalization
Data that can be recorded and played	Video Still pictures	Video Still pictures	Video
Main use	Temporary storage	As re-writable discs for backup use	As one time recording discs for backup use (recordable until the disc is full)
Maximum recording time	Approx. 142 hours	Approx. 8 hours (Approx. 16 hours on a double-sided disc※)	Approx. 8 hours
Play on other players	–	Only on DVD-RAM compatible players.	Only after finalizing the disc (➡ 54, 69).
Using a high speed recording compatible disc	–	This unit is compatible with 2×–5× recording speed discs.	This unit is compatible with 1×–8× recording speed discs.
What you can do on this unit (√: Can do, ×: Cannot do)			
Chasing playback	√	√	×
Recording broadcasts that allow one copy	√	√ [CPRM (➡ 69) compatible discs only.]	×
Recording both M 1 and M 2 for bilingual broadcasts	√	√	×[Only one is recorded.(➡ 58, Bilingual Audio Selection)
Recording 16:9 aspect picture	√	√	× (The picture is recorded in 4:3 aspect.)
Entering text	√	√	√
Erasing titles	√	√	√ (Available space does not increase after erasing.)
Creating playlists	√	√	×

Disc type	DVD-RW (DVD-Video format) ●4.7 GB, 12 cm ●1.4 GB, 8 cm	+R ●4.7 GB, 12 cm
Logo	DVD RW	–
Indicated in these instructions by	-RW(V) before finalization DVD-V after finalization	+R before finalization DVD-V after finalization
Data that can be recorded and played	Video	Video
Main use	As re-writable discs for backup use	As one time recording discs for backup use (recordable until the disc is full)
Maximum recording time	Approx. 8 hours	Approx. 8 hours
Play on other players	Only after finalizing the disc (➡ 54, 69).	Only after finalizing the disc (➡ 54, 69).
Using a high speed recording compatible disc	This unit is compatible with 1×–4× recording speed discs.	This unit is compatible with 2.4×–8× recording speed discs.
What you can do on this unit (√: Can do, ×: Cannot do)		
Chasing playback	×	×
Recording broadcasts that allow one copy	×	×
Recording both M 1 and M 2 for bilingual broadcasts	× [Only one is recorded. (➡ 58, Bilingual Audio Selection)]	× [Only one is recorded. (➡ 58, Bilingual Audio Selection)]
Recording 16:9 aspect picture	× (The picture is recorded in 4:3 aspect.)	× (The picture is recorded in 4:3 aspect.)
Entering text	√	√
Erasing titles	√ (Disc space increases only when the last recorded title is erased.)	√ (Available space does not increase after erasing.)
Creating playlists	×	×

■ DVD Video Recording format

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

- Digital broadcasts that allow “One time only recording” can be recorded to a CPRM compatible disc. You can record to the HDD or CPRM compatible DVD-RAM on this unit.
- Play is only possible on a compatible DVD player.

Use the HDD or a DVD-RAM to record in DVD Video Recording format.

■ DVD-Video format

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

- Digital broadcasts that allow “One time only recording” cannot be recorded.
- These can be played on a DVD player. However, programmes recorded on this unit must be finalized to be played on other DVD players.

Use a DVD-R or DVD-RW to record in DVD-Video format.

- We recommend using Panasonic discs and cards. We also recommend using DVD-RAM discs with cartridges to protect them from scratches and dirt.
- Discs from other manufacturers may not be recorded or played due to the condition of the recording.
- You may not be able to record to DVD-R, DVD-RW and +R discs on this unit or play them due to the condition of the recording.
- You cannot record programmes that allow “One time only recording” to CPRM compatible DVD-R and DVD-RW on this unit.You can record other programmes as DVD-Video format.
- This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.) Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.

※ You cannot consecutively record or play both sides.

Note

When “Rec for High Speed dubbing” is set to “On”, the restrictions on secondary audio recording etc. are also applied to DVD-RAM. Turn this setting “Off” if high speed transfer (dubbing) to DVD-R, etc. is not necessary when recording a programme (➡ 26).

Play-only discs (12 cm/8 cm)

Disc type	DVD-Video	DVD-Audio	DVD-RW (DVD Video Recording format)	+RW	CD		Video CD
Logo	DVD VIDEO / DVD VIDEO	DVD AUDIO	DVD RW	–	COMPACT disc DIGITAL AUDIO	–	COMPACT disc DIGITAL VIDEO
Indicated in these instructions by	DVD-V	DVD-A	-RW(VR)	DVD-V	CD		VCD
Instructions	High quality movie and music discs	High fidelity music discs ●Played on this unit in 2 channels.	DVD-RW recorded on another DVD Recorder※ ●You can play programmes that allow "One time only recording" if they have been recorded to a CPRM compatible disc. ●By formatting (➡ 53) the disc, you can record to it in DVD-Video format and play it on this unit. ●It may be necessary to finalize the disc on the equipment used for recording.	+RW recorded on another DVD Recorder※	Recorded audio and music (including CD-R/RW※)	CD-R and CD-RW※ with music recorded in MP3 (➡ 35) Still pictures (JPEG and TIFF) recorded on CD-R/RW※	Recorded music and video (including CD-R/RW※)

●You can play still pictures (JPEG/TIFF), CD-DA, Video CD and MP3 format data recorded on CD-R/RW. Close the session or finalize the disc after 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.
※ Play may be impossible on some CD-R, CD-RW, DVD-RW or +RW discs due to the condition of the recording.

Regarding DVD-Audio
Some multi-channel DVD-Audio will prevent down-mixing (➡ 69) of all or part of their contents if this is the manufacturer's intention. Tracks that are prevented from being down-mixed will not play properly on this unit (e.g. audio is played from the front two channels only). Refer to the disc's jacket for more information.

Discs that cannot be played

●2.6 and 5.2 GB DVD-RAM, 12 cm
●3.95 and 4.7 GB DVD-R for Authoring
●DVD-R recorded in DVD Video Recording format
●DVD-R (DVD-Video format), DVD-RW (DVD-Video format), +R recorded on another unit and not finalized (➡ 69).
●DVD-Video with a region number other than "2" or "ALL"
●Blu-ray
●DVD-ROM, DVD-R DL, +R DL, +R (8 cm), CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, DivX Video Disc, etc.

Types of disc or title recorded on HDD for the type of connected TV

When you use the discs recorded either PAL or NTSC, or playback a title recorded on HDD using PAL or NTSC, refer to this table.

(√: Possible to view, ×: Impossible to view)

TV type	Disc/Titles recorded on HDD	Yes/No
Multi-system TV	PAL	√
	NTSC	√※1
NTSC TV	PAL	×
	NTSC	√※2
PAL TV	PAL	√
	NTSC	√※3 (PAL60)

※1 If you select "NTSC" in "TV System" (➡ 62), the picture may be clearer.
※2 Select "NTSC" in "TV System" (➡ 62).
※3 If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.
●When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the title (➡ 62).

Optional accessories
(Product numbers correct as of February 2005. These may be subject to change.)

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

DVD-R
4.7 GB, single-sided, non-cartridge:
LM-RF120ME (compatible with high speed recording 8×)
LM-RF120LE (compatible with high speed recording 4×)

Cards useable on this unit

Type	**SD Memory Card** **miniSD™ Card**※ **MultiMediaCard**
Indicated in these instructions by	**SD**
Data that can be recorded and played	**Still pictures**
Instructions	You can insert directly into the SD card slot. ※ A miniSD™ card adaptor included with the miniSD™ card is necessary. ●You can play and transfer (dub) still pictures taken on a digital camera etc. (➡ 36, 50). ●You can set the DPOF (Digital Print Order Format) for automatic printing on your home printer or at a photo developing store (➡ 44, 69).

●**Compatible with**: FAT 12 or FAT 16

Suitable SD Memory Cards

●You can use SD Memory Cards with the following capacities (from 8 MB to 1 GB).

8 MB,	**16 MB,**	**32 MB,**	**64 MB,**
128 MB,	**256 MB,**	**512 MB,**	**1 GB (Maximum)**

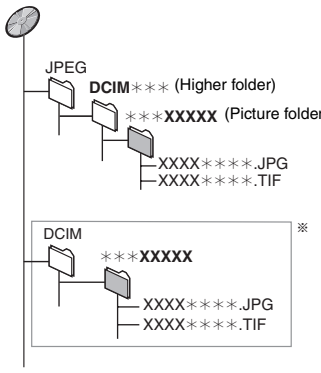
Please confirm the latest information on the following website.
http://panasonic.co.jp/pavc/global/cs
(This site is in English only.)

●If the SD Memory Card is formatted on other equipment, the time spent for recording may become longer. Also if the SD Memory Card is formatted on a PC, you may not be able to use it on this unit. In these cases, format the card on this unit (➡ 53, 69).
●This unit supports SD Memory Cards formatted in FAT 12 system and FAT 16 system based on SD Memory Card Specifications.
●We recommend using a Panasonic SD card.

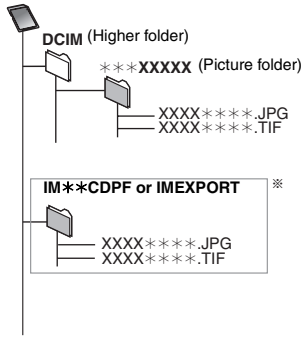
Structure of folders displayed by this unit

The following 🗀 can be displayed on this unit.
∗∗∗: Numbers XXX: Letters

DVD-RAM



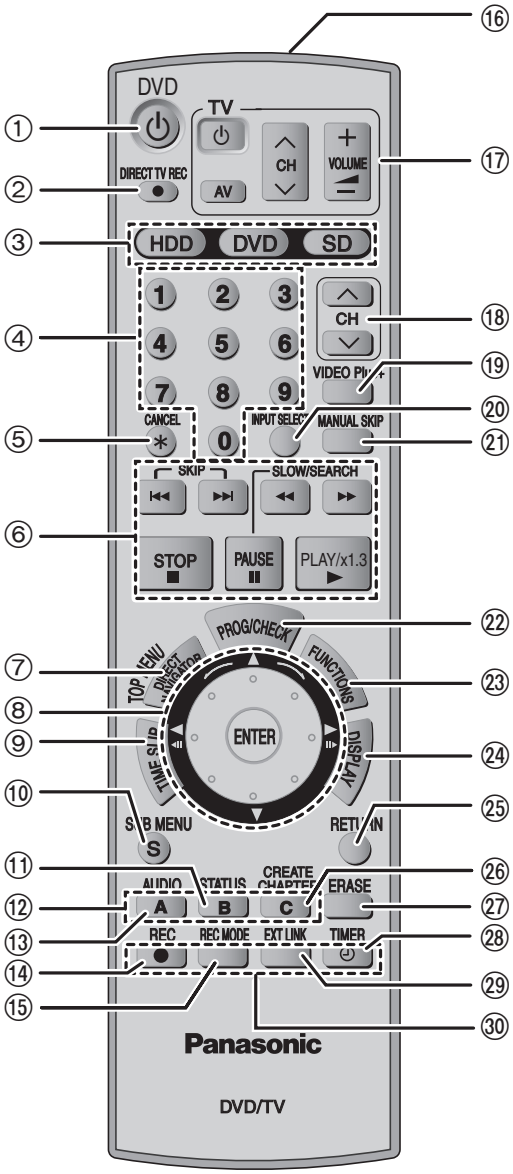
Card



※ Folders can be created on other equipment. However, these folders cannot be selected as a transferring (dubbing) destination.
●The folder cannot be displayed if the numbers are all “0” (e.g., DCIM000, etc.).
●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.

Remote control

Instructions for operations are generally described using the remote control.



① Turn the unit on (➡ 19, 20)
② Direct TV recording (➡ 27)
③ Select drive (HDD, DVD or SD) (➡ 24, 32, 36)
④ Select channels and title numbers, etc./Enter numbers
⑤ Cancel
⑥ Basic operations for recording and play
⑦ Show Top menu/Direct Navigator (➡ 32, 33, 40)
⑧ Smart Wheel (➡ below)
⑨ Skip the specified time/Display the television image as a picture-in-picture (➡ 27, 34)
⑩ Show sub menu (➡ 40)
⑪ Show status messages (➡ 39)
⑫ Buttons for switching between Video/Picture and Video/Playlists and manual tuning operation (➡ 32, 46, 60)
⑬ Select audio (➡ 34)
⑭ Start recording (➡ 24)
⑮ Change recording mode (➡ 24)
⑯ Transmission window
⑰ Television operations (➡ 23)
⑱ Channel select (➡ 24)
⑲ Show VIDEO Plus+ screen (➡ 28)
⑳ Input select (AV1, AV2, AV3 or AV4) (➡ 27, 49)
㉑ Skip 30 seconds forward (➡ 34)
㉒ Show timer recording programme screen (➡ 30)
㉓ Show FUNCTIONS window (➡ 39)
㉔ Show on-screen menu (➡ 38)
㉕ Return to previous screen
㉖ Create chapter (➡ 34)
㉗ Erase items (➡ 34)
㉘ Timer recording standby/release (➡ 28–30)
㉙ Linked timer recordings with external equipment (➡ 31)
㉚ Recording functions

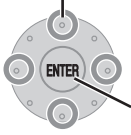
Note

- Buttons such as the [● REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- If you press [EXT LINK] accidentally, the unit turns off and switches to the recording standby mode. Press [EXT LINK] again to cancel the recording standby.
- The word “button” is not used in these operating instructions so “Press the [ENTER] button.” is shown as “Press [ENTER].”
- You can use this remote control to operate your television if you set the television manufacturer code (➡ 23).

■ Smart Wheel operation

- **Select items on menu screens and set items.**

Press [▲, ▼, ◄, ►] (up, down, left or right) to select an item.
You can also turn the wheel to select an item.



Press [ENTER] to confirm.

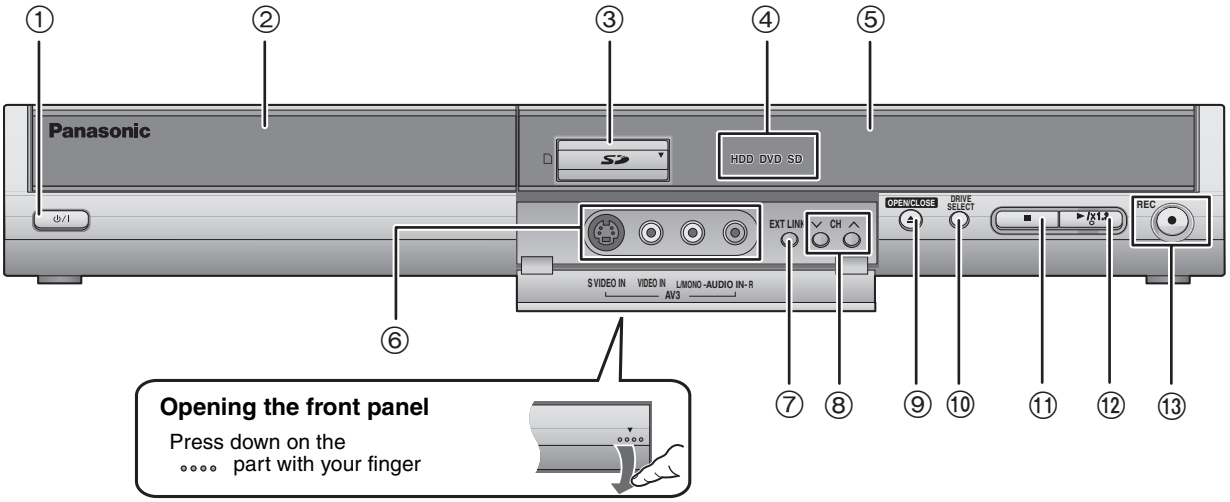
These operations are also possible…..

- **Frame-by-frame (backward/forward):**
  While paused, press [◄❚❚] or [❚❚►] (left/right)
- **Search (forward/backward):**
  During play, turn right or turn left
- **Slow-motion (forward/backward):**
  While paused, turn right or turn left

Note

Press the Smart Wheel dial lightly when turning it.
If you press it strongly when turning it, [▲, ▼, ◄, ►] may be mistakenly activated.

Main unit



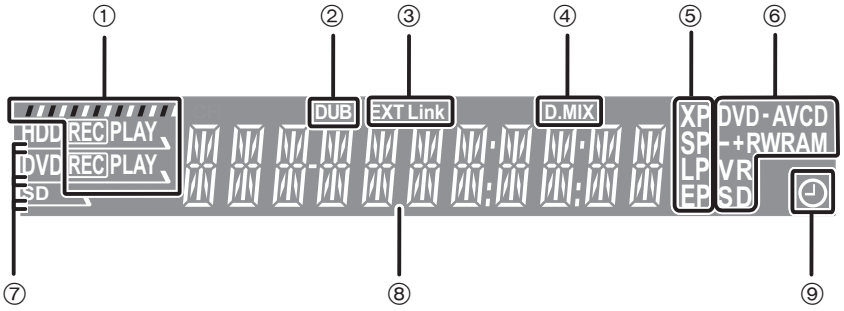
Opening the front panel

Press down on the ○○○○ part with your finger

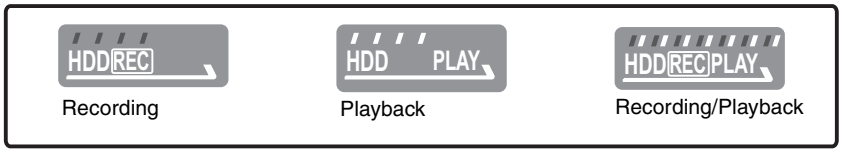
① **Standby/on switch (⏻/I)** (➡ 19, 20)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
② Disc tray (➡ 24, 32)
③ SD card slot (➡ 6)
④ Lights when the HDD, DVD or SD drive is selected
⑤ Display (➡ below)
⑥ Connection for camcorder etc. (➡ 49)
⑦ Linked timer recordings with external equipment (➡ 31)
⑧ Channel select (➡ 24)
⑨ Open/close disc tray (➡ 24, 32)
⑩ Select drive (➡ 24, 32, 36)
Drive changes each time you press [DRIVE SELECT].
⑪ Stop (➡ 24, 33)
⑫ Start play (➡ 32)
⑬ Start recording/Remote control signal sensor (➡ 24)
Specify a time to stop recording (➡ 25)

Rear panel terminals (➡ 15–17)

The unit's display



① e.g., HDD

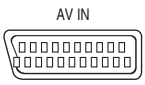


② Transferring (dubbing) indicator
③ Linked timer recordings with external equipment indicator
④ D.MIX (multi-channel DVD-Audio only)
When lit: Down-mixing (➡ 69) is possible.
When off: The disc prevents down-mixing so only the two front channels can be played (➡ 10, Regarding DVD-Audio)
⑤ Recording mode
⑥ Disc type
⑦ Lights when the HDD, DVD or SD drive is selected
⑧ Main display section
⑨ Timer recording indicator

STEP 1 Connection

- The equipment connections described are examples.
- Before connection, turn off all equipment and read the appropriate operating instructions.
- Peripheral equipment and optional cables sold separately unless otherwise indicated.

■ Recommended connection for your television

What kind of input terminal does your television have?			Required cable(s)	Page No. for connections	Page No. for TV settings
Scart		Highly recommended connection. ● You can enjoy high-quality RGB video from this unit by connecting to an RGB compatible television. ● If your television has the Q Link feature, you can use a variety of useful functions.	Fully wired 21-pin Scart lead	➡ 15	➡ 20 ● If it's a Q Link television ➡ 19
Component video		These terminals provide a purer picture than the S Video terminal. ● If your television is compatible with progressive scan, you can enjoy high-quality progressive video. If you have a progressive compatible CRT television, we cannot recommend this connection as some flickering may occur.	3 video cables	➡ 16	➡ 20
S Video		This terminal achieves a more vivid picture than the video terminal.	S Video cable	➡ 16	➡ 20
Audio/Video		The most basic connection.	Audio/Video cable (included)	➡ 16	➡ 20

If your television does not have one of the terminals mentioned above, connect with the RF sockets only (➡ 17). However, when using this connection, picture received from a satellite receiver may not be clear, therefore we do not recommend it.

Q Link functions

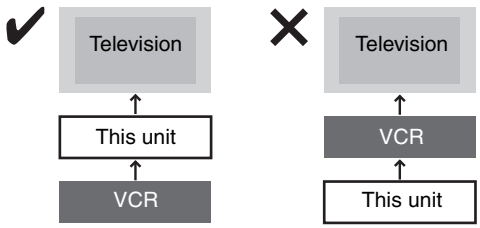
Q Link offers a range of convenient functions (For further details ➡ 70). Make sure to connect a fully wired 21-pin Scart lead to the television if using the Q Link functions.

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)

■ 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.



- **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.

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

When there is no 21-pin Scart terminal on the television (➡ 16)

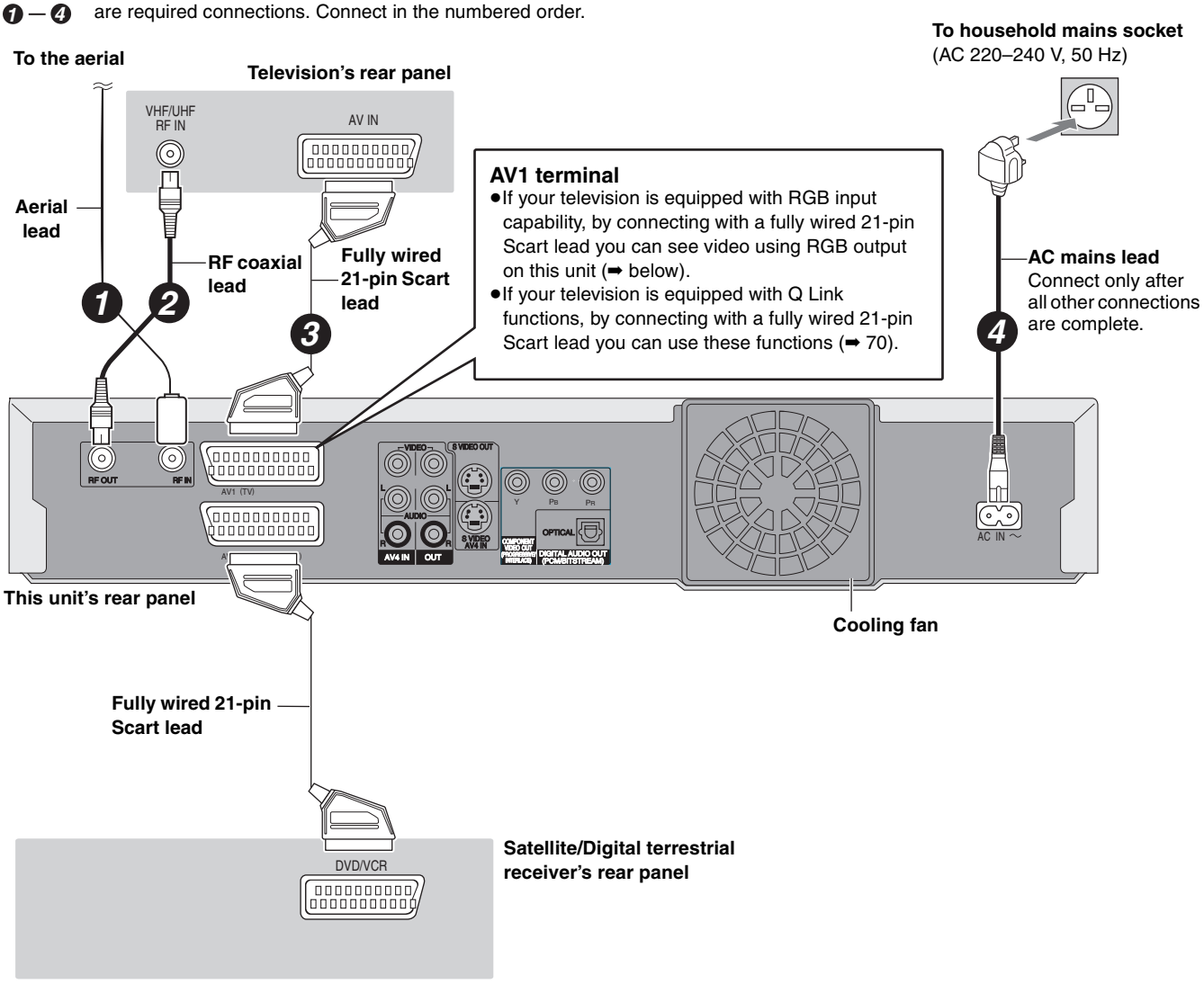
- Change the “AV2 Input” setting to match the output from a satellite/digital terrestrial receiver in the SETUP menu (➡ 59) after tuning is completed (➡ 19, 20).
- This unit is compatible with timer recording using programme function on television (e.g., IDTVs) (➡ 31).
- The AV2 or AV4 Scart terminals on Panasonic televisions are compatible with the Q Link functions.

——— indicates included accessories.

——— indicates accessories not included.

❶—❹ are required connections. Connect in the numbered order.

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



■ To view satellite/digital terrestrial programmes

Press [INPUT SELECT] to select the input channel “AV2” for the satellite/digital terrestrial receiver or put this unit in standby mode.

