Operating Instructions

DVD Recorder

Model No. DMR-EH50

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.

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

Region number supported by this unit

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

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

Example:

Dear customer

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

Before connecting, operating or adjusting this product, please read these instructions completely.

Please keep this manual for future reference.
Getting started

≥

VORSICHT
WARNING
VARO!
ADVARSEL
ATTENTION
CAUTION
DANGER

Your attention is drawn to the fact that the recording pre-recorded with wet hands.

infringe copyright laws.
tapes or discs or other published or broadcast material may

swallowed, seek medical advice immediately.

Memory Card out of reach of children. If

Keep the small memory cards such as the SD

Memory Card out of reach of children. If

remain readily operable.
easily accessible or the mains plug or an appliance coupler shall

telephone.

increase separation between the product and the mobile

telephones during use. If such interference is apparent, please

This product may receive radio interference caused by mobile

modules.

DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE,

DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS

WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND

other materials DO NOT OBSTRUCT THE

VENTILATION VENTS.

DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS

LIGHTED CANDLES, ON THE UNIT.

DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS

LIGHTED CANDLES, ON THE UNIT.

DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS

LIGHTED CANDLES, ON THE UNIT.

DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY

FRIENDLY MANNER.

≥

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

(page 71, Specifications—Others)

This product may receive radio interference caused by mobile

phones 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.

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.

Important!
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 for AC Mains Lead

(For United Kingdom)
For your safety, please read the following text carefully.
This appliance is supplied with a moulded three pin mains plug for
your safety and convenience.

A 5-ampere fuse is fitted in this plug.

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

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

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

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

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(For United Kingdom)
For your safety, please read the following text carefully.
This appliance is supplied with a moulded three pin mains plug for
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replacement fuse has a rating of 5-ampere and that it is approved by
ASTA or BSI to BS1362.

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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.

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.

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.
The following information summarizes a few of these features.

Resulted in many new features that outperform older tape formats.

You can keep on recording your favorite programmes to an internal HDD recording sequentially pressing the REC button (Quick Start Mode).

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

Instant play
You need not 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.

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

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

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

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

The HDD is a high precision recording instrument and because of its long recording capability and high speed operation it is a very special device that is easily susceptible to damage.

As a basic rule, save important video content to a disc as backup.

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

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

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

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

- **Setup precautions**
  - Do not place in an enclosed area so the rear cooling fan and the cooling vents on the side are covered up.
  - Place the unit on a surface that is flat and not subject to vibration or impact.
  - Do not place on anything that generates heat like a video cassette recorder, etc.
  - Do not place in an area often subject to temperature changes.
  - Place in an area where condensation does not occur. Condensation is a phenomenon where moisture forms on a cold surface when there is an extreme change in temperature. Condensation may cause internal damage to the unit.

- **Conditions where condensation may occur**
  - When there is an extreme change in temperature (moving from a very hot location to a very cold location, or vice versa, or when subjected to an air conditioner or when cooled air directly impacts the unit). When the HDD (warms during operation) is subjected to cold air, condensation may form on the inside of the HDD and may cause damage to the HDD heads, etc.
  - When there is high humidity or a lot of steam in the room.
  - During the rainy season.
  - In the above situation, without turning the unit on, let the unit adjust to the room temperature and wait 2–3 hours until condensation is gone.

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

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

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

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

How to hold a disc or card
Do not touch the recorded surface or the terminal surface.

Concerning non-cartridge discs
Be careful about scratches and dirt.

If there is dirt or condensation on the disc
Wipe with a damp cloth and then wipe dry.

Handling precautions
- Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not expose the terminals of the card to water, garbage or other strange things.
- Do not drop stack, or impact discs. Do not place objects on them.
- Do not use the following discs:
  - Discs with exposed adhesive from removed stickers or labels (rental discs, etc.).
  - Discs that are badly warped or cracked.
  - Irregularly shaped discs, such as heart shapes.

- Do not place in the following areas:
  - In direct sunlight.
  - In very dusty or humid areas.
  - Near a heater.
  - Locations susceptible to significant difference in temperature (condensation can occur).
  - Where static electricity or electromagnetic waves occur.
- To protect discs from scratches and dirt, return them to their cases or cartridges when you are not using them.

