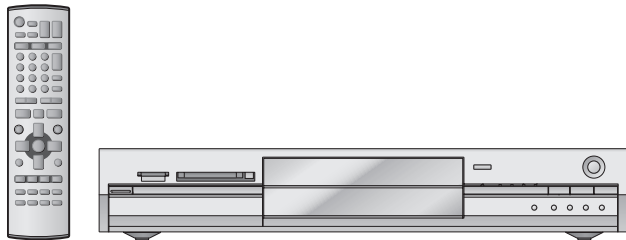


Operating Instructions

DVD Video Recorder

Model No. **DMR-E95H**



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

DIGA



EB

Region number supported by this unit

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

- The region number of this unit is "2".
- The unit will play DVDs 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.

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 54, 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. UNNGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	- AVATTAESSA OLET ALLTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEOFFNET. 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)**



("EB" area code model only)

For your safety, please read the following text carefully.

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

A 5-ampere fuse is fitted in this plug.

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

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

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

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

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

CAUTION!

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

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

If in any doubt please consult a qualified electrician.

IMPORTANT

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

Blue: Neutral, Brown: Live.

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

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

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

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

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

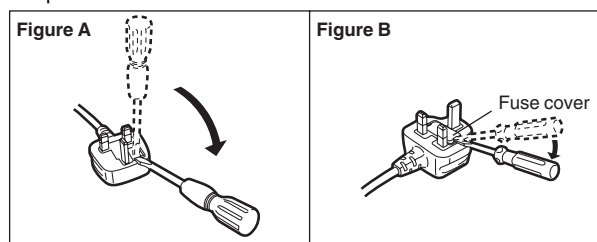
Remove the connector cover.

How to replace the fuse

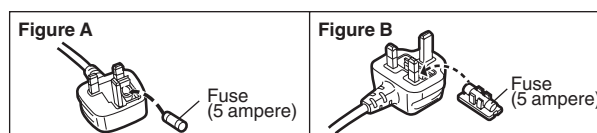
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

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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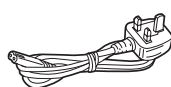
Accessories



Please check and identify the supplied accessories.
Use numbers when asking for replacement parts.



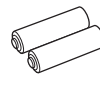
1 Remote control (EUR7721KN0)



1 AC mains lead (RJA0053-3X)
● For use with this unit only. Do not use it with other equipment.



1 RF coaxial lead (VJA1089)



2 Batteries for remote control



1 Audio/video cable (K2KA6CA00001)

■ Sales and Support Information

Customer Care Centre

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

Technical Support for AV Software

- For callers in UK: 08701 505610
- For callers in ROI: 0044 8701 505610

Direct Sales at Panasonic UK

- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday-Friday 9:00am-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.

Useful features

This DVD Video recorder records high quality images to rapid random access capable HDD (Hard disk drive) and DVD-RAM. This has resulted in many new features that out perform 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.

HDD recording

You can keep on recording your favorite programmes to an internal HDD that is able to record up to 284 hours [EP (8 Hour) mode].

You can also high speed transfer (dub) your favorite programmes to DVD-RAM or DVD-R and create a backup disc.

SD/PC card slot, DV input terminal

This unit is equipped with interfaces that allow networking with digital equipment.

- The SD/PC card slot of this unit lets you transfer (dub) digital camera photographs from a card to DVD-RAM for easy storage without using a computer.
- The DV automatic recording function of this unit lets you easily transfer (dub) digital images to the HDD by connecting only a single DV cable.

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.

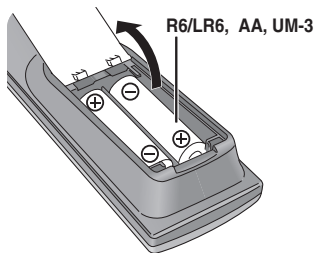


Time Slip

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

The remote control

■ Batteries



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

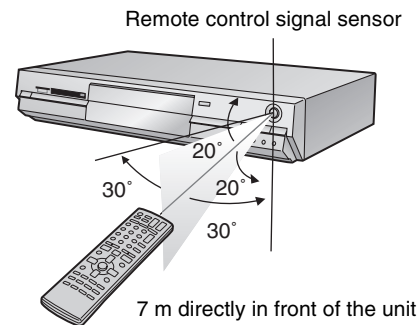
Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

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

Note

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

■ Use

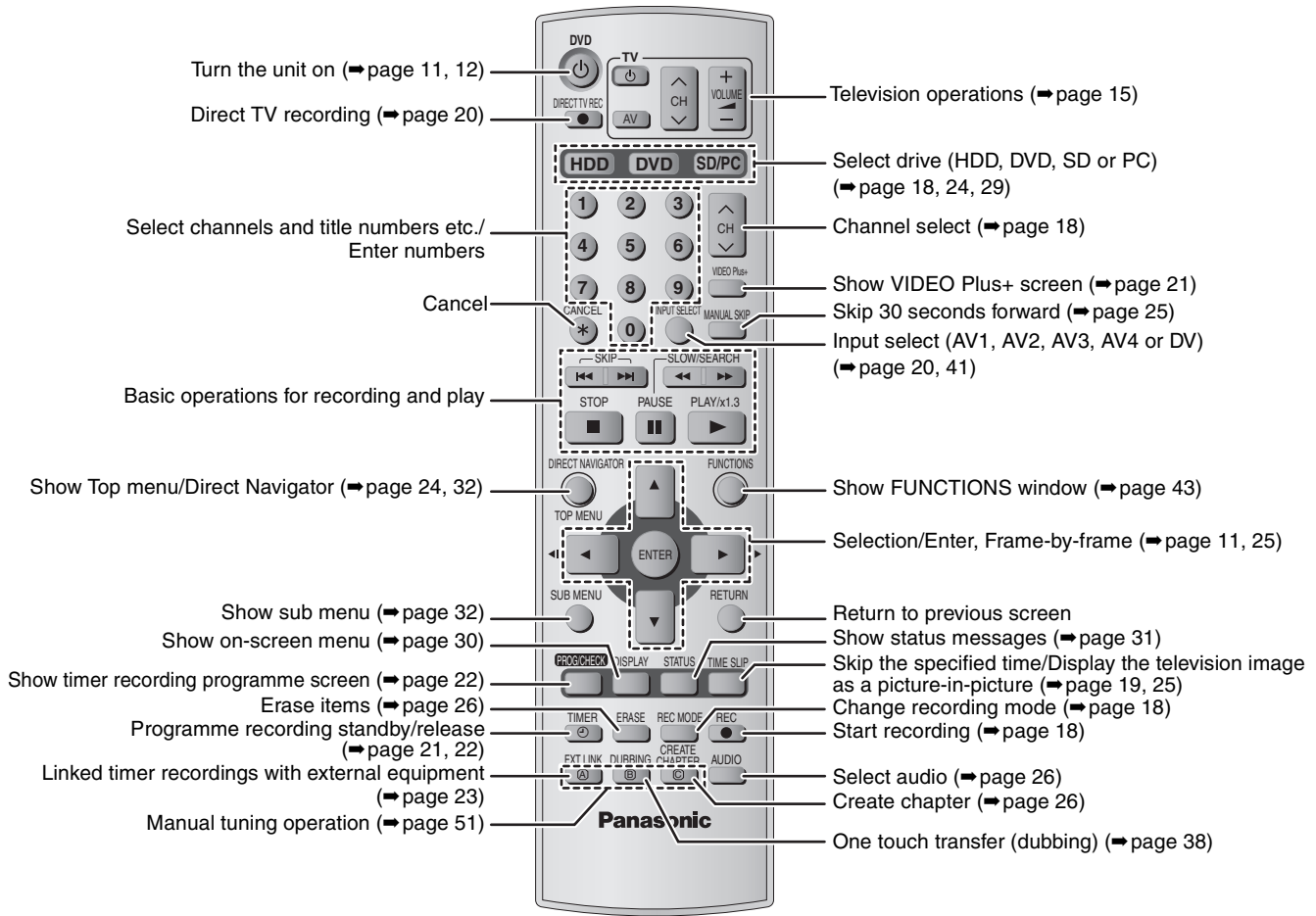


The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.

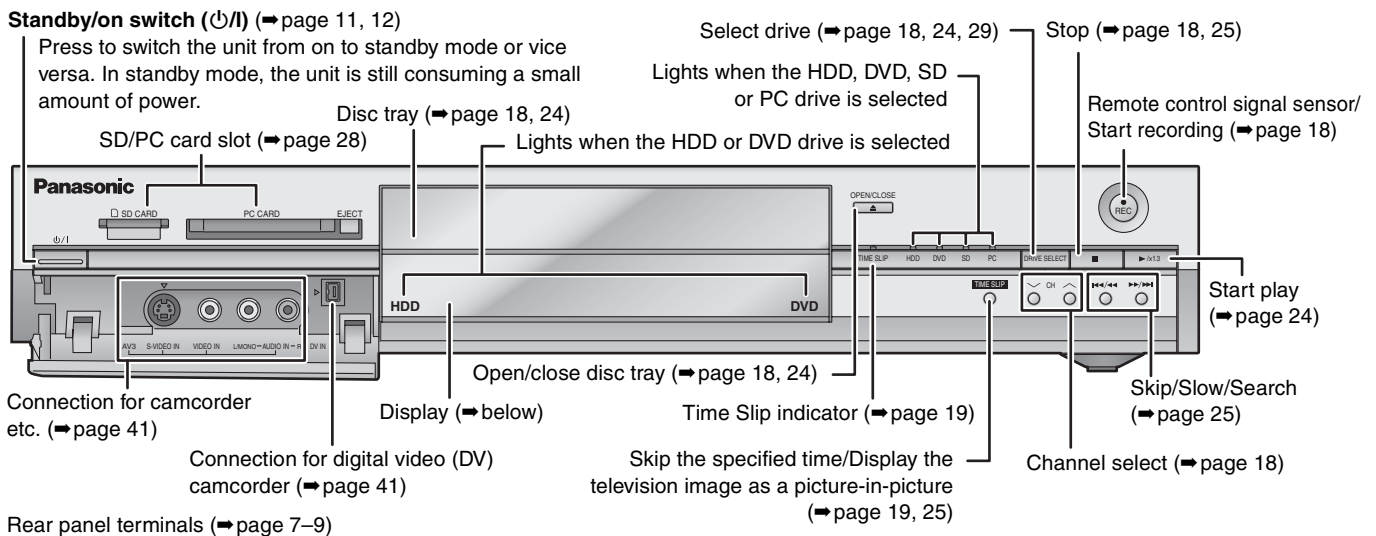
Examples of causes of such losses are

- 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.

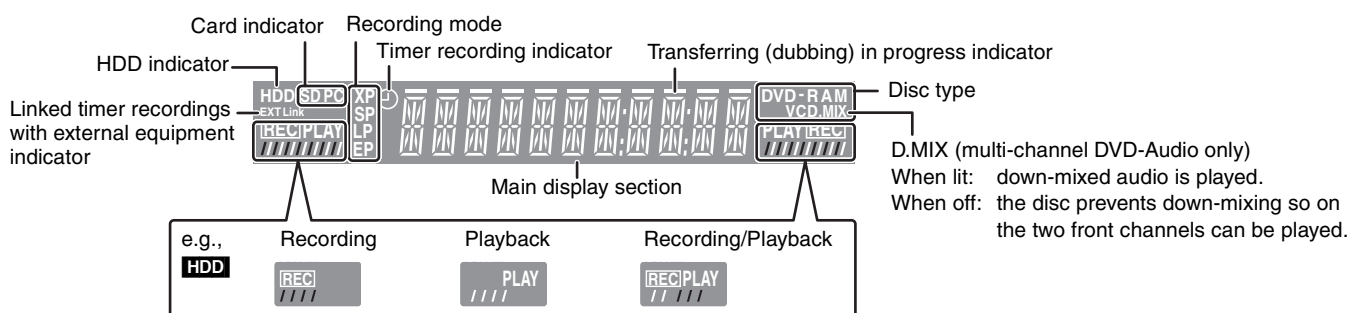
Remote control



Main unit



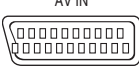



The unit's display



STEP 1 Connection

- The equipment connections described are examples.
- Before connection, turn off all equipment and read the appropriate operating instructions.
- Peripheral equipment and optional cables 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 	Fully wired 21-pin Scart lead	➔ 7	➔ 12 • If it's a Q Link television ➔ 11
Component video 	3 video cables	➔ 8	➔ 12
S-Video 	S-Video cable	➔ 8	➔ 12
Audio/Video 	Audio/Video cable (included)	➔ 8	➔ 12

- If your television does not have one of the terminals mentioned above, connect with the RF sockets only (➔ page 9). However, when using this connection, picture received from a satellite receiver may not be clear, therefore we do not recommend it.

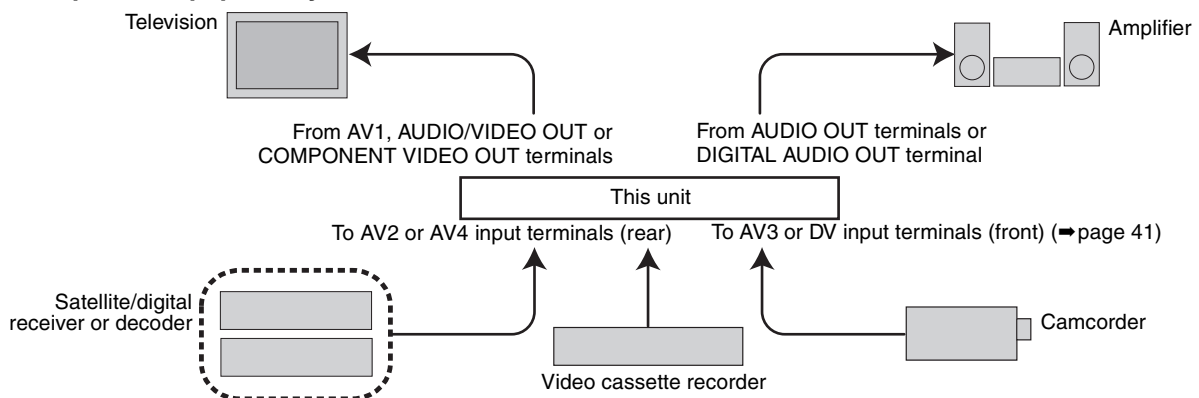
Q Link functions

Q Link offers a range of convenient functions (For further details ➔ page 56). Make sure to connect a fully wired 21-pin Scart lead to the television if using the Q Link function.

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

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

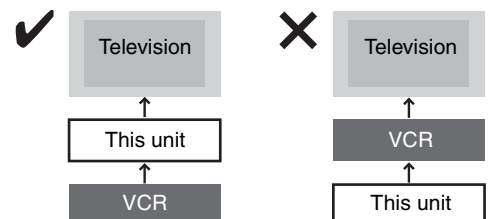
■ Examples of equipment you can connect to this unit's terminals



■ Do not connect the unit through a video cassette recorder

Video signals fed through video cassette recorders will be affected by copyright protection systems and the picture will not be shown correctly on the television.

- When connecting to a television with a built in VCR, connect to the input terminals on the television side, not the VCR side.



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

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

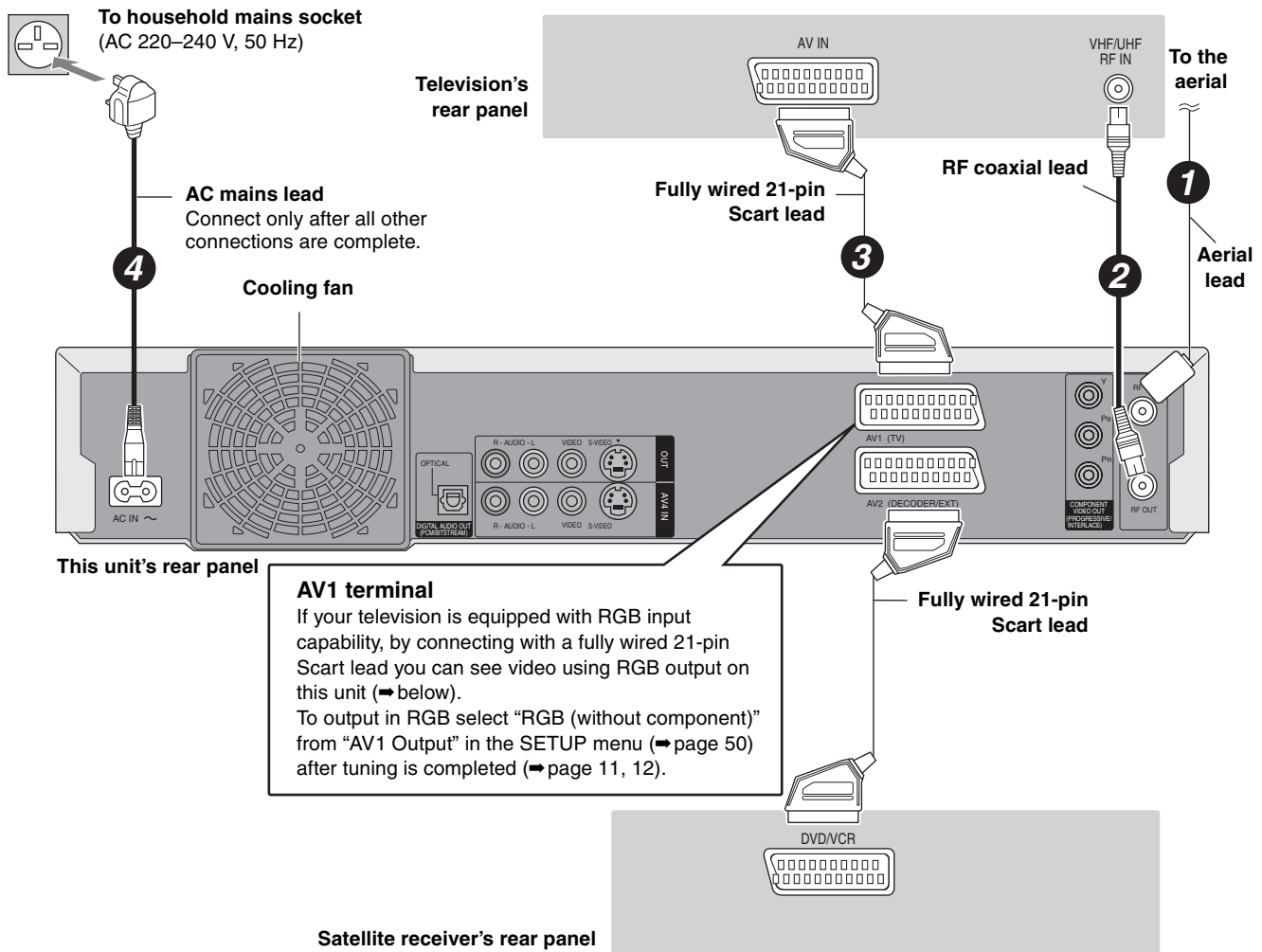
- When there is no 21-pin Scart terminal on the television (➔ page 8)
- Change the “AV2 Input” setting to match the output from a satellite receiver and set the “AV2 Connection” setting to “Normal” in the SETUP menu (➔ page 50) after tuning is completed (➔ page 11, 12).

— indicates included accessories.

— indicates accessories not included.

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

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



■ To view satellite programmes

Press [INPUT SELECT] to select the input channel “A2” for the satellite 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, S-VIDEO or COMPONENT VIDEO terminals and VCR

Connecting to the television using the 21-pin Scart leads (→ page 7)

— indicates included accessories.

— indicates accessories not included.

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

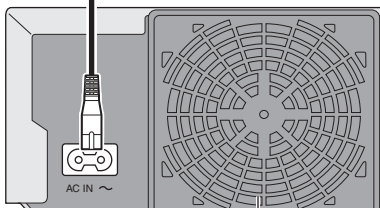
BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.

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



AC mains lead
Connect only after all other connections are complete.

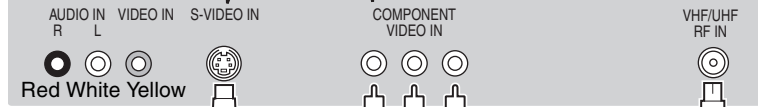
④



This unit's rear panel

Cooling fan

Television's rear panel



Red White Yellow

S-Video cable

RF coaxial lead

Video cable

②

①

To the aerial

Splitter

Aerial lead

When making this connection, ensure you connect the audio cables to the corresponding audio input terminals on the television.

Red White Yellow

R-AUDIO-L VIDEO S-VIDEO

R-AUDIO-L VIDEO S-VIDEO

Red White Yellow

R-AUDIO-L VIDEO S-VIDEO

Red White Yellow

R-AUDIO-L VIDEO S-VIDEO

Audio/Video cable

Audio/Video cable

VCR's rear panel

Red White Yellow

R L VIDEO OUT

R L VIDEO OUT

S-VIDEO OUT terminal
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
These terminals can be used for either interlace or progressive output and provide a purer picture than the S-VIDEO OUT terminal (→ below).
● Connect to terminals of the same colour.

Use a splitter if you also want to connect the aerial to your VCR.

You can also connect with the AV2 terminal on this unit using the 21-pin Scart lead.

VHF/UHF RF IN



■ 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 (→ page 55).

For progressive output (→ page 14)

Connecting a television with RF socket only and Satellite receiver

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

-  indicates included accessories.
-  indicates accessories not included.

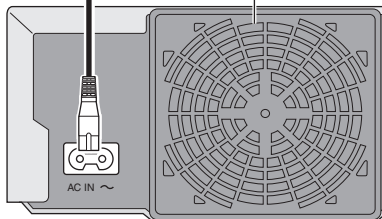
BE SURE TO READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.

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



AC mains lead
Connect only after all other connections are complete.