■ RGB

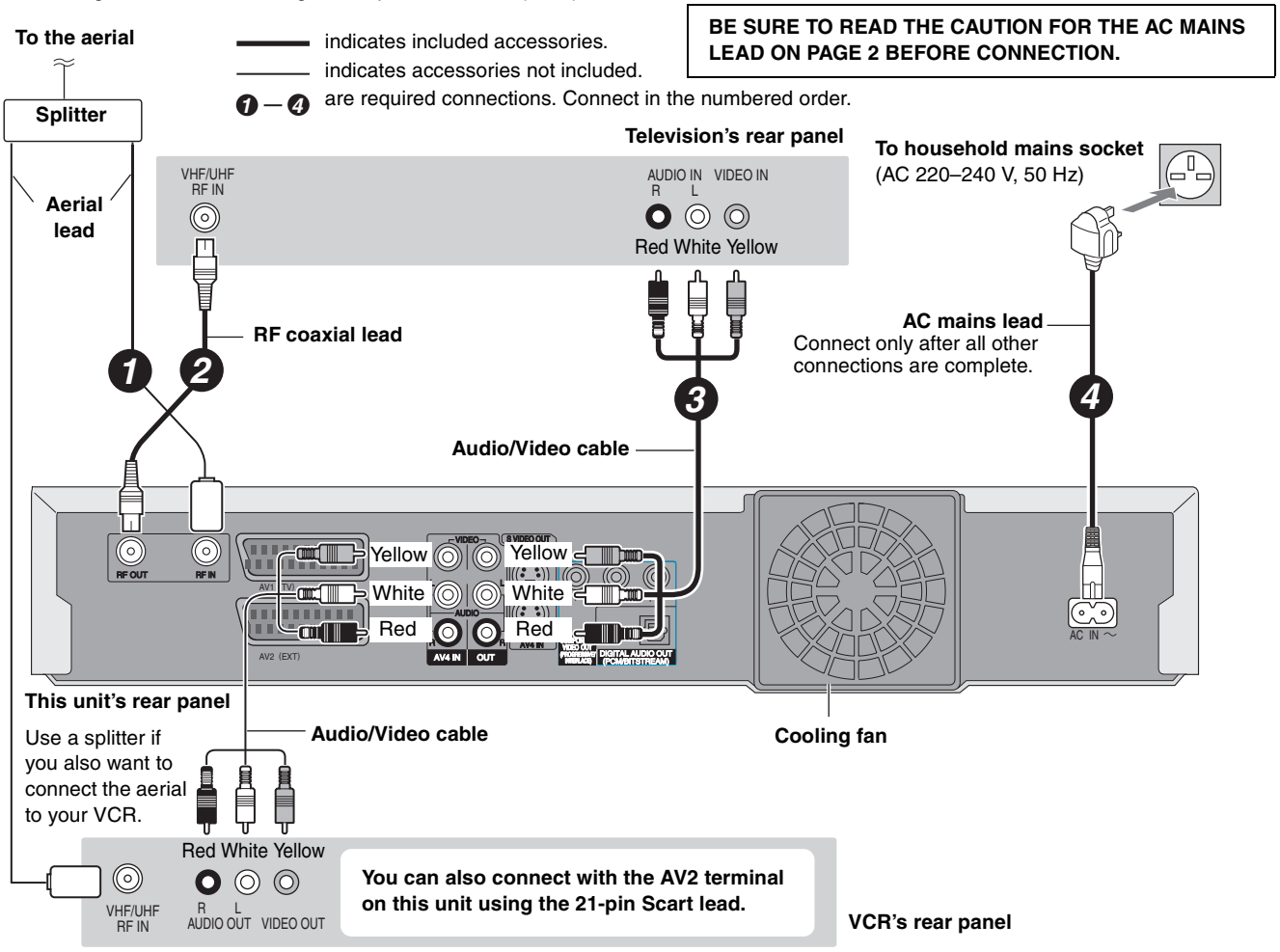
This refers to the three primary colours of light, red (R), green (G), and blue (B) and also the method of producing video that uses them. By dividing the video signal into the three colours for transmission, noise is reduced for even higher quality images.

STEP 1 Connection

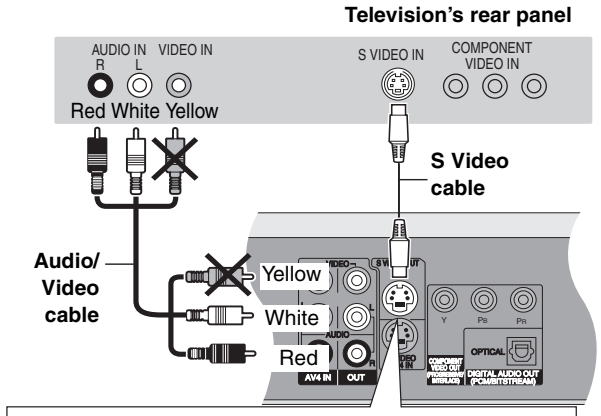
Connecting a television with AUDIO/VIDEO terminals and VCR

Connecting to the television using the 21-pin Scart leads (➡ 15)

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

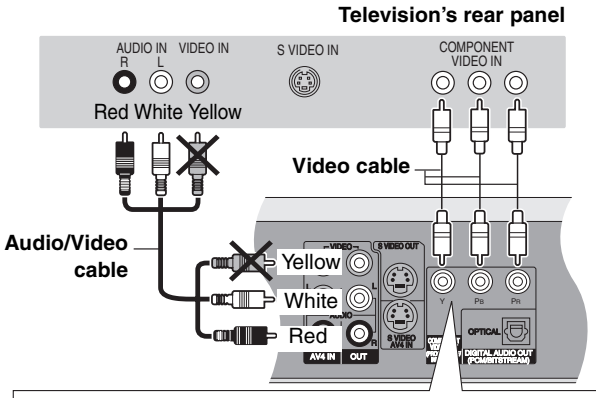


Connecting a television with S VIDEO or COMPONENT VIDEO terminals



S VIDEO OUT terminal

Connect to S VIDEO IN terminal on the television through a S Video cable.
The S VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the television.)



COMPONENT VIDEO OUT terminal

Connect to COMPONENT VIDEO IN terminal on the television through video cables. These terminals can be used for either interlace or progressive output (➡ 69) and provide a purer picture than the S VIDEO OUT terminal.

- Connect to terminals of the same colour.
- Video output from the component terminal will have no colour during EXT LINK recordings. Use a fully wired 21-pin Scart lead between the TV and the unit when viewing external equipment picture through the AV2 terminal.
- Change the "AV1 Output" setting in the SETUP menu (➡ 59) to "Video (with component)" or "S Video (with component)" after tuning is completed (➡ 19, 20). If not, the picture will not be in colour.

For progressive output (➡ 22)
Note to owners of progressive compatible PAL system televisions (➡ 6)

■ Component video output

Component signal outputs the colour difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours. If the television is compatible with progressive output, a high quality picture can be output because this unit's component video output terminal outputs a progressive output signal (➡ 69).

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

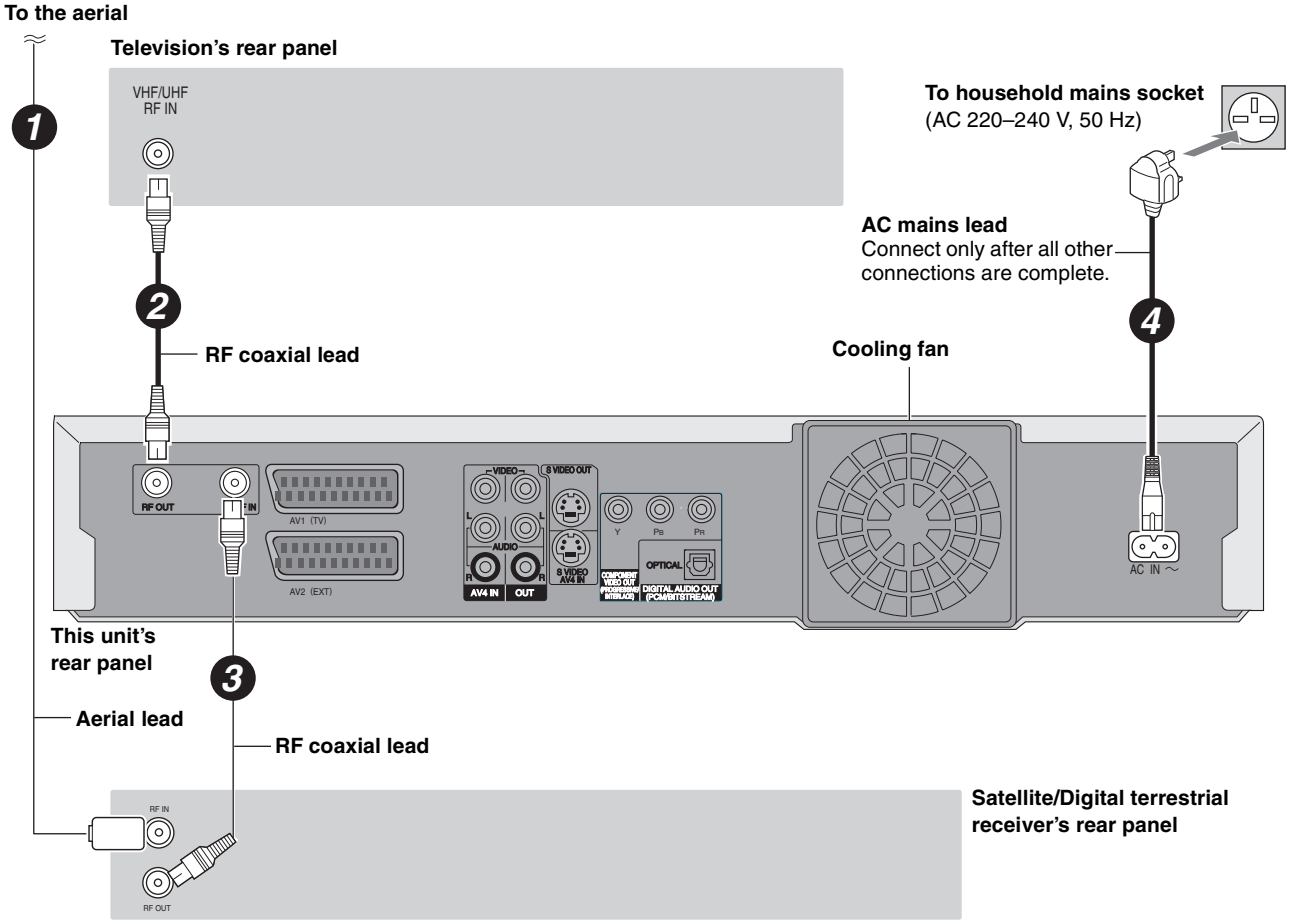
Connect in the numbered order. If you do not have a Satellite/Digital terrestrial receiver, connect the aerial to RF IN socket of this unit and skip step 3.

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

——— indicates included accessories.

——— indicates accessories not included.

❶ — ❹ are required connections. Connect in the numbered order.



STEP 1 Connection

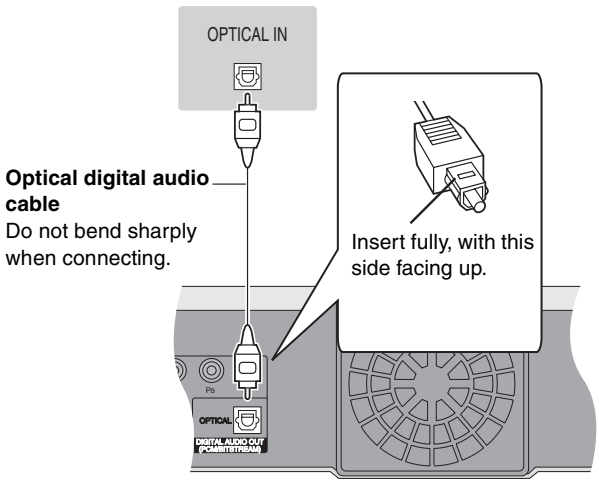
Connecting an amplifier or system component

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

Connect an amplifier with Dolby Digital, DTS and MPEG decoders using an optical digital audio cable and change the settings in "Digital Audio Output" (➡ 58) after tuning is completed (➡ 19, 20).

- 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.
- Even if using this connection, output will be only 2 channels when playing DVD-Audio.

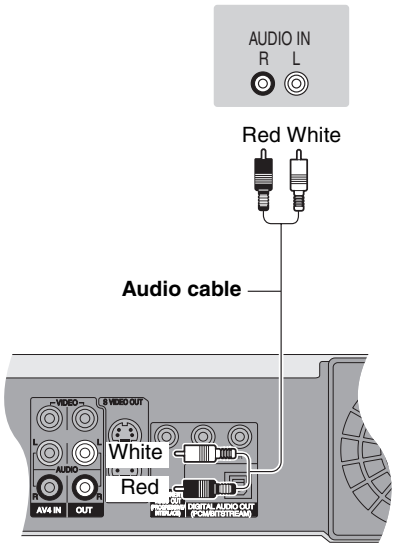
Amplifier's rear panel



This unit's rear panel

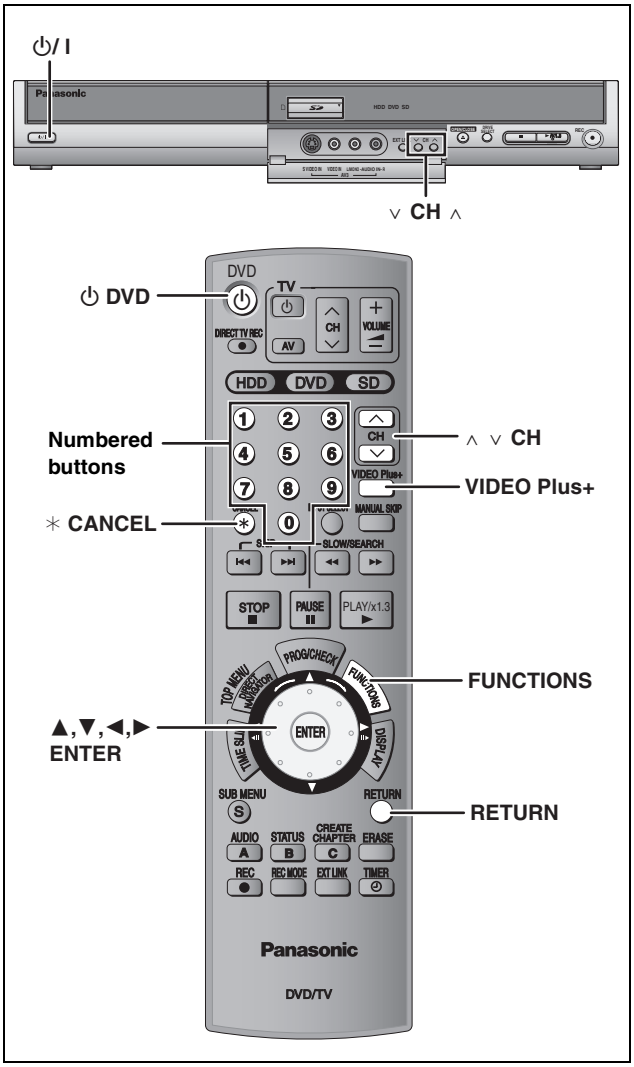
■ Connection to a stereo amplifier

Amplifier's rear panel



This unit's rear panel

STEP 2 Channel reception settings



Preset Download (Setup with Q Link functions)

When connecting to a television that has the Q Link functions (➡ 70) with a fully wired 21-pin Scart lead (➡ 15).

"TV stations" tuning information and positions will be downloaded from the TV to this unit. The clock will be set automatically from data sent by the broadcaster.

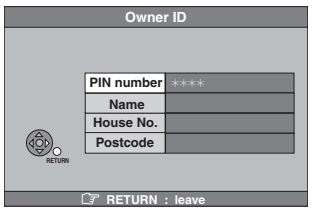
1 Turn on the television and select the appropriate AV input to suit the connections to this unit.

2 Press [⏻ DVD] to turn the unit on.

Downloading from the television starts.

3 When downloading has completed, the Owner ID settings screen appears.

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



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

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

The cursor moves to "Name".

5 Press [▶].

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

Repeat this to enter the name.

7 Press [ENTER] to store the name.

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

9 Press [RETURN].

The Owner ID settings screen disappears.

To stop partway

Press [RETURN].

■ If the clock setting menu appears

Set the clock manually (➡ 61).

■ To confirm that stations have been tuned correctly (➡ 60)

■ To restart Preset Download (➡ 60)

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

Change the "AV2 Input" in the SETUP menu to match the connected equipment (➡ 59).

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

Refer to "Removing Interference" on page 21, and perform steps 1, 2 and 4 to stop the RF output. In step 2, press [0] to select "––".

Note

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

Refer to the control reference on page 19.

STEP 2 Channel reception settings

Auto-Setup (Setup without Q Link functions)

- **When connecting to a television with the VIDEO OUT, S VIDEO OUT or COMPONENT VIDEO OUT terminal (➡ 16).**
- **When connecting to a television that does not have Q Link functions (➡ 70).**

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

- **When connecting to a television with RF socket only (➡ 17).**

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

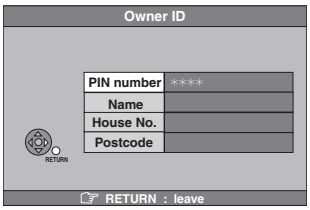
2 Press [⏻ DVD] to turn the unit on.

Auto-Setup starts. This takes about 5 minutes.

(When connecting to a television with RF socket only)
Set the new RF output channel to TV (refer to the instructions for your TV).
Select an unused channel pre-set on your TV and tune it to the RF output channel number shown on the unit's display.

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

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



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

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

The cursor moves to "Name".

5 Press [▶].

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

Repeat this to enter the name.

7 Press [ENTER] to store the name.

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

9 Press [RETURN].

The Owner ID settings screen disappears.

To stop partway
Press [RETURN].

■ If the clock setting menu appears

Set the clock manually (➡ 61).

■ To confirm that stations have been tuned correctly (➡ 60)

■ To restart Auto-Setup (➡ 60)

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 for about 5 seconds.

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

■ To enter the satellite/digital terrestrial station's name (➡ 60)

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

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

Change the "AV2 Input" in the SETUP menu to match the connected equipment (➡ 59).

Removing Interference

●When connecting to a television with RF socket only (➡ 17)

TV screen

Picture with interference

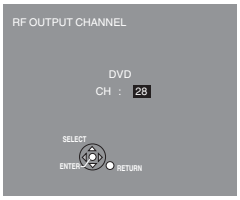
In some cases, interference (lines or patterning) or a very poor picture may appear on the TV screen when this unit is connected. Follow the steps below to change the video playback channel (RF output channel) to remove the interference.

1 Press [FUNCTIONS] for more than 5 seconds.

Unit's display

RF output channel number appears.

TV screen



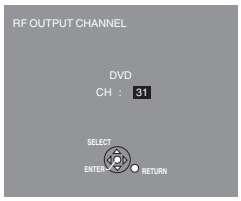
Test pattern screen appears.

2 Press [∧ ∨ CH] to select a channel number, which differs by 2 or 3 from the present channel number.

e.g. If the original channel number was 28, enter 31.

The test pattern screen disappears.

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



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

4 Press [ENTER] to finish this setting.

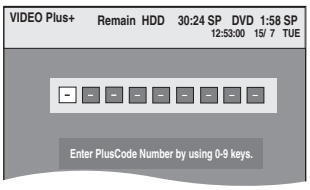
Clear picture

VIDEO Plus+ system for Satellite/ Digital terrestrial stations

This unit doesn't recognise PlusCode numbers for Satellite stations or Digital terrestrial stations.
The following operation also allows you to use PlusCode numbers to make timer recordings for satellite and digital terrestrial stations. As the settings indicated below are dummy timer recordings, delete them in step 6.

Preparation
Turn on the Satellite/Digital terrestrial receiver(s).
Select a correct station.

1 Press [VIDEO Plus+].

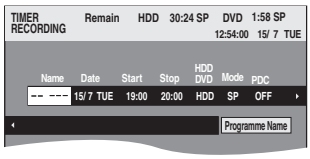


2 Press the numbered buttons to enter a PlusCode number for a satellite station (e.g. Sky One) or digital terrestrial station.

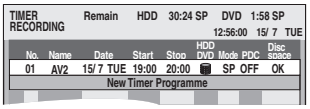
Press [◀] to move back to correct a digit.

3 Press [ENTER].

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



4 Press [▲, ▼] to select the channel or AV input that is to be used for recording from the satellite station or digital terrestrial station.



5 Press [ENTER].

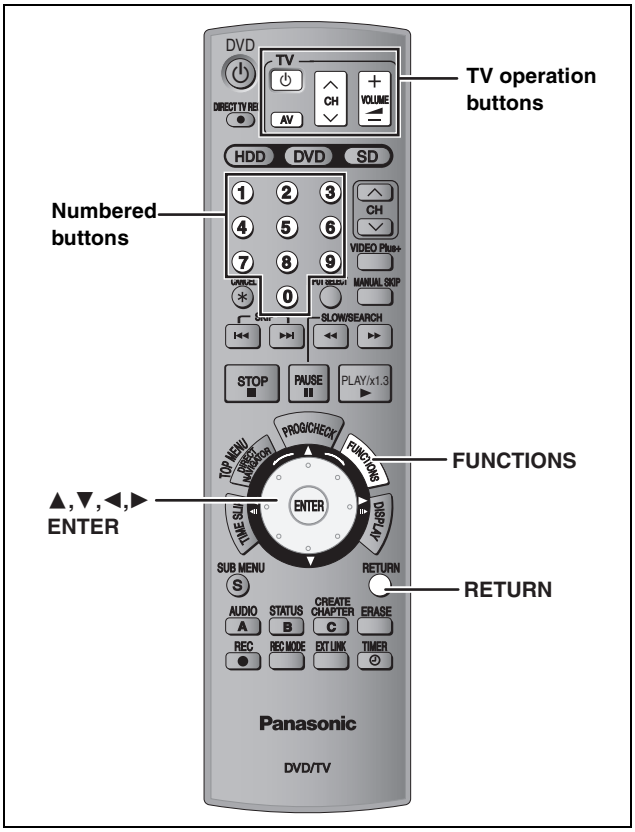
The channel or AV input corresponding to the PlusCode number is memorised.

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

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

To exit the screen
Press [RETURN].

STEP 3 Set up to match your television and remote control

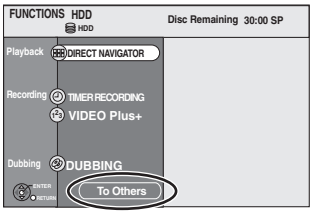


Selecting television type and aspect

Choose the setting to suit your television and preference.

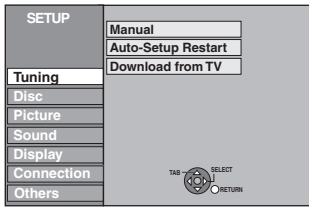
1 **While stopped**

Press [FUNCTIONS].



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

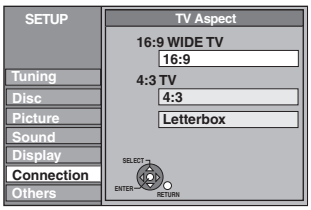
3 **Press [▲, ▼] to select "SETUP" and press [ENTER].**



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

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

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



- **16:9**: 16:9 widescreen television
- **4:3**: 4:3 aspect television
  HDD **RAM** Titles are recorded as they appear on screen.
  DVD-V Video recorded for a widescreen is played as Pan & Scan (unless prohibited by the producer of the disc) (➡ 69).
- **Letterbox**: 4:3 aspect television
  Widescreen picture is shown in the letterbox style (➡ 69).

To enjoy progressive video

You can enjoy progressive video by connecting this unit's COMPONENT VIDEO OUT terminals to an LCD/plasma television or LCD projector compatible with progressive scan (➡ 69).

1 **While stopped**

Press [FUNCTIONS].

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

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

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

5 **Press [▲, ▼] to select "AV1 Output" and press [ENTER].**

6 **Press [▲, ▼] to select "Video (with component)" or "S Video (with component)" and press [ENTER].**

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

8 **Press [▲, ▼] to select "On" and press [ENTER].**

Output becomes progressive.

Note

- When connected to a regular television (CRT: Cathode ray tube) or a multi system television using PAL mode, even if it is progressive compatible, progressive output can cause some flickering. Turn off "Progressive" if this occurs (➡ 39).
- Picture will not be displayed correctly if connected to an incompatible television.
- If the unit is connected to the television through VIDEO OUT, S VIDEO OUT or AV1 terminal, output will be interlace irrespective of the settings.

To return to the previous screen

Press [RETURN].

To exit the screen

Press [RETURN] several times.

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]

Manufacturer and Code No.

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

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.

When other Panasonic products respond to this 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.

Use “DVD 1”, the factory set code, under normal circumstances.

1 **While stopped**

Press [FUNCTIONS].

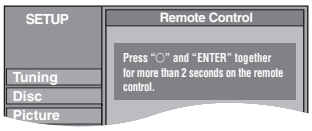
2 **Press [▲, ▼] to select “To Others” and press [ENTER].**

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

4 **Press [▲, ▼] to select “Others” and press [►].**

5 **Press [▲, ▼] to select “Remote Control” and press [ENTER].**

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



7 **To change the code on the remote control**

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

8 **Press [ENTER].**

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

The unit’s remote control code

Change the code on the remote control to match the main unit’s (➡ step 7).

Note

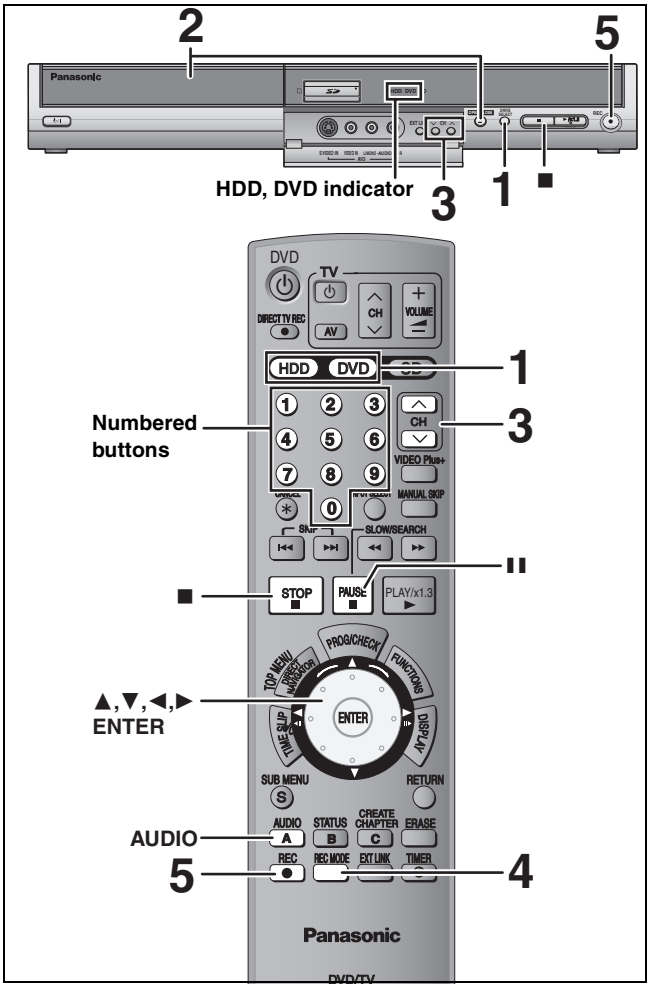
Executing “Shipping Condition” in the SETUP menu returns the main unit code to “DVD 1”. Change the remote control code to 1 (➡ step 7).

To return to the previous screen

Press [RETURN].

To exit the screen

Press [RETURN] several times.



HDD
- You can record up to 500 titles on HDD. (When continuously recording for long durations, titles are automatically divided every 8 hours.)

RAM **-R** **-RW(V)**
- You can record up to 99 titles on one disc.

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

SD
- It is not possible to record onto a card.

See also the notes "Before recording" (➡ 25).

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

1 Press [HDD] or [DVD] to select the recording drive.

The HDD or DVD indicator lights up on the unit.