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

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

Observe the following points to ensure continued listening and viewing pleasure:
- Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs.
- Use the DVD-RAM lens cleaner about once every year, depending on frequency of use and the operating environment. Carefully read the lens cleaner's instructions before use.

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

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

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

Unit care

Do not place the unit on amplifiers or equipment that may become hot.
The heat can damage the unit.

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

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

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

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

Note to owners of progressive compatible PAL system televisions

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

- If you have a regular television (CRT: cathode ray tube)
  Use component output with progressive “Off” (Factory setting 59), even if it is progressive compatible, because progressive output can cause some flickering. This is the same for multi system televisions using PAL mode.
Using DVD-R, DVD-RW and +R on this unit

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

* DVD-R, DVD-RW and +R are collectively referred to as “DVD-R, etc.” on this page.

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

When recording a bilingual programme to DVD-R, etc.
Select the audio to record before recording or transferring (dubbing).

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

If you do not connect external equipment

Select “M 1” or “M 2” in “Bilingual Audio Selection” in the SETUP menu (☞ 58).

If you connect external equipment

Select “M 1” or “M 2” on the external equipment.

When you want to transfer (dub) titles in high speed mode from the HDD to DVD-R, etc.
Set “Rec for High Speed dubbing” to “On” before recording to the HDD (☞ 26).

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

Depending on the disc, max. speed may vary.

Set “Rec for High Speed dubbing” to “On” (☞ 26).

When playing the disc on other DVD players

The disc must be finalized after recording or transferring (dubbing) (☞ 54).
It is necessary to finalize DVD-R, etc. on this unit after recording or transferring (dubbing) titles to them. You can then play them as a commercially sold DVD-Video. However, the discs become play-only and you can no longer record or transfer (dub).

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

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

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

1 Remote control (EUR7729K00)
1 AC mains lead (RJA0044-3C) For use with this unit only. Do not use it with other equipment. Also, do not use cords for other equipment with this unit.
1 RF coaxial lead (VJA1089)
2 Batteries for remote control
1 Audio/video cable (VJA0788-D)

The remote control information

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

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

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

Remote control signal sensor

Remote control signal sensor

Remote control signal sensor

Note

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

Sales and Support Information

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

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

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

Remote control operations ( 12)
## HDD, disc and card information

### HDD, disc and card information

#### HDD and discs you can use for recording and play

<table>
<thead>
<tr>
<th>Disc type</th>
<th>Hard disk drive (HDD)</th>
<th>DVD-RAM</th>
<th>DVD-R (DVD-Video format)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logo</td>
<td>–</td>
<td>DVD</td>
<td>-</td>
</tr>
<tr>
<td>Indicated in these instructions by</td>
<td>HDD</td>
<td>RAM</td>
<td>DVD-V</td>
</tr>
<tr>
<td>Data that can be recorded and played</td>
<td>Video</td>
<td>Video</td>
<td>Video</td>
</tr>
<tr>
<td>Main use</td>
<td>Temporary storage</td>
<td>As re-writable discs for backup use</td>
<td>As one time recording discs for backup use (recordable until the disc is full)</td>
</tr>
<tr>
<td>Maximum recording time</td>
<td>Approx. 142 hours</td>
<td>Approx. 8 hours (Approx. 16 hours on a double-sided disc)</td>
<td>Approx. 8 hours</td>
</tr>
<tr>
<td>Play on other players</td>
<td>–</td>
<td>Only on DVD-RAM compatible players.</td>
<td>Only after finalizing the disc (54, 69),</td>
</tr>
<tr>
<td>Using a high speed recording compatible disc</td>
<td>–</td>
<td>This unit is compatible with 2x~5x recording speed discs.</td>
<td>This unit is compatible with 1x~8x recording speed discs.</td>
</tr>
</tbody>
</table>

#### What you can do on this unit (V: Can do, X: Cannot do)

- Checking playback
- Recording broadcasts that allow one copy
- Recording both M 1 and M 2 for bilingual broadcasts
- Recording 16:9 aspect picture
- Entering text
- Erasing titles
- Creating playlists