Cooling fan



This unit's rear panel

Television's rear panel



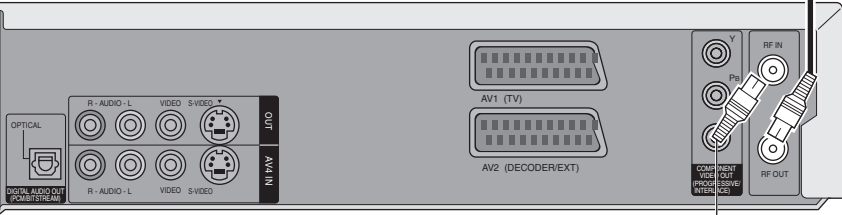
VHF/UHF
RF IN

To the aerial

1

2

RF coaxial lead



3

Aerial lead

RF coaxial lead

Satellite receiver's rear panel

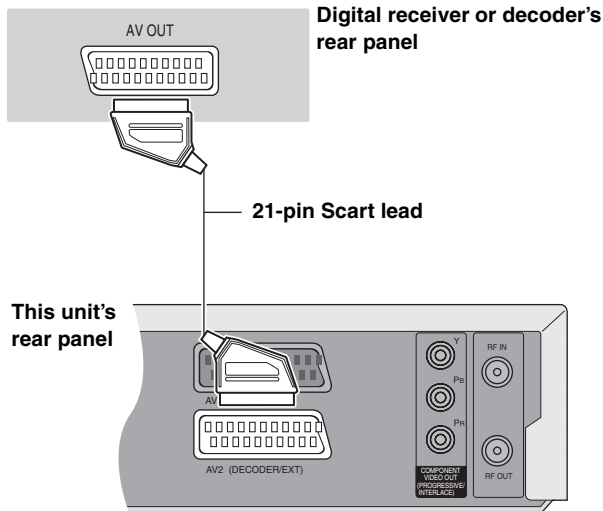


RF IN

RF OUT

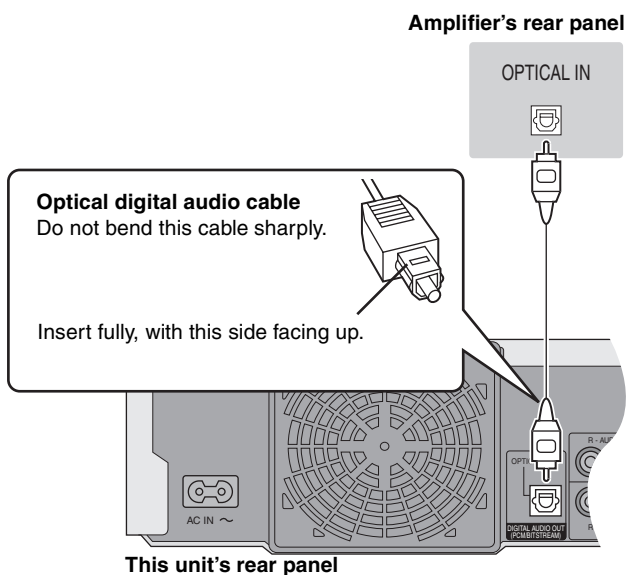
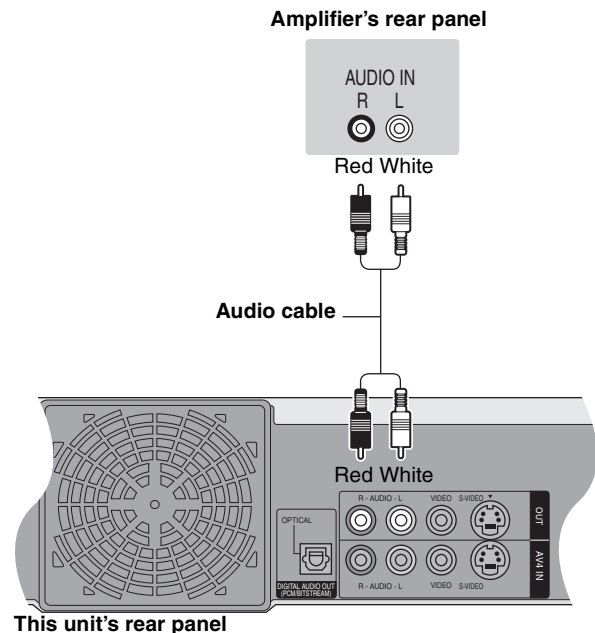
STEP 1 Connection**Connecting a digital receiver or decoder**

- Decoder here means the device used to decode scrambled broadcasts (Pay TV).
- Change the “AV2 Input” and “AV2 Connection” settings in the SETUP menu to match the connected equipment (→ page 50) after tuning is completed (→ page 11, 12).

**Connecting an amplifier or system component****■ To enjoy multi-channel surround sound on DVD-Video**

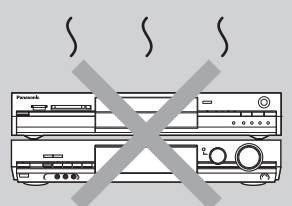
Connect an amplifier with Dolby Digital, DTS and MPEG decoders using an optical digital audio cable and change the settings in “Digital Audio Output” (→ page 49) after tuning is completed (→ page 11, 12).

- You cannot use DTS Digital Surround decoders not suited to DVD.
- Even if using this connection, output will be only 2 channels when playing DVD-Audio.

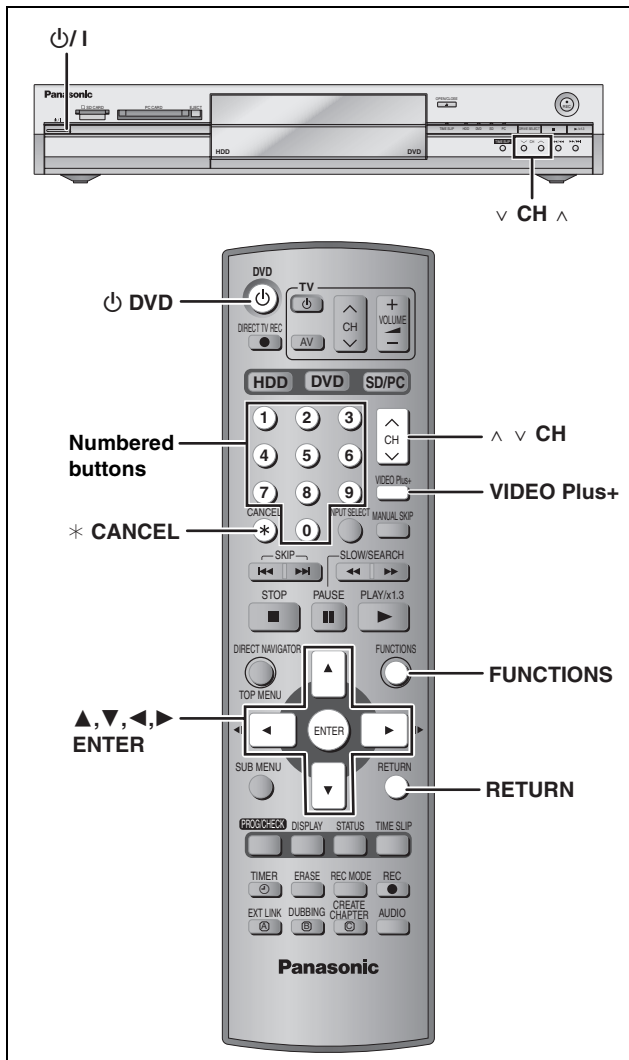
**■ Connection to a stereo amplifier**

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

The heat can damage the unit.



STEP 2 Channel reception settings



Preset Download (Setup with Q Link functions)

When connecting to a television that has the Q Link function (⇒ page 56) with a fully wired 21-pin Scart lead (⇒ page 7).

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

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

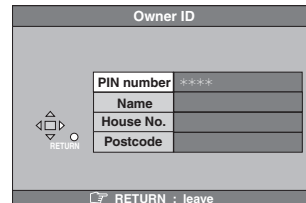
2 Press [DVD] to turn the unit on.

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 (⇒ page 53).

■ **To confirm that stations have been tuned correctly (⇒ page 51)**

■ **To restart Preset Download (⇒ page 52)**

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

Change the "AV2 Input" and "AV2 Connection" in the SETUP menu to match the connected equipment (⇒ page 50).

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

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

Refer to the control reference on page 11.

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 (⇒ page 8).

- When connecting to a television that does not have the Q Link function (⇒ page 56).

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

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

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

2 Press [DVD] to turn the unit on.

Auto-Setup starts. This takes about 5 minutes.

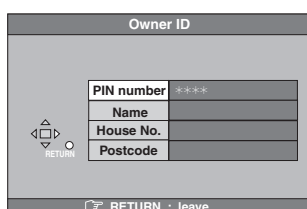


(When connecting to a television with RF socket only)
Set the new RF output channel to TV (refer to the instructions for your TV).

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

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

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



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

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

The cursor moves to "Name".

5 Press [▶].

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

Repeat this to enter the name.

7 Press [ENTER] to store the name.

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

9 Press [RETURN].

The Owner ID settings screen disappears.

To stop partway

Press [RETURN].

■ **If the clock setting menu appears**

Set the clock manually (⇒ page 53).

■ **To confirm that stations have been tuned correctly (⇒ page 51)**

■ **To restart Auto-Setup (⇒ page 52)**

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.

[When connecting to a television with RF socket only (⇒ page 9)]

■ **To enter the satellite station's name (⇒ page 51)**

The name of the satellite 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" and "AV2 Connection" in the SETUP menu to match the connected equipment (⇒ page 50).

Removing Interference

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

TV screen



Picture with interference

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

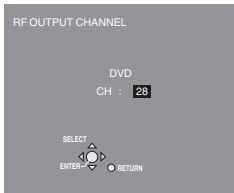
- 1 Press [FUNCTIONS] for more than 5 seconds.

Unit's display



RF output channel number appears.

TV screen



Test pattern screen appears.

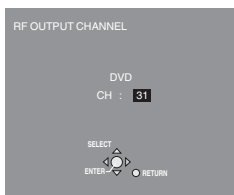
- 2 Press [\wedge \vee CH] to select a channel number, which differs by 2 or 3 from the present channel number.

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



The test pattern screen disappears.

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



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

- 4 Press [ENTER] to finish this setting.



Clear picture

VIDEO Plus+ numbers for Satellite/Cable TV stations

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

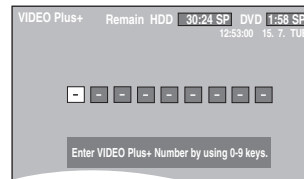
The following operation also allows you to use VIDEO Plus+ numbers to make timer recordings for satellite and cable TV stations. As the settings indicated below are dummy timer recordings, delete them in step 6.

Preparation

Turn on the Satellite receiver(s) or Cable TV box.

Select a correct station.

- 1 Press [VIDEO Plus+].

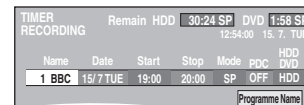


- 2 Press the numbered buttons to enter a VIDEO Plus+ number for a satellite station (e.g. Sky One) or Cable TV station.

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

- 3 Press [ENTER].

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



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



- 5 Press [ENTER].

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

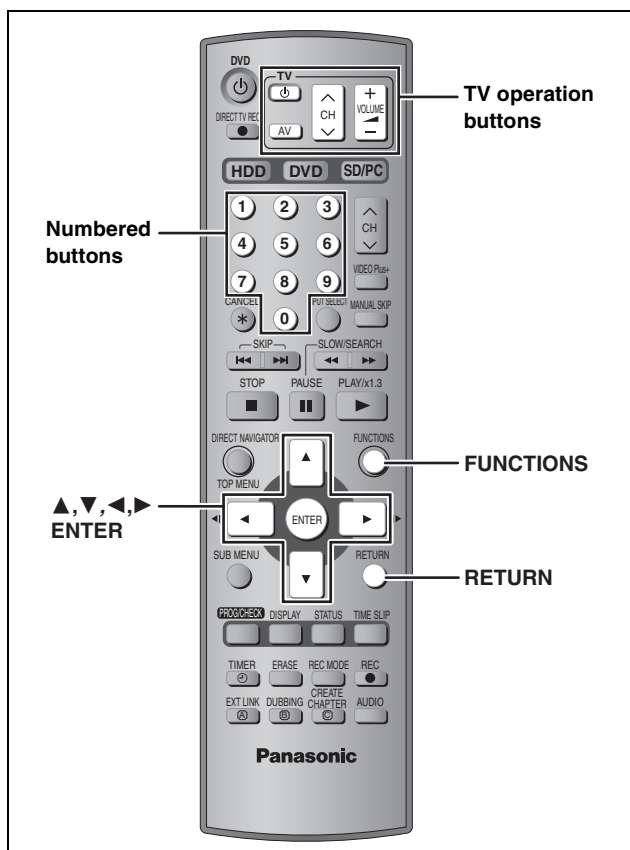
Repeat steps 1–5 above until you have set dummy timer recordings for each of the satellite stations or Cable TV stations that you will make VIDEO Plus+ recordings from.

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

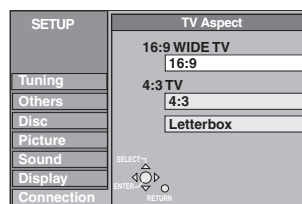
To exit the screen

Press [RETURN].

STEP 3 Set up to match your television and remote control



- 3 Press [**▲**, **▼**] to select “Connection” and press [**▶**].
- 4 Press [**▲**, **▼**] to select “TV Aspect” and press [ENTER].
- 5 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) (⇒ page 55).
- **Letterbox**: 4:3 aspect television
Widescreen picture is shown in the letterbox style (⇒ page 55).

To enjoy progressive video

You can enjoy progressive video by connecting this unit's COMPONENT VIDEO OUT terminals to an LCD/plasma television or LCD projector compatible with progressive scan (⇒ page 55).

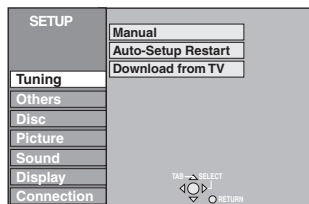
Selecting television type and aspect

Choose the setting to suit your television and preference.

- 1 While stopped
Press [FUNCTIONS].



- 2 Press [**▲**, **▼**, **◀**, **▶**] to select “SETUP” and press [ENTER].



- 1 While stopped
Press [FUNCTIONS].
- 2 Press [**▲**, **▼**, **◀**, **▶**] to select “SETUP” and press [ENTER].
- 3 Press [**▲**, **▼**] to select “Connection” and press [**▶**].
- 4 Press [**▲**, **▼**] to select “Progressive” and press [ENTER].
- 5 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 (⇒ page 31).
- There is no output from the COMPONENT VIDEO OUT terminals if “AV1 Output” in the SETUP menu is set to “RGB (without component)”. Set this item to either “Video (with component)” or “S-Video (with component)” (⇒ page 50).
- If the unit is connected to the television through VIDEO OUT, S-VIDEO OUT or AV1 terminal, output will be interlace irrespective of the settings.

To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

Television operation

You can configure the remote control TV operation buttons to turn the television on/off, change the television input mode, select the television channel and change the television volume.

Point the remote control at the television
While pressing [TV], enter the code with the numbered buttons.

e.g., 01: [0] → [1]

Manufacturer and Code No.

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

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

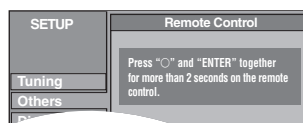
- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

When other Panasonic products respond to this remote control

If other Panasonic products are placed close together, change the remote control code on the main unit and the remote control (the two must match).

Under normal circumstances use the factory set code "DVD 1".

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



- 6 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.
- 7 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 6).

Note

Executing "Shipping Condition" in the SETUP menu returns the main unit code to "DVD 1". Change the remote control code to 1 (→ step 6).

HDD and discs you can use for recording and play

Type	Logo	Instructions
Hard disk drive (HDD) ● 160 GB Indicated in these instructions with HDD	—	Temporary storage ● You can record up to 284 hours [in EP (8 Hour) mode] (⇒ page 19, Recording modes and approximate recording times). ● You can view the title being recorded from the beginning (Chasing playback, Time Slip) (⇒ page 19). ● You can record digital broadcasts that allow “One time only recording”. You can transfer (dub) a recorded title to a CPRM compatible DVD-RAM, however the title is erased from the HDD (⇒ page 55). ● You can play and transfer (dub) still pictures taken on a digital camera etc. (⇒ page 28, 42).
DVD-RAM ● 4.7 GB/9.4 GB, 12 cm ● 2.8 GB, 8 cm RAM		Re-writable discs for backup use ● You can record up to 16 hours [in EP (8 Hour) mode] on double-sided disc. You cannot record or play continuously on two sides] (⇒ page 19, Recording modes and approximate recording times). ● You can view the title being recorded from the beginning (Chasing playback, Time Slip) (⇒ page 19). ● Scratch and dust resistant cartridge discs and large capacity double sided discs (9.4 GB) are commercially available. ● You can record digital broadcasts that allow “One time only recording” when using CPRM (Content Protection for Recordable Media) compatible discs (⇒ page 55). You cannot transfer (dub) a recorded title. ● This unit is compatible with 1×–3× recording speed discs. ● You can transfer (dub) up to 24× recording speed by using a high speed recording compatible disc (⇒ page 37). ● You can play and transfer (dub) still pictures taken on a digital camera etc. (⇒ page 28, 42).
DVD-R ● 4.7 GB, 12 cm ● 1.4 GB, 8 cm DVD-R		One time recording discs for backup use (recordable until the disc is full) ● You can record up to 8 hours [in EP (8 Hour) mode] (⇒ page 19, Recording modes and approximate recording times). ● By finalizing the disc, you can play it in a DVD player as DVD-Video (Play only) (⇒ page 45, 55). ● You cannot record digital broadcasts that allow “One time only recording”. ● This unit is compatible with 1×–4× recording speed discs. ● You can transfer (dub) up to 32× recording speed by using a high speed recording compatible disc (⇒ page 37).

● We recommend using Panasonic discs. DVD-R from other manufacturers may not be recorded or played due to the condition of the recording.
 ● 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.

Which should I use, DVD-RAM or DVD-R?

The following chart indicates the differences. Select based upon what you require.






(√: Possible, X: Impossible)	DVD-RAM	DVD-R
Re-writable	√	X
Edit	√	※1
Play on other players	√※2	√※3
Recording both M 1 and M 2 of bilingual broadcast	√	X※4
Recording broadcasts that allow one copy	√※5	X
Recording 16:9 aspect picture	√	※6

- ※ 1 You can erase, enter name and change thumbnail. Available space does not increase after erasing.
- ※ 2 Only on DVD-RAM compatible players.
- ※ 3 After finalizing the disc (⇒ page 45, 55).
- ※ 4 Only one is recorded (⇒ page 49, Bilingual Audio Selection).
- ※ 5 CPRM (⇒ page 55) compatible discs only.
- ※ 6 The picture is recorded in 4:3 aspect.

Note

When “DVD-R Rec for High Speed mode” 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 is not necessary when recording a programme (⇒ page 48).

Play-only discs (12 cm/8 cm)

Disc type	Logo	Instructions
DVD-Audio DVD-A		High fidelity music discs ● Played on this unit in 2 channels.
DVD-Video DVD-V	 	High quality movie and music discs
Video CD VCD		Recorded music and video (including CD-R/RW)
Audio CD CD		Recorded music and audio (including CD-R/RW)
	—	CD-R and CD-RW with music recorded in MP3 (⇒ page 27)

- This unit plays CD-R/CD-RW discs (audio recording discs) which have been recorded under one of the following standards: CD-DA, MP3 and Video CD. Close the session or finalize the disc after recording.
 Play may be impossible on some CD-R or CD-RW discs due to the condition of the recording.
- The producer of the discs 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.


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
- Unfinalized DVD-R recorded on other equipment (⇒ page 55, Finalize)
- DVD-Video with a region number other than “2” or “ALL”
- DVD-ROM ● DVD-RW ● +R ● +RW
- CD-ROM ● CDV ● CD-G ● Photo CD
- CVD ● SVCD ● SACD ● MV-Disc
- PD ● Divx Video Disc, etc.

Cards useable on this unit

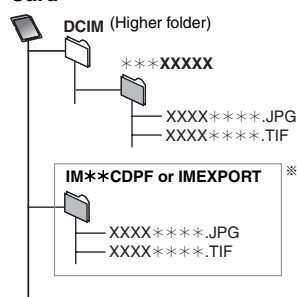
Type	Instructions
SD Memory Card MultiMediaCard SD	You can insert directly into the SD card slot. <ul style="list-style-type: none"> You can play and transfer (dub) still pictures taken on a digital camera etc. (⇒ page 28, 42). You can set the DPOF (Digital Print Order Format) for automatic printing on your home printer or at a photo developing store (⇒ page 36, 55).
SD Memory Card MultiMediaCard CompactFlash SmartMedia MEMORYSTICK xD-Picture Card Microdrive PC	You can insert into the PC card slot using an adaptor (TYPE II PC card adaptor). <ul style="list-style-type: none"> Compatible with: FAT 12 or FAT 16 We recommend using a Panasonic SD card. You cannot use SD cards that exceed 2 GB. We recommend using this unit to format a card before recording (⇒ page 45, 55). You may not be able to use the card if formatted on a computer.
ATA Flash PC Card Mobile hard disk* PC	You can insert directly into the PC card slot. <ul style="list-style-type: none"> * Content saved on SD media storage (SV-PT1). You can only play the recorded still pictures and transfer (dub) the data onto other cards, HDD or DVD-RAM.

Structure of folders displayed by this unit

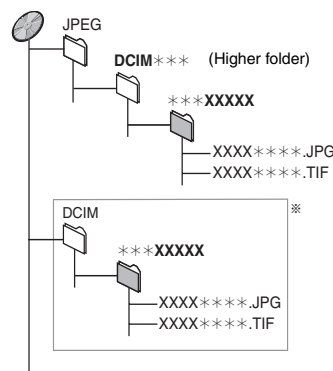
The following  can be displayed on this unit.

***: Numbers XXX: Letters

Card



DVD-RAM



* 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 filename 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.

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, X: Impossible)

TV type	Disc/Titles recorded on HDD	Yes/No
Multi-system TV	PAL	√
	NTSC	√ ^{#1}
NTSC TV	PAL	X
	NTSC	√ ^{#2}
PAL TV	PAL	√
	NTSC	√ ^{#3} (PAL60)

^{#1} If you select "NTSC" in "TV System" (⇒ page 52), the picture may be clearer.