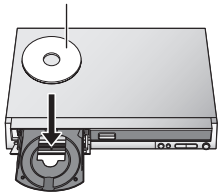
2

If you selected the DVD drive

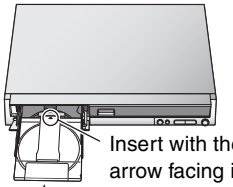
Press [▲ OPEN/CLOSE] on the main unit to open the tray and insert a disc.

- Press the button again to close the tray.
- When using 8 cm DVD-RAM, or 8 cm DVD-R, remove the disc from the cartridge.

Insert label-up.



■ **Cartridge disc**



Insert with the arrow facing in.

Insert fully so it clicks into place.

3 Press [∧ ∨ CH] to select the channel.

To select with the numbered buttons:
e.g., 5: [0] ➡ [5]
15: [1] ➡ [5]

4 Press [REC MODE] to select the recording mode (XP, SP, LP or EP).

Remaining time on the disc

- To record sound using LPCM (XP mode only): Set the "Audio Mode for XP Recording" to "LPCM" in the SETUP menu (➡ 58).

5 Press [● REC] to start recording.

Recording will take place on open space on the HDD or on disc. Data will not be overwritten.
- You cannot change the channel or recording mode during recording. You can change the channel or recording mode while paused; however, the recording will then be as a separate title.
- **HDD** **RAM** You can change the audio being received by pressing [AUDIO] during recording. (Does not affect the recording of audio.)

■ To pause recording

Press [II].

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

■ To stop recording

Press [■].

- From the start to the end of the recording is called one title.
- **-R** **-RW(V)** **+R** It takes about 30 seconds for the unit to complete recording management information after recording finishes.

If a station broadcasts Teletext information

The unit automatically records the programme's and station's name if the station's Title Page is correctly set (➡ 60).

Note

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

Quick Start (➡ 59)

1 Sec. Quick Start for Recording on DVD-RAM and HDD

From the power off state, recording on DVD-RAM and HDD starts about 1 second after first pressing the Power button and then sequentially pressing the REC button (Quick Start Mode).

"Quick Start" is set to "On" at the time of purchase.

Note

Startup takes up to a minute when:
- –You play a disc or start recording to discs other than DVD-RAM.
- –You want to make other operations.
- –The clock has not been set.

Recording modes and approximate recording times

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

(Unit: hour)

Mode	HDD (80 GB)	DVD-RAM		DVD-R DVD-RW +R (4.7 GB)
		Single-sided (4.7 GB)	Double-sided※1 (9.4 GB)	
XP (High quality)	17	1	2	1
SP (Normal)	34	2	4	2
LP (Long play)	68	4	8	4
EP (Extra long play)	142 (106※2)	8 (6※2)	16 (12※2)	8 (6※2)
FR (Automatic mode selection)	142 hours maximum	8 hours maximum	8 hours maximum for one side	8 hours 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 (➡ 57).
The sound quality is better when using "EP (6 Hours)" than when using "EP (8 Hours)".

- 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.

FR (Flexible Recording Mode)
You can set FR (Flexible Recording) mode when transferring (dubbing) 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".
- When recording to the HDD, picture quality is automatically adjusted to precisely fit a transferred (dubbed) title on a 4.7 GB disc.
- All the recording modes from XP to EP appear in the display.

Before recording

- It is not possible to record to both HDD (Hard Disk Drive) and DVD drive simultaneously.
- It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- It is not possible to record digital broadcasts that allow "One time only recording" onto DVD-R, DVD-RW, +R or 8 cm DVD-RAM discs. Use the HDD or CPRM compatible DVD-RAM.
- When transferring (dubbing) in high speed mode to DVD-R, DVD-RW (DVD-Video format) and +R, after you have recorded to the HDD, set "Rec for High Speed dubbing" to "On" before recording to the HDD (➡ 26).
  Refer to the "Using DVD-R, DVD-RW and +R on this unit" for more information (➡ 7).

Either the main or secondary audio can be recorded for bilingual broadcasts,
when
- Recording to DVD-R, DVD-RW (DVD-Video format) and +R
- Recording sound in LPCM (➡ 58, Audio Mode for XP Recording)
- "Rec for High Speed dubbing" is set to "On" (➡ 26)

You have to select the audio recording type before recording.
–If you do not connect external equipment
Select "M 1" or "M 2" in "Bilingual Audio Selection" in the SETUP menu (➡ 58).
–If you connect external equipment
Select "M 1" or "M 2" on the external equipment.

After recording

- -R -RW(V) +R In order to play a disc recorded using this unit on another playback equipment, the disc must first be finalized (➡ 54).

To specify a time to stop recording—One Touch Recording

HDD RAM -R -RW(V) +R

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.

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

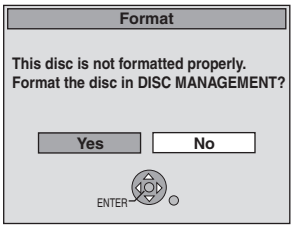
- This does not work during timer recordings (➡ 28) or while using Flexible Recording (➡ 26).
- If you change the channel or recording mode while recording is paused, the time specified to stop recording is cancelled.
- The unit does not turn off automatically after the time to stop recording is reached.

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 partway
Press [■].

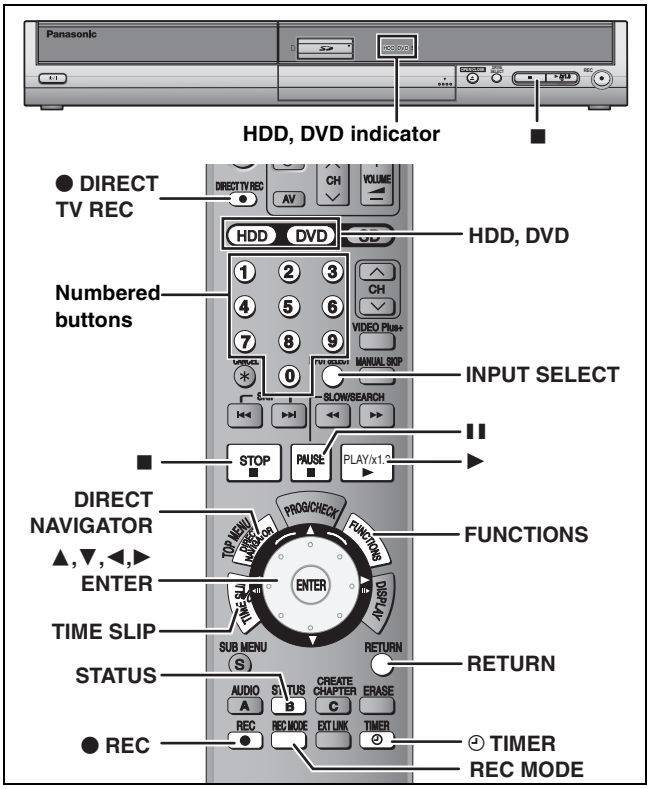
When using DVD-RW

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



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

To format a disc
"Erasing all contents of a disc or card–Format" (➡ 53)



Rec for High Speed dubbing

When transferring (dubbing) in high speed mode to DVD-R, DVD-RW (DVD-Video format) and +R after you have recorded to the HDD.

If transferring (dubbing) a title using the high speed mode to a DVD-R, etc., set "Rec for High Speed dubbing" to "On" before recording to the HDD.

However, the following restrictions apply:

- When recording bilingual broadcasts, either the main or secondary audio can be recorded.
  - –If you do not connect external equipment
    Select "M 1" or "M 2" in "Bilingual Audio Selection" in the SETUP menu (➡ 58).
  - –If you connect external equipment
    Select "M 1" or "M 2" on the external equipment.
- Even 16:9 aspect (Widescreen) programmes are recorded in 4:3 aspect.

Refer to the "Using DVD-R, DVD-RW and +R on this unit" for more information (➡ 7).

1 While stopped
Press [FUNCTIONS].
2 Press [▲, ▼] to select "To Others" and press [ENTER].
3 Press [▲, ▼] to select "SETUP" and press [ENTER].
4 Press [▲, ▼] to select "Disc" and press [▶].
5 Press [▲, ▼] to select "Settings for recording" and press [ENTER].
6 Press [▲, ▼] to select "Rec for High Speed dubbing" and press [ENTER].
7 Press [▲, ▼] to select "On" and press [ENTER].
8 Press [◀, ▶] to select "Yes" and press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

To start recording
- Recording television programmes (➡ 24)
- Timer recording (➡ 28)
- Recording from a video cassette recorder (➡ 49)

Note

If you do not intend to transfer (dub) titles in high speed mode to DVD-R, DVD-RW (DVD-Video format) and +R, set "Rec for High Speed dubbing" to "Off".

Flexible Recording
(Recording that fits the remaining disc space)

HDD RAM -R -RW(V) +R

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
- 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

HDD
- When you want to record a title to HDD so that it can then be transferred (dubbed) to fit one 4.7 GB disc perfectly
- You do not need to edit the recorded title, or change the recording mode when transferring (dubbing), to fit the disc space.

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.

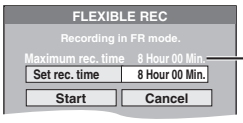
However there will be 30 minutes remaining disc space.

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 [HDD] or [DVD] to select the recording drive.

1 While stopped
Press [FUNCTIONS].
2 Press [▲, ▼] to select "To Others" and press [ENTER].
3 Press [▲, ▼] to select "FLEXIBLE REC" and press [ENTER].



Maximum recording time
This is the maximum recording time in EP 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 [ENTER].
- Recording starts.
- All the recording modes from XP to EP appear in the display.

To exit the screen without recording
Press [RETURN].

To stop recording partway
Press [■].

To show the remaining time
Press [STATUS].

e.g., HDD

Remaining time of recording

Playing while you are recording

HDD RAM

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

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
Press [◴ TIMER].
- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

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

- You can also change the drive and play while recording. Press [HDD] or [DVD].

1 Press [DIRECT NAVIGATOR] during recording.

2 Press [▲, ▼, ◄, ►] to select a title and press [ENTER].

- There is no sound output while searching forward or backward.

To stop play
Press [■].

To exit the Direct Navigator screen
Press [DIRECT NAVIGATOR].

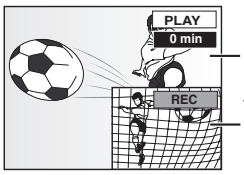
To stop recording
After play stops
1 Press [DIRECT NAVIGATOR] to exit screen.
2 If the recording is on the other drive
Press [HDD] or [DVD] to select the recording drive.
3 Press [■].

To stop timer recording
Press [◴ TIMER].
- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Reviewing the recorded images while recording—Time Slip

While recording, you can play a scene in the title being recorded or a previously recorded title. Both the images being played and recorded are shown.

1 Press [TIME SLIP] during recording.



Play starts from 30 seconds previous.

The image currently being recorded

- You will hear the playback audio.

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

- Each time you press [▲, ▼], the time increases [▲] or decreases [▼] by 1 minute.
(Press and hold for 10-minute intervals.)
- Press [TIME SLIP] to show the play images in full. Press again to show the play and recording images.

To stop play
Press [■].

To stop recording
2 seconds after play stops
Press [■].

To stop timer recording
Press [◴ TIMER].
- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Note
Chasing play can only be used with programmes of the same encoding system (PAL/NTSC).

Direct TV Recording

When connected to a television that has the Q Link functions using a fully wired 21-pin Scart lead.
This function allows you to immediately start recording the programme that you are viewing on the TV.

1 Press [HDD] or [DVD] to select the recording drive.

The HDD or DVD indicator lights up on the unit.

2 If you selected the DVD drive

Insert a disc. (➡ 24)

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

Recording starts.

To stop recording
Press [■].

Recording from digital/satellite receiver

Preparation
- Connect a digital/satellite receiver to this unit's input terminals (➡ 15).
- When recording bilingual programmes
HDD RAM
When both M 1 and M 2 is selected on the connected equipment, you can select the audio type in playback.
-R -RW(V) +R
Select either M 1 or M 2 on the connected equipment. (Only either one type of M 1 or M 2 can be recorded.)
- When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the SETUP menu (➡ 62). This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.)
- Press [HDD] or [DVD] to select the recording drive.

1 While stopped

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

e.g., If you have connected to AV2 input terminals, select "AV2".

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

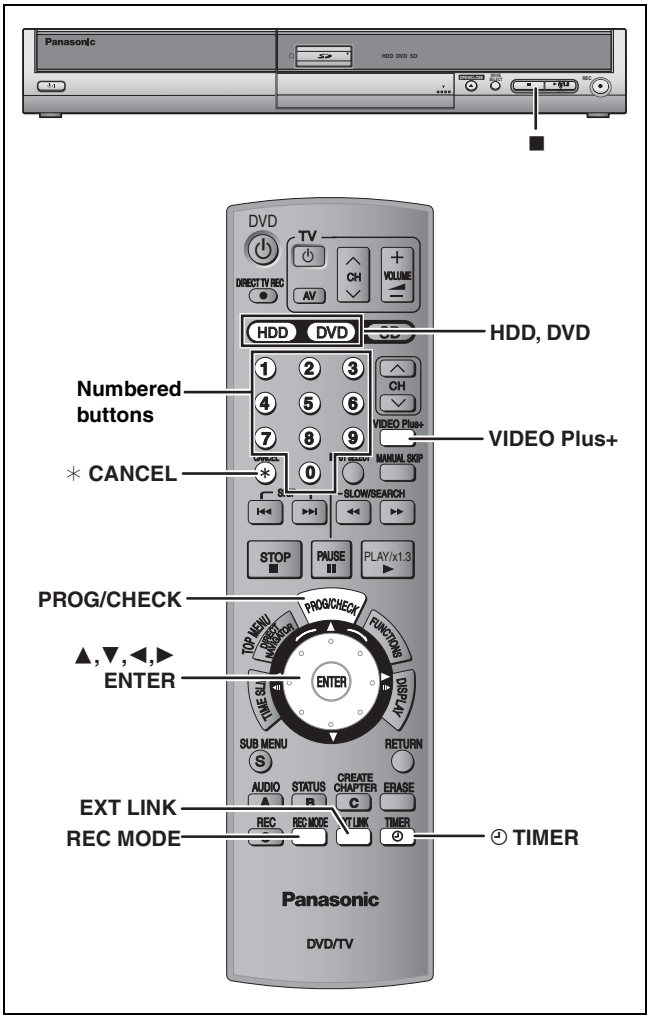
3 Select the channel on the other equipment.

4 Press [● REC].

Recording starts.

To skip unwanted parts
Press [❚❚] to pause recording. (Press again to restart recording.)

To stop recording
Press [■].



HDD RAM -R -RW(V) +R

- -R -RW(V) +R When recording bilingual broadcasts, only the audio selected in “Bilingual Audio Selection” (➡ 58) is recorded (“M 1” or “M 2”).
- HDD If you set “Rec for High Speed dubbing” to “On” before recording to the HDD, you can later high speed transfer (dub) the programme to DVD-R, DVD-RW(DVD-Video format) and +R.

Before recording

- Refer to the “Using DVD-R, DVD-RW and +R on this unit” for more information (➡ 7).
- See also the notes “Before recording” (➡ 25).

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 (➡ 24).
- Make sure that the clock settings are correct (➡ 61).

Using VIDEO Plus+ system to make timer recordings

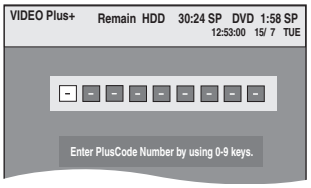
Entering PlusCode numbers is an easy way of timer recording. You can find these numbers in TV listings in newspapers and magazines.

- **Using PlusCode numbers for Satellite stations or Digital terrestrial stations**

Set this unit to recognise PlusCode numbers for Satellite stations or Digital terrestrial stations before you start the following operations (➡ 21, VIDEO Plus+ system for Satellite/Digital terrestrial stations).

- You can enter up to 32 programmes up to a month in advance.

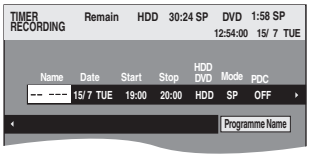
1 Press [VIDEO Plus+].



2 Press the numbered buttons to enter the PlusCode number.

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

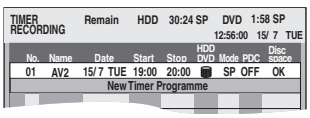
3 Press [ENTER].



- Confirm the programme and make corrections if necessary using [▲, ▼, ◀, ▶] (➡ 30, step 3).
- When “-- ---” appears in the “Name” column, you cannot set timer recording. Press [▲, ▼] to select desired programme position. After you have entered the information of a TV station, it is kept in the unit’s memory.
- You can also press [HDD] or [DVD] to select the recording drive.
  When the recording drive is “DVD” and there is not enough remaining space, recording automatically switches to the “HDD” (➡ 29, Relief Recording).
- You can also press [REC MODE] to change the recording mode.
- **PDC** (➡ 29)
  ON⟷OFF (– – –)
- **RENEW (Auto Renewal Recording)** HDD (➡ 30)
  ON⟷OFF
- **Programme Name**
  Press [◀, ▶] to select “Programme Name” and press [ENTER] (➡ 55, Entering text).

4 Press [ENTER].

The settings are stored.



Check to make sure “OK” is displayed (➡ 31).

Repeat steps 1–4 to programme other recordings.

5 Press [◴ TIMER].

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

- If you turn on the unit, a message screen appears. Recording is not possible while timer recording is in standby. [Playback is possible however you cannot play a title recorded using a different encoding system (PAL or NTSC) from that of the TV system currently selected on the unit.]

■ To release the unit from recording standby

Press [◴ TIMER].

"◴" goes out.

- Be sure to press [◴ TIMER] before the programme start time to put the unit in recording standby. Timer recording will work only if "◴" is displayed.

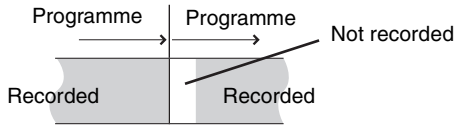
■ To cancel recording when recording has already begun

Press [◴ TIMER].

- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Note

- 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 transferring (dubbing) in normal speed mode (➡ 45).
- 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.
- "◴" flashes for about 5 seconds when the unit cannot go to timer recording standby.
- If the unit is not put in the timer recording standby mode at the latest 10 minutes before the programmed timer recording starting time, the "◴" flashes on the unit display. In this case, press [◴ TIMER] to put the unit in the timer recording standby mode.
- When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes [a few seconds when recording with HDD or DVD-RAM and approximately 30 seconds when recording with DVD-R, DVD-RW (DVD-Video format) and +R].



■ PDC function (➡ 70)

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

To activate the PDC function

In step 3 in the PDC column (➡ 28), press [▲, ▼] to select "ON".

■ Relief Recording

When the recording drive is "**DVD**" and there is not enough remaining space, recording automatically switches to the "**HDD**". If there is no disc in the tray or the disc cannot be recorded on or when timer recording starts while transferring (dubbing), the recording drive will be altered to the HDD.

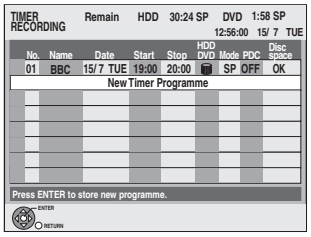
- The Direct Navigator shows which programmes were relief-recorded ("↱" is displayed.) (➡ 32).
- If the time remaining on the HDD is insufficient, as much of the programme as possible will be recorded onto the HDD.
- Relief recording is not activated when recording the programme with PDC and it is extended so that it no longer fits on the disc.

Refer to the control reference on page 28.

Manually programming timer recordings

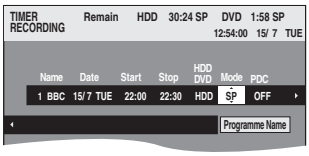
You can enter up to 32 programmes up to a month in advance. (Each daily or weekly programme is counted as one programme.)

1 Press [PROG/CHECK].



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

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

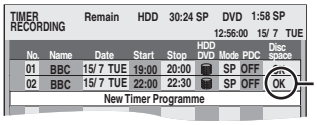


- Press and hold [▲, ▼] to alter the Start (Start time) and Stop (Finish time) in 30-minute increments.
- You can also set Name (Programme position/TV Station Name), Date, Start (Start time), and Stop (Finish time) with the numbered buttons.
- **Date**

→ 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 [HDD] or [DVD] to select the recording drive.
  When the recording drive is "DVD" and there is not enough remaining space, recording automatically switches to the "HDD" (➡ 29, Relief Recording).
- You can also press [REC MODE] to change the recording mode.
- **PDC** (➡ 29)
  ON←→OFF (– – –)
- **RENEW (Auto Renewal Recording)** HDD (➡ right)
  ON←→OFF
- **Programme Name**
  Press [◄, ►] to select "Programme Name" and press [ENTER]. (➡ 55, Entering text)

4 Press [ENTER].



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

Repeat steps 2–4 to programme other recordings.

5 Press [◴ TIMER].

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

- If you turn on the unit, a message screen appears. Recording is not possible while timer recording is in standby. [Playback is possible however you cannot play a title recorded using a different encoding system (PAL or NTSC) from that of the TV system currently selected on the unit.]

■ To release the unit from recording standby

Press [◴ TIMER].

"◴" goes out.

- Be sure to press [◴ TIMER] before the programme start time to put the unit on recording standby. Timer recording will work only if "◴" is displayed.

■ To cancel recording when recording has already begun

Press [◴ TIMER].

- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Note

- 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 transferring (dubbing) in normal speed mode (➡ 45).
- 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.
- "◴" flashes for about 5 seconds when the unit cannot go to timer recording standby.
- If the unit is not put in the timer recording standby mode at the latest 10 minutes before the programmed timer recording starting time, the "◴" flashes on the unit display. In this case, press [◴ TIMER] to put the unit in the timer recording standby mode.
- When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes [a few seconds when recording with HDD or DVD-RAM and approximately 30 seconds when recording with DVD-R, DVD-RW (DVD-Video format) and +R].

Auto Renewal Recording

HDD

If you record a programme onto HDD repeatedly everyday or every week using timer recording, the unit will record the new programme over the old one.

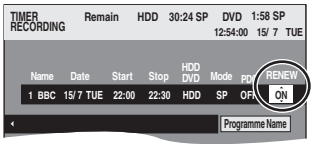
This function can be used only when weekly recording or daily recording is selected.

1 Press [PROG/CHECK].

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

3 Press [◄, ►] to select "RENEW" column.

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



Note

- If a programme set for Auto Renewal Recording is protected or while play back is taking place from the HDD, or while transferring (dubbing), the programme will not be overwritten. Instead the programme set for recording will be saved as a separate programme, and this programme will be the one to be overwritten when the next Auto Renewal Recording takes place.
- Playlists made from programmes that were set for Auto Renewal Recording are erased along with auto renewal.
- When there is not enough space on the HDD, the programme may not be recorded completely.

To record programmes from satellite receiver by RGB signals

HDD RAM -R -RW(V) +R

Preparation

- Make sure you connect the AV2 input terminal of this unit to "VCR Scart terminal" of a SKY Digital STB/digital terrestrial receiver with a 21-pin scart lead (➡ 15).
- Set the "AV2 Input" in the SETUP menu to "RGB/Video" or "RGB" (➡ 59).

Follow the steps indicated for manually programming timer recordings (➡ 30).

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

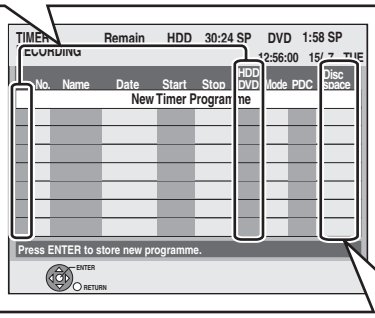
Check, change or delete a programme

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

Press [PROG/CHECK].

Icons

- ● This programme is currently recording.
- Ⓦ The times overlap those in another programme. Recording of the programme with the later start time starts when the earlier programme finishes recording.
- Ⓕ The disc was full so the programme failed to record.
- The material was copy-protected so it was not recorded.
- Ⓧ The programme did not complete recording because the disc is dirty or some other reason.
- Timer programmes set to Auto Renewal Recording (➡ 30).
- Titles that have been rerouted to the HDD (Displayed while recording.)
- Recording drive: HDD
- Recording drive: DVD



Message displayed in the "Disc space" line

OK:	Displayed if the recording can fit in the remaining space.
→ **(Date):**	For recordings made daily or weekly, the display will show until when recordings can be made (up to a maximum of one month from the present time) based on the time remaining on the disc.
! :	It may not be possible to record because: ● there is not enough space left ● the number of possible titles has reached its maximum.
Relief:	Timer programmes that will be relief recorded to the HDD.

■ To change a programme

Press [▲, ▼] to select the programme and press [ENTER]. (➡ 30, step 3)

■ To delete a programme

Press [▲, ▼] to select the programme and press [✳ CANCEL].

■ To exit the timer recording list

Press [PROG/CHECK].

■ To put the unit on timer recording standby

Press [◴ TIMER].

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

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

Making timer recordings on the television

(e.g., of digital broadcasts)

HDD RAM -R -RW(V) +R

To make a timer recording with your television, connect to a television with a Q Link function (➡ 70) that you can use for setting timer recordings using a fully wired 21-pin Scart lead (➡ 15).

1 Make timer programming on the TV.

2 Press [HDD] or [DVD] to select the recording drive.

If you selected the DVD drive, insert a disc (➡ 24).

3 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 timer recording standby or EXT LINK standby ("◴" or "EXT Link" 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. To divide the titles, go to "Divide Title" (➡ 41).

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

HDD RAM -R -RW(V) +R

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

Preparation

- Make sure you connect the AV2 input terminal of this unit to "VCR Scart terminal" of a Sky Digital STB/digital terrestrial receiver with a 21-pin Scart lead (➡ 15).
- Change the "AV2 Input" in the SETUP menu to match the connected equipment (➡ 59).
- Change the "Ext Link" in the SETUP menu to match the connected equipment (➡ 59).

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

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

1 Make timer programming on SKY Digital STB/ digital terrestrial receiver.

2 Press [HDD] or [DVD] to select the recording drive.

If you selected the DVD drive, insert a disc (➡ 24).