<table>
<thead>
<tr>
<th>Disc type</th>
<th>DVD-RW (DVD-Video format)</th>
<th>+R</th>
<th>DVD-R (DVD-Video format)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logo</td>
<td>DVD</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indicated in these instructions by</td>
<td>RAW</td>
<td>before finalization</td>
<td>RAW before finalization</td>
</tr>
<tr>
<td>Data that can be recorded and played</td>
<td>Video</td>
<td>Video</td>
<td>Video</td>
</tr>
<tr>
<td>Main use</td>
<td>As re-writable discs for backup use</td>
<td>As one time recording discs for backup use (recordable until the disc is full)</td>
<td></td>
</tr>
<tr>
<td>Maximum recording time</td>
<td>Approx. 8 hours</td>
<td>Approx. 8 hours</td>
<td></td>
</tr>
<tr>
<td>Play on other players</td>
<td>Only after finalizing the disc</td>
<td>Only after finalizing the disc</td>
<td></td>
</tr>
<tr>
<td>Using a high speed recording compatible disc</td>
<td>This unit is compatible with 1x~4x recording speed discs.</td>
<td>This unit is compatible with 2.4x~8x recording speed discs.</td>
<td></td>
</tr>
</tbody>
</table>

#### What you can do on this unit (V: Can do, X: Cannot do)

- Checking playback
- Recording broadcasts that allow one copy
- Recording both M 1 and M 2 for bilingual broadcasts
- Recording 16:9 aspect picture
- Entering text
- Erasing titles
- Creating playlists

### Note

- You cannot consecutively record or play both sides.
- You cannot record programmes that allow "One time only recording" to CPRM compatible DVD-R and DVD-RW on this unit. You can record other programmes as DVD-Video format.
- This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.)
- Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.
- Digital broadcasts that allow "One time only recording" cannot be recorded.
- These cannot be played on a DVD player.
- Use the HDD or a DVD-RAM to record in DVD Video Recording format.
- Use a DVD-R or DVD-RW to record in DVD Video format.

#### DVD Video Recording format

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

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

#### DVD-Video format

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

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

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

Getting started

You can play still pictures (JPEG/TIFF), CD-DA, Video CD and MP3 format data recorded on CD-R/RW. Close the session or finalize the disc after recording.

The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.

Play may be impossible on some CD-R, CD-RW, DVD-RW or +RW discs due to the condition of the recording.

DVD-RAM, 9.4 GB, double-sided, type 4 cartridge:
- LM-AD240ME (compatible with high speed recording 5k)
- LM-AD240LE (compatible with high speed recording 3k)

DVD-R, 9.4 GB, double-sided, type 3 cartridge:
- LM-AB120ME (compatible with high speed recording 5k)
- LM-AB120LE (compatible with high speed recording 3k)

DVD-R, 4.7 GB, single-sided, non-cartridge:
- LM-RF120ME (compatible with high speed recording 5k)
- LM-RF120LE (compatible with high speed recording 3k)

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

Play-only discs (12 cm/8 cm)

<table>
<thead>
<tr>
<th>Disc type</th>
<th>DVD-Video</th>
<th>DVD-Audio</th>
<th>DVD-RW (DVD Video Recording format)</th>
<th>+RW</th>
<th>CD</th>
<th>Video CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logo</td>
<td>DVDV</td>
<td>DVD-A</td>
<td>DVD-RW</td>
<td>+RW</td>
<td>CD</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>recorded on another DVD Recorder</td>
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<td></td>
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</tbody>
</table>

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

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

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

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

DVD-ROM
9.4 GB, double-sided, type 4 cartridge:
- LM-AD240ME (compatible with high speed recording 5x)
- LM-AD240LE (compatible with high speed recording 3x)

4.7 GB, single-sided, type 2 cartridge:
- LM-AB120ME (compatible with high speed recording 5x)
- LM-AB120LE (compatible with high speed recording 3x)

4.7 GB, single-sided, non-cartridge:
- LM-AF120ME (compatible with high speed recording 5x)
- LM-AF120LE (compatible with high speed recording 3x)

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

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.