^{#2} Select "NTSC" in "TV System" (⇒ page 52).

^{#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 (⇒ page 52).

Accessory discs

DVD-RAM

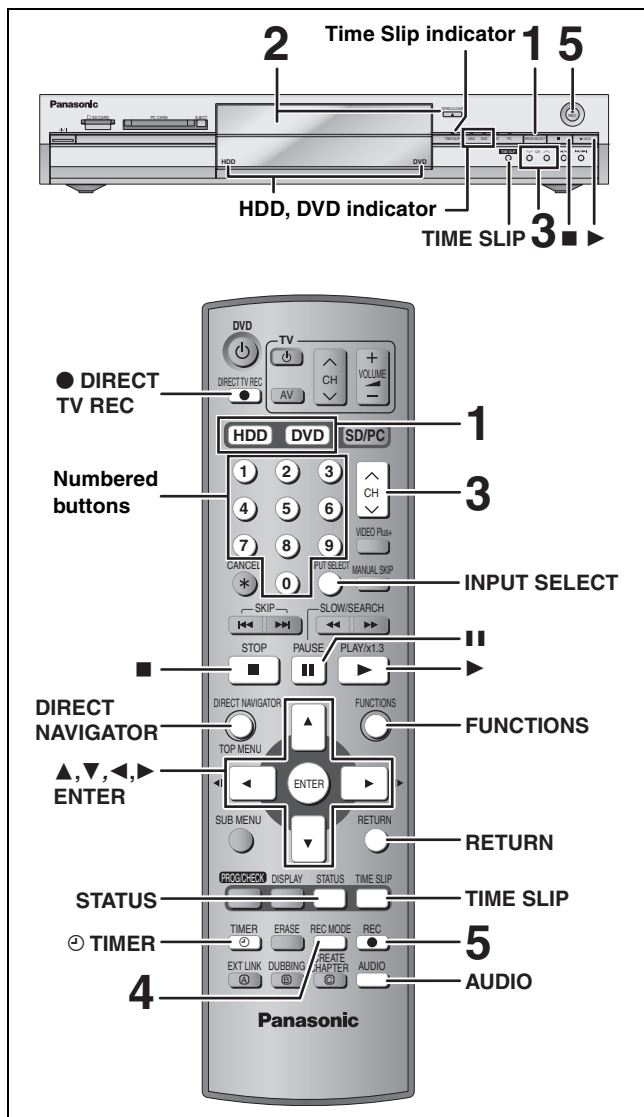
9.4 GB, double-sided, type 4 cartridge: LM-AD240LE

4.7 GB, single-sided, type 2 cartridge: LM-AB120LE

4.7 GB, single-sided, non-cartridge: LM-AF120LE

DVD-R

4.7 GB, single-sided, non-cartridge: LM-RF120LE



- HDD RAM DVD-R**
- It is not possible to record to both HDD (Hard disk drive) and DVD drive simultaneously.
 - You can record up to 500 titles on HDD, 99 titles on one disc.
 - It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
 - When using 8 cm DVD-RAM, remove the disc from the cartridge.
 - It is not possible to record CPRM (→ page 55) protected material onto DVD-R or 2.8 GB DVD-RAM discs.
 - It is not possible to record to a card.

When transferring (dubbing) in high speed mode to DVD-R after you have recorded to the HDD.

When transferring (dubbing) a title using the high speed mode to a DVD-R, set "DVD-R Rec for High Speed mode" to "On" before recording to the HDD (→ page 48).

However, the following restrictions apply.

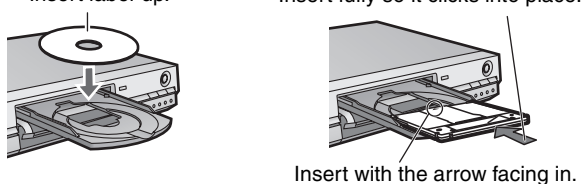
- When recording bilingual broadcasts, only the audio selected in "Bilingual Audio Selection" (→ page 49) is recorded ("M 1" or "M 2").
- Even 16:9 aspect (Widescreen) programmes are recorded in 4:3 aspect.
- Even if "Hybrid VBR Resolution" is set to "Automatic", it changes to "Fixed" automatically, and the "Automatic" setting does not work (→ page 48).

When recording to DVD-R

- When recording bilingual broadcasts, only the audio selected in "Bilingual Audio Selection" (→ page 49) is recorded ("M 1" or "M 2").
- In order to play a DVD-R recorded using this unit on another playback source, the disc must first be finalized (→ page 45).

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.
Insert label-up. 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 (→ page 49).

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.
- **HDD RAM** You can change the audio being received by pressing [AUDIO] during recording. (Does not affect the recording of audio.)

■ To stop recording
Press [■].
From the start to the end of the recording is called one title.

HDD
When continuously recording for long durations, titles are automatically divided every 8 hours.

DVD-R
It takes about 30 seconds for the unit to complete recording management information after recording finishes.

■ To pause recording
Press [||].
Press again to restart recording.
(Title is not split into separate titles.)

■ To specify a time to stop recording—One Touch Recording

During recording

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

Each time you press the button:

30 (min.) → 60 (min.) → 90 (min.) → 120 (min.)
 ↑ Counter (cancel) ← 240 (min.) ← 180 (min.) ↓

- This does not work during timer recordings (⇒ page 21) or while using Flexible Recording (⇒ page 20).

To stop recording partway

Press [■].

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 (⇒ page 51).

Note

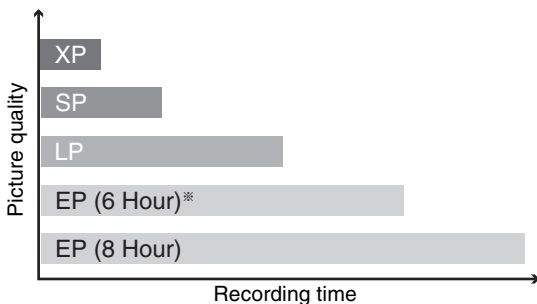
The unit may take some time in retrieving titles (up to 30 minutes) and may fail in some cases.

Recording modes and approximate recording times

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

(Unit: hour)

Mode	HDD (160 GB)	DVD-RAM		DVD-R (4.7 GB)
		Single-sided (4.7 GB)	Double-sided (9.4 GB)	
XP (High quality)	36	1	2	1
SP (Normal)	70	2	4	2
LP (Long play)	138	4	8	4
EP (Extra long play)	284 (212*)	8 (6*)	16 (12*)	8 (6*)



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

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

Note

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

FR (Flexible Recording Mode)

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

- You can set when transferring (dubbing) or programming timer recordings.
- 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.



Playing while you are recording

You can change the drive and play while recording on this unit. Also, while recording to the HDD or to DVD-RAM you can view the title being recorded from the beginning as well as play a recorded title.

HDD RAM

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

Press [▶] (PLAY).

Time Slip indicator on the main unit lights.

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

1 Press [DIRECT NAVIGATOR].

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

Time Slip indicator on the main unit lights.

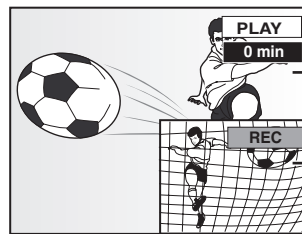
To exit the DIRECT NAVIGATOR screen

Press [DIRECT NAVIGATOR].

Reviewing the recorded images while recording—Time Slip

1 Press [TIME SLIP].

Time Slip indicator on the main unit lights.



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].

- 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).

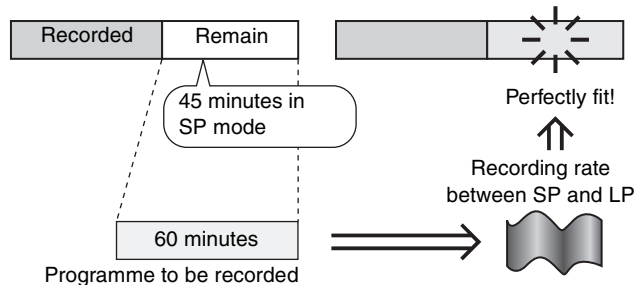
Refer to the control reference on page 18.

HDD **RAM** **DVD-R**

Flexible Recording

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

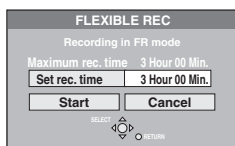
e.g.,



Preparation

Select the channel to record.

- 1 While stopped
Press **[FUNCTIONS]**.
- 2 Press **[▲, ▼, ◀, ▶]** to select **“FLEXIBLE REC”** and press **[ENTER]**.



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

- You cannot record more than 8 hours.
- You can also set the recording time with the numbered buttons.

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

Recording starts.

To exit the screen without recording

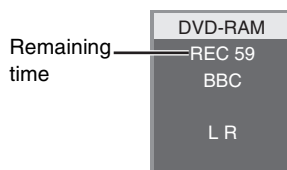
Press **[RETURN]**.

To stop recording partway

Press **[■]**.

To show the remaining time

Press **[STATUS]**.



Direct TV Recording

When connected to a television that has the Q Link function 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. (⇒ page 18)
- 3 Press **[● DIRECT TV REC]**.
Recording starts.

To stop recording

Press **[■]**.

Recording from satellite/digital receiver or decoder

Preparation

- Connect a satellite/digital receiver or decoder to this unit's input terminals (⇒ page 7, 9, 10).

- 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.

DVD-R

Select either M 1 or M 2 on the connected equipment. (You cannot select the audio type in playback.)

- When the output signal from the external equipment is NTSC, change the “TV System” to “NTSC” in the SETUP menu (⇒ page 52).
- 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]**.

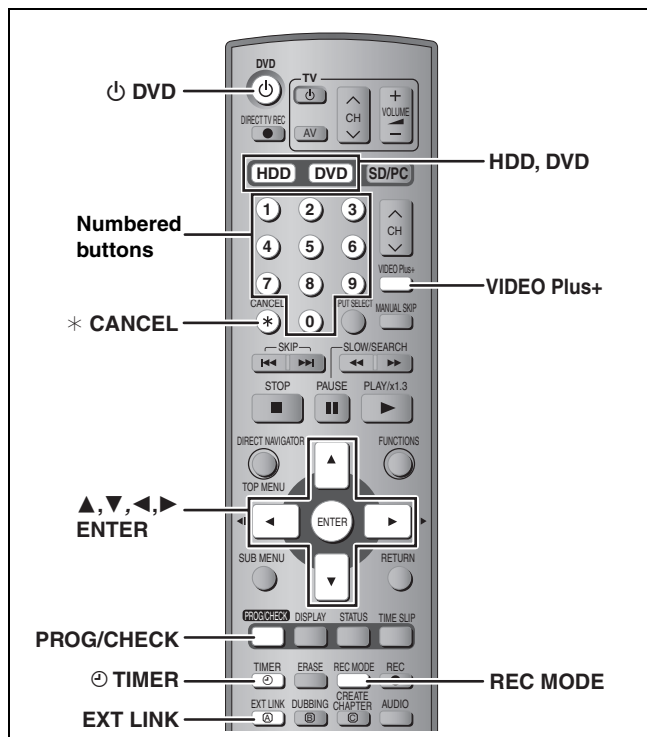
Recording starts.

To skip unwanted parts

Press **[||]** to pause recording. (Press again to restart recording.)

To stop recording

Press **[■]**.



HDD RAM DVD-R

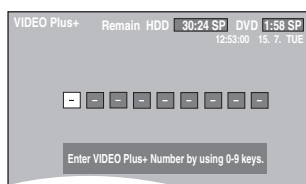
You can enter up to 32 programmes up to a month in advance.

Using VIDEO Plus+ number to make timer recordings

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

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

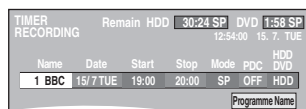
1 Press [VIDEO Plus+].



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

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

3 Press [ENTER].



- Confirm the programme and make corrections if necessary using [▲, ▼, ◀, ▶] (→ page 22, step 3).
- When "--" appears in the "Name" column, you cannot set timer recording. Press [▲, ▼] to select desired programme position. After you have entered the information of a TV station, it is kept in the unit's memory.
- You can also press [REC MODE] to change the recording mode.
- **PDC** (→ right)
ON ↔ OFF (---)
- 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" (→ right, Relief Recording).
- **RENEW (Auto Renewal Recording) HDD** (→ page 22)
ON ↔ OFF
- **Programme Name**
Press [◀, ▶] to select "Programme Name" and press [ENTER] (→ page 46).

4 Press [ENTER].

The settings are stored.



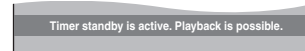
Check to make sure "OK" is displayed (→ page 23).

Repeat steps 1–4 to programme other recordings.

5 Press [⊙ TIMER].

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

- The message screen appears. Only play is possible while timer recording is in standby (→ page 24, 25). (You cannot play a title recorded using a different encoding system from that of the TV system currently selected on the unit.)
- The unit is not off. To save power, turn the unit off by pressing [⏻ DVD].



■ 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 (→ page 37).
- "⊙" 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).

■ PDC function (→ page 56)

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

To activate the PDC function

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

■ Relief Recording

When the recording drive is set to "DVD" for timer recording and if the programme will not fit onto the disc, the recording drive will be altered to the "HDD" automatically.

- 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.) (→ page 24).
- 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.

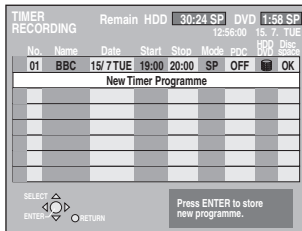
Refer to the control reference on page 21.

HDD RAM DVD-R

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

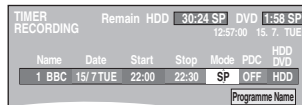
Manually programming timer recordings

1 Press [PROG/CHECK].



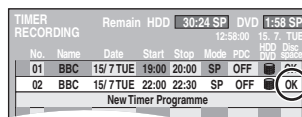
2 Press [▲, ▼] to select “New Timer Programme” and press [ENTER].

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.
- You can also press [REC MODE] to change the recording mode.
- **Date**
 → Date: Current date up to one month later minus one day
 ↓ ↑
 Daily timer: SUN-SAT → MON-SAT → MON-FRI
 ↓ ↑
 → Weekly timer: SUN → --- → SAT
- **PDC** (⇒ page 21)
 ON ↔ OFF (---)
- 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” (⇒ page 21, Relief Recording).
- **RENEW (Auto Renewal Recording)** **HDD** (⇒ right)
 ON ↔ OFF
- **Programme Name** (⇒ page 46)
 Press [◀, ▶] to select “Programme Name” and press [ENTER].

4 Press [ENTER].



Check to make sure “OK” is displayed (⇒ page 23).

Repeat steps 2–4 to programme other recordings.

5 Press [⏻ TIMER].

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

- The message screen appears. Only play is possible while timer recording is in standby (⇒ page 24, 25). (You cannot play a title recorded using a different encoding system from that of the TV system currently selected on the unit.)
- The unit is not off. To save power, turn the unit off by pressing [⏻ DVD].



■ 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 (⇒ page 37).
- “⏻” 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).

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.

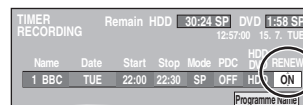
This function can be used only when weekly recording or daily recording is selected.

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.
- Play lists 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

Preparation

- Change the settings in the SETUP menu as follows (⇒ page 50).
 - “AV2 Input”: “RGB (Not NTSC)”
 - “AV2 Connection”: “Normal”

Follow the steps indicated for manually programming timer recordings (⇒ page 22).

- Make sure you connect to the “TV Scart terminal” of a Sky Digital STB with a 21-pin Scart lead.
- Set your Sky Digital STB to output “RGB” signals.
- After setting the Personal Planner programmes as required, Sky Digital STB must be left on (not set to standby) to ensure continuous output of RGB signals.

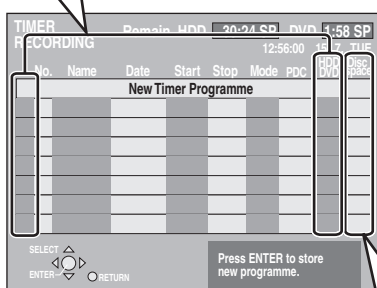
Check, change or delete a programme

- 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 (⇒ page 22).
- ➔ 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]. (⇒ page 22, 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 displayed gray. They are automatically deleted from the timer recording list at 4 a.m. two days later.

Linked timer recordings with external equipment (EXT LINK)

HDD RAM DVD-R

If an external equipment (for example a satellite receiver) with a timer function is connected to the AV2 terminal of this unit by a 21-pin Scart lead (⇒ page 7, 10), it is possible to control the recording of the unit with the equipment.

Preparation

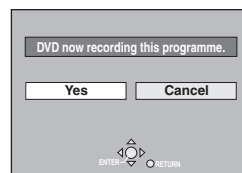
- Change the “Ext Link” in the SETUP menu to match the connected equipment (⇒ page 50).
- Timer programming has to be done on the external equipment and switch to the timer recording standby mode. Refer to the equipment’s operating instructions.
- Press [HDD] or [DVD] to select the drive.

Press [EXT LINK].

The unit turns off and switches to the recording standby mode.

- Recording begins when a signal is received from the connected equipment.
- As long as a video picture is being transmitted by the external equipment, the unit will record it.

When the following message appears on the television screen, press [◀, ▶] to select “Yes” (continue recording the current programme) or “Cancel” (cancel recording) and press [ENTER].



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 record programmes from a satellite receiver using the “Sky Personal Planner” function

Change the settings in the SETUP menu as follows (⇒ page 50).

- “AV2 Input”: “Video”
- “AV2 Connection”: “Normal”
- “Ext Link”: “Ext Link 1”

- Make sure you connect to the “VCR Scart terminal” of a Sky Digital STB with a 21-pin Scart lead.

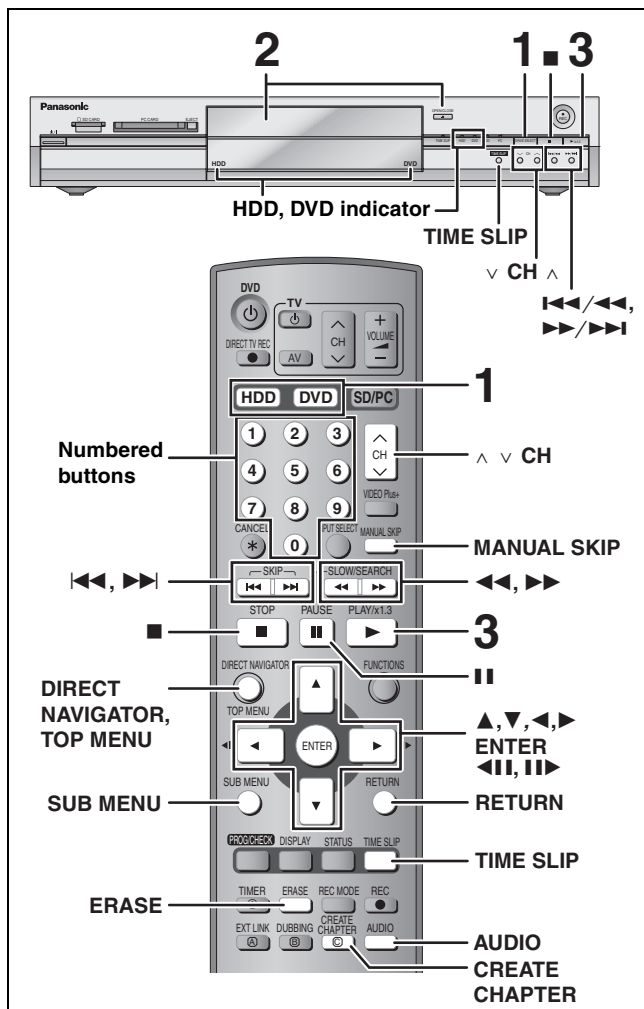
To cancel the external control

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

- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.
- In order to prevent accidental operation, press [EXT LINK] to cancel the setting after recording is finished.

For your reference

- The video being recorded automatically appears on the television when connected to this unit’s AV1 terminal with the 21-pin Scart lead.
- 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.



- It is possible to watch playback from one drive while recording from another (editing is not possible).
- It is not possible to play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- When using 8 cm DVD-RAM, remove the disc from the cartridge.
- When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the recorded title (⇒ page 52).

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

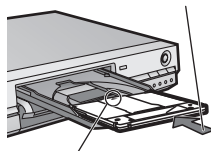
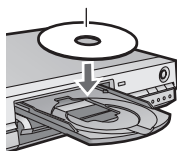
The HDD or DVD indicator lights up on the unit.

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.

Insert label-up.

Insert fully so it clicks into place.



Insert with the arrow facing in.

3 Press [▶] (PLAY).

HDD RAM DVD-R

Play starts from the most recently recorded title.

DVD-A DVD-V VCD CD

Play starts from the beginning of the disc.



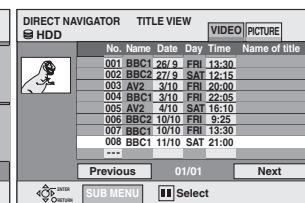
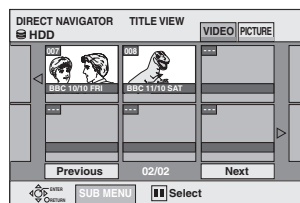
■ Selecting recorded programmes (titles) to play— Direct Navigator

HDD RAM DVD-R

1 Press [DIRECT NAVIGATOR].

•Thumbnail Display

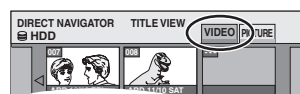
•Table Display



Switching the Direct Navigator appearance

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

2 Press [▲, ▼, ◀, ▶] to select "VIDEO" tab and press [ENTER].



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

You can also select titles with the numbered buttons.

e.g., **HDD** 5: [0] ⇒ [0] ⇒ [5] 15: [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].

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

To exit the screen

Press [DIRECT NAVIGATOR].

Direct Navigator screen icons

- 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.]
 - Currently recording.
 - Titles that have been rerouted to the HDD (⇒ page 21, Relief Recording)
 - Title with "One time only recording" restriction
 - (NTSC) Title recorded using a different encoding system from that of the TV system currently selected on the unit.
 - (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 (⇒ page 52).