3 Press [EXT LINK].

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

Note

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

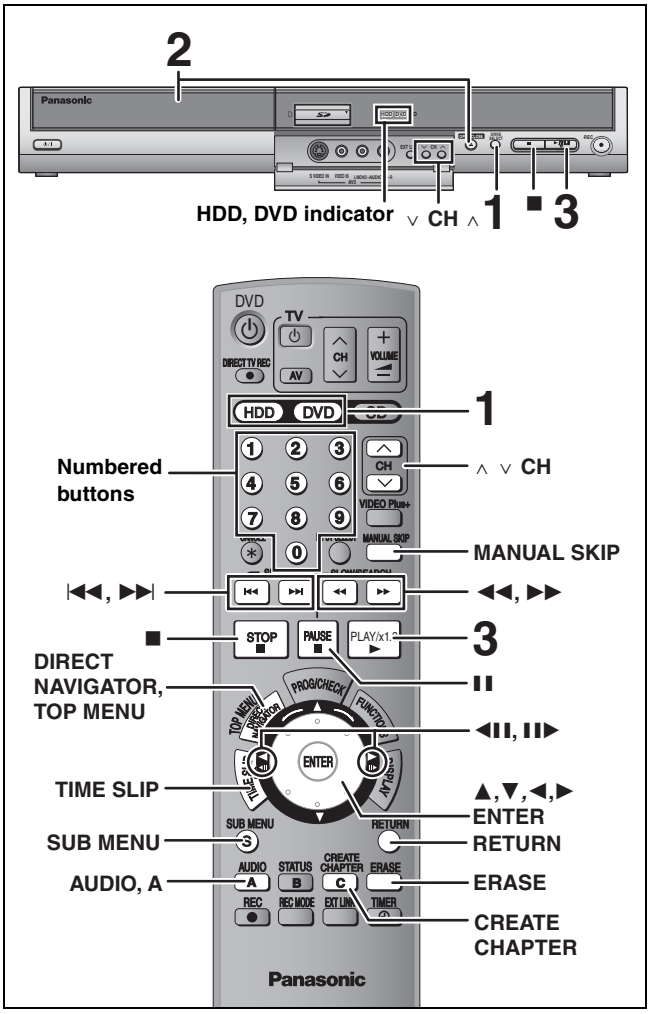
To cancel the external control

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

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

Note

- This function does not work with some equipment. Refer to the equipment's operating instructions.
- The beginnings of recordings may not be recorded correctly in some cases.
- When "Ext Link" is set to "Ext Link 2", this function does not work if the input signal is NTSC system.
- Programmes are recorded as one title on this unit when the end time of the earlier timer recording and the start time of the later timer recording are close to each other. To divide the titles, go to "Divide Title" (➡ 41).
- While the unit is in EXT LINK standby mode or recording, video picture is from AV2 input terminal irrespective of "AV1 Output" setting (➡ 59).



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

1 Press [HDD] or [DVD] to select the playback drive.

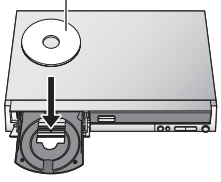
The HDD or DVD indicator lights up on the unit.
- It is possible to watch playback from one drive while recording on another (editing is not possible).

2 If you selected the DVD drive

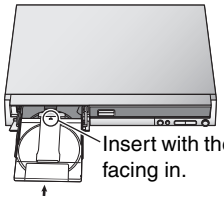
Press [▲ OPEN/CLOSE] on the main unit to open the tray and insert a disc.

- Press the button again to close the tray.
- When using 8 cm DVD-RAM, or 8 cm DVD-R, remove the disc from the cartridge.

Insert label-up.



■ **Cartridge disc**



Insert with the arrow facing in.

Insert fully so it clicks into place.

3 Press [▶] (PLAY).

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

DVD-V DVD-A CD VCD
Play starts from the beginning of the disc.

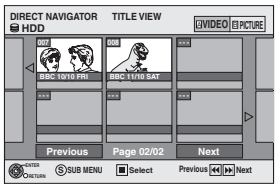
- When using cartridge discs with the write-protect tab in the protect position (➡ 52), play automatically starts when inserted in the unit.

■ Selecting recorded programmes (titles) to play—Direct Navigator

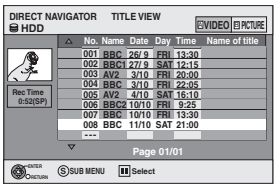
HDD RAM -R -RW(V) +R -RW(VR)

1 Press [DIRECT NAVIGATOR].

- **Thumbnail Display**



- **Table Display**



Switching the Direct Navigator appearance
① Press [SUB MENU] while Thumbnail Display is displayed.
② Press [▲, ▼] to select "Table Display" and press [ENTER].
- The display appearance last used is saved even after the unit is turned off.

2 HDD RAM Press [A] to select "VIDEO".

HDD To sort Title View for easy searching (Table Display only)
This function is convenient when searching for one title to playback from many titles.
①Press [SUB MENU].
②Press [▲, ▼] to select "Sort" and press [ENTER].
③Press [▲, ▼] to select the item and press [ENTER].
If you select an item other than "No."
- The Direct Navigator screen will reappear after playback of the selected title has finished. (You cannot play titles continuously.)
- Skip and Time Slip will only function with the title currently being played back.
- If you exit the Direct Navigator screen, or switch to "PICTURE" Direct Navigator screen, the sorted Title View will be cancelled.

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

You can also select titles with the numbered buttons.

e.g.,	HDD		RAM -R -RW(V) +R -RW(VR)	
	5:	[0] ➡ [0] ➡ [5]	5:	[0] ➡ [5]
	15:	[0] ➡ [1] ➡ [5]	15:	[1] ➡ [5]
	115:	[1] ➡ [1] ➡ [5]		

To show other pages
Press [▲, ▼, ◀, ▶] to select "Previous" or "Next" and press [ENTER]. (Thumbnail Display only)
- 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 transferring (dubbing) a title to the HDD, or when data is damaged etc.]
	Titles that have been rerouted to the HDD (➡ 29, Relief Recording)
	Title with "One time only recording" restriction (➡ 69, CPRM)
N (NTSC) P (PAL)	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 (➡ 62).

■ When a menu screen appears on the television

DVD-V DVD-A

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

Some items can also be selected using the numbered buttons.

VCD

Press the numbered buttons to select the item.

e.g., 5: [0] ➡ [5] 15: [1] ➡ [5]

●To return to the menu screen

DVD-V Press [TOP MENU] or [SUB MENU]. DVD-A Press [TOP MENU]. VCD Press [RETURN].

Note

- It is not possible to play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- Depending on the disc, it may take time for the menu screen, pictures, sound, etc. to start.
- 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.
- When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the recorded title (➡ 62).

Operations during play

Stop	**Press [■].** The stopped position is memorized. When stop position is memorized (resume), the indicator on the right appears in the unit's display. (Excluding when playing from the Direct Navigator and when playing a playlist.) **Resume play function** Press [►] (PLAY) to restart from this position. Stopped position ●If [■] is pressed several times, the indicator on the right disappears and the position is cleared. ●The position is cleared if the unit is turned off or the tray is opened.
Pause	**Press [❚❚].** Press [❚❚] again or [►] (PLAY) to restart play.
Search	**Press [◄◄] or [►►].** ●The speed increases up to 5 steps. ●You can also turn the Smart Wheel left or right for operation (excluding CD VCD). ●Press [►] (PLAY) to restart play. ●Audio is heard during first level search forward. DVD-A (excluding moving picture parts) CD Audio is heard during all levels of search. ●Depending on the disc, Search may not be possible.
Skip	**During play or while paused, press [I◄◄] or [►►I].** Skip to the title, chapter or track you want to play. ●Each press increases the number of skips.
Starting from a selected title	**Press the numbered buttons.** Play starts from the selected title, chapter or track. HDD CD (discs with MP3 files and JPEG/TIFF) e.g., 5: [0] ➡ [0] ➡ [5] 15: [0] ➡ [1] ➡ [5] DVD-A Selecting groups While stopped (screen saver is displayed on the television ➡ right) Input a 1-digit number e.g., 5: [5] Other discs (You can select a track with DVD Audio.) Input a 2-digit number e.g., 5: [0] ➡ [5] 15: [1] ➡ [5] ●This works only when stopped (screen saver is displayed on the television ➡ above) with some discs. ●VCD (with playback control) If you press the numbered buttons while stopped (the above screen saver is displayed on the television) you can cancel PBC. (Elapsed play time appears on the unit's display.)
Quick View HDD RAM	**Press and hold [►] (PLAY/×1.3).** Play speed is quicker than normal. ●Press again to return to normal speed.
Slow-motion HDD RAM -R -RW(V) +R DVD-V DVD-A (Motion picture parts only) -RW(VR) VCD	**While paused, press [◄◄] or [►►].** The speed increases up to 5 steps. ●You can also turn the Smart Wheel left or right for operation (excluding VCD). ●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 DVD-A VCD).
Frame-by-frame HDD RAM -R -RW(V) +R DVD-V DVD-A (Motion picture parts only) -RW(VR) VCD	**While paused, press [◄] (◄❚❚) or [►] (❚❚►).** Each press shows the next frame. ●Press and hold to change in succession forward or backward. ●Press [►] (PLAY) to restart play. ●VCD Forward direction [►] (❚❚►) only.

(Continued on the next page)

Refer to the control reference on page 32.

Operations during play

(continued)

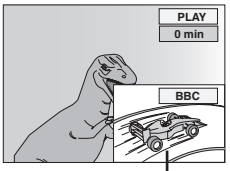
Displaying the television image as a picture-in-picture

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

Press [TIME SLIP].

The unit displays the television image as a picture-in-picture.

- You will hear the playback audio.
- Press [TIME SLIP] again to cancel.
- Time Slip does not work when the unit's "TV System" settings are different from the title recorded.



Play images

Current receiving images

- You can change the channel being received by pressing [∧ ∨ CH].
  (You cannot change the channel being received while recording.)

Skipping the specified time (Time Slip)

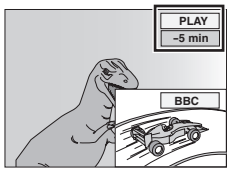
HDD RAM -R -RW(V) +R -RW(VR)

1 Press [TIME SLIP].

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

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.)
- Press [TIME SLIP] to show the play images in full.



Note

Time Slip does not work while timer recording is in standby.

Manual Skip

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

Press [MANUAL SKIP].

Each time you press, play restarts approximately 30 seconds later.

Simple editing operations during play

Erase

HDD RAM -R -RW(V) +R

Erase titles etc. during play

1 Press [ERASE].

2 Press [◄, ►] to select "Erase" and press [ENTER].

- A title cannot be restored once it is erased. Make certain before proceeding.
- You cannot erase while recording or transferring (dubbing)
- -R +R Available space does not increase after erasing.
- -RW(V) Disc space increases only when the last recorded title is erased.

Create Chapter

(➡ 40, Title/Chapter)

HDD RAM

Press [CREATE CHAPTER].

Chapters are divided at the point pressed.

The message screen appears for 5 seconds to confirm that a chapter is created.

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

Changing audio during play

Press [AUDIO].

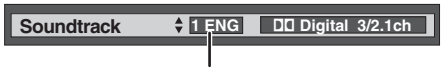
HDD RAM -RW(VR) VCD

LR→L→R

e.g., "L R" is selected

DVD-V DVD-A

You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language (➡ 38, Soundtrack).

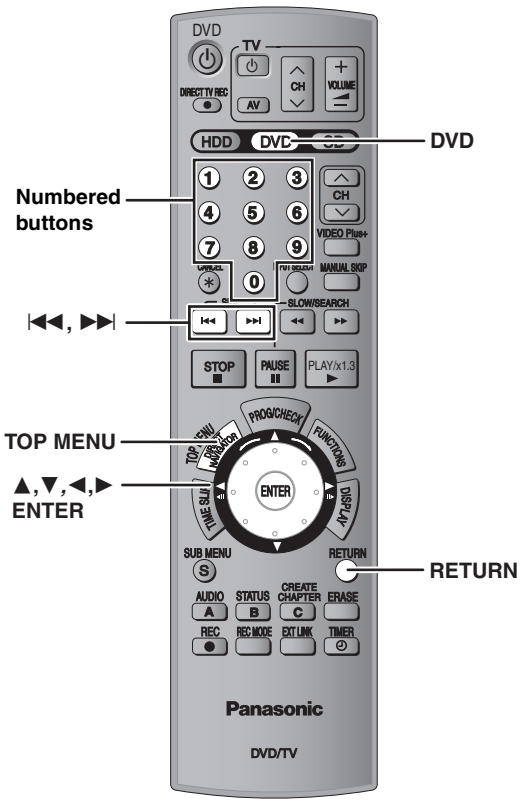


e.g., English is selected.

Note

You cannot change the audio type in the following cases.

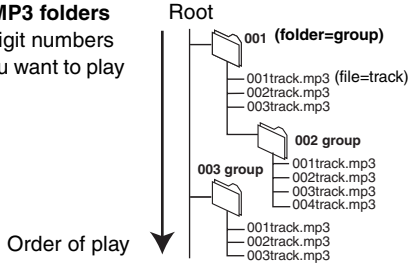
- When a DVD-R, DVD-RW (DVD-Video format) or +R disc is in the disc tray while DVD drive is selected.
- When the recording mode is XP and "Audio Mode for XP Recording" is set to "LPCM" (➡ 58).
- When "Rec for High Speed dubbing" is set to "On" (➡ 26).



Regarding MP3

- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- Maximum number of files (tracks) and folders (groups) recognizable: 999 files (tracks) and 99 folders (groups)
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (tracks) and/or folders (groups) and some files (tracks) may not display or be playable.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- File format: MP3
  Files must have the extension ".mp3" or ".MP3".
- Bit rates: 32 kbps to 320 kbps
- Sampling frequency: 16 kHz/22.05 kHz/24 kHz/32 kHz/ 44.1kHz/48 kHz
- This unit is not compatible with ID3 tags.

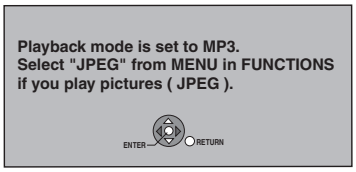
Structure of MP3 folders
Prefix with 3-digit numbers in the order you want to play them.



CD

Preparation
Press [DVD] to select the DVD drive.

This unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (➡ 69) on a computer.
The screen shown below is displayed when you insert a disc containing MP3 files and still pictures (JPEG/TIFF).

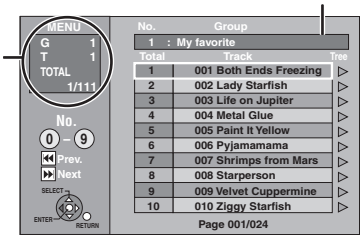


Press [ENTER], and follow the steps below.

1 Press [TOP MENU].

Selected group

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



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

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

Play starts on the selected track.
- "☞" indicates the track currently playing.
- You can also select the track with the numbered buttons.
  e.g., 5: [0] ➡ [0] ➡ [5]
  15: [0] ➡ [1] ➡ [5]

To show other pages
Press [|◀◀, ▶▶|].

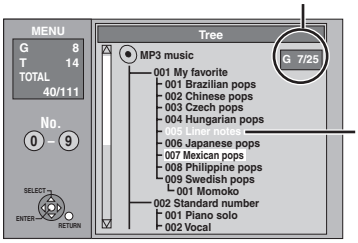
To exit the screen
Press [TOP MENU].

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.

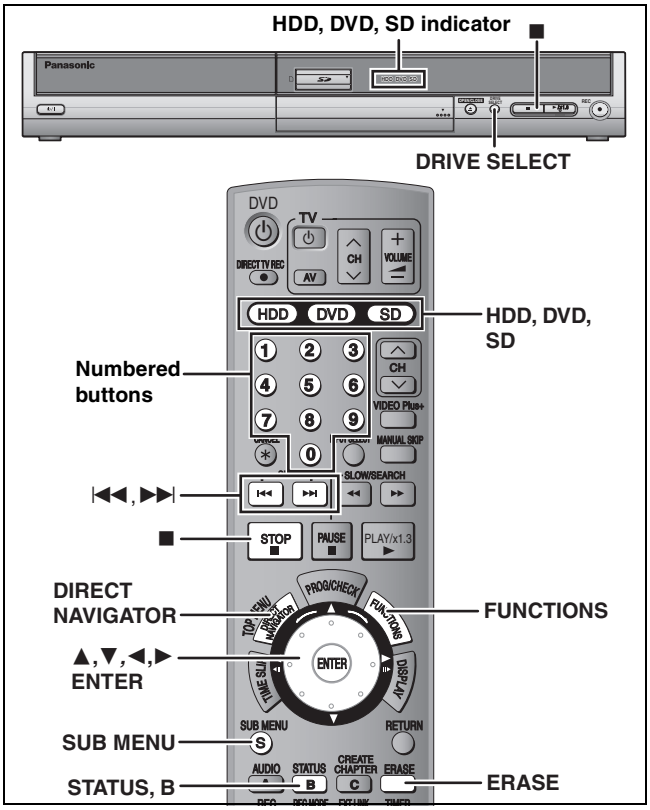


You cannot select groups that contain no compatible files.

2 Press [▲, ▼, ◄, ►] to select a group and press [ENTER].

The file list for the group appears.

To return to the previous screen
Press [RETURN].

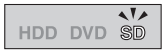


HDD RAM SD CD

- You can use SD Memory Cards with capacities from 8 MB to 1 GB (➡ 11).
- Inserting, Removing the SD card (➡ 6)

1 Press [HDD], [DVD] or [SD] to select the drive.

e.g., SD card drive

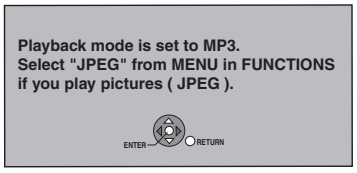


The indicator lights up on the unit.

- On the main unit, press [DRIVE SELECT] several times.

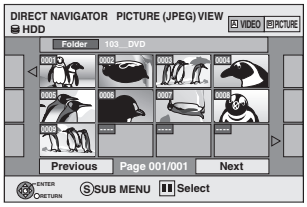
CD

The screen shown below is displayed when you insert a disc containing MP3 files and still pictures (JPEG/TIFF). Select JPEG menu (➡ right) before performing the steps below.



2 Press [DIRECT NAVIGATOR].

3 HDD RAM Press [B] to select “PICTURE”.



PICTURE (JPEG) VIEW screen

Direct Navigator screen icons

- Picture protected.
- Picture in which the number of prints is set (DPOF) (➡ 44, 69).

To show other pages

Press [▲, ▼, ◄, ►] to select “Previous” or “Next” and press [ENTER].

- You can also press [|◄◄, ►►|] to show other pages.

To select the still pictures in another folder ➡ 37

4 Press [▲, ▼, ◄, ►] to select the still picture and press [ENTER].

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 (➡ 37)

To return to the Direct Navigator screen

Press [■].

To exit the screen

Press [DIRECT NAVIGATOR].

■ To show the picture properties

Press [STATUS] twice.

Shooting date

To exit the picture properties screen

Press [STATUS].

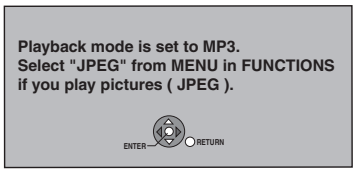
Note

- Still pictures cannot be played during recording or transferring (dubbing).

To select JPEG

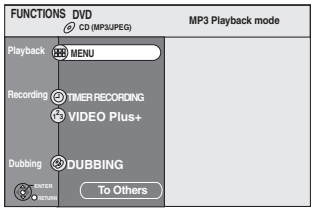
CD [with MP3 files and still pictures (JPEG/TIFF)]

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

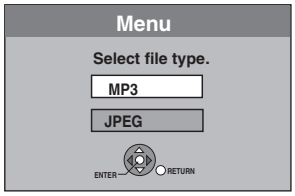


1 Press [ENTER].

2 Press [FUNCTIONS].



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



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

Useful functions during still picture play

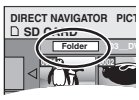
Start Slide Show
Slide Interval

HDD RAM SD CD

You can display still pictures one by one with constant interval.

While the PICTURE (JPEG) VIEW screen is displayed

1 Press [▲, ▼, ◄, ►] to select "Folder" and press [SUB MENU].



2 Press [▲, ▼] to select "Start Slide Show" and press [ENTER].

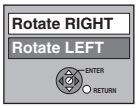
●To change the display timing

1 Press [▲, ▼] to select "Slide Interval" in step 2 and press [ENTER].
2 Press [◄, ►] to select the desired timing (0–30 seconds) and press [ENTER].

Rotate

HDD RAM SD CD

1 Press [SUB MENU].
2 Press [▲, ▼] to select "Rotate RIGHT" or "Rotate LEFT" and press [ENTER].

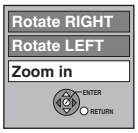


●Rotation information will not be stored.

Zoom in
Zoom out

HDD RAM SD CD

1 Press [SUB MENU].
2 Press [▲, ▼] to select "Zoom in" and press [ENTER].



●To return the picture to its original size, press [▲, ▼] to select "Zoom out" in step 2 and press [ENTER].
●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.

Erase

HDD RAM SD

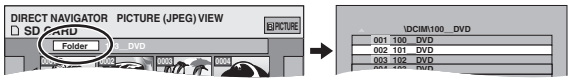
1 Press [ERASE].
2 Press [◄, ►] to select "Erase" and press [ENTER].

●**Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding.

■ To select the still pictures in another folder

(➡ 11, Structure of folders displayed by this unit)

① **Press [▲, ▼, ◄, ►] to select "Folder" and press [ENTER].**
② **Press [▲, ▼] to select the folder and press [ENTER].**

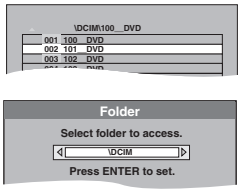


You can also select folders with the numbered buttons.
e.g., 5: [0] ➡ [0] ➡ [5]
15: [0] ➡ [1] ➡ [5]
115: [1] ➡ [1] ➡ [5]

To switch to another higher folder

If there is a multiple number of higher folders recognizable, while the screen on the right appears

1 Press [SUB MENU].
2 Press [▲, ▼] to select "Folder" and press [ENTER].
3 Press [◄, ►] to select the higher folder and press [ENTER].
4 Press [▲, ▼] to select the desired folder and press [ENTER].



Regarding still pictures (JPEG, TIFF)

HDD RAM SD

●Compatible formats: DCF※ compliant (Content recorded on a digital camera, etc.)
※ Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).
●File format: JPEG, TIFF (non-compressed RGB chunky format)
●Number of pixels: 34×34 to 6144×4096
(Sub sampling is 4:2:2 or 4:2:0)
●This unit can handle a maximum of 3000 files and 300 folders (including higher folders).
●Operation may take time to complete when playing TIFF format still pictures, or when there are many files and/or folders, some files may not display or be playable.
●MOTION JPEG is not supported.

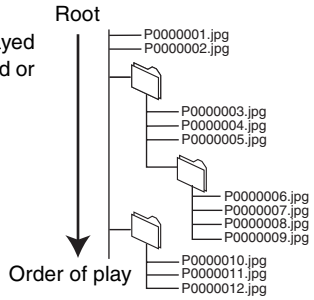
CD

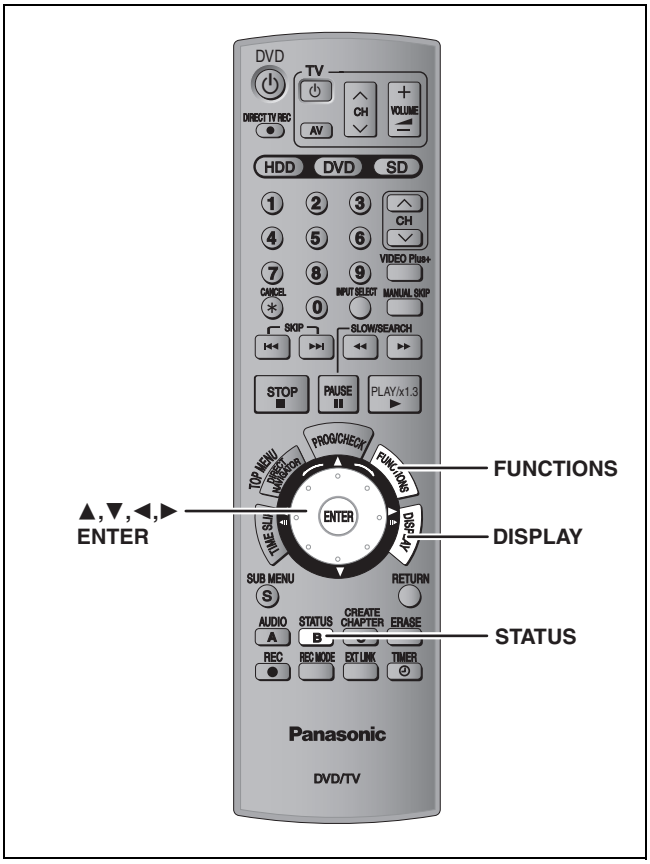
●Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
●Maximum number of files and folders recognizable: 999 files and 99 folders
●This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
●Operation may take time to complete when there are many files and/or folders and some files may not display or be playable.
●The display order on this unit may differ from how the order is displayed on a computer.
●Depending on how you create the disc (writing software), files and folders may not play in the order you numbered them.
●This unit is not compatible with packet-write format.

●File format: JPEG, TIFF (non-compressed RGB chunky format)
●Files must have the extension ".jpg", ".JPG", ".tif" or ".TIF".
●Number of pixels: 34 x 34 to 6144 x 4096
(Sub sampling is 4:2:2 or 4:2:0)
●Operation may take time to complete when playing TIFF format still pictures.
●MOTION JPEG is not supported.
●You can play MP3 and still pictures (JPEG/TIFF) on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.
●English alphabet and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
●When the highest level folders are "DCIM" folders, they are displayed first on the tree.

Structures of still pictures

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

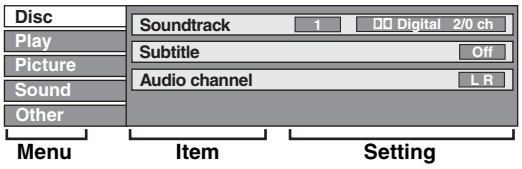




Using on-screen menus

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 [ENTER].

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

Disc menu—Setting the disc content

Soundtrack※

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

Subtitle※
DVD-V DVD-A
Turn the subtitle on/off and select the language (➡ below, Language).
HDD RAM -R -RW(V) +R -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.

Angle※ DVD-V DVD-A

Change the number to select an angle.

Audio channel HDD RAM -RW(VR) VCD

➡ 34, Changing audio during play

STILL-P (Still picture) DVD-A

Selects the play method for still pictures.
Slide Show: Plays according to the default order on the disc.
Page: Select the still picture number and play.
- RANDOM: Plays in random order.
- Return: Returns to the default still picture on the disc.

PBC (Playback control ➡ 69) 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 (➡ 33) on the disc.

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

Audio attribute

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

Language

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

Play menu—Change the play sequence

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

Repeat Play

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

Select "Off" to cancel.

Picture menu—Change the picture quality

Playback NR

Reduces noise and picture degradation.