<table>
<thead>
<tr>
<th>TV type</th>
<th>Disc/Titles recorded on HDD</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-system TV</td>
<td>PAL</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>NTSC</td>
<td>x</td>
</tr>
<tr>
<td>NTSC TV</td>
<td>PAL</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td>NTSC</td>
<td>✓/x2</td>
</tr>
<tr>
<td>PAL TV</td>
<td>PAL</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>NTSC</td>
<td>✓/x2</td>
</tr>
</tbody>
</table>

x1 If you select "NTSC" in "TV System" (62), the picture may be clearer.

x2 Select "NTSC" in "TV System" (62).

x3 If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.

When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the title (62).
Getting started

Compatible with: FAT 12 or FAT 16

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

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

If the SD Memory Card is formatted on other equipment, the time spent for recording may become longer. Also if the SD Memory Card is formatted on a PC, you may not be able to use it on this unit. In these cases, format the card on this unit (➡53, 69).

This unit supports SD Memory Cards formatted in FAT 12 system and FAT 16 system based on SD Memory Card Specifications.

We recommend using a Panasonic SD card.

### Cards useable on this unit

<table>
<thead>
<tr>
<th>Type</th>
<th>SD Memory Card</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>miniSD™ Card</td>
</tr>
<tr>
<td></td>
<td>MultiMediaCard</td>
</tr>
</tbody>
</table>

Indicated in these instructions by:

- SD

Data that can be recorded and played:

- Still pictures

Instructions:

- You can insert directly into the SD card slot.
- A miniSD™ card adaptor included with the miniSD™ card is necessary.
- You can play and transfer (dub) still pictures taken on a digital camera etc. (➡36, 50).
- You can set the DPOF (Digital Print Order Format) for automatic printing on your home printer or at a photo developing store (➡44, 69).

- Compatible with: FAT 12 or FAT 16

### Suitable SD Memory Cards

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

<table>
<thead>
<tr>
<th>8 MB</th>
<th>16 MB</th>
<th>32 MB</th>
<th>64 MB</th>
<th>128 MB</th>
<th>256 MB</th>
<th>512 MB</th>
<th>1 GB (Maximum)</th>
</tr>
</thead>
</table>

Please confirm the latest information on the following website.

http://panasonic.co.jp/pavc/global/cs
(This site is in English only.)

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

### Structure of folders displayed by this unit

The following can be displayed on this unit.

- **XXX**: Numbers
- **XXX**: Letters

#### DVD-RAM

- **DCIM**: (Higher folder)
- **XXXX**: (Picture folder)
- **XXXXXXX**: .JPG
- **XXXXXXX**: .TIF

#### Card

- **DCIMG**: (Higher folder)
- **XXXXXXX**: Picture folder)
- **XXXXXXX**: .JPG
- **XXXXXXX**: .TIF

* Folders can be created on other equipment. However, these folders cannot be selected as a transferring (dubbing) destination.

- The folder cannot be displayed if the numbers are all "0" (e.g., DCIM000, etc.).
- If a folder name or file name has been input using other equipment, the name may not be displayed properly or you may not be able to play or edit the data.
Getting started

Control reference guide

Instructions for operations are generally described using the remote control.

Remote control

Buttons such as the [REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.

If you press [EXT LINK] accidentally, the unit turns off and switches to the recording standby mode. Press [EXT LINK] again to cancel the recording standby.

The word “button” is not used in these operating instructions so “Press the [ENTER] button.” is shown as “Press [ENTER].”

You can use this remote control to operate your television if you set the television manufacturer code (→ 23).

■ Smart Wheel operation

Select items on menu screens and set items.

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

Press [ENTER] to confirm.

These operations are also possible.....

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

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

Note
Getting started

Standby/on switch (I/O) (19, 20)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

Disc tray (24, 32)

SD card slot (6)
Lights when the HDD, DVD or SD drive is selected

Lights when the HDD, DVD or SD drive is selected

Drive changes each time you press [DRIVE SELECT].