■ When a menu screen appears on the television

DVD-A DVD-V

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]



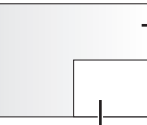
•To return to the menu screen

DVD-A Press [TOP MENU].

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

VCD Press [RETURN].

Operations during play

<p>Stop</p>	<p>Press [■]. The stopped position is memorized. The indicator on the right appears in the unit's display. (Excluding when playing from the Direct Navigator and when playing a play list.) Resume play function Press [▶] (PLAY) to restart from this position.</p> 
<p>Pause</p>	<p>Press [II]. Press again to restart play.</p>
<p>Search</p>	<p>Press [◀◀] or [▶▶].</p> <ul style="list-style-type: none"> • On the main unit, press and hold [◀◀/▶▶] or [▶▶/▶▶▶]. • The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play. • Audio is heard during first level search forward. You can turn off the sound during search (⇒ page 49, "PLAY × 1.3 & Audio during Search"). Audio is heard during all levels of search. DVD-A (excluding moving picture parts) CD
<p>Skip</p>	<p>Press [I◀◀] or [▶▶I].</p> <ul style="list-style-type: none"> • On the main unit, press [I◀◀/▶▶I] or [▶▶/▶▶▶]. • Each press increases the number of skips.
<p>Starting from a selected item</p>	<p>Press the numbered buttons.</p> <p>e.g., 5: [0] ⇒ [5] HDD 5: [0] ⇒ [0] ⇒ [5] 15: [1] ⇒ [5] CD (MP3 discs only) 15: [0] ⇒ [1] ⇒ [5]</p> <p>DVD-A Selecting groups While stopped (screen saver is displayed on the television ⇒ right) 5: [5]</p> <ul style="list-style-type: none"> • This works only when stopped (screen saver is displayed on the television ⇒ right) with some discs. 
<p>Quick View HDD RAM The play speed can be increased without distorting the audio.</p>	<p>Press and hold [▶] (PLAY/× 1.3).</p> <ul style="list-style-type: none"> • Press again to return to normal speed. • This does not work if the setting is "Off" in "PLAY × 1.3 & Audio during Search" (⇒ page 49).
<p>Slow-motion HDD RAM DVD-R DVD-A (Motion picture parts only) DVD-V VCD</p>	<p>While paused, press [◀◀] or [▶▶].</p> <ul style="list-style-type: none"> • On the main unit, press and hold [◀◀/▶▶] or [▶▶/▶▶▶]. • The speed increases up to 5 steps. • Press [▶] (PLAY) to restart play. • Forward direction only. VCD • The unit will pause if slow-motion play is continued for 5 minutes.
<p>Frame-by-frame HDD RAM DVD-R DVD-A (Motion picture parts only) DVD-V VCD</p>	<p>While paused, press [◀II] or [II▶].</p> <ul style="list-style-type: none"> • Each press shows the next frame. • Press [▶] (PLAY) to restart play. • Forward direction only. VCD
<p>Displaying the television image as a picture-in-picture</p> <p>Skipping the specified time (Time Slip) HDD RAM DVD-R</p>	<p>Press [TIME SLIP]. The unit displays the television image as a picture-in-picture.</p> <ul style="list-style-type: none"> • You will hear the playback audio. • Press [TIME SLIP] again to cancel. • The grey background does not appear on the receiving screen even if you select "On" from the "Grey Background" in the SETUP menu (⇒ page 49).  <p>Current receiving images</p> <ul style="list-style-type: none"> • You can change the channel being received by pressing [^ v CH]. • You cannot change the channel being received while recording. <p>1 Press [TIME SLIP]. 2 Press [▲, ▼] to select the time and press [ENTER]. Play skips the specified time.</p> <ul style="list-style-type: none"> • Press [TIME SLIP] to show the play images in full. <p>Note Time Slip does not work while timer recording is in standby.</p>
<p>Manual Skip HDD RAM DVD-R Play restarts from approximately 30 seconds later.</p>	<p>Press [MANUAL SKIP].</p>

Refer to the control reference on page 24.

Editing operations during play

<p>Erase HDD RAM DVD-R</p>	<p>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).</p>
<p>Create Chapter (⇒ page 32, Title/Chapter) HDD RAM</p>	<p>Press [CREATE CHAPTER]. The message screen appears for 5 seconds to confirm that a chapter is created. ● Press [◀◀, ▶▶] to skip to the start of a chapter. ● You cannot divide while recording or transferring (dubbing).</p>

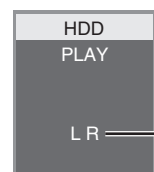
Changing audio

Press [AUDIO].

HDD RAM VCD

LR → L → R

↑



e.g., “L R” is selected

DVD-A DVD-V

You can change the audio channel number each time you press the buttons. This allows you to change things like the soundtrack language (⇒ page 30, Soundtrack).



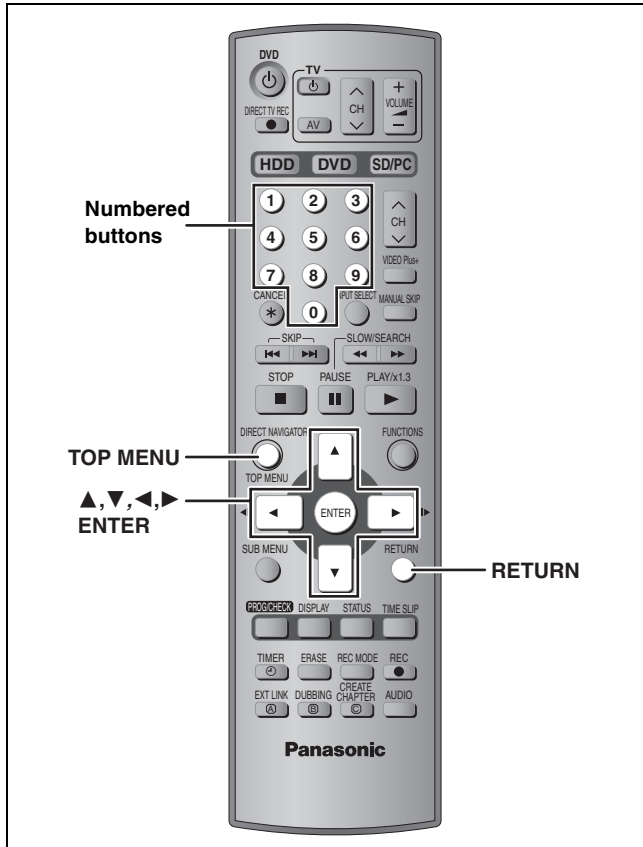
e.g., English is selected.

Note

You cannot change the audio type in the following cases.

- When a DVD-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” (⇒ page 49).
- When “DVD-R Rec for High Speed mode” is set to “On” (⇒ page 48).

Using menus to play MP3

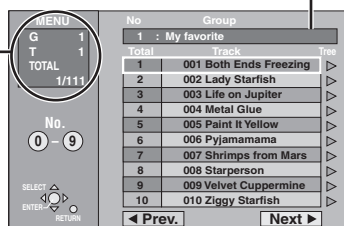


CD (MP3 discs only)

This unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ page 55) on a computer. Files are treated as tracks and folders are treated as groups.

1 Press [TOP MENU].

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



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

- Play continues to the last track in the last group.
- “” 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 select “Prev.” or “Next” and press [ENTER]. After listing all the tracks in one group, the list for the next group appears.

To exit the screen

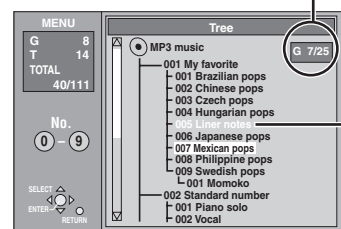
Press [TOP MENU].

Using the tree screen to find a group

While the file list is displayed

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

Selected group No. /Total groups
 If the group has no track, “- -” is displayed as group number.



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

The file list for the group appears.

To return to the file list

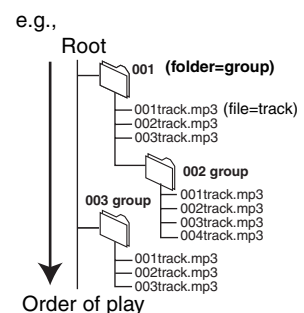
Press [RETURN].

Tips for making MP3 discs

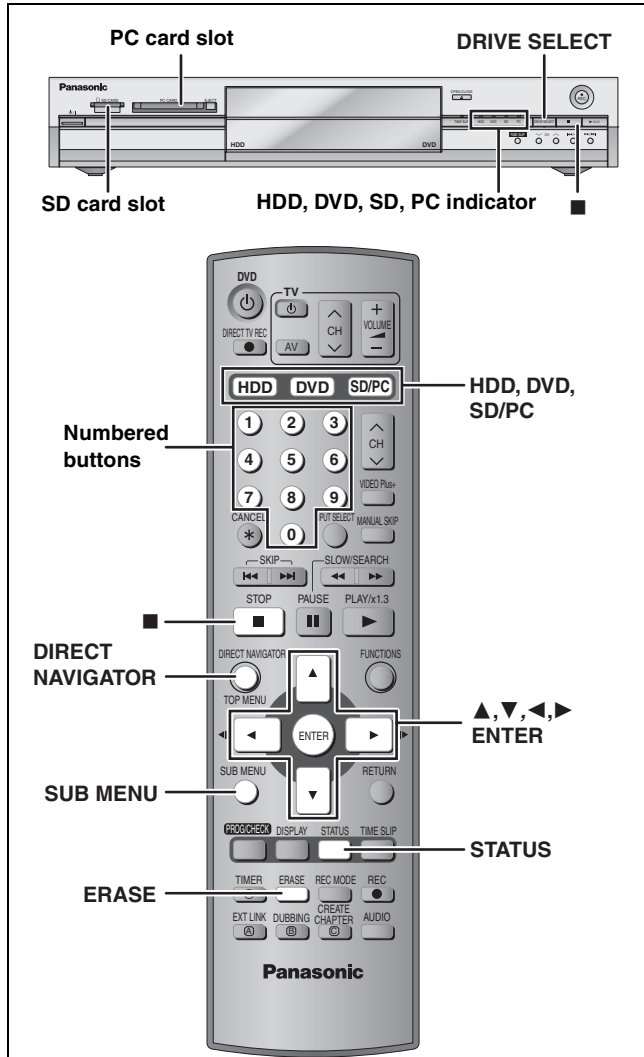
- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- Compatible compression rate: between 32 kbps and 320 kbps
- Compatible sampling rate: 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz and 48 kHz
- Maximum number of tracks and groups recognizable:
 999 tracks and 99 groups
- This unit is compatible with multi-session.
- This unit is not compatible with ID3 tags or packet writing.
- Depending on the recording, some items may not be playable.
- Reading or play of the disc may take time if there are a lot of still pictures or sessions.
- The display order may differ from how the order is displayed on a computer.

Naming folders and files

- MP3 files must have the extension “.MP3” or “.mp3”.
- At the time of recording, give folder and file names a 3-digit numeric prefix in the order you want them to play (this may not work at times).
- English alphabets and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.



Playing still pictures



Regarding still pictures (JPEG, TIFF)

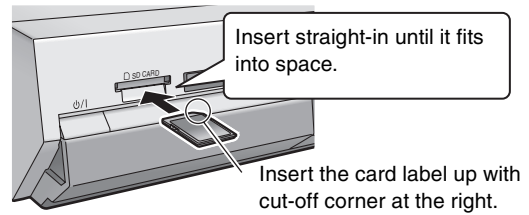
- Compatible formats: DCF* compliant (Content recorded on a digital camera etc.)
 - * Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).
- File format: JPEG, TIFF (non-compressed RGB chunky format)
- Number 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.

Inserting/Removing the SD/PC card

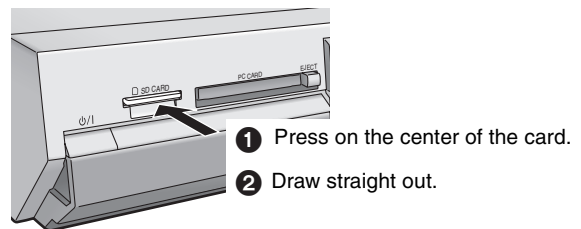
Only insert or remove the SD/PC card after turning the unit off. When the card indicator ("SD" or "PC") on the unit's display is flashing, the card is being read from or written to. Do not turn off the unit or remove the card. Such action may result in malfunction or loss of the card's contents.

SD card slot

Inserting the card



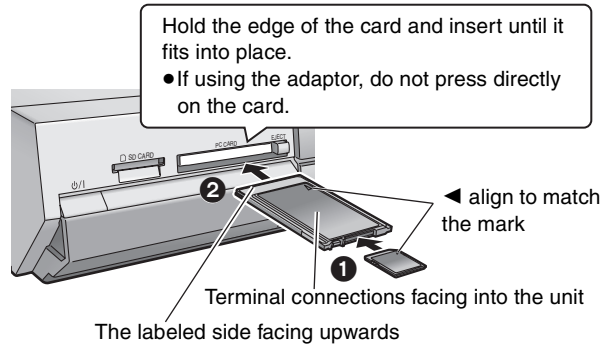
Removing the card



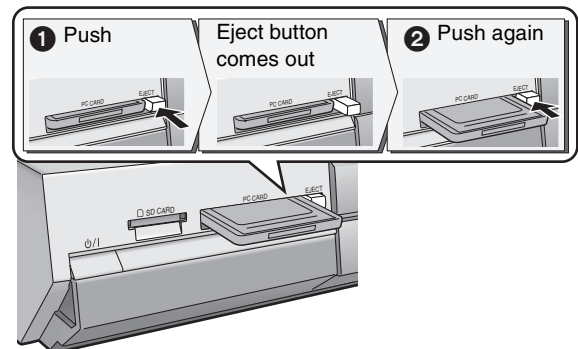
PC card slot

Inserting the card

There are cards requiring adaptors (⇒ page 17).



Removing the card

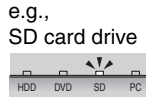


• If using the adaptor, remove the adaptor and card together.

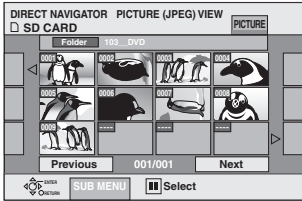
HDD RAM SD PC

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

- Each time you press [SD/PC]:
SD card drive ↔ PC card drive
- On the main unit, press [DRIVE SELECT] several times.
The indicator lights up on the unit.



2 Press [DIRECT NAVIGATOR].



PICTURE (JPEG) VIEW screen

3 Press [▲, ▼, ◀, ▶] to select "PICTURE" tab and press [ENTER].

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 (⇒ below)

To stop playing

Press [■].

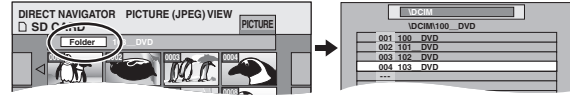
To exit the screen

Press [DIRECT NAVIGATOR].

■ To select the still pictures in another folder

(⇒ page 17, 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]

- If there is a multiple number of higher folders recognizable, you can switch them using [◀, ▶].



■ 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.

Playing back

Useful functions during still picture play

HDD RAM SD PC

Start Slide Show Slide Interval

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

While the PICTURE (JPEG) VIEW screen is displayed

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

•To change the display timing

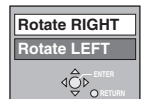
- 1 Press [▲, ▼] to select "Slide Interval" in step 2 and press [ENTER].
- 2 Press [◀, ▶] to select the desired timing (0–30 seconds) and press [ENTER].



Rotate

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

- Rotation information will not be stored.

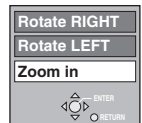


Zoom in Zoom out

(Only for a still picture with a low pixel count)

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

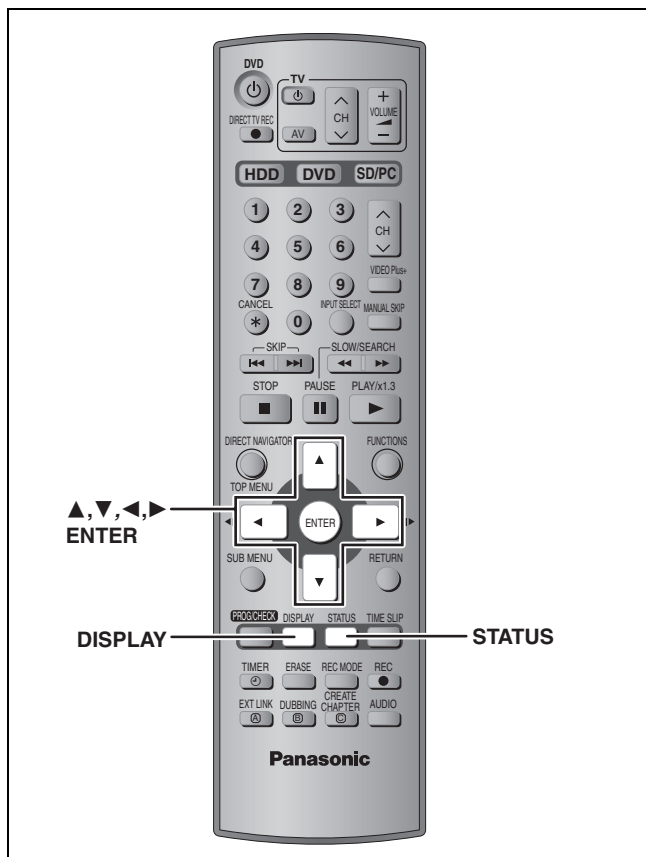
- To return the picture to its original size, press [▲, ▼] to select "Zoom out" in step 2 and press [ENTER].
- When zooming in, the picture may be cut off.
- The enlargement information will not be stored.



Erase

- 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.



On-screen menus

1 Press [DISPLAY].

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

• 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 DVD-R

The disc's audio attributes appear.

DVD-A DVD-V

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

Subtitle*

HDD RAM DVD-R

(Only discs that contain subtitle on/off information)

DVD-A DVD-V

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

• Subtitle on/off information cannot be recorded using this unit. **HDD RAM DVD-R**

Audio channel **HDD RAM VCD**

⇒ page 26, Changing audio

Angle* **DVD-A DVD-V**

STILL-P (Still picture) **DVD-A**

Selects the play method for still pictures.

Slide Show: Plays according to the default order on the disc.

Page: Select the still picture number and play.

• **RANDOM:** Plays in random order.

• **Return:** Returns to the default still picture on the disc.

PBC (Playback control ⇒ page 55) **VCD**

Indicates whether menu play (playback control) is on or off.

* You may have to use the menu (⇒ page 24) on the disc to make changes.

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

Audio attribute

LPCM/PPCM/DD 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.

Repeat Play

- All VCD CD (excluding MP3 discs)
- Chapter HDD RAM DVD-R DVD-V
- Group DVD-A CD (MP3 discs only)
- PL (Play list) HDD RAM
- Title HDD RAM DVD-R DVD-V
- Track DVD-A VCD CD

Select "OFF" to cancel.

Picture menu—Change the picture quality

Playback NR

Reduces noise and picture degradation.

Progressive* (⇒ page 55)

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 material being played (⇒ page 55, 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** Detects 24 frame-per-second film content and (normal): 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.

* Only when you have set "Progressive" to "On" in the SETUP menu (⇒ page 14).

Sound menu—Change the sound effect

V.S.S. HDD RAM DVD-R DVD-V

(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.
- V.S.S. does not work for bilingual recordings.

Dialog Enhancer DVD-A DVD-V

(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.

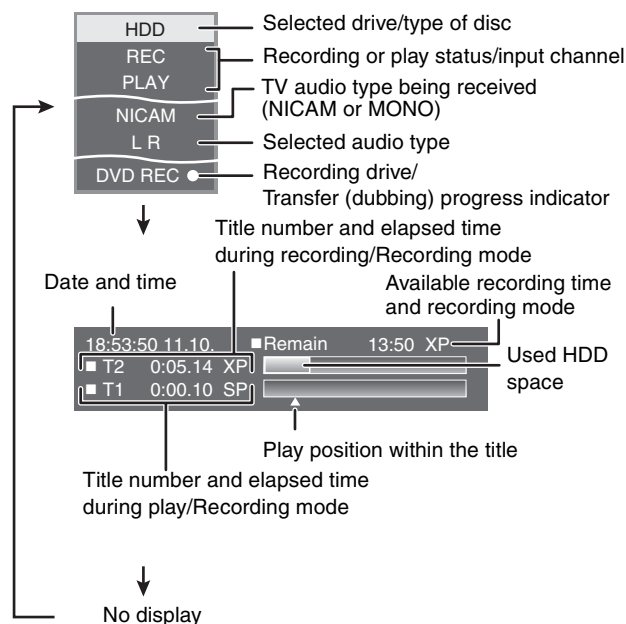
Status messages

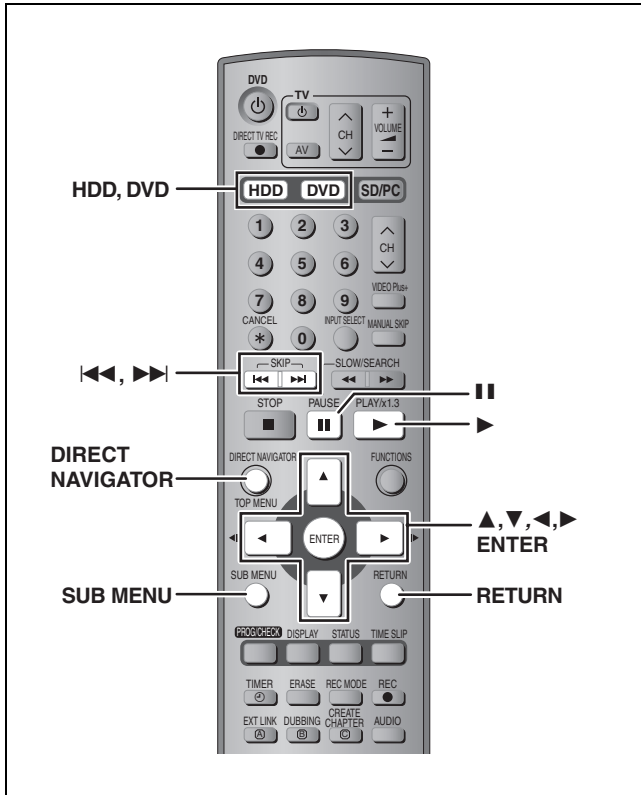
Status messages appear on the television when you operate the unit to show the condition of the unit.