Progressive※ (➡ 69)

Select “On” to enable progressive output.
Select “Off” if the picture is stretched horizontally.

Transfer※ [When “Progressive” (➡ above) is set to “On”.]

Select the method of conversion for progressive output to suit the type of title being played (➡ 69, Film and video).

When the output signal is PAL

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

When the output signal is NTSC

- **Auto1 (normal):** Detects 24 frame-per-second film content and appropriately converts it.
- **Auto2:** Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content. (Picture distortion may occur depending on the content)
- **Video:** Select when using “Auto1” and “Auto2”, and the video content is distorted.

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

Reduces video tape noise while transferring (dubbing).

- **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.

※ Only when you have set “Progressive” to “On” in the SETUP menu (➡ 22).

Sound menu—Change the sound effect

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

Enjoy a surround-like effect if you are using two front speakers only.
- Turn V.S.S. off if it causes distortion. (Check the surround function on the connected equipment.)
- V.S.S. does not work for bilingual recordings.

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

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

Other menu—Change the display position

Position

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

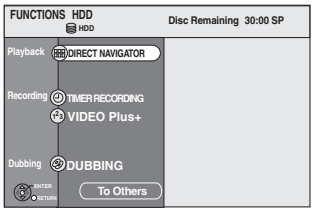
FUNCTIONS window

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

1 **While stopped**

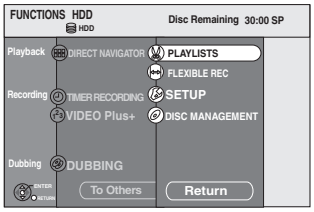
Press [FUNCTIONS].

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



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

- If you select “To Others” and press [ENTER], the following screen appears.



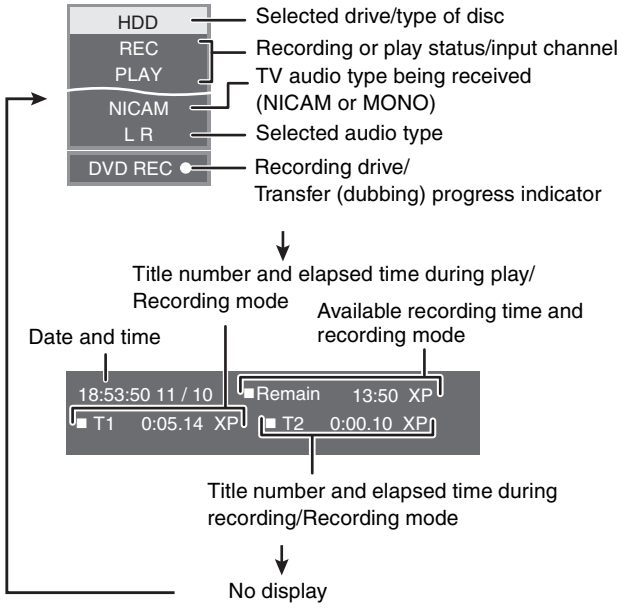
- If you select “Return” and press [ENTER], you can return to the previous screen.

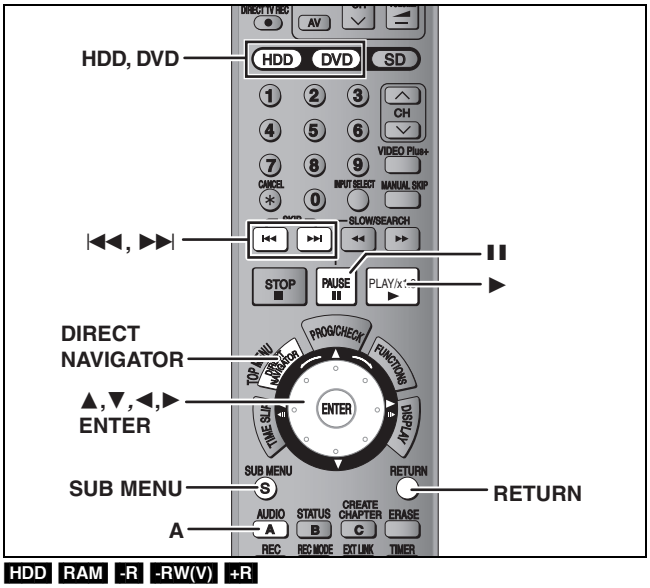
To exit the FUNCTIONS window
Press [FUNCTIONS].

Status messages

Press [STATUS].

The display changes each time you press the button.

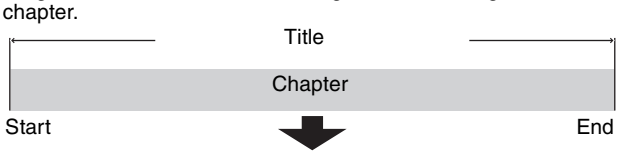




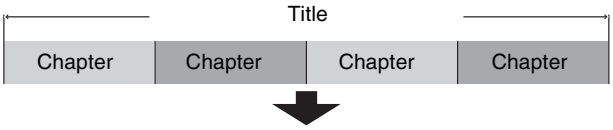
HDD RAM -R -RW(V) +R

Title/Chapter

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



You can divide a title into multiple chapters. HDD RAM
(➡ 34, 41, Create Chapter)



You can change the order of chapters and create a playlist (➡ 42). HDD RAM

●Titles are divided into about 5-minute chapters after finalizing (➡ 54). -R -RW(V) +R

●The maximum number of items on a disc:

HDD
–Titles: 500
–Chapters: Approx. 1000 per title
(Depends on the state of recording.)

RAM -R -RW(V) +R
–Titles: 99 (+R 49 titles)
–Chapters: Approx. 1000 (+R Approx. 254)
(Depends on the state of recording.)

Note

●Once erased, divided or partially erased, recorded content cannot be restored to its original state. Make certain before proceeding.
●You cannot edit during recording or transferring (dubbing), etc.
●Restricted recording information remains even after editing (e.g. dividing a title etc).

Editing titles/chapters and playing chapters

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

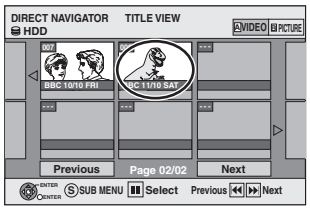
Preparation

●Turn on the television and select the appropriate video input to suit the connection to this unit.
●Turn the unit on.
●Press [HDD] or [DVD] to select the drive containing the recorded title to be edited.
●RAM Release protection (➡ 52).

1 During play or while stopped
Press [DIRECT NAVIGATOR].

2 HDD RAM
Press [A] to select "VIDEO".

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



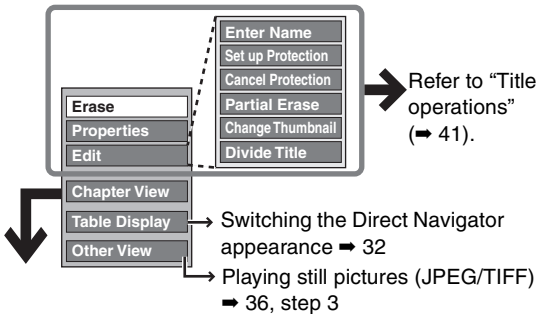
Title View screen

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

4 **Press [SUB MENU].**

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

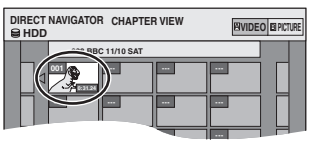
●If you select "Edit", press [▲, ▼] to select the operation and press [ENTER]. (➡ 41)



■ If you select "Chapter View"

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

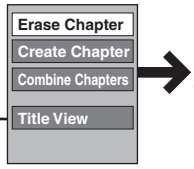
To start play ➡ Press [ENTER].
To edit ➡ Step 7.



Chapter View screen

●To show other pages/Multiple editing (➡ above)

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



●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 1–5 (➡ 40)

Erase※

HDD RAM -R -RW(V) +R

Press [◄, ►] to select "Erase" and press [ENTER].

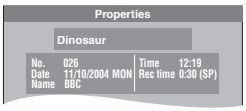
- **Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
- The available recording space on DVD-R or +R does not increase when you erase titles.
- Available recording space on DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased.

Properties

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

Information (e.g., time and date) is shown.

- Press [ENTER] to exit the screen.



Enter Name

HDD RAM -R -RW(V) +R

You can give names to recorded titles.

➡ 55, Entering text

Set up Protection※

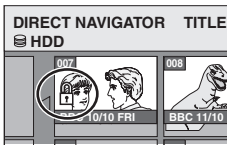
Cancel Protection※

HDD RAM

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

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

The lock symbol appears when the title is protected.



Partial Erase

HDD RAM

(➡ below, For your reference)

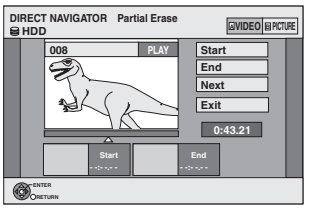
You can remove unnecessary part of the recording.

① Press [ENTER] at the start point and end point of the section you want to erase.

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

- Select "Next" and press [ENTER] to erase other sections.

③ Press [◄, ►] to select "Erase" and press [ENTER].



Change Thumbnail

HDD RAM -R -RW(V) +R

(➡ below, For your reference)

You can change an image to be shown as the thumbnail picture in the Title View.

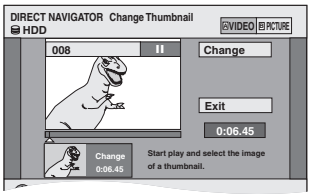
① Press [►] (PLAY) to start play.

② Press [ENTER] when the image you want to use as a thumbnail is shown.

To change the thumbnail

Restart play and press [▲, ▼] to select "Change", then press [ENTER] at the point you want to change.

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



Divide Title

HDD RAM

(➡ below, For your reference)

You can divide a title into two.

① Press [ENTER] at the point you want to divide the title.

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

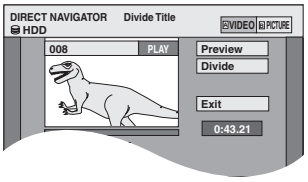
③ Press [◄, ►] to select "Divide" and press [ENTER].

To confirm the division point

Press [▲, ▼] to select "Preview" and press [ENTER]. (The unit plays 10 seconds before and after the division point.)

To change the division point

Restart play and press [▲, ▼] to select "Divide", then press [ENTER] at the point where you want to divide the title.



Note

- The divided titles retain the title name and CPRM property (➡ 69) 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 1–7 (➡ 40)

Erase Chapter※

HDD RAM

Press [◄, ►] to select "Erase" and press [ENTER].

- **Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding.

Create Chapter

HDD RAM

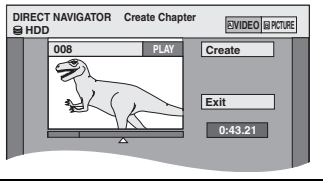
(➡ below, For your reference)

Select the point where you want to start a new chapter while viewing the title.

① Press [ENTER] at the point you want to divide.

- Repeat this step to divide at other points.

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



Combine Chapters

HDD RAM

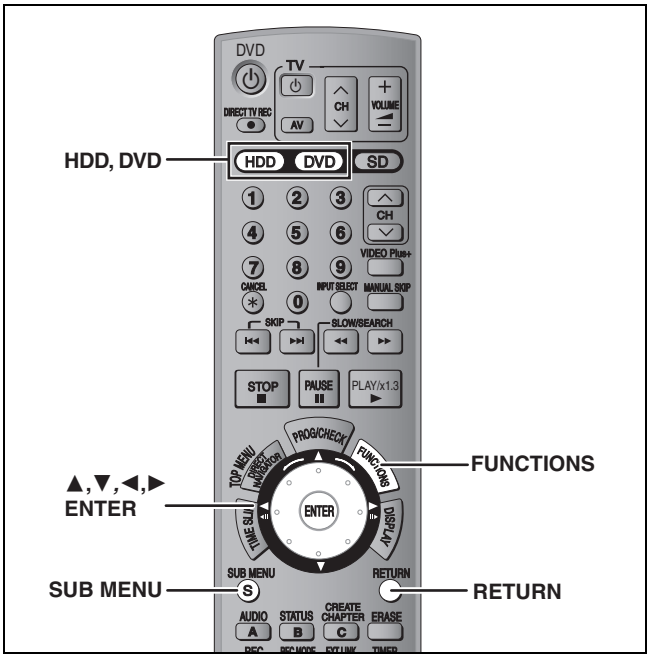
Press [◄, ►] to select "Combine" and press [ENTER].

- The selected chapter and following chapter are combined.

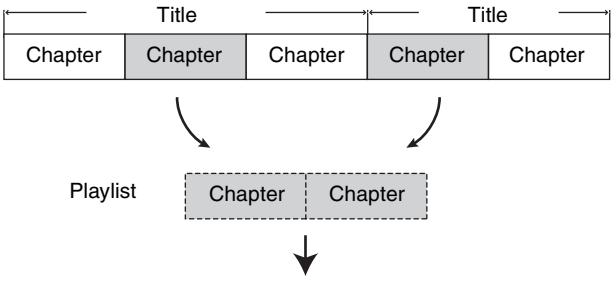
※ Multiple editing is possible.

For your reference

- Use search (➡ 33), Time Slip (➡ 34) to find the desired point.
- To find the desired point correctly, use Slow-motion (➡ 33) and Frame-by-frame (➡ 33).
- Press [|◄◄, ►►|] to skip to the end of a title.



You can arrange the chapters (➡ 40) to create a playlist.



Transferring (dubbing) (➡ 45) a playlist will create a title.

- 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.

HDD 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

HDD RAM

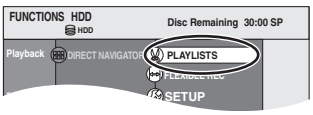
Preparation

- Turn on the television and select the appropriate Video input to suit the connection to this unit.
- Turn the unit on.
- Press [HDD] or [DVD] to select the drive containing the recorded title to be edited.
- RAM Release disc or cartridge protection (➡ 52).
- You cannot create or edit a playlist while recording or while transferring (dubbing).
- Playlists must be made in accordance with the encoding system currently selected in "TV System" (➡ 62).

1 **While stopped**

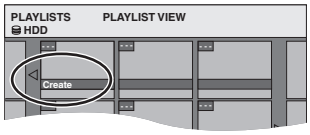
Press [FUNCTIONS].

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



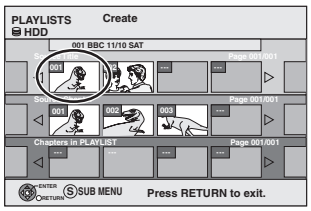
3 **Press [▲, ▼] to select "PLAYLISTS" and press [ENTER].**

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



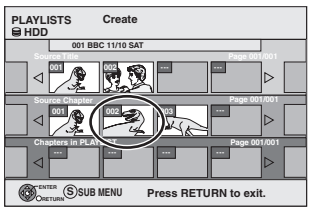
5 **Press [◄, ►] to select the source title and press [▼].**

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



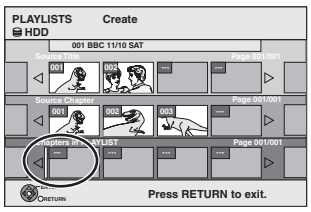
6 **Press [◄, ►] to select the chapter you want to add to a playlist and press [ENTER].**

Press [▲] to cancel.



- You can also create a new chapter from the source title. Press [SUB MENU] to select "Create Chapter" and press [ENTER] (➡ 41, Create Chapter)

7 **Press [◄, ►] to select the position to insert the chapter and press [ENTER].**



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

8 **Press [RETURN].**

All the selected scenes become the playlist.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Editing and playing playlists/chapters

HDD RAM
-RW(VR) (Play only)

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

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

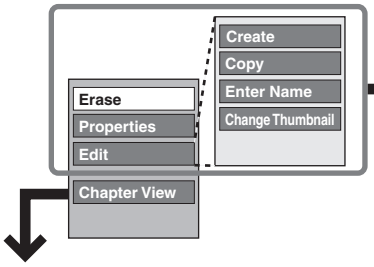
3 **Press [▲, ▼] to select "PLAYLISTS" and press [ENTER].**

4 **Press [▲, ▼, ◄, ►] to select the playlist.**
To start play ➡ Press [ENTER].
To edit ➡ Step 5.

PLAYLIST View screen

●**To show other pages/Multiple editing (➡ 40)**

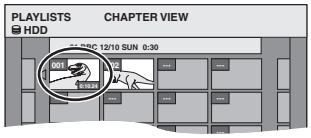
5 **Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].**
●If you select "Edit", press [▲, ▼] to select the operation and press [ENTER].



Refer to "Playlist operations".

■ **If you select "Chapter View"**

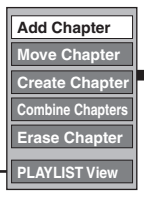
6 **Press [▲, ▼, ◄, ►] to select the chapter.**
To start play ➡ Press [ENTER].
To edit ➡ Step 7.



Chapter View screen

●**To show other pages/Multiple editing (➡ 40)**

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



Refer to "Chapter operations".

●You can go back to PLAYLIST View.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Playlist operations

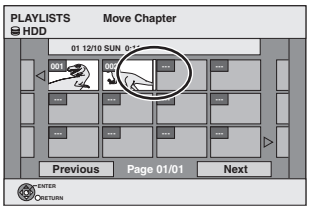
After performing steps 1–5 (➡ left)

Erase※ HDD RAM	**Press [◄, ►] to select "Erase" and press [ENTER].** **Once erased, the playlists are lost and cannot be restored.** Make certain before proceeding.
Properties HDD RAM -RW(VR)	Playlist information (e.g., total time and date) is shown. ●Press [ENTER] to exit the screen.
Create HDD RAM	➡ 42, Creating playlists, Step 5–8
Copy※ HDD RAM	**Press [◄, ►] to select "Copy" and press [ENTER].** ●The copied playlist becomes the newest one in the playlist view screen.
Enter Name HDD RAM	You can give names to playlists. ➡ 55, Entering text
Change Thumbnail HDD RAM	➡ 41, Change Thumbnail

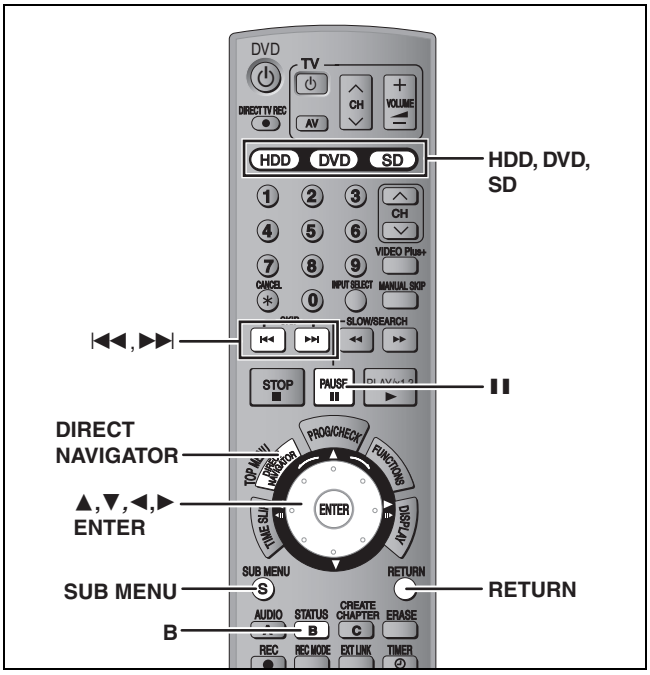
※ Multiple editing is possible.

Chapter operations

HDD RAM
After performing steps 1–7 (➡ left)
●Editing chapters in a playlist does not modify the source titles and source chapters.

Add Chapter	➡ 42, Creating playlists, Step 5–7
Move Chapter	**Press [▲, ▼, ◄, ►] to select the position to insert the chapter and press [ENTER].** 
Create Chapter	➡ 41, Create Chapter
Combine Chapters	➡ 41, Combine Chapters
Erase Chapter※	➡ 41, Erase Chapter The playlist itself is erased if you erase all the chapters in it.

※ Multiple editing is possible.



HDD RAM SD

- You can use SD Memory Cards with capacities from 8 MB to 1 GB (➡ 11).

Preparation
- Press [HDD], [DVD] or [SD] to select the drive.
- RAM SD Release protection (➡ 52, Setting the protection).

1 Press [DIRECT NAVIGATOR].

2 HDD RAM
Press [B] to select "PICTURE".

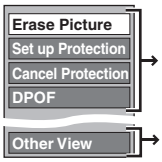
3 Press [▲, ▼, ◀, ▶] to select the still picture.

To show other pages
Press [▲, ▼, ◀, ▶] to select "Previous" or "Next" and press [ENTER].
- You can also press [|◀◀, ▶▶|] to show other pages.

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

- **To select the still pictures in another folder (➡ 37)**

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



→ below

→ Editing titles/chapters and playing chapters ➡ 40, step 2

■ To edit still picture folders

In step 3 (➡ above)

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

② **Press [▲, ▼] to select the folder.**
- To show other pages/Multiple editing (➡ above)

③ **Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].**

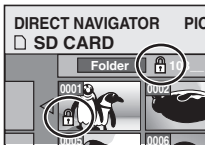
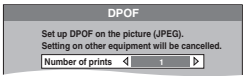
To switch to another higher folder ➡ 37

To return to the previous screen
Press [RETURN].

To exit the screen
Press [DIRECT NAVIGATOR].

Picture and folder operation

After performing steps 1–4

Erase Picture※ Erase Whole Folder※ HDD RAM SD	**Press [◀, ▶] to select "Erase" and press [ENTER].** - **Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding. - When erasing a folder, the files not containing still pictures will also be erased if they are inside the folder. (This does not apply to folders under the folder concerned.)
Folder Name HDD RAM SD	You can give names to still picture folders. ➡ 55, Entering text - Folder names input using this unit may not be displayed on other equipment.
Set up Protection※ Cancel Protection※ HDD RAM SD	If set, this will protect the still picture or folder from accidental erasure. **Press [◀, ▶] to select "Yes" and press [ENTER].** The lock symbol appears when the still picture or folder is protected. - Even if the protection setting is used by this unit to protect a folder, the folder may be erased by another unit. 
DPOF※ SD	You can select a whole folder or individual pictures for printing and specify the number of prints to be made. **Press [◀, ▶] to select number of print (0 to 9) and press [ENTER].** The DPOF mark appears. (This appears on the still pictures inside a folder when you make the DPOF setting for the folder.)  **To cancel the print setting** Set the number of print to "0". - Print settings (DPOF) made using this unit may not be viewable on other equipment. - When this is set by this unit, any settings established by other units will be released. - Settings cannot be made for folders and files not in accordance with DCF standards or if there is no remaining space on the card.

※ Multiple editing is possible.

Transferring (dubbing) titles or playlists

HDD RAM -R -RW(V) +R

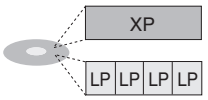
You can select from a variety of methods to transfer (dub) on this unit.
You cannot transfer (dub) titles which have been treated to prevent copying.

■ Transferring (dubbing) direction

You can transfer (dub) your favorite titles and playlists to discs. ●Transferring (dubbing) a playlist will create a title.		When you want to re-edit finalized content on a DVD-R, etc.
High speed mode HDD ⟷ RAM **Normal speed mode** **High speed mode** HDD ⟵ DVD-RW (DVD Video Recording format)	**High speed mode**※1 HDD ⟶ DVD-R, etc.※2 **Normal speed mode** ●When you want to play a transferred (dubbed) disc on other equipment, you must finalize the disc after transferring (dubbing) (➡ 54, 69). ※1 Before recording to HDD, set "Rec for High Speed dubbing" to "On" (➡ 26). ※2 DVD-R, DVD-RW (DVD-Video format) and +R	HDD ⟵ DVD-V※ **Normal speed mode** ※Finalized DVD-R, DVD-RW (DVD-Video format) and +R or DVD-Video on sale that are not copy-protected, etc.

Normal speed mode: Select XP, SP, LP, EP or FR as the recording mode for transferring (dubbing) (➡ 25).

■ Transferring (dubbing) speed mode types and features

	High speed	Normal speed (XP, SP, LP, EP, FR)
Features	You can transfer (dub) in a very short amount of time. You can transfer (dub) even faster if you use a high speed recording compatible disc. You can record and play using the HDD while high speed transferring (dubbing).	You can record for a long period of time on 1 disc. For example, using LP mode, you can record approximately 4 hours on 1 (4.7 GB) disc (➡ 25). e.g., 1 hour TV drama  Only one episode using XP mode 4 episodes using LP mode
Transferring (dubbing) times	➡ below, Approximate transferring (dubbing) times	The same amount of time it takes to record the source
Picture quality	Original picture quality	Can change※1
Are chapters/thumbnails maintained?	Yes※2	No (One title is recorded as one chapter. Thumbnails return to the default position.)
Other operations while transferring (dubbing)	You can record/play using the HDD.	No

※1 If you select a recording mode with better picture quality than the original, the picture quality does not improve. (However it does prevent against degradation of picture quality.)
※2 +R Up to approx. 100 chapters
When transferring (dubbing) playlists to DVD-R, DVD-RW (DVD-Video format) or +R, the thumbnails may not reflect changes made to them.

■ Approximate transferring (dubbing) times (Max. speed)

(excludes time required to write data management information)

HDD		▶	5× high speed recording compatible DVD-RAM	8× high speed recording compatible DVD-R	4× high speed recording compatible DVD-RW	8× high speed recording compatible +R
Recording mode	Recording time					
XP	1 hour		Approx. 12 min.	Approx. 8.7 min.	Approx. 15 min.	Approx. 8.7 min.
SP			Approx. 6 min.	Approx. 3.8 min.	Approx. 7.5 min.	Approx. 3.8 min.
LP			Approx. 3 min.	Approx. 1.9 min.	Approx. 3.8 min.	Approx. 1.9 min.
EP (6 Hours)			Approx. 2 min.	Approx. 1.3 min.	Approx. 2.5 min.	Approx. 1.3 min.
EP (8 Hours)			Approx. 1.5 min.	Approx. 56 sec.	Approx. 1.9 min.	Approx. 56 sec.

Note

- When recording or playing while transferring (dubbing), the unit may not use the maximum recording speed.
- Depending on the condition of the disc, the unit may not transfer (dub) using the maximum speed.

Regarding high speed transfer (dubbing) to DVD-R, etc.