Press [STATUS].

The display changes each time you press the button.

- Displayed information are examples.





HDD RAM DVD-R

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

Start End

You can divide a title into multiple chapters. **HDD RAM**
(⇒ page 26, 33, Create Chapter)

You can change the order of chapters and create a play list
(⇒ page 34). **HDD RAM**

- Titles are divided into about 5-minute chapters after finalizing
(⇒ page 45). **DVD-R**

•The maximum number of items on a disc:

HDD

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

RAM DVD-R

- Titles: 99
- Chapters: Approx. 1000
(Depends on the state of recording.)

Note

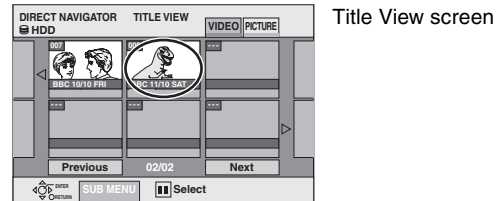
- Once erased, divided or partially erased, it cannot be restored to its original state. Make certain before proceeding.
- You cannot edit during recording, chasing play or transferring (dubbing), etc.
- Restricted recording information remains even after editing (e.g. dividing a title etc.)

Editing titles/chapters and playing chapters

Preparation

- Press [HDD] or [DVD] to select the drive.
- Release protection (⇒ page 44). **RAM**

- 1 Press [DIRECT NAVIGATOR].
- 2 Press [▲, ▼, ◀, ▶] to select “VIDEO” tab and press [ENTER].
- 3 Press [▲, ▼, ◀, ▶] to select the title.



To show other pages

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

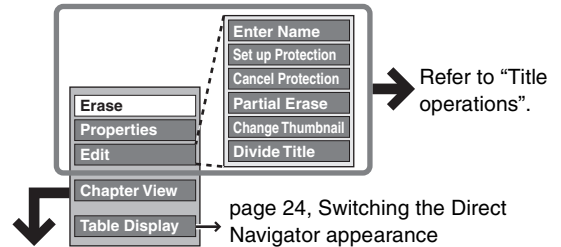
- You can also press [◀◀, ▶▶] to show other pages.

Multiple editing

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

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

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

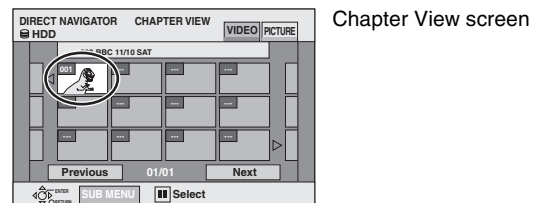


■ If you select “Chapter View”

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

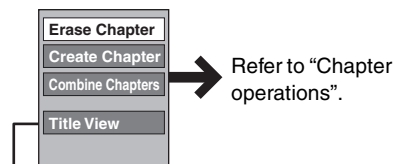
To start play ⇒ Press [ENTER].

To edit ⇒ Step 6.



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

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



- You can go back to Title View.

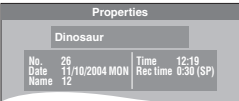
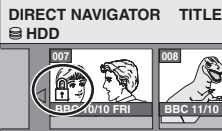

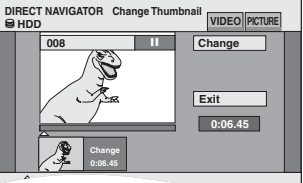
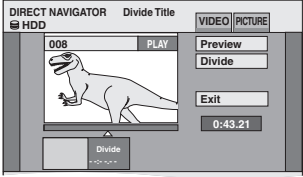
To exit the screen

Press [DIRECT NAVIGATOR].

To return to the previous screen

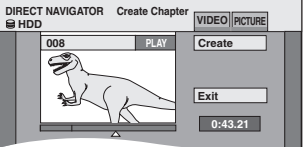
Press [RETURN].

Title operations

Erase* HDD RAM DVD-R	<p>Press [◀, ▶] to select “Erase” and press [ENTER].</p> <ul style="list-style-type: none"> • Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding. • The available recording time on DVD-R does not increase when you erase titles.
Properties HDD RAM DVD-R	<p>Information (e.g., time and date) is shown.</p> 
Enter Name HDD RAM DVD-R	<p>You can give names to recorded titles. ➔ page 46, Entering text</p>
Set up Protection* Cancel Protection* HDD RAM	<p>If set, this will protect the title from accidental erasure.</p> <p>Press [◀, ▶] to select “Yes” and press [ENTER].</p> <p>The lock symbol appears when the title is protected.</p> 
Partial Erase HDD RAM	<p>You can remove unnecessary parts of the recording such as commercials.</p> <ol style="list-style-type: none"> 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 DVD-R	<p>You can change an image to be shown as the thumbnail picture in the Title View.</p> <ol style="list-style-type: none"> 1 Press [▶] (PLAY) to start play. 2 Press [ENTER] when the image you want to use as a thumbnail is shown. 3 Press [▲, ▼] to select “Exit” and press [ENTER]. 
Divide Title HDD RAM	<p>You can divide a title into two.</p> <ol style="list-style-type: none"> 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]. <p>To confirm the division point Press [▲, ▼] to select “Preview” and press [ENTER]. (The unit plays 10 seconds before and after the division point.)</p> <p>To change the division point Restart play and press [▲, ▼] to select “Divide”, then press [ENTER] at the point you want to change.</p> <p>Note</p> <ul style="list-style-type: none"> • The divided titles retain the title name and CPRM property (➔ page 55) of the original title. • Video and audio just before and after the dividing point may momentarily cut out. 

* Multiple editing is possible.

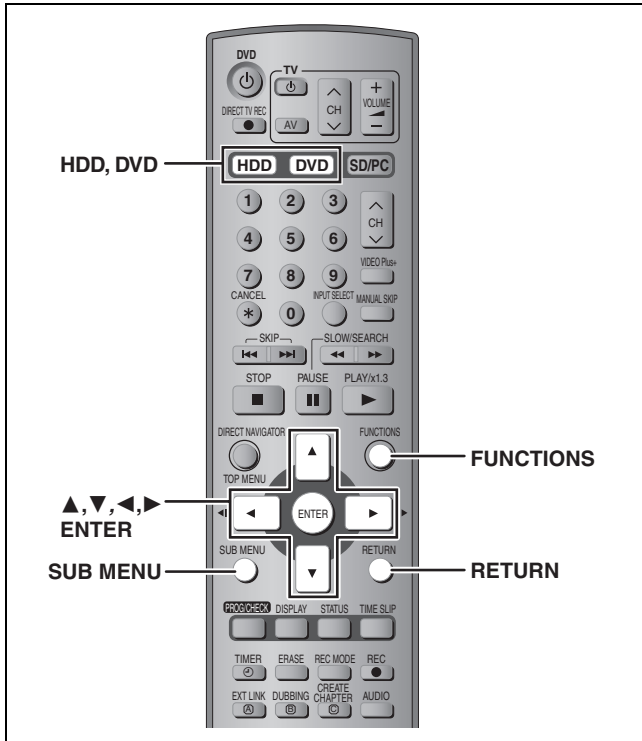
Chapter operations

Erase Chapter* HDD RAM	<p>Press [◀, ▶] to select “Erase” and press [ENTER].</p> <ul style="list-style-type: none"> • Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.
Create Chapter HDD RAM	<ol style="list-style-type: none"> 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	<p>Press [◀, ▶] to select “Combine” and press [ENTER].</p> <ul style="list-style-type: none"> • The selected chapter and next chapter are combined.

* Multiple editing is possible.

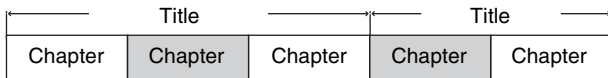
For quicker editing

- Use search, Time Slip or slow-motion (➔ page 25) to find the desired point.
- Press [◀◀, ▶▶] to skip to the end of a title.



HDD RAM

You can arrange the chapters (⇒ page 32) to create a play list.



Transferring (dubbing) (⇒ page 37) a play list will create a title.

- Editing play lists doesn't modify the recording data.
- Play lists are not recorded separately so this doesn't use much capacity.

- The maximum number of items on a disc:
 - Play lists: 99
 - Chapters in play lists: Approx. 1000 (Depends on the state of recording.)

Note

- You cannot create or edit a play list while recording or while transferring (dubbing).
- Play lists must be made in accordance with the encoding system currently selected in "TV System" (⇒ page 52).

Creating play lists

Preparation

- Press [HDD] or [DVD] to select the drive.
- Release protection (⇒ page 44). **RAM**

- 1 While stopped
Press [FUNCTIONS].



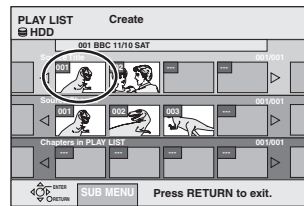
- 2 Press [▲, ▼, ◀, ▶] to select "PLAY LIST" and press [ENTER].



- 3 Press [▲, ▼, ◀, ▶] to select "Create" and press [ENTER].

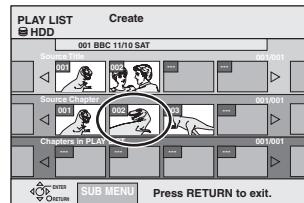
- 4 Press [◀, ▶] to select the source title and press [▼].

- Press [ENTER] to select all the chapters in the title, then skip to step 6.



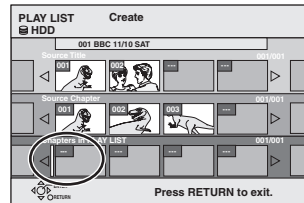
- 5 Press [◀, ▶] to select the chapter you want to add to a play list and press [ENTER].

- Press [▲] to cancel.



- You can also create a new chapter from the source title. Press [SUB MENU] to select "Create Chapter" and press [ENTER] (⇒ page 33, Create Chapter)

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



- Press [▲] to select other source titles.
- Repeat steps 5–6 to add other chapters.

- 7 Press [RETURN].

To exit the screen

Press [RETURN] several times.

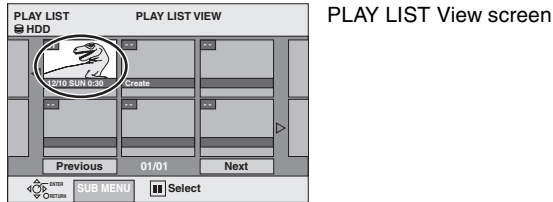
To return to the previous screen

Press [RETURN].

Editing and playing play lists/chapters

- 1 Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select “PLAY LIST” and press [ENTER].
- 3 Press [▲, ▼, ◀, ▶] to select the play list.

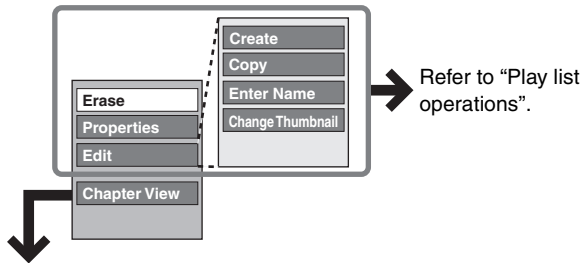
To start play → Press [ENTER].
To edit → Step 4.



• To show other pages/Multiple editing (→ page 32)

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

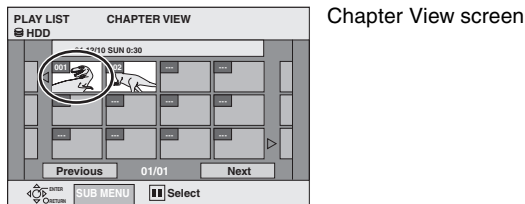
• If you select “Edit”, press [▲, ▼] to select the operation and press [ENTER].



■ If you select “Chapter View”

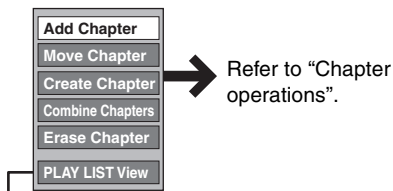
- 5 Press [▲, ▼, ◀, ▶] to select the chapter.

To start play → Press [ENTER].
To edit → Step 6.



• To show other pages/Multiple editing (→ page 32)

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



• You can go back to PLAY LIST View.

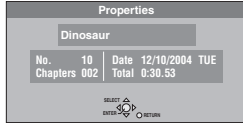
To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

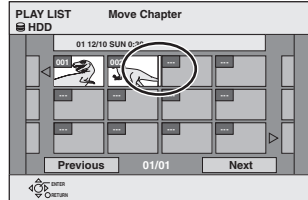
Play list operations

Erase*	Press [◀, ▶] to select “Erase” and press [ENTER].
Properties	Play list information (e.g., time and date) is shown. 
Create	→ page 34, Creating play lists
Copy*	Press [◀, ▶] to select “Copy” and press [ENTER].
Enter Name	You can give names to play lists. → page 46, Entering text
Change Thumbnail	→ page 33, Change Thumbnail

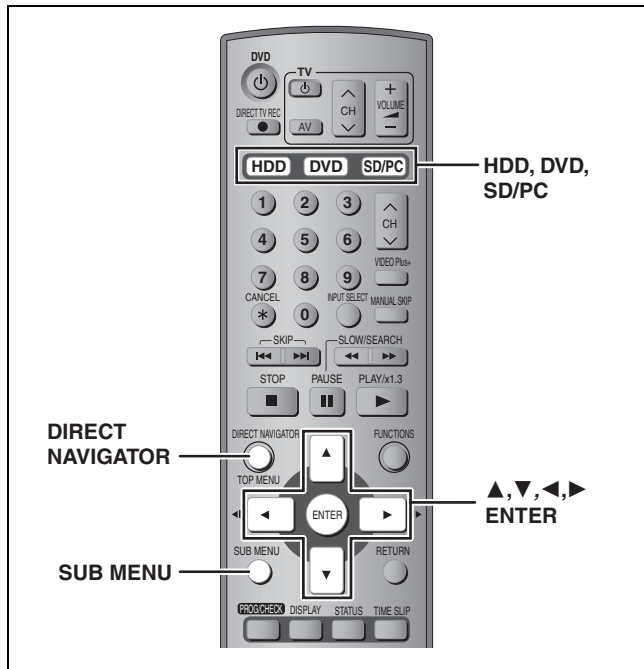
* Multiple editing is possible.

Chapter operations

Editing chapters in a play list does not modify the source titles and source chapters.

Add Chapter	→ page 34, Creating play lists, Step 4–6
Move Chapter	Press [▲, ▼, ◀, ▶] to select the position to insert the chapter and press [ENTER]. 
Create Chapter	→ page 33, Create Chapter
Combine Chapters	→ page 33, Combine Chapters
Erase Chapter*	→ page 33, Erase Chapter

* Multiple editing is possible.



HDD RAM SD PC

Preparation

- Press [HDD], [DVD] or [SD/PC] to select the drive.
- Release protection (⇒ page 44).

1 Press [DIRECT NAVIGATOR].

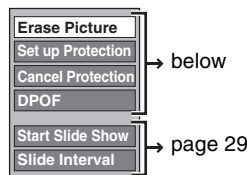
To exit the screen
Press [DIRECT NAVIGATOR].

2 **HDD RAM**
Press [**▲**, **▼**, **◀**, **▶**] to select “**PICTURE**” tab and press [ENTER].

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

- To show other pages/Multiple editing (⇒ page 32)
- To select the still pictures in another folder (⇒ page 29)

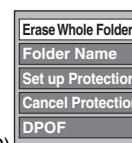
4 Press [SUB MENU], then [**▲**, **▼**] to select the operation and press [ENTER].



■ 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 (⇒ page 32)
- 3 Press [SUB MENU], then [**▲**, **▼**] to select the operation and press [ENTER].

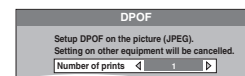
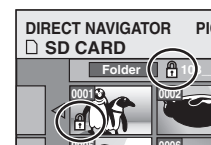


- To select another higher folder (⇒ page 29)

To return to the previous screen
Press [RETURN].

Picture and folder operation

<p>Erase Picture* Erase Whole Folder* HDD RAM SD PC</p>	<p>Press [◀, ▶] to select “Erase” and press [ENTER].</p> <ul style="list-style-type: none"> • Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding. • When erasing a folder, even 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.)
<p>Set up Protection* Cancel Protection* HDD RAM SD PC</p>	<p>If set, this will protect the still picture or folder from accidental erasure.</p> <p>Press [◀, ▶] to select “Yes” and press [ENTER].</p> <p>The lock symbol appears when the still picture or folder is protected.</p> <ul style="list-style-type: none"> • Even if the protection setting is used by this unit to protect a folder, the folder may be erased by another unit.
<p>DPOF* SD PC</p>	<p>You can select a whole folder or individual pictures for printing and specify the number of prints to be made.</p> <p>Press [◀, ▶] to select number of print (0 to 9) and press [ENTER].</p> <p>The DPOF mark appears.</p> <ul style="list-style-type: none"> • This appears on the still pictures inside a folder when you make the DPOF setting for the folder. <p>To cancel the print setting Set the number of print to “0”.</p> <ul style="list-style-type: none"> • When this is set by this unit, any settings established by other units will be released. • Print settings (DPOF) made using this unit may not be viewable on other equipment. • Settings cannot be made for folders and files not in accordance with DCF standards or if there is no remaining space on the card.
<p>Folder Name HDD RAM SD PC</p>	<p>You can give names to still picture folders.</p> <p>⇒ page 46, Entering text</p> <ul style="list-style-type: none"> • Folder names inputted using this unit may not be displayed on other equipment.



* Multiple editing is possible.

Transferring (dubbing) titles or play lists

HDD RAM DVD-R

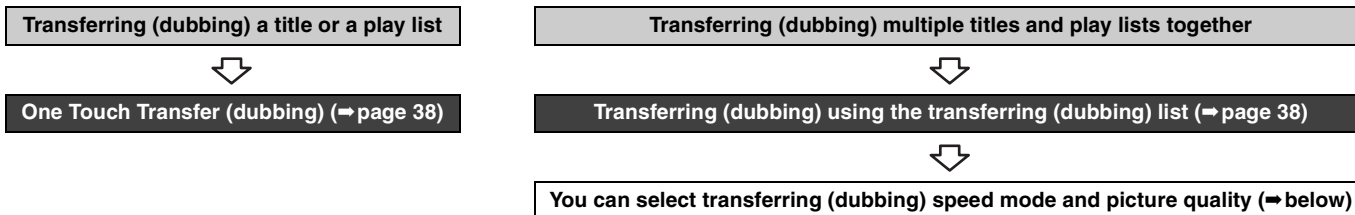
You can select from a variety of methods to transfer (dub) on this unit.

Transferring (dubbing) direction

You can transfer (dub) your favorite titles and play lists to an archive disc. ●Transferring (dubbing) a play list will create a title.		When you want to re-edit finalized content on a DVD-R etc.
	<p>●When you want to play a transferred (dubbed) disc on other equipment, you must finalize the disc after transferring (dubbing) (⇒ page 45, 55). *Before recording to HDD, set “DVD-R Rec for High Speed mode” to “On” (⇒ page 48).</p>	<p>*Finalized DVD-R or DVD-Video on sale that is not copy-protected, etc.</p>

Normal speed mode: Select XP, SP, LP, EP or FR as the recording mode for transferring (dubbing) (⇒ page 19).

Transferring (dubbing) mode



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 (⇒ page 19). e.g., 1 hour TV drama
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*
Are chapters/thumbnails maintained?	Yes	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

*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.)

Approximate transferring (dubbing) times (Max. speed)

HDD		3× high speed recording compatible DVD-RAM		4× high speed recording compatible DVD-R	
Recording mode	Recording time	Required time	Speed	Required time	Speed
XP	1 hour	Approx. 20 min.	3×	Approx. 15 min.	4×
SP		Approx. 10 min.	6×	Approx. 7.5 min.	8×
LP		Approx. 5 min.	12×	Approx. 4 min.	16×
EP (6 Hour)		Approx. 3.5 min.	18×	Approx. 2.5 min.	24×
EP (8 Hour)		Approx. 2.5 min.	24×	Approx. 2 min.	32×

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

To high speed transfer (dub) titles (or play lists created from those titles), set “DVD-R Rec for High Speed mode” to “On” before recording to the HDD (⇒ page 48).

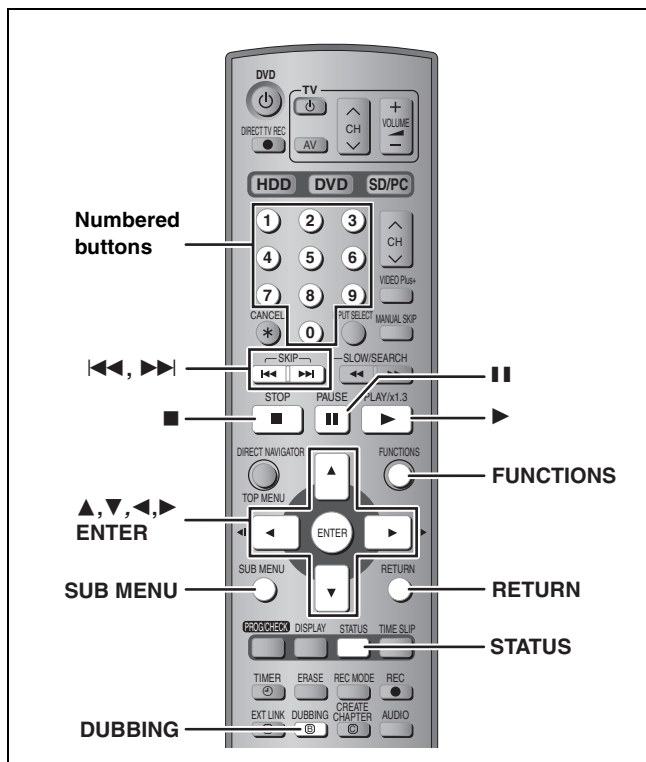
However in the following cases, transferring (dubbing) to DVD-R using the high speed mode does not work.