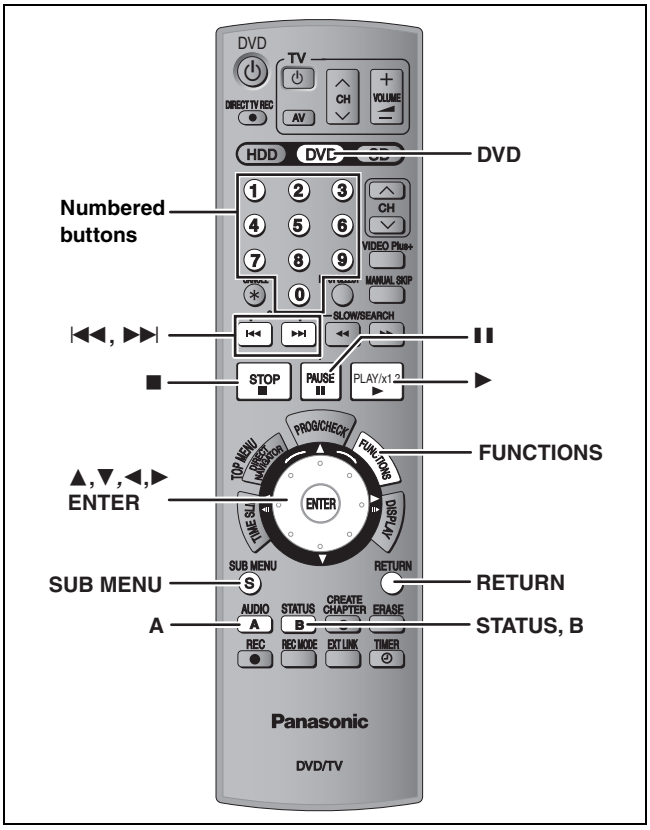
To high speed transfer (dub) titles (or playlists created from those titles), set "Rec for High Speed dubbing" to "On" before recording to the HDD (➡ 26).
However in the following cases, transferring (dubbing) to DVD-R, DVD-RW(DVD-Video format) and +R using the high speed mode does not work.

- Playlists created from titles using a variety of recording modes
- Playlists created from multiple titles using FR recording mode
- Playlists mixed with a variety of audio types (Dolby Digital and LPCM, etc.)
- Titles that contain many erased segments

Regarding transferring (dubbing) of digital broadcasts that allow "One time only recording"

You can transfer (dub) a recorded title to a CPRM (➡ 69) compatible DVD-RAM, however, the title is erased from the HDD.

- Titles or playlists cannot be transferred (dubbed) from DVD-RAM to the HDD.
- Titles will not be transferred (dubbed) if they are protected (➡ 41).
- You cannot transfer (dub) playlists created from "One time only recording" titles.
- Titles with recording limitations and playlists cannot be registered on the same transferring (dubbing) list.



Note

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

Preparation

- Insert a disc that you can use for recording (➡ 9).
- Confirm that there is enough remaining disc space.

Transferring (dubbing) using the transferring (dubbing) list

HDD ↔ RAM
-RW(VR) → HDD
HDD → -R -RW(V) +R

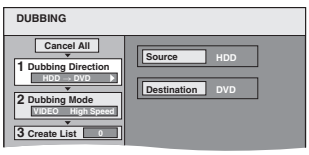
You can order titles and playlists as desired for transfer (dubbing) to disc.

- Select the audio type for recording bilingual broadcast from "Bilingual Audio Selection" (➡ 58) when:
  –Transferring (dubbing) to a DVD-R, DVD-RW (DVD-Video format) and +R.
  –When "Audio Mode for XP Recording" is set to "LPCM" (➡ 58) and you are transferring (dubbing) in XP mode.

1 While stopped

Press [FUNCTIONS].

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



- If you are not going to change the registered list press [▼] several times (➡ step 6).

3 Set the transfer (dubbing) direction.

- If you are not going to change the dubbing direction, press [▼] (➡ step 4).

① **Press [▲, ▼] to select "Dubbing Direction" and press [▶].**
② **Press [▲, ▼] to select "Source" and press [ENTER].**
③ **Press [▲, ▼] to select the drive and press [ENTER].**
④ **Press [▲, ▼] to select "Destination" and press [ENTER].**
⑤ **Press [▲, ▼] to select the drive and press [ENTER].**
The same drive as the transfer (dubbing) source cannot be selected.
⑥ **Press [◀] to confirm.**

4 Set the recording mode.

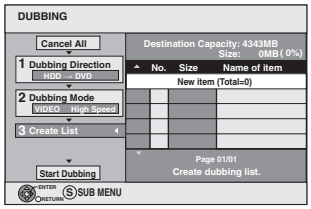
- If you are not going to change the recording mode, press [▼] (➡ step 5).

① **Press [▲, ▼] to select "Dubbing Mode" and press [▶].**
② **Press [▲, ▼] to select "Format" and press [ENTER].**
③ **Press [▲, ▼] to select "VIDEO" and press [ENTER].**
④ **Press [▲, ▼] to select "Recording Mode" and press [ENTER].**
⑤ **Press [▲, ▼] to select the mode and press [ENTER].**
⑥ **Press [◀] to confirm.**

5 Register titles and playlists for transfer (dubbing).

- If you are going to transfer (dub) a registered list without making any changes to it (➡ step 6).

① **Press [▲, ▼] to select "Create List" and press [▶].**



② **Press [▲, ▼] to select "New item" and press [ENTER].**
③ **Press [A] to select "VIDEO" or press [B] to select "PLAYLISTS".**

④ **Press [▲, ▼, ◀, ▶] to select the titles or playlists and press [ENTER].**
- When transferring (dubbing) to DVD-R, DVD-RW (DVD-Video format) or +R using high speed mode, only items indicated with "" can be registered.
- **To select a multiple number of items together, press [❚❚] to add the check mark and press [ENTER] (➡ 47, Multiple editing).**
- **To show other pages (➡ 47)**
- **To edit the transferring (dubbing) list (➡ 47)**

You can register a multiple number of titles and playlists on the transferring (dubbing) list by repeating steps ②–④.
You cannot start transferring (dubbing) when the value of the "Size" (➡ 47) exceeds 100% ("Destination Capacity" is not sufficient).

⑤ **Press [◀] to confirm.**

6 Press [▲, ▼] to select "Start Dubbing" and press [ENTER].

Selecting the DVD drive speed※
1 Press [▲] to select "DVD drive speed".
2 Press [◀, ▶] to select "Maximum" or "Normal (Silent)" and press [▼].
- Selecting "Normal (Silent)" means the noise generated by this unit is less than "Maximum", however, the time required for transferring (dubbing) will double (approximately).

※ Only when transferring (dubbing) to 5× high speed recording compatible DVD-RAM, 8× high speed recording compatible DVD-R or 8× high speed recording compatible +R in High speed mode

7 Press [◀, ▶] to select "Yes" and press [ENTER] to start transferring (dubbing).

■ To stop transferring (dubbing)

Press and hold [RETURN] for 3 seconds.

- If stopped partway, transferring (dubbing) will be up to that point. However, in high speed mode, only titles that have completed transferring (dubbing) at the point stopped are transferred (dubbed). [Even if the title was not transferred (dubbed) to the DVD-R, DVD-RW (DVD-Video format) or +R, the amount of remaining writable disc space becomes less.]

■ To return to the previous screen

Press [RETURN].

■ Recording and playing while transferring (dubbing)

You can record and play using the HDD while high speed transferring (dubbing).

Press [ENTER] to cancel the screen display.

- **To confirm the current progress**
  Press [STATUS].

Note

- You cannot perform chasing play or edit etc. while transferring (dubbing).
- Timer recordings executed while transferring (dubbing) are recorded to the HDD regardless of the recording drive settings.
- You cannot play a playlist while transferring (dubbing) titles with "One time only recording" restriction (➡ 45).

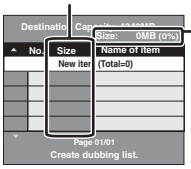
To play DVD-R, DVD-RW (DVD-Video format) and +R on other players, it is necessary to finalize them after transfer (dubbing).

Transferring (dubbing) list icons and functions

Transferring (dubbing) list indicators

	Titles and playlists that can be transferred (dubbed) in high speed mode to DVD-R, etc. (➡ 26)
	Title with "One time only recording" restriction
	Titles erased from the HDD by "One time only recording" restriction after transferring (dubbing).
	Title or playlist contains still picture(s) ● Still picture(s) cannot be transferred (dubbed).
(NTSC) **(PAL)**	Title or playlist recorded using a different encoding system from that of the TV system currently selected on the unit. ● Titles and playlists displaying these marks cannot be selected.

Data size of each registered item



Size:
Data size recorded to the transfer (dubbing) destination

- When transferring (dubbing) at normal speed, 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 transfer (dubbing) destination, etc.

To show other pages

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

- You can also press [I◄◄, ►►I] to show other pages.

Multiple editing

Select with [▲, ▼, ◄, ►] and press [❚❚]. (Repeat.)
Press [ENTER] to register to the list.

- A check mark appears. Press [❚❚] again to cancel.
- When you switch between the "VIDEO" and "PLAYLISTS" tab, the check mark is cancelled.

■ To edit the transferring (dubbing) list

Select the item in step 5–④ (➡ 46, right column)

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

Erase All:
Erase all items registered on the transferring (dubbing) list.
Press [◄, ►] to select "Yes" and press [ENTER].

Add:
Add new items to the transferring (dubbing) list.
Press [▲, ▼, ◄, ►] to select the playlists and titles to be added and press [ENTER].

Erase:
Erase the selected items.
Press [◄, ►] to select "Yes" and press [ENTER].
You can also erase multiple items (➡ left, Multiple editing).

Move:
Move selected items or change the order of items on the transferring (dubbing) list.
Press [▲, ▼] to select the destination and press [ENTER].

To cancel all registered transferring (dubbing) setting and lists

After performing steps 1–2 (➡ 46, left column)

1 Press [▲, ▼] to select "Cancel All" and press [ENTER].
2 Press [◄, ►] to select "Yes" and press [ENTER].

- The settings and lists may be cancelled in the following situations.
  –When a title, still picture, etc. has been recorded or erased at the transfer (dubbing) source
  –When steps have been taken, for instance, to turn off the unit, open the tray, change the transfer (dubbing) direction, etc.

Refer to the control reference on page 46.

Transferring (dubbing) a finalized DVD-R, DVD-RW (DVD-Video format) and +R

DVD-V → HDD

You can transfer (dub) the content of finalized DVD-R, DVD-RW (DVD-Video format) and +R etc to the HDD and re-edit.
While playing a disc, the content being played is transferred (dubbed) to the HDD according to the set time.

- **Operations and on screen displays during transfer (dubbing) are also recorded.**
- Almost all DVD-Video on sale have been treated to prevent illegal copying, and cannot be transferred (dubbed).
- The following cannot be transferred (dubbed): DVD-Audio, Video CD, Audio CD and so on.

Preparation
- Insert the finalized disc (➡ 32).
- Press [DVD] to select the DVD drive.

After performing steps 1–4 (“Format” is automatically set to “DVD-Video”) (➡ 46)

5 Set “Dubbing Time”.

- If you are not going to change the setting (➡ step 6).

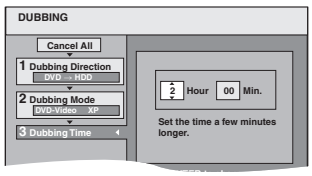
■Setting the unit to transferring (dubbing) according to the set time

① Press [▲, ▼] to select “Dubbing Time” and press [►].
② Press [▲, ▼] to select “Time Setting” and press [ENTER].
- Setting the unit to transferring (dubbing) all the content on the disc

③Press [▲, ▼] to select “Off” and press [ENTER].
④Press [◄] to confirm.

- Setting the transferring (dubbing) time

③Press [▲, ▼] to select “On” and press [ENTER].
④Press [▲, ▼] to select “Dubbing Time” and press [ENTER].



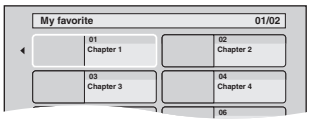
⑤Press [◄, ►] to select “Hour” and “Min.” and press [▲, ▼] to set the recording time.
⑥Press [ENTER].
⑦Press [◄] to confirm.
- Set a few minutes longer than the source title, in order to include the operation time before play begins.
- You can also set the recording time with the numbered buttons.

6 Press [▲, ▼] to select “Start Dubbing” and press [ENTER].

Press [◄, ►] to select “Yes” and press [ENTER] to start transferring (dubbing).
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 finalizing the disc (➡ 54).

7 When the top menu is displayed

Press [▲, ▼, ◄, ►] to select the title you want to start transferring (dubbing), and press [ENTER].



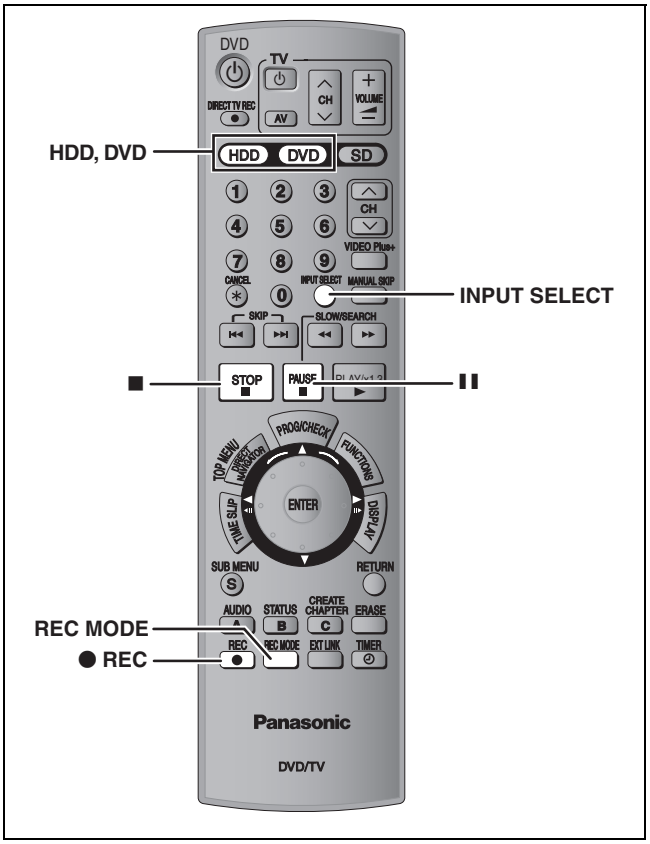
While playing in order, all the titles after the selected title are recorded until the set time. (After the last title on the disc has finished playing the top menu is recorded until the set time is reached.)

To return to the previous screen
Press [RETURN].

To stop transferring (dubbing)
Press [■].
You can also press and hold [RETURN] for 3 seconds to stop transferring (dubbing).
- If stopped partway, transferring (dubbing) will be up to that point.

Note
- The screen saver on the right is recorded at the beginning.
- The content is recorded as 1 title from the start of transfer (dubbing) 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 transfer (dub) a high quality video/audio DVD, the original picture and audio quality cannot be exactly replicated.

Recording from a video cassette recorder

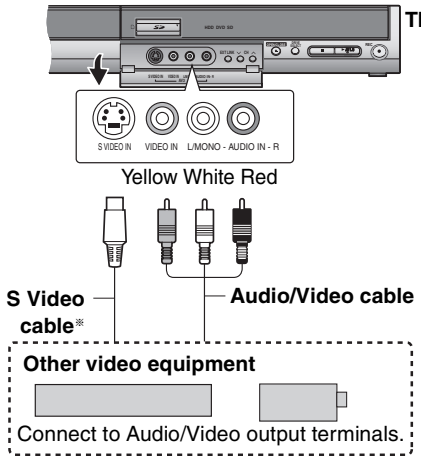


HDD RAM -R -RW(V) +R

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

You can also connect to the AV4 input terminals on the rear.

- Turn off the unit and other video equipment before connecting.



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.

Preparation

- Press [HDD] or [DVD] to select the recording drive.
- When recording bilingual programmes

HDD RAM

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

-R -RW(V) +R

Select either M 1 or M 2 on the connected equipment. (Only either one type of M 1 or M 2 can be recorded.)

- When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the SETUP menu (➡ 62). This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.)
- To reduce noise in input from a video cassette recorder, set "AV-in NR" to "On" in the on-screen menu (➡ 39).

1 **While stopped**

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

2 **Press [REC MODE] to select the recording mode.**

3 **Start play on the other equipment.**

4 **When you want to start recording**

Press [● REC].

Recording starts.

To skip unwanted parts

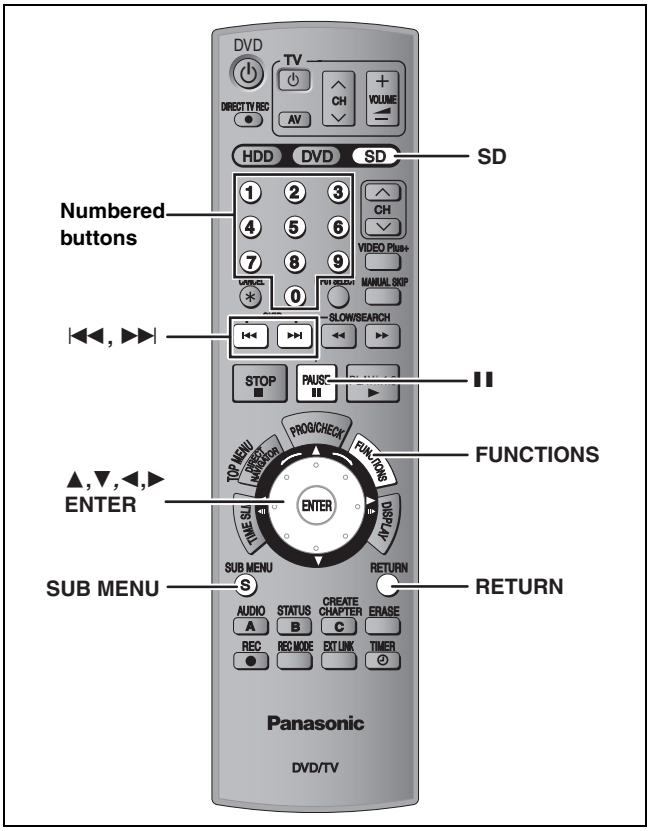
Press [❚❚] to pause recording. (Press again to restart recording.)

To stop recording

Press [■].

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

- Using Flexible Recording (➡ 26), you can save 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.



HDD RAM SD

- You can use SD Memory Cards with capacities from 8 MB to 1 GB (➡ 11).

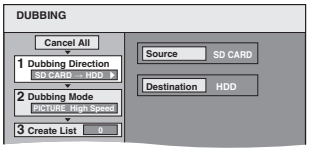
Transferring (dubbing) using the transferring (dubbing) list

- You cannot transfer (dub) still pictures recorded on CD.

1 While stopped

Press [FUNCTIONS].

2 **Press [▲, ▼] to select “DUBBING” and press [ENTER].**



- If you are not going to change the registered list press [▼] several times (➡ step 6).

3 **Set the transfer (dubbing) direction.**

- If you are not going to change the dubbing direction, press [▼] (➡ step 4).

① **Press [▲, ▼] to select “Dubbing Direction” and press [▶].**
② **Press [▲, ▼] to select “Source” and press [ENTER].**
③ **Press [▲, ▼] to select the drive and press [ENTER].**
④ **Press [▲, ▼] to select “Destination” and press [ENTER].**
⑤ **Press [▲, ▼] to select the drive and press [ENTER].** The same drive as the transfer (dubbing) source can be selected.
⑥ **Press [◀] to confirm.**

4 **Set the recording mode.**

- If you are not going to change the recording mode, press [▼] (➡ step 5).

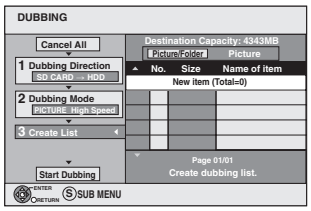
① **Press [▲, ▼] to select “Dubbing Mode” and press [▶].**
② **Press [▲, ▼] to select “Format” and press [ENTER].**
③ **Press [▲, ▼] to select “PICTURE” and press [ENTER].** “Recording Mode” is automatically set to “High Speed”.
④ **Press [◀] to confirm.**

5 **Register still pictures for transfer (dubbing).**

- If you are going to transfer (dub) a registered list without making any changes to it (➡ step 6).

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

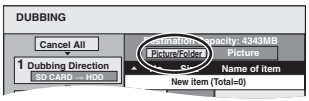
① **Press [▲, ▼] to select “Create List” and press [▶].**
② **Press [▲, ▼] to select “New item” and press [ENTER].**
③ **Press [▲, ▼, ◀, ▶] to select the still picture and press [ENTER].**

- **You can register a multiple number of still pictures on the transferring (dubbing) list by repeating steps ②–③.**
- **To select a multiple number of items together, press [❚❚] to add the check mark and press [ENTER] (➡ 51, Multiple editing).**
- **To show other pages (➡ 51)**
- **To select the still pictures in another folder (➡ 51)**
- **To edit the transferring (dubbing) list (➡ 51)**

④ **Press [◀] to confirm.**

■ To register on a folder by folder basis

① **Press [▲, ▼] to select “Create List” and press [▶].**
② **Press [▲, ▼] to select “Picture/Folder” and press [ENTER].**



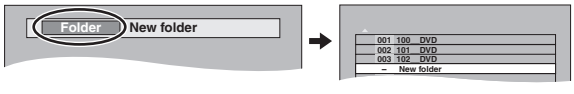
③ **Press [▲, ▼] to select “Folder” and press [ENTER].**
④ **Press [▲, ▼] to select “New item” and press [ENTER].**
⑤ **Press [▲, ▼] to select the folder and press [ENTER].**

- **You can register a multiple number of folders on the transferring (dubbing) list by repeating steps ④–⑤.**
- **To select a multiple number of items together, press [❚❚] to add the check mark and press [ENTER] (➡ 51, Multiple editing).**
- **To show other pages (➡ 51)**
- **To switch to another higher folder (➡ 51)**
- **To edit the transferring (dubbing) list (➡ 51)**

⑥ **Press [◀] to confirm.**

6 **Press [▲, ▼] to select “Start Dubbing” and press [ENTER].**

- For individual still pictures only
  When specifying another folder as the transferring (dubbing) destination, select “Folder”.



7 **Press [◀, ▶] to select “Yes” and press [ENTER] to start transferring (dubbing).**

To stop transferring (dubbing)
Press and hold [RETURN] for 3 seconds.

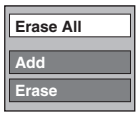
To return to the previous screen
Press [RETURN].

To show other pages
Press [▲, ▼, ◄, ►] to select “Previous” or “Next” and press [ENTER].
●You can also press [|◄◄, ►►|] to show other pages.

Multiple editing
Select with [▲, ▼, ◄, ►] and press [❚❚]. (Repeat.)
Press [ENTER] to register to the list.
●A check mark appears. Press [❚❚] again to cancel.

■ To edit the transferring (dubbing) list

Select the item in step 5–③ (for a still picture) or 5–⑤ (for a folder) (➡ 50, right column)



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

Erase All:
Erase all items registered on the transferring (dubbing) list.
Press [◄, ►] to select “Yes” and press [ENTER].

Add:
Add new items to the transferring (dubbing) list.
Press [▲, ▼, ◄, ►] to select the still picture or folder to be added and press [ENTER].

Erase:
Erase the selected items.
Press [◄, ►] to select “Yes” and press [ENTER].
You can also erase multiple items (➡ above, Multiple editing).

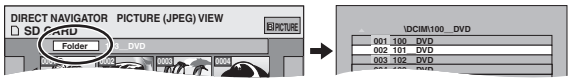
To cancel all registered transferring (dubbing) settings and lists
After performing steps 1–2 (➡ 50)
1 Press [▲, ▼] to select “Cancel All” and press [ENTER].
2 Press [◄, ►] to select “Yes” and press [ENTER].
●The settings and lists may be cancelled in the following situations.
–When a title or still picture has been recorded or erased at the transfer (dubbing) source
–When steps have been taken, for instance, to turn off the unit, remove the card, open the tray, change the transfer (dubbing) direction, etc.

■ To select another folder

(➡ 11, Structure of folders displayed by this unit)

① **Press [▲, ▼, ◄, ►] to select “Folder” and press [ENTER].**
If you want to switch to another higher folder (➡ below).

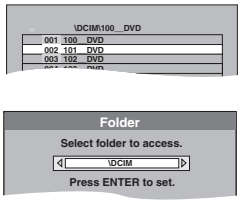
② **Press [▲, ▼] to select the folder and press [ENTER].**



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

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

To switch to another higher folder
●Only when selecting the source folder
If there is a multiple number of higher folders recognizable, while the screen on the right appears
1 Press [SUB MENU].
2 Press [▲, ▼] to select “Folder” and press [ENTER].
3 Press [◄, ►] to select the higher folder and press [ENTER].
4 Press [▲, ▼] to select the desired folder and press [ENTER].



Transferring (dubbing) all the still pictures on a card—COPY ALL PICTURES

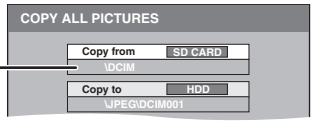
SD → HDD or RAM

Preparation
Press [SD] to select the source drive.

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

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

3 **Press [▲, ▼] to select “COPY ALL PICTURES” and press [ENTER].**



●If there is a multiple number of higher folders recognizable, you can switch them using [◄, ►].

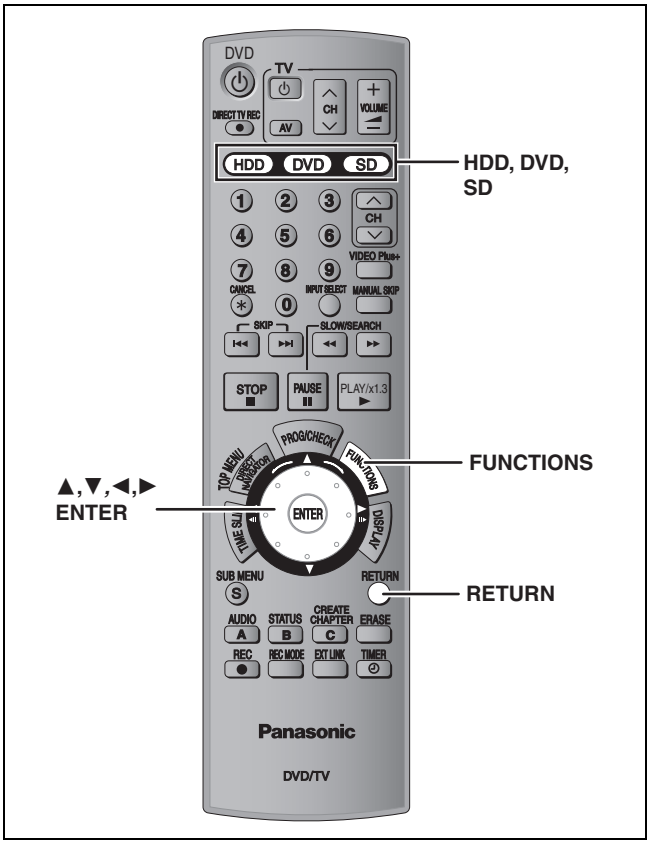
4 **Press [▲, ▼] to select “Copy to” and press [◄, ►] to select the drive.**

5 **Press [▲, ▼, ◄, ►] to select “Copy” and press [ENTER].**

To stop transferring (dubbing)
Press and hold [RETURN] for 3 seconds.