- Play lists created from titles using a variety of recording modes
- Play lists created from multiple titles using FR recording mode
- Play lists 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 (⇒ page 55) compatible DVD-RAM, however the title is erased from the HDD.

- You cannot use one touch transfer (dubbing). Use the transferring (dubbing) list (⇒ page 38).
- Titles will not be transferred if they are protected (⇒ page 33).
- You cannot transfer play lists created from “One time only recording” titles.
- Titles with recording limitations and play lists cannot be registered on the same transferring (dubbing) list.
- Titles or play lists cannot be transferred from DVD-RAM to the HDD.



Note

Titles and play lists recorded using a different encoding system from the TV system currently selected on the unit cannot be transferred (dubbed).

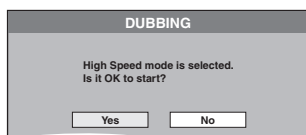
One Touch Transfer (dubbing)

HDD → RAM
HDD → DVD-R

Preparation

Select the audio type for recording bilingual broadcast from “Bilingual Audio Selection” (→ page 49) when transferring (dubbing) to a DVD-R.

- 1 Play the title or play list you want to transfer (dub).
- 2 Press [DUBBING].



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

•The transfer (dubbing) speed and picture quality are set as follows.

The recording mode changes to FR mode if the remaining disc space is exceeded using one of the recording modes indicated below.

HDD → RAM : High speed mode
HDD → DVD-R :

DVD-R Rec for High Speed mode setting	
On	Off
High speed mode	Same recording mode used as when recording the source title (XP-EP, FR). •Play lists are transferred (dubbed) in FR mode.

Note

Titles and play lists cannot be transferred (dubbed) if they contain digital broadcast that allow “One time only recording”.

Transferring (dubbing) using the transferring (dubbing) list

HDD ↔ RAM
HDD → DVD-R

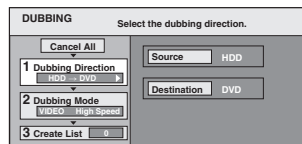
You can order titles and play lists for transfer (dubbing) as desired as well as select the speed and picture quality.

Preparation

Select the audio type for recording bilingual broadcast from “Bilingual Audio Selection” (→ page 49) when:

- Transferring (dubbing) to a DVD-R.
- When “Audio Mode for XP Recording” is set to “LPCM” (→ page 49) 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 7).

- 3 Press [▲, ▼] to select “Dubbing Direction” and press [▶].

- ① Press [▲, ▼] to select “Source” and press [ENTER].
- ② Press [▲, ▼] to select the drive and press [ENTER].
- ③ Press [▲, ▼] to select “Destination” and press [ENTER].

The same drive as the transfer (dubbing) source cannot be selected.

- ④ Press [▲, ▼] to select the drive and press [ENTER].
- ⑤ Press [◀] to confirm.

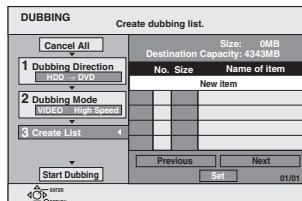
- 4 Press [▲, ▼] to select “Dubbing Mode” and press [▶].

- ① Press [▲, ▼] to select “Format” and press [ENTER].
- ② Press [▲, ▼] to select “VIDEO” and press [ENTER].
- ③ Press [▲, ▼] to select “Recording Mode” and press [ENTER].
- ④ Press [▲, ▼] to select the mode and press [ENTER].
- ⑤ Press [◀] to confirm.

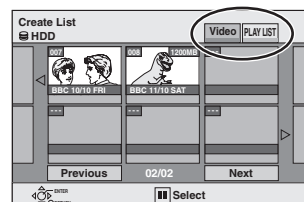
- 5 Press [▲, ▼] to select “Create List” and press [▶].

Select the transferring (dubbing) items and register on the list.

- When transferring (dubbing) to DVD-R using high speed mode, only items indicated with “▶▶▶” can be registered.



- ① Press [▲, ▼] to select “New item” and press [ENTER].
- ② Press [▲, ▼, ◀, ▶] to select “Video” or “PLAY LIST” tab and press [ENTER].



- ③ Press [**▲**, **▼**, **◀**, **▶**] to select the titles or play lists and press [ENTER].
- To select a multiple number of items together, press [**■**] to add the check mark and press [ENTER] (⇒ below, Multiple editing).
- To show other pages (⇒ below)
- To edit the transferring (dubbing) list (⇒ below)

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

The transferring (dubbing) list is registered.

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

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

■ To edit the transferring (dubbing) list

Select the item in step 5 (⇒ page 38, right column)

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

* Multiple editing is possible (⇒ below).



To cancel all registered transferring (dubbing) setting and lists

In step 3 (⇒ page 38, right 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 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.

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.
- When you switch between the “Video” and “PLAY LIST” tab, the check mark is cancelled.

Transferring (dubbing) list indicators



Titles and play lists that can be transferred (dubbed) in high speed mode to DVD-R (⇒ page 48)



Title with “One time only recording” restriction



Titles erased from the HDD by “One time only recording” restriction after transferring (dubbing).



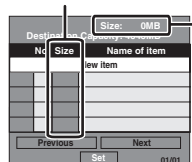
Title or play list contains still picture(s)
● Still picture(s) cannot be transferred (dubbed).



(NTSC) Title or play list recorded using a different encoding system from that of the TV system currently selected on the unit.

(PAL) Titles and play lists displaying these marks cannot be selected.

Data size of each registered item



Data size recorded to the transfer (dubbing) destination

- For normal speed transfer (dubbing), the total data size changes according to the recording mode.
- When transferring (dubbing) to the HDD using high speed mode, data management information is automatically added so the total data size becomes larger than the sum of the data size for all registered items.

■ 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, 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 play list while transferring (dubbing) titles with “One time only recording” restriction (⇒ page 37).

Refer to the control reference on page 38.

Transferring (dubbing) a finalized DVD-R

DVD-V → HDD

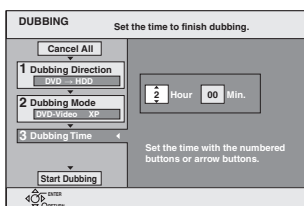
While playing a disc, the content being played is transferred (dubbed) to the HDD according to the set time.

- 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.

After performing steps 1–4 (→ page 38, right column)

5 Press [▲, ▼] to select “Dubbing Time” and press [▶].

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



- You can also set the recording time with the numbered buttons.
- Set a few minutes longer than the source title, in order to include the operation time before play begins.

7 Press [◀] to select “Dubbing Time”.

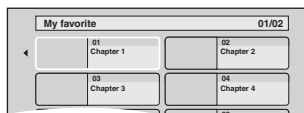
8 Press [▲, ▼] to select “Start Dubbing” and press [ENTER].

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 (→ page 45).

9 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.)

Note

- The screen on the right (screen saver) is recorded at the beginning.
- 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.



To stop transferring (dubbing)

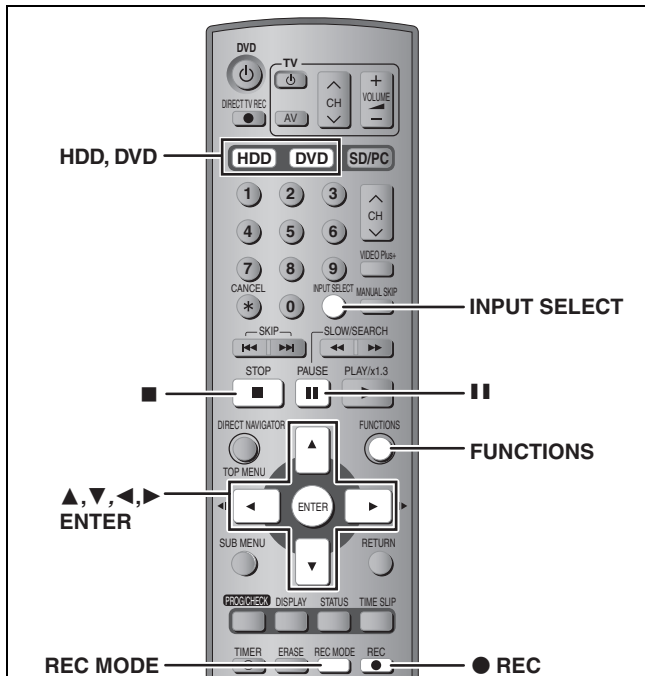
Press [■].

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.

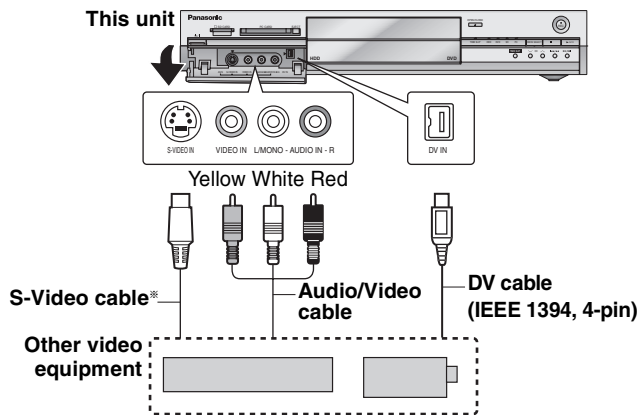
To return to the previous screen

Press [RETURN].



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

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



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

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

Manual recording

HDD **RAM** **DVD-R**

Preparation

- Connect a video cassette recorder to this unit's input terminals.
- 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.

DVD-R

Select either M 1 or M 2 on the connected equipment. (You cannot select the audio type in playback.)

- When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the SETUP menu (⇒ page 52).

- 1 While stopped**
Press [INPUT SELECT] to select the input channel for the equipment you have connected.
e.g., If you have connected to AV3 input terminals, select "AV3".
- 2 Press [REC MODE] to select the recording mode.**
- 3 Start play on the other equipment.**

4 Press [● REC].

Recording starts.

To skip unwanted parts

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

To stop recording

Press [■].

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

⇒ page 20, Flexible Recording

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

DV automatic recording (DV AUTO REC)

HDD **RAM**

When the "DV AUTO REC" function is used, programmes are recorded as a title while at the same time chapters are created at each break in the images and the play list is created automatically.

Preparation

- 1 Turn off the main unit and DV equipment, then connect the equipment with the unit's DV input terminal (⇒ left).
 - 2 Turn on the main unit and DV equipment.
 - 3 Pause play of the DV equipment at the point you want recording to start.
 - 4 Press [HDD] or [DVD] to select the recording drive.
- Select the type of audio recording from "Audio Mode for DV Input" in the SETUP menu (⇒ page 49).
 - When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the SETUP menu (⇒ page 52).

- 1 While stopped**
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select "DV AUTO REC" and press [ENTER].**
- 3 Press [REC MODE] to select the recording mode.**
- 4 Press [◀, ▶] to select "Rec" and press [ENTER].**

Recording starts.

When recording finishes

The confirmation screen appears. Press [ENTER] to finish DV automatic recording.

To stop recording

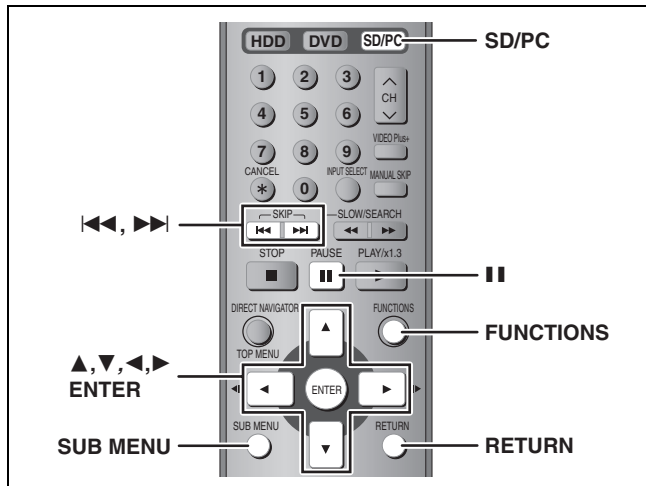
Press [■].

Note

- Only one piece of DV equipment (e.g., digital video camcorder) can be connected to the unit via the DV input terminal.
- It is not possible to operate the unit from the connected DV equipment.
- The DV input on this unit is for use with DV equipment only. (It cannot be connected to a computer, etc.)
- The DV equipment name may not be shown correctly.
- Depending on the DV equipment, the images or audio may not be input properly.
- The date and time information on the tape of the DV equipment will not be recorded.
- You cannot record and play simultaneously.

If the DV automatic recording function does not work properly, check the connections and DV equipment settings, and turn the unit off and back on.
If that does not work, follow the instructions for manual recording (⇒ left).

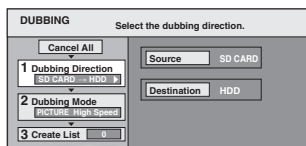
Transferring (dubbing) still pictures



HDD RAM SD PC

Transferring (dubbing) using the transferring (dubbing) list

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select "DUBBING" and press [ENTER].

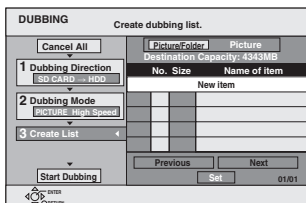


• If you are not going to change the registered list press [▼] several times (⇒ step 7).

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

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

- 5 Press [▲, ▼] to select "Create List" and press [▶].
Select the transferring (dubbing) items and register on the list.

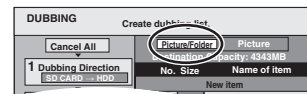


■ To register individual still pictures

- ① Press [▲, ▼] to select "New item" and press [ENTER].
 - ② Press [▲, ▼, ◀, ▶] to select the still picture and press [ENTER].
- To select a multiple number of items together, press [■] to add the check mark and press [ENTER] (⇒ right, Multiple editing).
 - To show other pages (⇒ right)
 - To select the still pictures in another folder (⇒ right)
 - To edit the transferring (dubbing) list (⇒ right)

■ To register on a folder by folder basis

- ① Press [▲, ▼] to select "Picture/Folder" and press [ENTER].



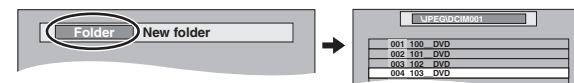
- ② Press [▲, ▼] to select "Folder" and press [ENTER].
 - ③ Press [▲, ▼] to select "New item" and press [ENTER].
 - ④ Press [▲, ▼] to select the folder and press [ENTER].
- To select a multiple number of items together, press [■] to add the check mark and press [ENTER] (⇒ below, Multiple editing).
 - To show other pages (⇒ below)
 - To switch another higher folder (⇒ below)
 - To edit the transferring (dubbing) list (⇒ below)
- Still pictures and folders cannot be registered on the same list.

- 6 Press [▲, ▼] to select "Set" and press [ENTER].

The transferring (dubbing) list is registered.

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

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



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 select another folder

- ① Press [▲, ▼, ◀, ▶] to select "Folder" and press [ENTER].
- ② Press [▲, ▼] to select the folder and press [ENTER].

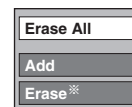


- The still pictures of different folders cannot be registered on the same list.
- If there is a multiple number of higher folders recognizable, you can switch them using [◀, ▶]. (Folders whose higher folders are different cannot be registered on the same list.)

■ To edit the transferring (dubbing) list

Select the item in step 5 (⇒ left)

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



* Multiple editing is possible (⇒ below).

To cancel all registered transferring (dubbing) setting and lists

In step 3 (⇒ left)

- 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 still picture or folder 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 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.

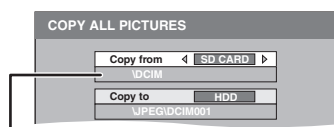
Transferring (dubbing) all the still pictures on a card—COPY ALL PICTURES

SD or PC → HDD or RAM

Preparation

Press [SD/PC] to select the source drive.

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select “COPY ALL PICTURES” and press [ENTER].



• If there is a multiple number of higher folders recognizable, you can switch them using [◀, ▶].

- 3 Press [▲, ▼] to select “Copy from” and press [◀, ▶] to select the drive.
- 4 Press [▲, ▼] to select “Copy to” and press [◀, ▶] to select the drive.
- 5 Press [▲, ▼, ◀, ▶] to select “Copy” and press [ENTER].

To stop transferring (dubbing)

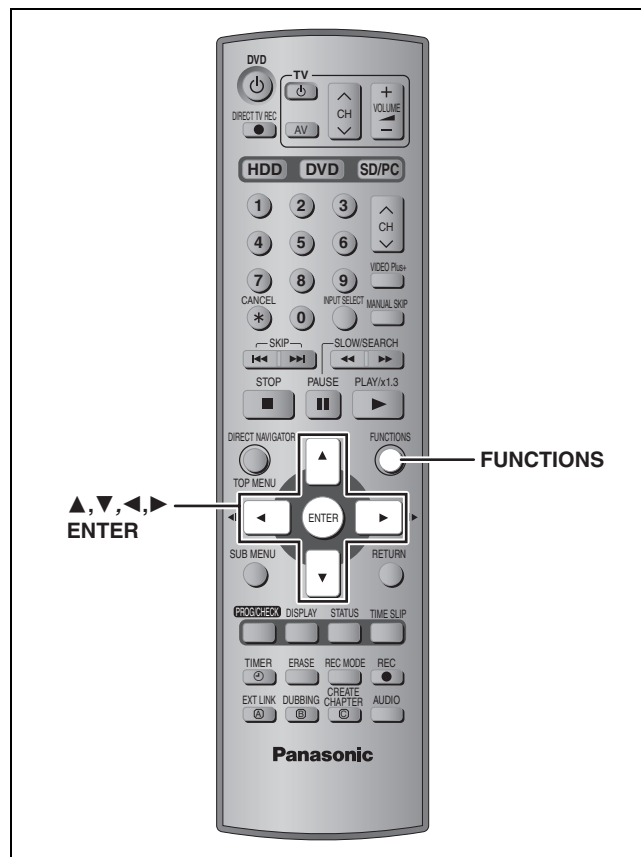
Press and hold [RETURN] for 3 seconds.

To return to the previous screen

Press [RETURN].

Note

- When transferring (dubbing) the still pictures on a folder by folder or card by card basis, 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 (→ page 28), transferring (dubbing) will stop partway through.
- When a name has been input by this unit for the transfer (dubbing) source folder, the folder name will be reflected in the transfer (dubbing) destination folder.
- 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 reflected at the transfer (dubbing) destination.



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

- 1 While stopped
Press [FUNCTIONS].

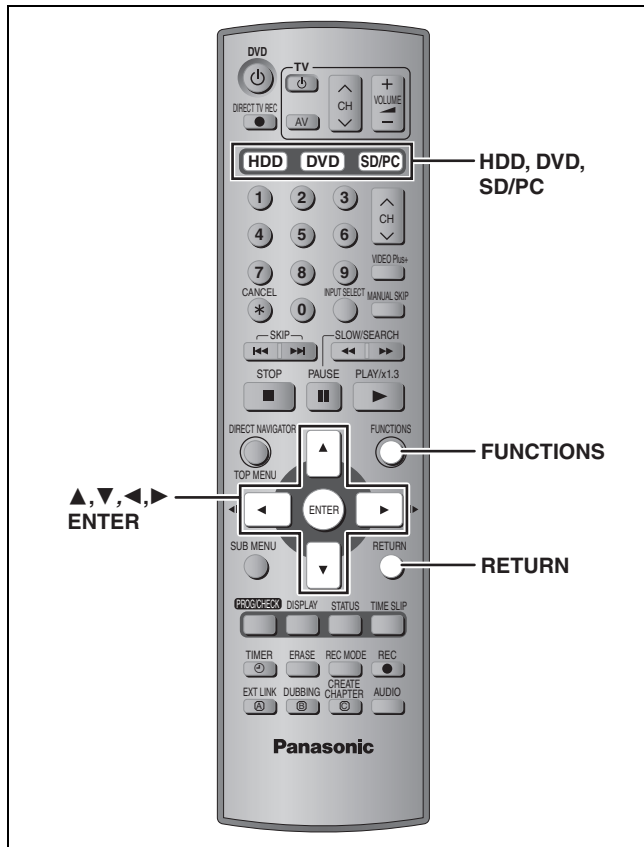


Functions displayed depend on the selected drive or type of disc.

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

To exit the FUNCTIONS window

Press [FUNCTIONS].



Setting the protection

■ Setting the protection for the whole disc or card

- For a DVD-RAM with a cartridge or for a card

RAM

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



SD PC

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

e.g. SD Memory Card



- For a DVD-RAM without a cartridge (→ below, Disc Protection)

■ Other protection settings

Title

Select "Set up Protection" in step 4 on page 32.

Still picture or folder

Select "Set up Protection" in step 4 on page 36.

Disc Protection

RAM

Preparation

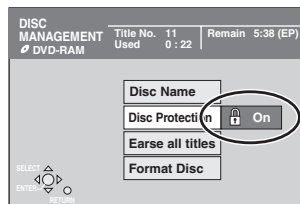
Press [DVD] to select the DVD drive.

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select "DISC MANAGEMENT" and press [ENTER].
- 3 Press [▲, ▼] to select "Disc Protection" and press [ENTER].

To exit the screen

Press [RETURN] several times.

- 4 Press [◀, ▶] to select "Yes" and press [ENTER].



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

Providing a disc with a name

RAM DVD-R

Preparation

- Press [DVD] to select the DVD drive.
- Release protection (→ left).

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select "DISC MANAGEMENT" and press [ENTER].
- 3 Press [▲, ▼] to select "Disc Name" and press [ENTER].
→ page 46, Entering text

- The disc name is displayed in the FUNCTIONS window.
- With a finalized DVD-R, the name is displayed on the Top Menu.



Erasing all titles and play lists—Erase all titles

HDD RAM

Preparation

- Press [HDD] or [DVD] to select the drive.
- Release protection (→ left).

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

Note

- Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.
- Still picture data (JPEG, TIFF) or computer data cannot be erased.
- Erase does not work if one or more titles are protected.

To return to the previous screen

Press [RETURN].

Erasing all the contents of a disc or card—Format

HDD RAM SD PC

Preparation

- Press [HDD], [DVD] or [SD/PC] to select the drive.
- Release protection (→ left).

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

Note

- **Formatting erases all contents (including computer data), and it cannot be restored. Check carefully before proceeding.** The contents are erased when you format it even if you have set protection.
- **Do not disconnect the AC mains lead while formatting.** This can render the disc unusable.
Formatting normally takes a few minutes, however it may take up to a maximum of 70 minutes (**RAM**).

- **To stop formatting**
Press [RETURN].
(You can cancel formatting if it takes more than 2 minutes. The disc or card must be reformatted if you do this.)
- Formatting cannot be performed on DVD-R or CD-R/RW.
- When a disc or card has been formatted using this unit, it may not be possible to use it on any other equipment.
- You cannot format a Microdrive or mobile hard disk on this unit.

Enabling DVD-R to be played on other equipment—Finalize

DVD-R

Preparation

Press [DVD] to select the DVD drive.

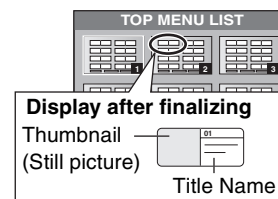
- 1 While stopped**
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select “DISC MANAGEMENT” and press [ENTER].**

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

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

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

- You can change thumbnails displayed in the top menu. (→ page 33, Change Thumbnail)



- 4 Press [▲, ▼] to select “Auto-Play Select” and press [ENTER].**

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

You can select whether to show the top menu after finalizing.
Top Menu: The top menu appears first.

Title 1: The disc content is played without displaying the top menu.

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

- ① Press [◀, ▶] to select “Yes” and press [ENTER].
- ② Press [◀, ▶] to select “Start” and press [ENTER].
A message appears when finalizing is finished.
- ③ Press [ENTER].

Note

After finalizing

- **The disc becomes play-only and you can no longer record or edit.**
- 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 DVD-R.
 - 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.

Do not disconnect the AC mains lead while the message “Finalizing the disc” is on the television. This will render the disc unusable.
Finalizing takes up to 15 minutes.

- You cannot finalize DVD-R recorded on other manufacturer's equipment.
- If you finalize a recorded DVD-R on Panasonic equipment other than this unit, the background selected as “Top Menu” may not display.

	Before finalizing	After finalizing
Disc display on this unit	DVD-R	DVD-V
Recording/Editing/Entering name	✓	×
Play on other players	×	✓

DVD-R finalized on this unit may not be playable on other players due to the condition of the recording.

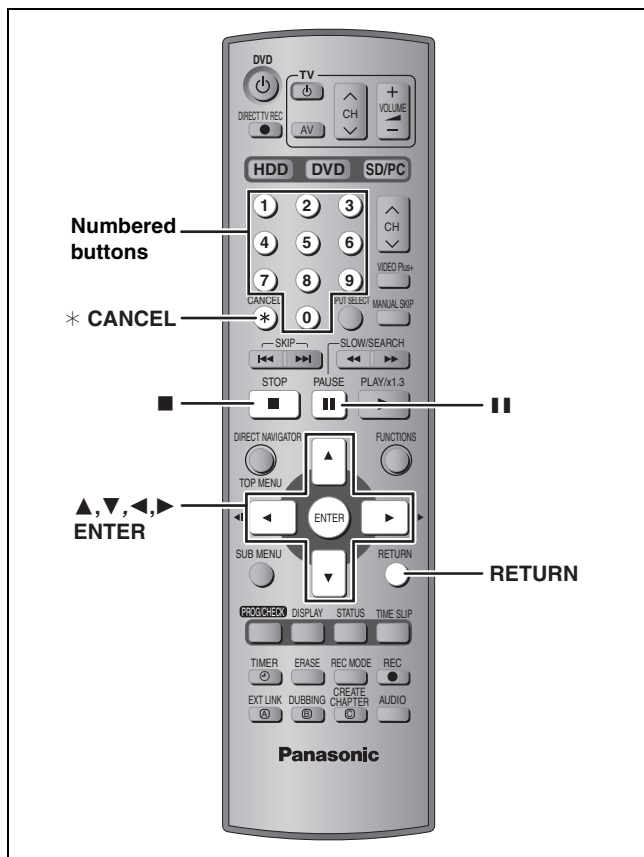
- Visit Panasonic's homepage for more information about DVDs.
<http://www.panasonic-europe.com>

To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].



HDD RAM DVD-R SD PC

You can give names to recorded titles, etc.

The maximum number of characters:

HDD RAM	Characters
Title	64 (44*)
Play list	64
Disc	64
Folder of still pictures	36

* Title name for timer recording

DVD-R	Characters
Title	44
Disc	40

SD PC	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 21, 22.

Title

Select "Enter Name" in step 4 on page 32.

Play list

Select "Enter Name" in step 4 on page 35.

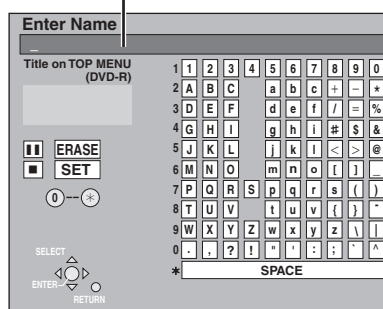
Disc

Select "Disc Name" in step 3 on page 44.

Folder of still pictures

Select "Folder Name" in step 4 on page 36.

Name field: shows the text you have entered



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

Repeat this step to enter other characters.

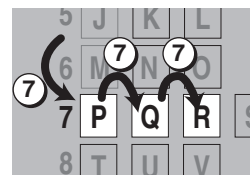
• To erase a character

Press [▲, ▼, ◀, ▶] to select the character in the name field and press [II].

• Using the numbered buttons to enter characters

e.g., entering the letter "R"

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



• To enter a space

Press [* CANCEL] and press [ENTER].

3 Press [■] (SET).

Returns to the previously displayed screen.

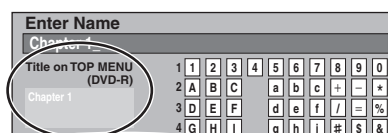
To end partway

Press [RETURN].

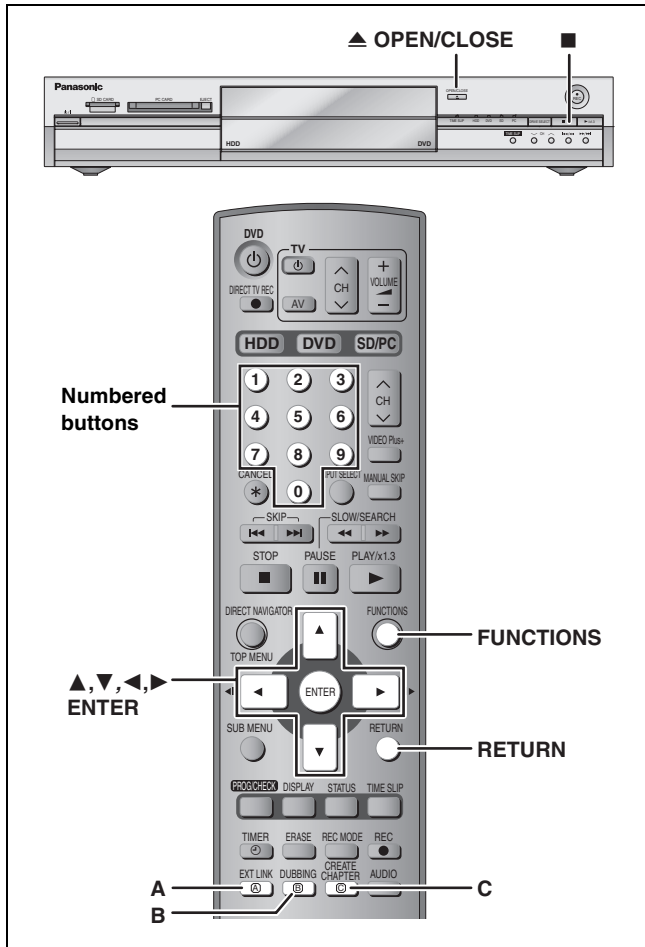
Text is not saved.

For your reference

If you enter a long name, only part of it is shown in the Top Menu after finalization (⇒ page 45). When entering a title name, the name that will appear in the Top Menu can be previewed in "Title on TOP MENU (DVD-R)" window.

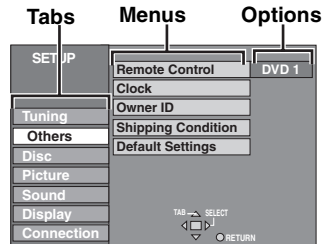


Changing the unit's settings



Common procedures

- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select "SETUP" and press [ENTER].



- 3 Press [▲, ▼] to select the tab and press [▶].
- 4 Press [▲, ▼] to select the menu and press [ENTER].
- 5 Press [▲, ▼] to select the option and press [ENTER].

To exit the screen

Press [RETURN] several times.

To return to the previous screen



Press [RETURN].

Summary of settings

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

Tabs	Menus	Options (Underlined items are the factory presets.)
Tuning	Manual (⇒ page 51)	
	Auto-Setup Restart (⇒ page 52)	
	Download from TV (⇒ page 52)	
Others	Remote Control (⇒ page 15)	● <u>DVD 1</u> ● DVD 2 ● DVD 3
	Clock	
	Auto Clock Setting (⇒ page 53)	
	Manual Clock Setting (⇒ page 53)	
	Owner ID (⇒ page 11, 12) 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
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 other than 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>	

Tabs	Menus	Options (Underlined items are the factory presets.)
Disc	Language	Choose the language for audio, subtitle and disc menus. DVD-V ● Press [ENTER] to show the following settings. ● Some discs start in a certain language despite any changes you make here. ● Enter a code (⇒ page 50) 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 (⇒ page 24).
	Soundtrack	● <u>English</u> ● French ● German ● Italian ● Spanish ● Original: The original language of each disc will be selected. ● Other * * * *
	Subtitle	● <u>Automatic</u> : If the language selected for “Soundtrack” is not available, subtitles of that language will automatically appear if available on that disc. ● English ● French ● German ● Italian ● Spanish ● Other * * * *
	Menus	● <u>English</u> ● French ● German ● Italian ● Spanish ● Other * * * *
	Ratings	● <u>8 No Limit</u> : All DVD-Video can be played. ● 1 to 7: Prohibits play of DVD-Video with corresponding ratings recorded on them. ● 0 Lock All: Prohibits play of all DVD-Video.
	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.	● <u>Unlock Recorder</u> ● Change Password ● Change Level ● Temporary Unlock
	Select the maximum number of hours for recording in EP mode (⇒ page 19, Recording modes and approximate recording times).	● EP (6 Hour): You can record for 6 hours on an unused 4.7 GB disc. ● <u>EP (8 Hour)</u> : You can record for 8 hours on an unused 4.7 GB disc.
	Select “On” to play DVD-Video content on some DVD-Audio.	● <u>On</u> : The setting returns to “Off” when you change the disc or turn the unit off. ● <u>Off</u>
	When high speed transferring (dubbing) a title to DVD-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 is not necessary when recording a programme.	● <u>On</u> : Makes high speed mode transferring (dubbing) to DVD-R possible. Press [◀, ▶] to select “Yes” and press [ENTER]. [“▶▶▶” appears in the transferring (dubbing) list (⇒ page 39).] – Pictures are saved at 4:3. – “Hybrid VBR Resolution” (⇒ below) setting is “Fixed”. – Select the type of audio in advance from “Bilingual Audio Selection” (⇒ page 49). ● <u>Off</u>
	Picture	Comb Filter
Hybrid VBR Resolution (⇒ page 55, VBR)		● <u>Automatic</u> : The resolution is automated to provide efficient recording with less block noise. HDD RAM ● <u>Fixed</u> : The resolution is fixed to ensure that there is no loss of source picture resolution while recording.
Still Mode		● <u>Automatic</u> ● <u>Field</u> : Select if jittering occurs when “Automatic” is selected. ● <u>Frame</u> : Select if small text or fine patterns cannot be seen clearly when “Automatic” is selected.
Seamless Play		● <u>On</u> : The chapters in play lists are played seamlessly. This does not work when there are several audio types included on the play list and when using Quick View. Additionally, the positioning of chapter segments may change slightly. ● <u>Off</u> : The points where chapters in play lists change are played accurately, but the picture may freeze for a moment.

Tabs	Menus	Options (Underlined items are the factory presets.)
Sound	PLAY × 1.3 & Audio during Search You may hear sound regardless of this setting with some discs.	<ul style="list-style-type: none"> ● <u>On</u>: Audio is heard during first level search forward. ● <u>Off</u>: Audio is not heard during search. Quick View (⇒ page 25) does not work.
	Dynamic Range Compression <u>DVD-V</u> (Dolby Digital only) Change the dynamic range for late night viewing.	<ul style="list-style-type: none"> ● <u>On</u> ● <u>Off</u>
	Bilingual Audio Selection Select whether to record the main or secondary audio type when: –Recording or transferring (dubbing) to a DVD-R. –Recording or transferring (dubbing) sound in LPCM. (⇒ below, “Audio Mode for XP Recording”)	<ul style="list-style-type: none"> ● <u>M 1</u> ● <u>M 2</u> <p>You cannot select this when recording from an external source onto DVD-R. Select the audio on the other equipment.</p>
	Digital Audio Output Change the settings when you have connected equipment through this unit’s DIGITAL AUDIO OUT terminal (⇒ page 10). ● Press [ENTER] to show the following settings.	
	PCM Down Conversion Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz.	<ul style="list-style-type: none"> ● <u>On</u>: Signals are converted to 48 kHz or 44.1 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz or 88.2 kHz.) ● <u>Off</u>: Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz or 88.2 kHz.) <p>Signals are converted to 48 kHz or 44.1 kHz despite the above settings if the signals have a sampling frequency of over 96 kHz or 88.2 kHz, or the disc has copy protection.</p>
	Dolby Digital  Select how to output the signal, to output “Bitstream” so the connected equipment decodes the signal, or to decode on this unit and output the signal as “PCM” (2 channel).	<ul style="list-style-type: none"> ● <u>Bitstream</u>: When connecting to equipment displaying the Dolby Digital logo. ● <u>PCM</u>: When connecting to equipment not displaying the Dolby Digital logo.
	DTS  Note Not making the proper settings may result in noise, possibly damage your hearing and speakers, and digital recording may not work properly.	<ul style="list-style-type: none"> ● <u>Bitstream</u>: When connecting to equipment displaying the DTS logo. ● <u>PCM</u>: When connecting to equipment not displaying the DTS logo.
MPEG	<ul style="list-style-type: none"> ● <u>Bitstream</u>: When connected to equipment with a built-in MPEG decoder. ● <u>PCM</u>: When connected to equipment without a built-in MPEG decoder. 	
Audio Mode for XP Recording	Audio Mode for XP Recording Choose the audio type when recording or transferring (dubbing) with XP mode.	<ul style="list-style-type: none"> ● <u>Dolby Digital</u> (⇒ page 55) ● <u>LPCM</u> (⇒ page 55) <ul style="list-style-type: none"> –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 bilingual broadcast, select the type of audio in advance from “Bilingual Audio Selection” (⇒ above).
	Audio Mode for DV Input You can select the kind of audio when recording from the unit’s DV input terminal (⇒ page 41).	<ul style="list-style-type: none"> ● <u>Stereo 1</u>: Records audio (L1, R1). ● <u>Stereo 2</u>: Records added audio such as narration (L2, R2) subsequent to original recording. ● <u>Mix</u>: Records both Stereo 1 and Stereo 2. <p>When recording bilingual broadcast to a DVD-R or recording in LPCM audio, select the type of audio in advance from “Bilingual Audio Selection” (⇒ above).</p>
Display	On-Screen Messages Choose whether to show status messages automatically.	<ul style="list-style-type: none"> ● <u>Automatic</u> ● <u>Off</u>
	Grey Background Select “Off” if you do not want to have the unit show the grey background when reception is weak.	<ul style="list-style-type: none"> ● <u>On</u> ● <u>Off</u>
	FL Display Changes the brightness of the unit’s display.	<ul style="list-style-type: none"> ● <u>Bright</u> ● <u>Dim</u>

Tabs	Menus	Options (Underlined items are the factory presets.)
Connection	TV Aspect (⇒ page 14)	● <u>16:9</u> ● 4:3 ● Letterbox
	Progressive (⇒ page 14)	● On ● <u>Off</u>
	TV System (⇒ page 52)	● <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.	● <u>Video (with component)</u> ● S-Video (with component) ● RGB (without component)
	AV2 Settings Set to match the connected equipment. ● Press [ENTER] to show the following settings.	
	AV2 Input Set to "RGB (Not NTSC)" when receiving or recording RGB output video from external equipment.	● <u>Video</u> ● S-Video ● RGB (Not NTSC)
	AV2 Connection This setting is fixed with "Normal" if you set "TV System" to "NTSC" (⇒ page 52).	● Decoder: When a decoder is connected. ● <u>Normal</u> : When the VCR or a satellite receiver is connected.
	Ext Link This setting cannot be made when the "TV System" is set to "NTSC" (⇒ page 52).	● <u>Ext Link 1</u> : When a digital receiver which transmits a special control signal recordings via the 21-pin Scart lead is connected. ● Ext Link 2: When an external equipment with a timer function is connected.

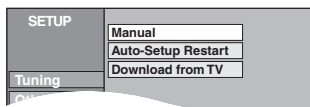
Language code list Input the code with the numbered buttons.

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: 6588	Esperanto: 6979	Irish: 7165	Marathi: 7782	Shona: 8378	Turkmen: 8475
Azerbaijani: 6590	Estonian: 6984	Italian: 7384	Moldavian: 7779	Shindi: 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

Refer to the control reference on page 47.

Tuning

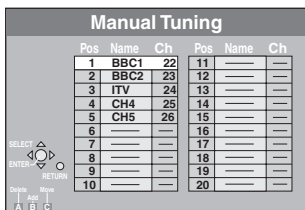
- 1 While stopped
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select “SETUP” and press [ENTER].
- 3 Press [▲, ▼] to select “Tuning” and press [▶].



Manual

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

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



To delete a programme position

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

To add a blank programme position

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

To move a TV station to another programme position

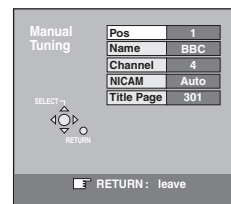
- ① Press [▲, ▼, ◀, ▶] to select a programme position and press [C].
- ② Press [▲, ▼, ◀, ▶] to select the new programme position to which you want to assign the TV station and press [ENTER].

Note

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

- To change the tuning settings for individual programme position

- 5 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.

Refer to the control reference on page 47.

Auto-Setup Restart, Download from TV

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

After performing steps 1–3 (→page 51)

■ **Auto-Setup Restart**

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

5 Press [◀, ▶] to select “Yes” and press [ENTER].

Auto-Setup starts.

■ **Download from TV**

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

5 Press [◀, ▶] to select “Yes” and press [ENTER].

Downloading from the television starts.

To exit the screen

Press [RETURN] several times.

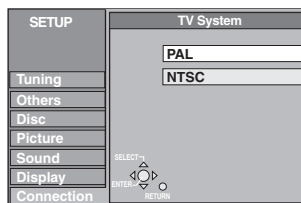
To return to the previous screen

Press [RETURN].

TV System

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

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

To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

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

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

Clock settings

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

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

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

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

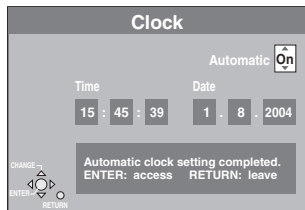
Auto Clock Setting

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.

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

Auto clock setting starts.

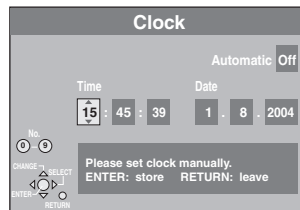
The following screen appears when setting is complete.



To stop partway
Press [RETURN].

Manual Clock Setting

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



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

The items change as follows:

Hour ↔ Minute ↔ Second ↔ Day ↔ Month ↔ Year

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

You can also use the numbered buttons for setting.

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

The clock starts.

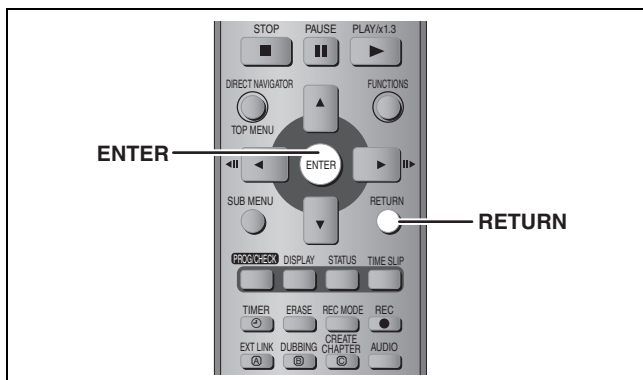
To exit the screen

Press [RETURN] several times.

To return to the previous screen

Press [RETURN].

Child Lock



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

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



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

To cancel the Child Lock

Press and hold [ENTER] and [RETURN] simultaneously until "X HOLD" disappears.