To return to the previous screen
Press [RETURN].

Note
●When transferring (dubbing) the still pictures on a folder by folder basis (➡ 50) or card by card basis (➡ above, COPY ALL PICTURES), files other than the still picture files inside the folder will also be transferred (dubbed). (This does not apply to the lower folders contained inside the folders.)
●If still pictures are already contained inside the transfer (dubbing) destination folder, the new still pictures are recorded following the existing still pictures.
●If the space on the destination drive runs out or the number of files/folders to be transferred (dubbed) exceeds the maximum (➡ 37), transferring (dubbing) will stop partway through.
●When a name has not been input for the transfer (dubbing) source folder, it is possible that this folder’s name will not be the same on the transfer (dubbing) destination. It is recommended that you input a folder name before transferring (dubbing) (➡ 44).
●Print number setting (DPOF) is not transferred (dubbed).
●The sequence in which the still pictures are registered on the transfer (dubbing) list may not be the same at the transfer (dubbing) destination.



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

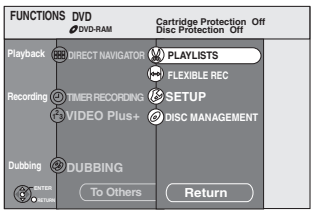
- You can use SD Memory Cards with capacities from 8 MB to 1 GB (➡ 11).

Common procedures

1 While stopped

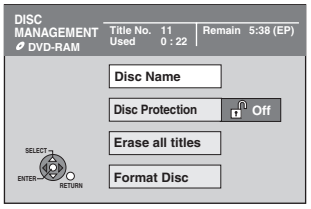
Press [FUNCTIONS].

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



3 **Press [▲, ▼] to select "DISC MANAGEMENT" or "CARD MANAGEMENT" and press [ENTER].**

e.g., RAM



- When HDD has been selected, "Erase all titles" and "Format HDD" are displayed.
- When SD has been selected, "Format Card" only is displayed.

Setting the protection

RAM

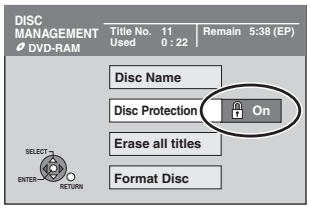
Preparation

- Press [DVD] to select the DVD drive.

After performing steps 1–3 (➡ left)

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

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



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

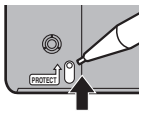
To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Cartridge-protection

For a DVD-RAM with a cartridge

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



SD

Switch the write-protect switch to the "LOCK" position.

Providing a name for a disc

RAM -R -RW(V) +R

You can provide a name for each disc.

Preparation

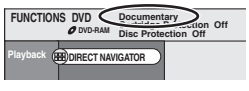
- Press [DVD] to select the DVD drive.
- RAM Release protection (➡ above).

After performing steps 1–3 (➡ left)

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

➡ 55, Entering text

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



To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Erasing all titles and playlists—Erase all titles

HDD RAM

Preparation
- Press [HDD] or [DVD] to select the drive.
- Release protection (➡ 52).

After performing steps 1–3 (➡ 52)

4 Press [▲, ▼] to select "Erase all titles" and press [ENTER].

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

6 Press [◄, ►] to select "Start" and press [ENTER].
A message appears when finished.

7 Press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Note
- **Once erased, the recorded contents are lost and cannot be restored.** Make certain before proceeding.
- Erasing all video titles will result in all playlists also being erased.
- Still picture data (JPEG, TIFF) or computer data cannot be erased.
- Erase does not work if one or more titles are protected.

Erasing all the contents of a disc or card—Format

HDD RAM -RW(V) -RW(VR) SD

Preparation
- Press [HDD], [DVD] or [SD] to select the drive.
- Release protection (➡ 52).

Note

Formatting erases all contents (including computer data), and they cannot be restored. Check carefully before proceeding. The contents are erased when you format a disc or card even if you have set protection.

After performing steps 1–3 (➡ 52)

4 Press [▲, ▼] to select "Format HDD", "Format Disc" or "Format Card" and press [ENTER].

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

6 Press [◄, ►] to select "Start" and press [ENTER].
A message appears when formatting is finished.

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 or the card unusable.

7 Press [ENTER].

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

To stop formatting RAM
Press [RETURN].
- You can cancel formatting if it takes more than 2 minutes. The disc must be reformatted if you do this.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Refer to the control reference on page 52.

Enabling discs to be played on other equipment
(Top Menu, Auto-Play Select, Finalize)

-R -RW(V) +R

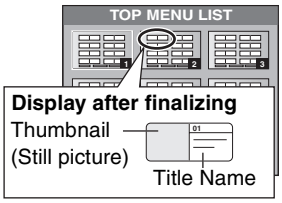
Preparation
Press [DVD] to select the DVD drive.

After performing steps 1–3 (➡ 52)

■ Top Menu
You can select the background that will be displayed as the DVD-Video top menu after finalizing.

4 Press [▲, ▼] to select "Top Menu" and press [ENTER].

5 Press [▲, ▼, ◄, ►] to select the background and press [ENTER].



- You can change thumbnails displayed in the top menu. (➡ 41, Change Thumbnail)

■ Auto-Play Select
You can select whether to show the top menu after finalizing.

6 Press [▲, ▼] to select "Auto-Play Select" and press [ENTER].

7 Press [▲, ▼] to select "Top Menu" or "Title 1" and press [ENTER].

Top Menu: The top menu appears first.
Title 1: The disc content is played without displaying the top menu.

■ Finalize
Make selections from "Top Menu" and "Auto-Play Select" (➡ above) before finalizing the disc.

8 Press [▲, ▼] to select "Finalize" and press [ENTER].

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

10 Press [◄, ►] to select "Start" and press [ENTER].

A message appears when finalizing is finished.

Note
- You cannot cancel finalizing.
- Finalizing takes up to 15 minutes.
- **Do not disconnect the AC mains lead while finalizing.** This will render the disc unusable.

11 Press [ENTER].

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

After finalizing
- **-R +R The disc becomes play-only and you can no longer record or edit.**
- **-RW(V) You can record and edit the disc after formatting (➡ 53) although it becomes play-only after finalizing.**
- When transferring (dubbing) in high speed, chapters will be replicated.
- Titles are divided into about 5-minute* chapters, if
  –the titles were directly recorded to the disc.
  –the titles were transferred (dubbed) using any mode other than the high speed mode.
  * 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.

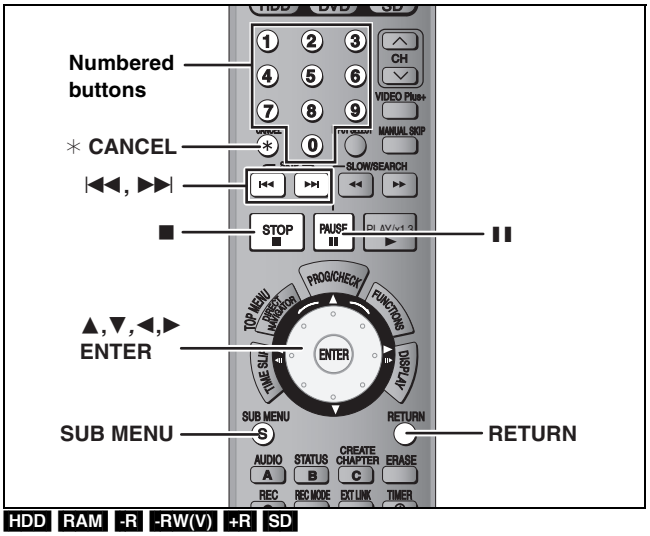
	Before finalizing	After finalizing
Disc display on this unit	DVD-R DVD-RW(V) +R	DVD-V
Recording/Editing/Entering name	√	×
Play on other players	×	√

- You cannot finalize discs recorded on other manufacturer's equipment.
- If you finalize discs recorded on Panasonic equipment other than this unit, the background selected as "Top Menu" may not be displayed.
- Discs finalized on this unit may not be playable on other players due to the condition of the recording.

- Visit Panasonic's homepage for more information about DVDs. **http://www.panasonic-europe.com**

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.



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

You can give names to recorded titles, etc.

The maximum number of characters:

HDD RAM	Characters
Title	64 (44※)
Playlist	64
Folder of still pictures	36
Disc (RAM)	64

※ Title name for timer recording

-R -RW(V) +R	Characters
Title	44
Disc	40

SD	Characters
Folder of still pictures	36

Note

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

1 Show Enter Name screen.

Title (timer recording)
Select “Programme Name” in step 3 on page 28, 30.

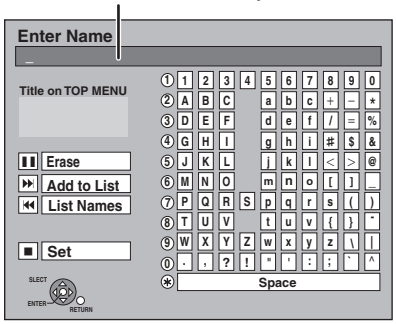
Title
Select “Enter Name” in step 5 on page 40.

Playlist
Select “Enter Name” in step 5 on page 43.

Disc
Select “Disc Name” in step 4 of “Providing a name for a disc” on page 52.

Folder of still pictures
Select “Folder Name” in step ③ on page 44, “To edit still picture folders”.

Name field: shows the text you have entered



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

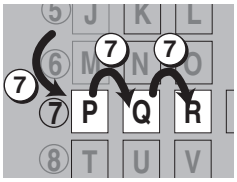
Repeat this step to enter other characters.

●To erase a character
Press [▲, ▼, ◀, ▶] to select the character in the name field and press [❚❚]. (The selected characters are erased.)

●Using the numbered buttons to enter characters

e.g., entering the letter “R”

① **Press [7] to move to the 7th row.**
② **Press [7] twice to highlight “R”.**
③ **Press [ENTER].**



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

●Save/recall phrases (➡ below)

3 Press [■] (Set).

“Now writing.” appears then the screen returns to the Title view screen and so on.

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

■ To add a name

You can add frequently used names and recall them later.
Maximum number of added names: 20
Maximum number of characters per name: 20
After entering the name (step1–2).

1 Press [▲, ▼, ◀, ▶] to select “Add to List” and press [ENTER].
●You can also press [▶▶|] to select “Add to List”.
2 Press [◀, ▶] to select “Add” and press [ENTER].
●Press [RETURN] to cancel.

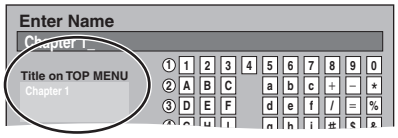
■ To recall an added name

1 Press [▲, ▼, ◀, ▶] to select “List Names” and press [ENTER].
●You can also press [|◀◀] to select “List Names”.
2 Press [▲, ▼, ◀, ▶] to select the name to be recalled and press [ENTER].

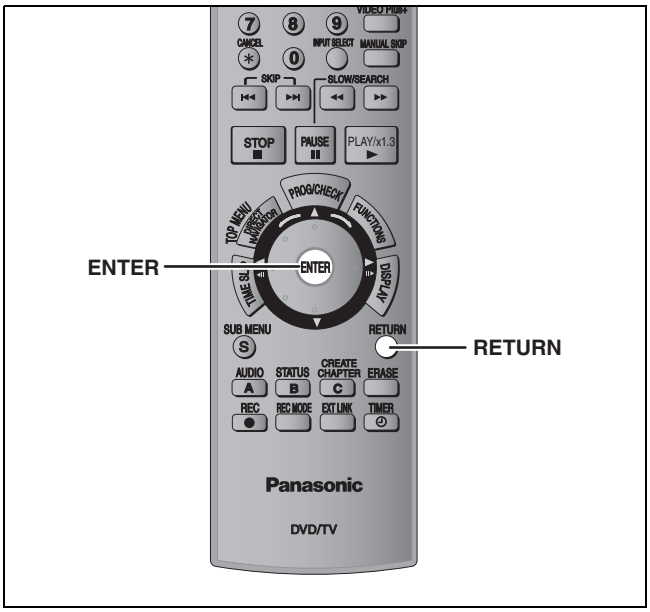
■ To erase an added name

1 Press [▲, ▼, ◀, ▶] to select “List Names” and press [ENTER].
●You can also press [|◀◀] to select “List Names”.
2 Press [▲, ▼, ◀, ▶] to select the name to be erased.
3 Press [SUB MENU] to show “Erase Name” and press [ENTER].
4 Press [◀, ▶] to select “Erase” and press [ENTER].
5 Press [ENTER].

For your reference
If you enter a long name, only part of it is shown in the Top Menu after finalization (➡ 54). When entering a title name, the name that will appear in the Top Menu can be previewed in “Title on TOP MENU” window.



Child Lock



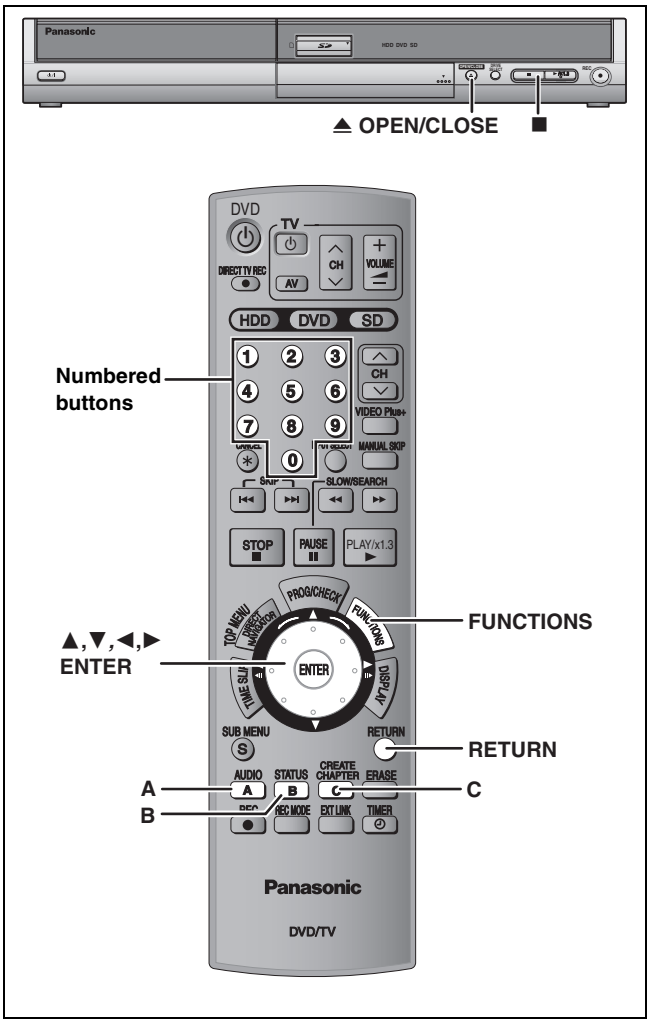
The Child Lock deactivates all buttons on the unit and remote control. Use it to prevent other people from operating the unit.

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

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

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

Changing the unit's settings



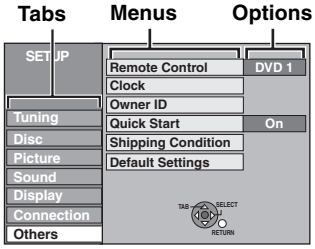
Common procedures

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

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

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

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



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

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Note
There may be differences in operation methods. If this happens, follow the on-screen instructions for the operation.

Summary of settings

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

Tabs	Menus	Options (Underlined items are the factory presets.)
Tuning	**Manual** (➡ 60)	
	Auto-Setup Restart (➡ 60)	
	Download from TV (➡ 60)	
Disc	**Settings for playback** ●Press [ENTER] to show the following settings.	
	Ratings Set a ratings level to limit DVD-Video play. Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown. ●Do not forget your password.	●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. ●Unlock Recorder ●Change Password ●Change Level ●Temporary Unlock
	DVD-Audio Video mode Playback Select "On" to play DVD-Video content on some DVD-Audio.	●On: The setting returns to "Off" when you change the disc or turn the unit off. ●Off
	Soundtrack Choose the language for audio, subtitle and disc menus. DVD-V ●Some discs start in a certain language despite any changes you make here. ●Enter a code (➡ 62) with the numbered buttons when you select "Other ∗∗∗∗". 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 (➡ 33).	●English ●French ●German ●Italian ●Spanish ●Original: The original language of each disc will be selected. ●Other ∗∗∗∗
	Subtitle	●Automatic: If the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc. ●English ●French ●German ●Italian ●Spanish ●Other ∗∗∗∗
	Menus	●English ●French ●German ●Italian ●Spanish ●Other ∗∗∗∗
	Settings for recording ●Press [ENTER] to show the following settings.	
	Recording time in EP mode Select the maximum number of hours for recording in EP mode (➡ 25, 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)".
	Rec for High Speed dubbing When high speed transferring (dubbing) a title to DVD-R, DVD-RW (DVD-Video format) and +R, it is necessary to turn this setting "On" before recording to the HDD; however, the screen size, etc. is restricted (➡ right). We recommend turning the setting "Off" if high speed transfer (dubbing) to DVD-R, etc. is not necessary when recording a programme.	●On: Makes high speed mode transferring (dubbing) to DVD-R, etc. possible. Press [◄, ►] to select "Yes" and press [ENTER]. [" " appears in the transferring (dubbing) list (➡ 47).] –Pictures are saved in 4:3. –Select the type of audio in advance from "Bilingual Audio Selection" (➡ 58). ●Off
Picture	**Comb Filter** Select the picture sharpness when recording. The setting is fixed with "On" if you set "TV System" to "NTSC" (➡ 62).	●On: Select it to record clear picture. ●Off: Normally, use this setting.
	Still Mode Select the type of picture shown when you pause play (➡ 69, 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 Selects the play mode for playlist chapter segments.	●On: The chapters in playlists are played seamlessly. This does not work when there are several audio types included on the playlist and when using Quick View. 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.

Tabs	Menus	Options (Underlined items are the factory presets.)
Sound	**Dynamic Range Compression** DVD-V (Dolby Digital only) Change the dynamic range for late night viewing.	●On ●Off
	Bilingual Audio Selection Select whether to record the main or secondary audio type when: –Recording or transferring (dubbing) to a DVD-R, DVD-RW (DVD-Video format) and +R. –"Rec for High Speed dubbing" is set to "On" (➡ 26). –Recording or transferring (dubbing) 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 transferring (dubbing) from a video cassette recorder. Select on the other equipment.
	Digital Audio Output Change the settings when you have connected equipment through this unit's DIGITAL AUDIO OUT terminal (➡ 18). ●Press [ENTER] to show the following settings.	
	PCM Down Conversion Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz. ●Signals are converted to 48 kHz or 44.1 kHz despite the settings across if the signals have a sampling frequency of over 96 kHz or 88.2 kHz, or the disc has copy protection.	●On: Signals are converted to 48 kHz or 44.1 kHz. (Choose when the connected equipment cannot process signals with sampling frequency of 96 kHz or 88.2 kHz.) ●Off: Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment can process signals with sampling frequency of 96 kHz or 88.2 kHz.)
	Dolby Digital 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. **Note** Not making the proper settings may result in noise or some trouble for digital recording.	●Bitstream: When connecting to equipment displaying the Dolby Digital logo. ●PCM: When connecting to equipment not displaying the Dolby Digital logo.
	DTS DIGITAL dts SURROUND	●Bitstream: When connecting to equipment displaying the DTS logo. ●PCM: When connecting to equipment not displaying the DTS logo.
	MPEG	●Bitstream: When connected to equipment with a built-in MPEG decoder. ●PCM: When connected to equipment without a built-in MPEG decoder.
	Audio Mode for XP Recording Choose the audio type when recording or transferring (dubbing) with XP mode.	●Dolby Digital (➡ 69) ●LPCM (➡ 69) –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	**On-Screen Messages** Choose whether to show status messages automatically.	●Automatic ●Off
	Grey Background Select "Off" if you do not want to have the unit show the grey background when tuner reception is weak.	●On ●Off
	FL Display Changes the brightness of the unit's display.	●Bright ●Dim

Tabs	Menus	Options (Underlined items are the factory presets.)
Connection	**TV Aspect** (➡ 22)	Set to match the type of television connected.	●<u>16:9</u> ●4:3 ●Letterbox
	Progressive (➡ 22) This setting cannot be made when the "AV1 Output" is set to "RGB (without component)" (➡ below).		●On ●<u>Off</u>
	TV System (➡ 62)		●<u>PAL</u> ●NTSC
	AV1 Output Selects the output from the AV1 terminal. Select "RGB (without component)" for RGB output. Select "Video (with component)" or "S Video (with component)" for component output.		●Video (with component) ●S Video (with component) ●<u>RGB (without component)</u>
	AV2 Settings Set to match the connected equipment. ●Press [ENTER] to show the following settings.		
	AV2 Input Set to "RGB/Video" or "RGB" when receiving or recording RGB output from external equipment.		●<u>RGB/Video</u> ●RGB ●Video ●S Video
	Ext Link This setting cannot be made when the "TV System" is set to "NTSC" (➡ 62).		●<u>Ext Link 1</u>: When a digital receiver (SKY Digital STB etc.) which transmits a special control signal recordings via the 21-pin Scart lead is connected. ●Ext Link 2: When external equipment with a timer function is connected.
Others	**Remote Control** (➡ 23)		●<u>DVD 1</u> ●DVD 2 ●DVD 3
	Clock **Auto Clock Setting** (➡ 61) **Manual Clock Setting** (➡ 61)		
	Owner ID (➡ 19, 20) In order to prevent another person from using this unit if it is stolen, you can set a PIN number and input your personal information. Once the PIN number has been set, you cannot return to the factory preset. Make sure not to forget this.		●PIN number ●Name ●House No. ●Postcode
	Quick Start The Quick Start feature enables this unit to be ready to start recording as quick as approx. 1 second※ after turning it on. You can start recording soon after deciding you want to record something. ※Only when recording to the HDD or DVD-RAM. ●Startup takes up to a minute when: –You play a disc or start recording to discs other than DVD-RAM. –You want to make other operations. –The clock has not been set.		●<u>On</u> ●Off: Standby power consumption is less than when this is set to "On"
	Shipping Condition All the settings except for the ratings level, ratings password, Owner ID and time settings return to the factory preset. The timer recording programmes are also cancelled.		●Yes ●<u>No</u>
	Default Settings All the settings except for the programmed channels, time settings, disc language settings, ratings level, ratings password, Owner ID and remote control code return to the factory presets.		●Yes ●<u>No</u>

Refer to the control reference at the bottom of page 56.

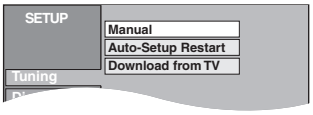
Tuning

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

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

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

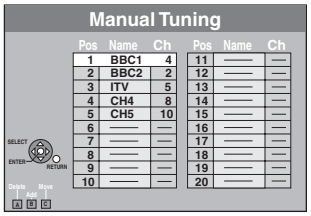
4 **Press [▲, ▼] to select "Tuning" and press [►].**



Manual

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

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



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

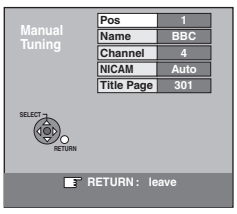
To add a blank programme position
Press [▲, ▼, ◄, ►] to select a programme position and press [B].

To move a TV station to another programme position
① Press [▲, ▼, ◄, ►] to select a programme position and press [C].
② Press [▲, ▼, ◄, ►] to select the new programme position to which you want to assign the TV station and press [ENTER].

Note
If Preset Download (➡ 19) has been performed, only deletion of the programme position can be performed.

■ To change the tuning settings for individual programme position

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



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

Pos	**To change the programme position in which the TV stations are assigned** Press [▲, ▼] or numbered buttons to select the number of the desired programme position and press [ENTER].
Name	**To enter or change the name of a TV station** Press [▲, ▼, ◄, ►] to enter station name and press [ENTER]. If the station name needs a blank space, select the blank between "Z" and "∗".
Channel	**To enter newly available TV stations or change the channel number of an already tuned TV station** Press [▲, ▼] or the numbered buttons to enter the channel number of the desired TV station. Wait a few moments until the desired TV station has been tuned. After the desired TV station is tuned, press [ENTER].
NICAM	**To select the type of sound to be recorded** Press [▲, ▼] to select "Auto" and press [ENTER]. ●Select "Off" if you want to record the normal (mono) sound during a stereo, bilingual or NICAM broadcast, or if the stereo sound is distorted due to inferior reception conditions.
Title Page	**To enter the Teletext title page for a channel** Entering title page number allows the unit to automatically record programme and station names. Press [▲, ▼] or numbered buttons to enter the number and press [ENTER]. ●To find the correct title page for the station, refer to its Teletext TV guide. ●The unit's clock must be set correctly.

Auto-Setup Restart, Download from TV

You can restart auto channel setting if Preset Download or Auto-Setup (➡ 19, 20) fails for some reason.

After performing steps 1–4 (➡ left)

■ Auto-Setup Restart

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

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

■ Download from TV

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

6 **Press [◄, ►] to select "Yes" and press [ENTER].**
Downloading from the television starts.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Clock settings

Usually, the unit's Preset Download or Auto-Setup function (➡ 19, 20) automatically adjusts the clock to correct time. Under some reception conditions, however, the unit cannot set the clock automatically.
In this case, follow the operation steps below to manually set the clock.

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

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

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

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

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

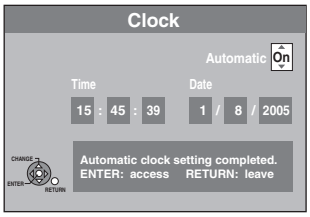
5 **Press [▲, ▼] to select "Clock" and press [ENTER].**

Auto Clock Setting

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

6 **Press [▲, ▼] to select "On" of "Automatic" and press [ENTER].**
Auto clock setting starts.

The following screen appears when setting is complete.

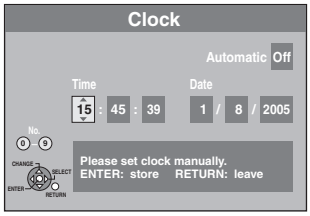


To stop partway
Press [RETURN].

●If the unit cannot set the clock automatically, set the clock manually (➡ right, step 6).

Manual Clock Setting

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



7 **Press [◄, ►] to select the item you want to change.**
The items change as follows:
Hour⟷Minute⟷Second⟷Day⟷Month⟷Year

8 **Press [▲, ▼] to change the setting.**
You can also use the numbered buttons for setting.

9 **Press [ENTER] when you have finished the settings.**
The clock starts.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Refer to the control reference at the bottom of page 56.

TV System

Change the setting to match the equipment you are connecting with, or to match the title when there are both PAL and NTSC titles on the HDD.

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

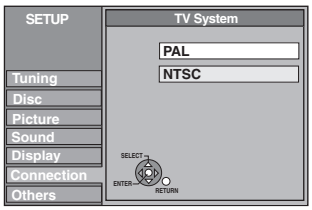
2 **Press [▲, ▼] to select "To Others" and press [ENTER].**

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

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

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

6 **Press [▲, ▼] to select the TV system and press [ENTER].**



- **PAL** (factory preset)
  - –Select when connecting to a PAL or Multi-system television. Titles recorded using NTSC are played as PAL 60.
  - –Select to record television programmes and PAL input from other equipment.
  - –HDD Select when playing a PAL input title recorded on the HDD.
- **NTSC**
  - –Select when connecting to a NTSC television. Television programmes cannot be recorded properly.
  - –Select to record NTSC input from other equipment.
  - –HDD Select when playing a NTSC input title recorded on the HDD.

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

■ To change the setting all at once (PAL⟷NTSC)

While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit for 5 or more seconds.

Note

- This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.)

Language code list Enter the code with the numbered buttons.

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

On the television

		Page
Cannot finish recording completely.	●The programme was copy-protected. ●The HDD or disc may be full. ●The maximum number of times you can record the program is exceeded.	— — —
Cannot playback. **TV system is different from the setting.** **To playback, please change the TV System in SETUP.**	●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.	**62**
Cannot record on the disc.	●The disc may be dirty or scratched.	**5**
Unable to format.		
Please check the disc.		
Cannot play on this unit.	●You tried to play a non-compatible image. ●Turn the unit off and re-insert the card.	**37** **6**
Cannot record. Disc is full.	●HDD RAM Create space by erasing any unnecessary titles. [Even if you erase recorded content from the DVD-R or +R, there is no increase in disc space. Available space on DVD-RW (DVD-Video format) increases only when the last recorded title is erased.]	**34, 41, 53**
Cannot record. Maximum number of titles exceeded.	●Use a new disc.	—
Error has occurred. Please press ENTER.	●Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering (“SELF CHECK” appears on the unit’s display).	—
No Disc	●The disc may be upside down.	—
No folders.	●There is no compatible folder in this unit.	**11**
No SD CARD **No valid SD card.**	●The card is not inserted. If this message is displayed with a compatible card already inserted, turn off the unit, remove and then re-insert the card. ●The card inserted is not compatible or the card format does not match.	**6** **11**
Not enough space on dubbing destination.	●Create space by erasing any unnecessary items. ●Erase one or more items registered on the transfer (dubbing) list to ensure that the “Destination Capacity” is not exceeded.	**34, 37, 41, 44, 53** **47, 51**
Please change the disc.	●There may be a problem with the disc. Press [▲ OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)	**5**
This is a non-recordable disc.	●The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R, DVD-RW (DVD-Video format), or +R.	**9**
This disc is not properly formatted. **Formatting is necessary using DISC MANAGEMENT.**	●You inserted an unformatted DVD-RAM or DVD-RW.	**53**
⃠	●The operation is prohibited by the unit or disc.	—

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.

REMOTE DVD □ (“□” stands for a number.)	●The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.	**23**
HARD ERR	●If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.	—
HDD SLP	●In order to extend HDD life, the HDD is in SLEEP mode. Press [HDD] to activate.	**4**
NO READ	●The disc is dirty or badly scratched. The unit cannot record, play, or edit. ●This message may appear when the DVD-RAM lens cleaner has finished cleaning. Press [▲ OPEN/CLOSE] on the main unit to eject the disc.	**5** **5**
PROG FULL	●There are already 32 timer programmes. Delete unnecessary timer programmes.	**31**
SELF CHECK	●There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. Wait until the message disappears. ●If “Quick Start” is set to “On”, “PLEASE WAIT” is displayed while the unit is carrying out its recovery process. You cannot operate the unit while “PLEASE WAIT” is displayed.	— —
UNFORMAT	●You have inserted a DVD-RAM or a DVD-RW that is unformatted or a DVD-RW recorded on another unit.	—
UNSUPPORT	●You have inserted a disc the unit cannot play or record on.	**9, 10**
U59	●The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.	—
U99	●The unit fails to operate properly. Press [⏻/I] on the main unit to switch the unit to standby. Now press [⏻/I] on the main unit again to turn the unit on.	—
X HOLD	●The Child Lock function is activated. Press and hold [ENTER] and [RETURN] simultaneously until “X HOLD” disappears.	**56**
H□□ or F□□	●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. 1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it. 2. 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.	— **65–68**
R□□:□□ (e.g., R44:00)	●The unit is showing you the remaining time on the HDD or the disc. (This does not indicate a malfunction.) In the display across the letter “R” means “Remain” and the numbers mean remaining time (hours:minutes).	**24**

Frequently asked questions

Refer to the following items if you have any doubts about unit operations.

Set up		Page
What equipment is necessary to play multi channel surround sound?	●DVD-Video: You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital, DTS or MPEG decoder. ●DVD-Audio: This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound.	**18** **—**
Are the headphones and speakers directly connected to the unit?	●You cannot directly connect them to the unit. Connect through the amplifier, etc.	**18**
The television has a Scart terminal and component video input terminal. Which terminal should I connect with?	●If you have a regular television (CRT: cathode ray tube) we recommend using the Scart terminal. You can enjoy high-quality RGB video from this unit by connecting to an RGB compatible television. If you have an LCD/plasma television or LCD projector compatible with progressive scan, connect through the component video terminals for high-quality progressive video. If you have a CRT television or a multi system television using PAL mode that is compatible with progressive scan, we cannot recommend progressive output as some flickering can occur.	**15, 16**
Is my television progressive output compatible?	●All Panasonic televisions that have 625 (576)/50i · 50p, 525 (480)/60i · 60p input terminals are compatible. Consult the manufacturer if you have another brand of television.	**—**

Disc		
Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?	●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 DVD-R, DVD-RW, +R and +RW compatibility with this unit.	●This unit records and plays DVD-R, DVD-RW (DVD-Video format) and +R, and plays DVD-RW (DVD Video Recording format) and +RW. ●This unit also records and plays high speed recording compatible DVD-R, DVD-RW, +R discs.	**9, 10** **—**
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, MP3 and still pictures (JPEG/TIFF). Close the session or finalize the disc after recording. This unit can recognize up to 99 folders (groups) and 999 files (tracks) on a disc with MP3 or still pictures (JPEG/TIFF). ●You cannot write to a CD-R or CD-RW with this unit.	**10, 35, 37** **—**

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-RW (DVD-Video format) and +R recorded on this unit be played on other equipment?	●You can play on compatible equipment such as DVD players after finalizing the disc on this unit. However, depending on the condition of the recording, the quality of the disc and capabilities of the DVD player, play may not be possible.	**—**
Can I record digital audio signals using this unit?	●You cannot record digital signals. The digital audio terminals on this unit are for output only.	**—**
Can a digital audio signal from this unit be recorded to other equipment?	●You can record if using the PCM signal. When recording DVD, change the “Digital Audio Output” settings to the following in the SETUP menu. –PCM Down Conversion: On –Dolby Digital/DTS/MPEG: PCM However, only as long as digital recording from the disc is permitted and the recording equipment is compatible with a sampling frequency of 48 kHz. ●You cannot record MP3 signals.	**58** **—**
Can I switch to bilingual broadcast during recording?	●With HDD and DVD-RAM, you can. Just press [AUDIO]. ●With DVD-R, DVD-RW (DVD-Video format), +R you cannot. Change before recording with “Bilingual Audio Selection” in the SETUP menu.	**34** **58**
Can I high speed transfer (dub) to a disc?	●When using a high speed recording compatible disc, you can transfer (dub) a one hour programme to: –DVD-R or +R in approximately 56 seconds* –DVD-RAM in approximately 1.5 minutes* –DVD-RW (DVD-Video format) in approximately 1.9 minutes* *Quickest possible time	**45**

Troubleshooting guide

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 rotating sounds.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions in reception due to periodic satellite broadcasting breaks.
- A sound is heard when the HDD goes into SLEEP mode, or operations are slow to respond in SLEEP mode.
- 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 10 seconds.)
- When the HDD has been automatically placed in the SLEEP mode (➡ 4), or the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

Power

		Page
No power. **The unit does not turn on pressing [⏻ DVD].**	●Insert the AC mains lead securely into a known active household mains socket. ●Linked timer recordings with external equipment is in recording standby. Press [EXT LINK] to cancel the recording standby.	**15–17** **31**
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.	**—**

Displays

The display is dim.	●Change "FL Display" in the SETUP menu.	**58**
"0:00" is flashing on the unit's display.	●Set the clock.	**61**
The time recorded on the disc and the available time shown do not add up. **The play time shown for MP3 does not agree with the actual time.**	●Times shown may disagree with actual times. ●Available recording space on DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased. ●Even if you erase recorded content from the DVD-R or +R, there is no increase in disc space. ●More disc space than the actual recording time is used after recording or editing the DVD-R or +R 200 times or more. ●While searching, the elapsed time may not display correctly.	**—** **—** **—** **—** **—**
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.	**61**

TV screen and video

Television reception worsens after connecting the unit.	●This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers. If it is not solved by using a signal booster, consult the dealer.	**—**
Status messages do not appear.	●Select "Automatic" in "On-Screen Messages" in the SETUP menu.	**58**
The grey background does not appear.	●Select "On" in "Grey Background" in the SETUP menu.	**58**
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 4:3 aspect ratio picture expands left and right. **Screen size is wrong.**	●Use the television to change the aspect. If your television does not have that function, set "Progressive" in the Picture menu to "Off". ●Check the settings for "TV Aspect" in the SETUP menu.	**39** **22**
There is a lot of after-image when playing video.	●Set "Playback NR" in the Picture menu to "Off".	**39**
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	●Set "Progressive" in the Picture menu to "Off". This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.	**39**
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, S VIDEO OUT terminal or COMPONENT VIDEO OUT terminals on this unit. ●Make sure that the television's input setting (e.g., AV 1) is correct. ●Progressive output is set to on but the connected television is not progressive compatible. Press and hold [■] and [▶] (PLAY) on the main unit at the same time for more than 5 seconds to cancel this setting. The setting will change to interlace. ●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.	**15, 16** **—** **—** **62**

Sound

		Page
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. ●Press [AUDIO] to select the audio. ●Turn off V.S.S. in the following cases. –When using discs that do not have surround sound effects such as Karaoke discs. –When playing bilingual broadcast programmes. ●The disc may have a restriction on the method of audio output. If “D.MIX” does not appear in the display when playing multi-channel DVD-Audio, only audio for the two front channels will be output. Refer to the disc’s jacket. DVD-A	**15–18, 58** **34** **39** **—**
Cannot switch audio.	●You cannot switch the audio in the following cases. –When a DVD-R, DVD-RW (DVD-Video format) or +R 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”. –When “Rec for High Speed dubbing” is set to “On”. ●When connecting an amplifier using an optical digital cable, you cannot switch the audio if “Dolby Digital” is set to “Bitstream”. Set “Dolby Digital” to “PCM” or connect using audio cables. ●There are discs for which audio cannot be changed because of how the disc was created.	 **—** **58** **26** **18, 58** **—**

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. ●The remote control and main unit are using different codes. Change the code on the remote control. Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds. ●The batteries are depleted. Replace them with new ones. ●You are not pointing the remote control at the main unit’s remote control signal sensor during operation. ●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. ●It may be necessary to set the manufacturer code again after changing the batteries. ●The child lock function is activated.	**23** **23** **8** **—** **—** **—** **23** **23** **56**
The unit is on but cannot be operated.	●Recording drive or playback drive has not been selected properly. ●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 [⏻/I] on the main unit to switch the unit to standby. If the unit doesn’t switch to standby, press and hold [⏻/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it. 2 Press [⏻/I] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.	**24, 32** **—** **—** **—**
HDD activation is slow.	●The HDD is in SLEEP mode. (“HDD SLP” appears in the unit’s display.)	**4**
Cannot eject disc.	●The unit is recording. ●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.	**—** **56**
Cannot tune channels. **Cannot download channel presets from the television.**	●Check the connections. ●You must connect to a television equipped with the Q Link function with a fully wired 21-pin Scart lead to download channel presets.	**15–17** **—**
Startup is slow.	●Make sure that “Quick Start” is set to “On”. ●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. –For a few minutes after 5:15 am due to system maintenance of this unit.	**59** **—**
Takes time to read DVD-RAM.	●It may take time to read a disc if it is being used for the first time in this unit or it has not been used for a long time.	**—**

Recording, timer recording and transferring (dubbing)		Page
Cannot record.	●You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto. ●The disc is unformatted. Format the disc. RAM -RW(V) ●The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DISC MANAGEMENT. ●Some programmes have limitations on the number of times they can be recorded (CPRM). ●You cannot record when there is not enough space or when the number of titles has reached its limit. Erase unwanted titles or use a new disc. ●You cannot record on finalized DVD-R, DVD-RW (DVD-Video format), +R or DVD-RW (DVD Video Recording format) discs. ●Due to peculiarities of DVD-R, DVD-RW (DVD-Video format) and +R, you may be unable to record onto them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of fifty times. ●DVD-R, DVD-RW (DVD-Video format) and +R recorded on this unit may not be recordable on other Panasonic DVD Recorders. ●This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.) Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.	9 53 52 69 34, 41, 53 — — — —
Cannot record from external equipment.	●Check that the connection is correct. ●Select the input channel ("AV2", "AV3" or "AV4") for the equipment you have connected.	15, 16, 49 —
Timer recording does not work properly. **VIDEO Plus+ programming does not work properly.**	●The timer programme is incorrect or different timer programme times overlap. Correct the programme. ●The unit is not on timer recording standby. ("⏲" on the unit's display is not on.) Press [⏲ TIMER]. ●Set the clock.	31 28–30 61
Timer recording does not stop even when [■] is pressed.	●While using timer recording, press [⏲ TIMER]. ("⏲" disappears.) ●When using the linked timer recording with external equipment, press [EXT LINK]. ("Ext Link" disappears.) ●If you start recording immediately after turning on the unit while "Quick Start" is set to "On", you cannot then stop recording for a few seconds.	28–30 31 —
The timer programme remains even after recording finishes.	●The timer programme remains if set to daily or weekly.	30
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 HDD/disc may become unusable. You will have to format the disc (HDD RAM -RW(V)) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs.	— 53
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.	—
Cannot transfer (dub) to a DVD-R, etc. disc using the high speed mode.	●When recording to the HDD, set "Rec for High Speed dubbing" to "On" in the SETUP menu.	26
When transferring (dubbing), it takes a long time even when high speed mode is selected.	●Use a disc that is compatible with high speed recording. Even if the disc is high speed recording compatible, the maximum speed may not be possible due to the condition of the disc. ●It takes longer than normal to transfer (dub) many titles. ●You cannot high speed transfer (dub) to DVD-R, DVD-RW (DVD-Video format) and +R, titles longer than 6 hours when using other Panasonic DVD Recorders that are not compatible with EP (8 Hours) mode recording.	— — —
An unusually loud sound is coming from the rotating DVD-R, etc.	●When recording or high speed transferring (dubbing) to a DVD-R, DVD-RW (DVD-Video format) and +R, 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. ●The disc is dirty. ●You tried to play a blank disc or disc unplayable on this unit. ●You tried to play a +RW that needs to finalized on the equipment used for recording. ●You may be able to transfer (dub) a "One time only recording" title that was recorded to DVD-RAM using a different Panasonic DVD Recorder to this unit's HDD, but play is not possible due to copyright protection. ●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.	32 5 9, 10 — — 57
Audio and video momentarily pause.	●This occurs between playlist chapters. ●This occurs between chapters and with partially deleted titles on finalized DVD-R, DVD-RW (DVD-Video format) and +R that have been transferred (dubbed) using the high speed mode. ●This occurs as scenes change during Quick View.	— — —
DVD-Video is not played.	●You have set a ratings level to limit DVD-Video play. Change this setting.	57

Continued on the next page

Play (Continued)

		Page
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.	— **33**
No subtitles.	●Subtitles are not recorded on the disc. ●Turn the subtitles on. Set "Subtitle" on the on-screen menu to "On".	— **38**
Angle cannot be changed.	●Angles can only be changed during scenes where different angles are recorded.	—
You have forgotten your ratings password. You want to cancel the ratings level.	●The ratings level returns to the factory preset. While the disc tray is open, press [DVD] then press and hold [● REC] and [►] (PLAY) 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.	●This function only works when the indicator on the right appears on the unit display. ●Memorized positions are canceled when the unit is turned off or when the tray is opened. The memorized position on the playlist is also canceled when the playlist and title are edited.	— —
The Video CD picture does not display properly.	●When connecting to Multi-system TV, select "NTSC" in "TV System" in the SETUP menu. ●When connecting to PAL TV, the lower part of the picture cannot be displayed correctly during search.	**62** —
Time Slip does not work.	●Time Slip does not work when the unit's "TV System" settings are different from the title recorded on the disc.	**62**

Edit

Cannot format.	●The disc is dirty. Wipe with a damp cloth and then wipe dry. ●You tried formatting a disc that you may not be able to use in this unit.	**5** **9**
Cannot create chapters.	●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.	—
Cannot mark the start point or the end point during "Partial Erase" operation.	●These operations are not possible with still pictures. ●You cannot set points if they are too close to each other. You cannot set an end point before a start point.	— —
Cannot erase chapters.	●When the chapter is too short to erase, use "Combine Chapters" to make the chapter longer.	**41**
The available recording time doesn't increase even after erasing recordings on the disc.	●Available recording space on the DVD-R and +R does not increase even after erasing previously recorded titles. ●Disc space on a DVD-RW (DVD-Video method) increases only when the last recorded title is erased. It does not increase if other titles are erased.	— —
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.	—

Still pictures

Cannot display Direct Navigator screen.	●This screen cannot be displayed during recording or transfer (dubbing) or while the unit is standing by for linked timer recording with external equipment.	—
Cannot edit or format a card.	●Release the card's protection setting. (With some cards, the "Write Protection Off" message sometimes appears on the screen even when protection has been set.)	**52**
The contents of the card cannot be read.	●The card format is not compatible with the unit. (The contents on the card may be damaged.) Format using FAT 12 or FAT 16 with other equipment or format the card with this unit. ●The card contains a folder structure and/or file extensions that are not compatible with this unit. ●Turn off and then turn on the unit again.	**11, 37, 53** **11** —
Transferring (dubbing), erasing 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 transferring (dubbing) or erasing, it may sometimes take a long time. Format the disc or card.	— **53**

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 password, Owner ID and time settings return to the factory preset. The timer recording programmes are also cancelled. ●Select "Yes" in "Default Settings" in the SETUP menu. All the settings other than the programmed channels, time settings, disc language settings, ratings level, ratings password, Owner ID, remote control code, return to the factory presets. ●Press and hold [∨ CH] and [CH ∧] on the main unit until the Auto-Setup screen appears. All the settings except for the ratings level, ratings password, Owner ID and time settings return to the factory preset. The timer recording programmes are also cancelled.	**59** **59** —
To reset the ratings level settings	●While the disc tray is open, press [DVD] then press and hold [● REC] and [►] (PLAY) 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 10 seconds. (The settings remain.)	—

Glossary

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

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

Decoder
A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

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.

DPOF (Digital Print Order Format)
DPOF is the standard printing format for still picture data taken by a digital camera, etc. It is used for automatic printing at a photo developing store or on your home printer.

Drive
In the instance of this unit, this refers to the hard disk (HDD), disc (DVD) and SD card (SD). 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.

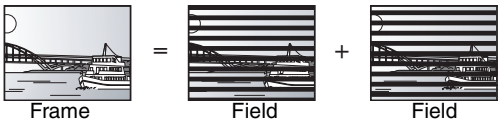
Film and video
DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.
For PAL
Film is 25 frames per second.
Video is 50 fields per second (two fields making up one frame).
For NTSC
Film is 24 or 30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

Finalize
A process that makes play of a recorded CD-R, CD-RW, DVD-R, etc. possible on equipment that can play such media. You can finalize DVD-R, DVD-RW (DVD-Video format) and +R on this unit.
After finalizing, the disc becomes play-only and you can no longer record or edit. However, finalized DVD-RW can be formatted to become recordable.

Folder
This is a place on the hard disk or memory card where groups of data are stored together. In the case of this unit, it refers to the place where still pictures (JPEG, TIFF) are stored.

Formatting
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.
You can format the HDD, DVD-RAM, DVD-RW (only as DVD-Video format) and SD Memory Card on this unit. Formatting erases irrevocably all contents.

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



- 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.

HDD (Hard disk drive)
This is a mass data storage device used in computers, etc. A disk with a surface that has been treated with magnetic fluid is spun and a magnetic head is brought in close proximity to facilitate the reading and writing of large amounts of data at high speed.

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. LPCM sound is available when recording in XP mode.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality. You can play MP3 you have recorded onto CD-R and CD-RW.

Pan&Scan/Letterbox
In general, DVD-Video are produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.
Pan & Scan: The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.
(This unit is compatible with version 2.0 and 1.1.)

Progressive/Interlace
The PAL video signal standard has 625 (or 576) interlaced (i) scan lines, whereas progressive scanning, called 625p (or 576p), uses twice the number of scan lines. For the NTSC standard, these are called 525i (or 480i) and 525p (or 480p) respectively.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video.
Your television must be compatible to enjoy progressive video.
Panasonic televisions with 625 (576)/50i · 50p, 525 (480)/60i · 60p input terminals are progressive compatible.

Protection
You can prevent accidental erasure by setting writing protection or erasure protection.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

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

TIFF (Tag Image File Format)
This is a system used for compressing/decoding colour still pictures, a common format for storing high quality images on digital cameras and other devices.

Q Link

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

- Download from the TV*
  When you connect the unit to a TV, the station list data is automatically copied from the TV to the unit, and the TV stations are assigned to the programme positions on the unit in the same order as on the TV.
- Direct TV Recording
  By simply pressing [● DIRECT TV REC], you can at once record the same programme that you are watching on the TV.
- TV/DVD Auto On*
  Even if the TV and the unit are off (standby mode), pressing [►] (PLAY), [DIRECT NAVIGATOR, TOP MENU], [VIDEO Plus+] or [PROG/CHECK] automatically turns on both the TV and the unit.
  If the TV is off (standby mode) and the unit is on, when you press [FUNCTIONS] or [►] (PLAY), or insert the disc [except DVD-RAM, DVD-R, DVD-RW (DVD-Video format) and +R], the TV is automatically turned on.
- DVD Auto Standby*
  When you turn the TV off, the unit is turned off as well. However, this function works in the stop mode.
  This function does not work during the following operations: Preset Download, Auto-Setup, Auto Clock Setting, Child Lock and Manual Tuning.
- On-Screen Messages*
  When you are watching a TV programme, the following messages appear on the TV screen to inform you of the unit's condition:

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

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

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

- If you have an IDTV with electronic programme guide function for digital broadcasts, you can perform timer recording using the electronic programme guide function. Refer to the television's operating instructions for further information.

PDC (Programme Delivery Control)

Programme Delivery Control adjusts the start and stop time of a timer recording automatically to ensure the recording starts and finishes in line with the programme broadcast. This is useful when a programme over-runs the published times.
The station must be transmitting PDC and the exact time must be set for PDC to work.
The unit detects whether a station is transmitting PDC only during the tuning process.
If PDC is introduced or discontinued by a station you will need to re-tune the unit before it becomes aware of this.
PDC transmissions are not currently nation-wide so please check with your local broadcaster for more information.
The beginnings of recordings may not be recorded correctly in some cases.

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.

Specifications

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

Recordable discs

DVD-RAM: Ver.2.0
Ver. 2.1/3×-SPEED DVD-RAM Revision 1.0
Ver.2.2/5×-SPEED DVD-RAM Revision 2.0
DVD-R: for General Ver. 2.0
for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0
for General Ver.2.x/8×-SPEED DVD-R Revision 3.0
DVD-RW: Ver.1.1
Ver. 1.1/2×-SPEED DVD-RW Revision 1.0
Ver.1.2/4×-SPEED DVD-RW Revision 2.0
+R: Ver.1.0
Ver.1.1
Ver.1.2

Internal HDD capacity 80 GB

Recording time Maximum 8 hours (with 4.7 GB disc)
XP: Approx. 1 hour, SP: Approx. 2 hours
LP: Approx. 4 hours, EP: Approx. 6 hours/8 hours
Maximum 142 hours (EP 8 hour mode, with built-in 80 GB HDD)

Playable discs

DVD-RAM, DVD-R, DVD-RW, +R, +RW, DVD-Video, DVD-Audio, CD-Audio (CD-DA), Video CD, CD-R/RW (CD-DA, Video CD, MP3, JPEG formatted discs)

SD card slot

Still picture (JPEG, TIFF) SD Memory Card slot: 1 pc
Compatible media: SD Memory Card※, MultiMediaCard
Format: FAT12, FAT16
Image file format:
JPEG conforming DCF (Design rule for Camera File system), (sub sampling; 4:2:2 or 4:2:0)
TIFF (Uncompressed RGB chunky), DPOF Compatible
Number of pixels: 34 × 34 to 6144 × 4096
Thawing time: Approx. 7 sec (2 M pixels)

LASER specification

Class I LASER Product
Wave length:
CD 795 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/AV4 (pin jack)
Input level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Input impedance: More than 10 kΩ
Audio out: AV1/AV2 (21 pin)
Audio Out (pin jack)
Output level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Output impedance: Less than 1 kΩ
Digital audio out: Optical terminal (PCM, Dolby Digital, DTS, MPEG)

Television system

Tuner system: PAL-I
Channel Coverage: UHF: CH 21–68
RF converter output: UHF: CH 21–68, 71±3 dBμ, 75 Ω termination

Video

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

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

Others

Region code: # 2
Operating temperature: 5–40 °C
Operating humidity range: 10–80 % RH (no condensation)
Power supply: AC 220–240 V, 50 Hz
Power consumption: 31 W
Dimensions (W×D×H): Approx. 430 mm×350.5 mm×63 mm
Mass: Approx. 4.4 kg

Note

Specifications are subject to change without notice.
Mass and dimensions are approximate.
※ Includes miniSD™ cards. (A miniSD™ card adaptor needs to be inserted.)

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