Specifications

Recording system DVD Video Recording format (DVD-RAM),
DVD-Video format (DVD-R)

Recordable discs

DVD-RAM: 12 cm 4.7 GB, 12 cm 9.4 GB, 8 cm 2.8 GB
12 cm 4.7 GB (Ver. 2.1/3×-SPEED DVD-RAM Revision 1.0)

DVD-R: 12 cm 4.7 GB, 8 cm 1.4 GB (for General Ver. 2.0)

12 cm 4.7 GB (for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0)

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 284 hours (with built-in 160 GB HDD)

XP: Approx. 36 hours, SP: Approx. 70 hours

LP: Approx. 138 hours, EP: Approx. 212 hours/284 hours

Playable discs

DVD-RAM: 12 cm 4.7 GB, 12 cm 9.4 GB, 8 cm 2.8 GB

12 cm 4.7 GB (Ver. 2.1/3×-SPEED DVD-RAM Revision 1.0)

DVD-R: 12 cm 4.7 GB, 8 cm 1.4 GB (for General Ver. 2.0)

12 cm 4.7 GB (for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0)

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

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

Built-in HDD capacity 160 GB

Drive unit High Speed Drive (correspond to 4 times speed with
DVD-R disc and 3 times speed with DVD-RAM disc)

LASER specification

Class I LASER Product

Wave length: 795 nm, 658 nm

Laser power:

No hazardous radiation is emitted with the safety protection

Audio

Recording system: Dolby Digital 2ch, Linear PCM (XP mode, 2ch)

Audio in: AV1/AV2 (21 pin), AV3/AV4 (pin jack)

Input level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz

Input impedance: More than 10 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

Pb: 0.7 Vp-p 75 Ω, termination

Pr: 0.7 Vp-p 75 Ω, termination

DV input (PAL/NTSC) IEEE 1394 Standard, 4 pin

SD/PC card slot SD Memory Card slot: 1 pc.

PC Card slot (Type II): 1 pc.

Still pictures (JPEG, TIFF)

Compatible media (SD card slot):

SD Memory Card, MultiMediaCard

Compatible media (PC card slot):

A PC card adaptor conforming to PC card standards,

ATA Flash PC Card,

PC card adaptor (SD Memory Card, xD-Picture Card,

Microdrive, MultiMediaCard, CompactFlash,

SmartMedia, MEMORYSTICK), Mobile hard disk

Format: FAT12, FAT16

Image file format:

JPEG conforming to 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)

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: 42 W

Dimensions (W×D×H): Approx. 430×291×79 mm

Mass: Approx. 4.6 kg

Note

Specifications are subject to change without notice.

Mass and dimensions are approximate.

Bitstream

This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

CPRM (Content Protection for Recordable Media)

CPRM is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

Dolby Digital

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

After finalizing, the disc becomes play-only and you can no longer record or edit.

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.

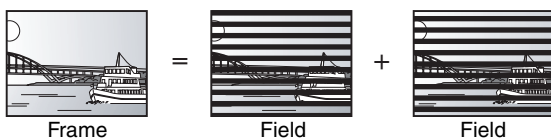
Formatting

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

You can format the HDD, DVD-RAM and memory cards 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 feature 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.

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.

Thumbnail

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

VBR (Variable bitrate)

This is a method of video recording that adjusts the bit rate according to video signal.

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 and DVD-R), the TV automatically is turned on.

●DVD Auto Standby*

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

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

This function does also not work when the DVD drive selected and an audio CD is in the disc tray.

●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] or [VIDEO Plus+] was pressed while the unit is in the timer recording mode.

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

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

PDC (Programme Delivery Control)

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

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

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

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

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

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

Frequently asked questions

Set up		Page
What equipment is necessary to play multi channel surround sound?	<ul style="list-style-type: none"> ●DVD-Video: You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital, DTS or MPEG decoder. ●DVD-Audio: This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound. 	10 —
Are the headphones and speakers directly connected to the unit?	<ul style="list-style-type: none"> ●You cannot directly connect to the unit. Connect through the amplifier etc. 	10
The television has a Scart terminal and component video input terminal. Which terminal should I connect with?	<ul style="list-style-type: none"> ●If you have a 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. 	7, 8
Is my television progressive output compatible?	<ul style="list-style-type: none"> ●All Panasonic televisions that have 625 (576)/50I · 50P, 525 (480)/60I · 60P input terminals are compatible. Consult the manufacturer if you have another brand of television. 	—
Disc		
Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?	<ul style="list-style-type: none"> ●You cannot play DVD-Video if their region number does not include “2” or “ALL”. 	Cover
Can a DVD-Video that does not have a region number be played?	<ul style="list-style-type: none"> ●The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number. 	—
Please tell me about DVD-R and DVD-RW compatibility with this unit.	<ul style="list-style-type: none"> ●This unit records and plays DVD-R. However, you cannot record onto DVD-R discs that are finalized. ●This unit also records and plays high speed recording compatible discs. ●This unit does not record or play DVD-RW. 	— — —
Please tell me about CD-R and CD-RW compatibility with this unit.	<ul style="list-style-type: none"> ●This unit plays CD-R/CD-RW discs (audio recording discs) which have been recorded under one of the following standards: CD-DA, MP3 and Video CD. Close the session or finalize the disc after recording. ●You cannot write to a CD-R or CD-RW with this unit. 	16, 27 —
Recording		
Can I record from a commercially purchased video cassette or DVD?	<ul style="list-style-type: none"> ●Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible. 	—
Can a DVD-R recorded on this unit be played on other equipment?	<ul style="list-style-type: none"> ●You can play on DVD-R compatible players after finalizing the disc on this unit; however, due to the condition of the recording, play may not be possible. 	45
How many times can I write to a DVD-RAM disc?	<ul style="list-style-type: none"> ●You can write to the disc approximately 100,000 times depending upon the conditions of use. 	—
Can I high speed transfer (dub) to a disc?	<ul style="list-style-type: none"> ●You can record up to 32× recording speed to DVD-R and up to 24× recording speed to DVD-RAM when using a high speed compatible disc. 	37
Can I record digital audio signals using this unit?	<ul style="list-style-type: none"> ●You cannot record digital signals. The digital audio terminals on this unit are for output only. (The audio recorded using the DV automatic recording function from a digital video camcorder, for example, is recorded digitally.) 	—
Can a digital audio signal from this unit be recorded to other equipment?	<ul style="list-style-type: none"> ●You can record if using the PCM signal. When recording DVD, change the “Digital Audio Output” settings to the following 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. 	49 —
Can I switch to bilingual broadcast during recording?	<ul style="list-style-type: none"> ●With HDD and DVD-RAM, you can. Just press [AUDIO]. ●With DVD-R, you cannot. Change before recording with “Bilingual Audio Selection” in the SETUP menu. 	26 49


Error messages

On the television

Page

Cannot finish recording completely.	<ul style="list-style-type: none"> The programme was copy-protected. The HDD or disc may be full. 	—
Cannot playback this title. TV system is different from the setting. To playback this title, please change the TV System in SETUP.	<ul style="list-style-type: none"> You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the "TV System" setting on this unit to suit. 	52
Cannot record on the disc.	<ul style="list-style-type: none"> The disc may be dirty or scratched. You cannot format a Microdrive or mobile hard disk on this unit. 	63
Please check the disc.		—
Unable to format.		—
Cannot play on this unit.	<ul style="list-style-type: none"> You tried to play a non-compatible image. Turn the unit off and re-insert the card. 	28 28
Cannot record. Disc is full.	<ul style="list-style-type: none"> Create space by erasing any unnecessary titles. HDD RAM (Even if you erase recorded content from the DVD-R, there is no increase in disc space.) Use a new disc. 	26, 33, 44, 45
Cannot record. Maximum number of titles exceeded.		—
Error has occurred. Please press ENTER.	<ul style="list-style-type: none"> Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering ("SELF CHECK" appears on the unit's display). 	—
No Disc	<ul style="list-style-type: none"> The disc may be upside down. 	—
No folders.	<ul style="list-style-type: none"> There is no compatible folder in this unit. 	17
No PC CARD No SD CARD No valid PC card. No valid SD card.	<ul style="list-style-type: none"> 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. 	28 17
Not enough space on dubbing destination.	<ul style="list-style-type: none"> 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. 	26, 29, 33, 36, 44, 45, 39
Please change the disc.	<ul style="list-style-type: none"> There may be a problem with the disc. Press [▲ OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.) 	63
This is a non-recordable disc.	<ul style="list-style-type: none"> The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R. You inserted an unformatted DVD-RAM. Format the disc with this unit. 	—
This disc is not properly formatted. Formatting is necessary using DISC MANAGEMENT.		45
⊘	<ul style="list-style-type: none"> The operation is prohibited by the unit or disc. 	—

On the unit's display

HDD SLP	<ul style="list-style-type: none"> In order to extend HDD life, the HDD is in SLEEP mode. Press [HDD] to activate. 	63
HARD ERR	<ul style="list-style-type: none"> If there is no change after turning the unit on and off, consult the dealer where the unit was purchased. 	—
NO READ	<ul style="list-style-type: none"> The disc is dirty or badly scratched. The unit cannot record, play, or edit. You have used a DVD-RAM/PD lens cleaner and it has finished. Press [▲ OPEN/CLOSE] on the main unit to eject the disc. 	63 —
PROG FULL	<ul style="list-style-type: none"> There are already 32 timer programmes. Delete unnecessary timer programmes. 	23
REMOTE DVD □ (□ stands for a number.)	<ul style="list-style-type: none"> The remote control and main unit are using different codes. Change the code on the remote control.  <p>Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.</p>	15
SELF CHECK	<ul style="list-style-type: none"> The unit is starting up. Wait until the message disappears. 	—
U14	<ul style="list-style-type: none"> The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit. 	—
U99	<ul style="list-style-type: none"> The unit fails to operate properly. Press [⏻/I] on the main unit to switch the unit to standby. Now press [⏻/I] on the main unit again to turn the unit on. 	—
UNSUPPORT	<ul style="list-style-type: none"> You have inserted a disc the unit cannot play or record on. 	16
X HOLD	<ul style="list-style-type: none"> The Child Lock function is activated. Press and hold [ENTER] and [RETURN] simultaneously until "X HOLD" disappears. 	53

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, consult your dealer for instructions.

The following do not indicate a problem with this unit:

- | | |
|--|---|
| <ul style="list-style-type: none"> ● Regular disc rotating sounds. ● Poor reception due to atmospheric conditions. ● Image disturbance during search. | <ul style="list-style-type: none"> ● 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. |
|--|---|

Power

Page

No power. Unit does not turn on pressing [⏻ DVD].	<ul style="list-style-type: none"> ● Insert the AC mains lead securely into a known active AC mains socket. ● Linked timer recordings with external equipment is in recording standby. Press [EXT LINK] to cancel the recording standby. 	7-9 23
The unit switches to standby mode.	<ul style="list-style-type: none"> ● 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.	<ul style="list-style-type: none"> ● Change "FL Display" in the SETUP menu. 	49
"0:00" is flashing on the unit's display.	<ul style="list-style-type: none"> ● Set the clock. 	53
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.	<ul style="list-style-type: none"> ● Times shown may disagree with actual times. ● More disc space than the actual recording time is used after recording or editing the DVD-R 200 times or more. ● While searching, the elapsed time may not display correctly. ● Even if you erase recorded content from the DVD-R, there is no increase in disc space. 	— — — —
The clock is not correct.	<ul style="list-style-type: none"> ● Under adverse reception conditions, etc., the automatic time correction function may not work. In this case, "Automatic" is automatically turned to "Off". If re-setting the Auto Clock Setting does not work, set the time manually. 	53

TV screen and video

Television reception worsens after connecting the unit.	<ul style="list-style-type: none"> ● This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers. 	—
Status messages do not appear.	<ul style="list-style-type: none"> ● Select "Automatic" in "On-Screen Messages" in the SETUP menu. 	49
The grey background does not appear.	<ul style="list-style-type: none"> ● Select "On" in "Grey Background" in the SETUP menu. 	49
Picture does not appear during timer recording.	<ul style="list-style-type: none"> ● 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.	<ul style="list-style-type: none"> ● Use the television to change the aspect. If your television does not have that function, set "Progressive" in the Picture menu to "OFF". 	31
Screen size is wrong.	<ul style="list-style-type: none"> ● Check the settings for "TV Aspect" in the SETUP menu. 	14
There is a lot of after-image when playing video.	<ul style="list-style-type: none"> ● Set "Playback NR" in the Picture menu to "OFF". 	31
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	<ul style="list-style-type: none"> ● Set "Progressive" in the Picture menu to "OFF". This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output. 	31
There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.	<ul style="list-style-type: none"> ● The effect is less perceivable with some types of video. 	—
The images from this unit do not appear on the television.	<ul style="list-style-type: none"> ● Make sure that the television is connected to the AV1 terminal, VIDEO OUT terminal, S-VIDEO OUT terminal or COMPONENT VIDEO OUT terminals on this unit. 	7, 8
Picture is distorted.	<ul style="list-style-type: none"> ● Make sure that the television's input setting (e.g., AV 1) is correct. ● The television isn't compatible with progressive signals. Press and hold [■] and [TIME SLIP] on the main unit at the same time for about 5 seconds. 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. 	— — 52

Sound		Page
No sound. Low volume. Distorted sound. Cannot hear the desired audio type.	<ul style="list-style-type: none"> ● Check the connections and 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. <ul style="list-style-type: none"> – When using discs that do not have surround sound effects such as Karaoke discs. – When playing bilingual broadcast programmes. ● 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 	7–10, 49 26 31 —
	<ul style="list-style-type: none"> ● You cannot switch the audio in the following cases. <ul style="list-style-type: none"> – When a DVD-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 “DVD-R Rec for High Speed mode” is set to “On” ● You have used a digital connection. Set “Dolby Digital” to “PCM” or connect using audio cables (analog connection). ● There are discs for which audio cannot be changed because of how the disc was created. 	— 49 48 49, 10 —

Operation		Page
Cannot operate the television. The remote control doesn't work.	<ul style="list-style-type: none"> ● Change 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. 	15 15
	 Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.	
	<ul style="list-style-type: none"> ● The batteries are depleted. Replace them with new ones. ● Coloured glass may obstruct the signal reception/transmission. ● Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure. ● The child lock function is activated. 	4 — — 53
	<ul style="list-style-type: none"> ● Recording drive or playback drive has not been selected properly. ● Some operations may be prohibited by the disc. ● The unit is hot (“U14” appears on the display). Wait for “U14” to disappear. ● One of the unit's safety devices may have been activated. Reset the unit as follows: Press [⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.	18, 24 — — —
	<ul style="list-style-type: none"> ● The HDD is in SLEEP mode. (“HDD SLP” appears in the unit's display.) 	63
Cannot eject disc.	<ul style="list-style-type: none"> ● 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. 	53
Cannot tune channels. Cannot download channel presets from the television.	<ul style="list-style-type: none"> ● 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. 	7–9 —

Recording, timer recording and transferring (dubbing)		Page
Cannot record.	<ul style="list-style-type: none"> ● 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 un-formatted. Format the disc. RAM ● 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. ● You cannot record on finalized DVD-R discs. ● Due to peculiarities of DVD-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. ● A DVD-R recorded on this unit may not be recordable on other Panasonic DVD recorders. 	16 45 44 55 26, 33, 44, 45 — — —
	<ul style="list-style-type: none"> ● 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. 	23 21, 22 53

Continued on next page

Recording, timer recording and transferring (dubbing) (Continued)

Page

Timer recording does not stop even when [■] is pressed.	<ul style="list-style-type: none"> While using timer recording, press [⊖ TIMER]. (“⊖” disappears.) When using the linked timer recording with external equipment, press [EXT LINK]. (“Ext Link” disappears.) 	21, 22 23
The timer programme remains even after recording finishes.	<ul style="list-style-type: none"> The timer programme remains if set to daily or weekly. 	22
A part or whole of a recorded title has been lost.	<ul style="list-style-type: none"> If there is a power failure or the plug is disconnected from the household AC mains socket while recording or editing, the title may be lost or the disc may become unusable. You will have to format the disc (HDD RAM) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs. 	—
Cannot transfer (dub) to a DVD-R disc using the high speed mode.	<ul style="list-style-type: none"> When recording to the HDD, set “DVD-R Rec for High Speed mode” to “On” in the SETUP menu. 	48
When transferring (dubbing), it takes a long time even when high speed mode is selected.	<ul style="list-style-type: none"> Use a disc that is compatible with high speed recording. Even if the disc is high speed recording compatible, the maximum speed recording rating 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 titles longer than 6 hours when using other Panasonic DVD recorders that are not compatible with EP (8 hour) mode recording. 	— — —
An unusually loud sound is coming from the rotating DVD-R.	<ul style="list-style-type: none"> When recording or high speed transferring (dubbing) to a DVD-R, the sound of the disc rotating may be louder than normal, however, this is not a problem. 	—
The DV automatic recording function does not work.	<ul style="list-style-type: none"> If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings. You cannot start recording until the images from the DV equipment appear on the television. Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive. Depending on the equipment, the DV automatic recording may not operate properly. 	41 — — —

Play

Play fails to start even when [▶] (PLAY) is pressed. Play starts but then stops immediately.	<ul style="list-style-type: none"> Insert the disc correctly with the label facing up. You tried to play a blank DVD-RAM/DVD-R, or disc unplayable on this unit. 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 Hour)” mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use “EP (6 Hour)” mode. You cannot play discs during DV automatic recording. 	24 16 — 48 —
Audio and video momentarily pause.	<ul style="list-style-type: none"> This occurs between play list chapters. This occurs between chapters and with partially deleted titles on finalized DVD-R that have been transferred (dubbed) using the high speed mode. 	— —
DVD-Video is not played.	<ul style="list-style-type: none"> Some DVD-Video cannot be played when you change the ratings level. 	48
Alternative soundtrack and subtitles cannot be selected.	<ul style="list-style-type: none"> The languages are not recorded on the disc. You may have to use the disc’s menus to select languages. 	— —
No subtitles.	<ul style="list-style-type: none"> Subtitles are not recorded on the disc. Turn the subtitles on. 	— 30
Angle cannot be changed.	<ul style="list-style-type: none"> Angles can only be changed during scenes where different angles are recorded. 	—
You have forgotten your ratings password.	<ul style="list-style-type: none"> While the disc tray is open, press [DVD] then press and hold [⏪/◀◀] and [▶▶/▶▶] on the main unit at the same time for 5 or more seconds. 	—
Quick View does not work.	<ul style="list-style-type: none"> This does not work if the setting is “Off” in “PLAY ×1.3 & Audio during Search”. This does not work when audio is other than Dolby Digital. This does not work when recording is in XP or FR mode. RAM 	49 — —
The resume play function does not work.	<ul style="list-style-type: none"> 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 play list is also canceled when the play list and title are edited. 	— —
The Video CD picture does not display properly.	<ul style="list-style-type: none"> When connecting to Multi-system TV, select “NTSC” in “TV System” in the SETUP menu. When connecting to PAL TV, the lower part of the picture cannot be displayed correctly during search. 	52 —
Time Slip does not work.	<ul style="list-style-type: none"> Time Slip does not work when the unit’s “TV System” settings are different from the title recorded on the disc. 	52



Edit		Page
Cannot format.	<ul style="list-style-type: none"> •The disc is dirty. Use a special cleaner and wipe clean. •You tried formatting a disc that is not compatible with this unit. 	63 16
Cannot create chapters. Cannot mark the start point or the end point during “Partial Erase” operation.	<ul style="list-style-type: none"> •The unit writes the chapter information to the disc when you turn it off or remove the disc. The information is not written if there is an interruption to the power before this. •These operations are not possible with still pictures. •You cannot set points if they are too close to each other. You cannot set an end point before a start point. 	— — —
Cannot erase chapters.	<ul style="list-style-type: none"> •When the chapter is too short to erase, use “Combine Chapters” to make the chapter longer. 	33
The available recording time doesn’t increase even after erasing recordings on the disc.	<ul style="list-style-type: none"> •Available recording space on the DVD-R does not increase even after erasing previously recorded titles. 	—
Cannot create a play list.	<ul style="list-style-type: none"> •You cannot select all the chapters at once in a title if the title also includes still pictures. Select them individually. 	—

Still pictures		
Cannot display Direct Navigator screen.	<ul style="list-style-type: none"> •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.	<ul style="list-style-type: none"> •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.) 	44
The contents of the card cannot be read.	<ul style="list-style-type: none"> •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. 	17, 28 45 17 —
Transferring (dubbing), erasing and setting protection takes a long time.	<ul style="list-style-type: none"> •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. 	— 45
The PC card cannot be removed.	<ul style="list-style-type: none"> •Make sure the PC card is slotted home firmly before attempting to remove. 	28

Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit’s service life.

Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.

Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

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 benzene to clean this unit.
- Before using chemically treated cloth, read the instructions that came with the cloth carefully.

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

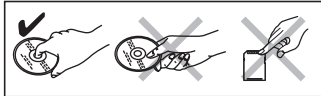
Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs.

Use the DVD-RAM/PD lens cleaner (LF-K123LCA1, where available) about once every year, depending on frequency of use and the operating environment. Read the lens cleaner's instructions carefully before use.

Disc and card handling

How to hold a disc or card

Do not touch the recorded surface or the terminal surface.



If there is dirt or condensation on the disc

RAM DVD-R

- Clean with an optional DVD-RAM/PD disc cleaner (LF-K200DCA1, where available).
- Do not use cleaners for CDs or cloths.

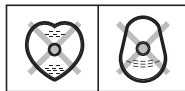
DVD-A DVD-V VCD CD

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.)
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzene, 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 use the following discs:
 - Discs with exposed adhesive from removed stickers or labels (rented discs etc).
 - Discs that are badly warped or cracked.
 - Irregularly shaped discs, such as heart shapes.
- Do not place in the following areas:
 - In direct sunlight.
 - In very dusty or humid areas.
 - Near a heater
 - Where static electricity or electromagnetic waves occur



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 DVD 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 the content during recording or play 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 viewing once, editing, or for saving to a DVD disc.

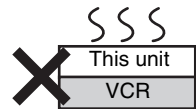
Immediately save (backup) all content as soon as you feel there may be problem with the HDD

If there is an irregularity within the HDD, 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, save all content to the DVD disc.

Recorded content (Data) on a HDD that has become unusable is unrecoverable.

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 time is insufficient, erase any unwanted titles to create enough space before you start recording. (Erasing a play list will not increase the amount of time.)

When "HDD SLP (SLEEP)" appears in the display

The HDD has automatically gone into SLEEP mode in order to extend the life of the HDD. (While power is supplied, the HDD rotates at high speed. If there is no disc in the unit, the HDD will go into SLEEP mode after there has been no operation for 30 minutes or longer.)

- Press [HDD] to activate.
- While in SLEEP mode play or recording may not begin 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 the case any type of repair is made to the unit (including any other non-HDD related component).

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