Stop (24, 33)

Start play (32)

Start recording/Remote control signal sensor (24)
Specify a time to stop recording (25)

Rear panel terminals (15–17)

Opening the front panel
Press down on the part with your finger

The unit's display

Transferring (dubbing) indicator

Linked timer recordings with external equipment indicator

D.MIX (multi-channel DVD-Audio only)
When lit: Down-mixing (69) is possible.
When off: The disc prevents down-mixing so only the two front channels can be played (10, Regarding DVD-Audio)

Recording mode

Disc type

Lights when the HDD, DVD or SD drive is selected

Main display section

Timer recording indicator

Main unit

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

Disc tray (24, 32)

SD card slot (6)
Lights when the HDD, DVD or SD drive is selected

Connection for camcorder etc. (49)

Linked timer recordings with external equipment (31)

Channel select (24)

Lights when the HDD, DVD or SD drive is selected

Main display section

Timer recording indicator
STEP 1 Connection

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

Recommended connection for your television

<table>
<thead>
<tr>
<th>What kind of input terminal does your television have?</th>
<th>Required cable(s)</th>
<th>Page No. for connections</th>
<th>Page No. for TV settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scart</td>
<td>Fully wired 21-pin Scart lead</td>
<td>➡ 15</td>
<td>➡ 20</td>
</tr>
<tr>
<td>Component video</td>
<td>3 video cables</td>
<td>➡ 16</td>
<td>➡ 20</td>
</tr>
<tr>
<td>S Video</td>
<td>S Video cable</td>
<td>➡ 16</td>
<td>➡ 20</td>
</tr>
<tr>
<td>Audio/Video</td>
<td>Audio/Video cable (included)</td>
<td>➡ 16</td>
<td>➡ 20</td>
</tr>
</tbody>
</table>

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

Q Link functions

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

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

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

Connect the unit directly to the television

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

-When connecting to a television with a built-in VCR

Connect to the input terminals on the television side if there are both television and VCR input terminals.
Connecting a television with 21-pin Scart terminal and Satellite/Digital terrestrial receiver

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

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

∫ indicates included accessories.
∫ ∫ indicates accessories not included.
= are required connections. Connect in the numbered order.

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

RGB
This refers to the three primary colours of light, red (R), green (G), and blue (B) and also the method of producing video that uses them. By dividing the video signal into the three colours for transmission, noise is reduced for even higher quality images.
STEP 1 Connection

Connecting a television with AUDIO/VIDEO terminals and VCR

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

To the aerial

<table>
<thead>
<tr>
<th>Aerial lead</th>
<th>Splitter</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF coaxial lead</td>
<td>Audio/Video cable</td>
</tr>
</tbody>
</table>

Television’s rear panel

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

<table>
<thead>
<tr>
<th>AC mains lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connect only after all other connections are complete.</td>
</tr>
</tbody>
</table>

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

Connecting a television with S VIDEO or COMPONENT VIDEO terminals

S VIDEO OUT terminal

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

COMPONENT VIDEO OUT terminal

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

Connect to terminals of the same colour.

Video output from the component terminal will have no colour during EXT LINK recordings. Use a fully wired 21-pin Scart lead between the TV and the unit when viewing external equipment picture through the AV2 terminal.

Change the “AV1 Output” setting in the SETUP menu (➡ 59) to “Video (with component)” or “S Video (with component)” after tuning is completed (➡ 19, 20). If not, the picture will not be in colour.

For progressive output (➡ 22)

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

Component video output

Component signal outputs the colour difference signals (Pb/Pu) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours. If the television is compatible with progressive output, a high quality picture can be output because this unit’s component video output terminal outputs a progressive output signal (➡ 69).
Connecting a television with RF socket only and Satellite/Digital terrestrial receiver

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

- 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 the aerial

**1.** Television’s rear panel

**2.** RF coaxial lead

**3.** Aerial lead

**4.** 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

Satellite/Digital terrestrial receiver’s rear panel

---

indicates included accessories.
indicates accessories not included.
1—4 are required connections. Connect in the numbered order.
**STEP 1 Connection**

**Connecting an amplifier or system component**

- **To enjoy multi-channel surround sound on DVD-Video**
  
  Connect an amplifier with Dolby Digital, DTS and MPEG decoders using an optical digital audio cable and change the settings in "Digital Audio Output" (➡ 58) after tuning is completed (➡ 19, 20).

- Before purchasing an optical digital audio cable (not included), check the terminal shape of the connected equipment.

- You cannot use DTS Digital Surround decoders not suited to DVD.

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

**Connection to a stereo amplifier**

**Amplifier's rear panel**

\[\text{Amplifier's rear panel} \]

**This unit's rear panel**

\[\text{This unit's rear panel} \]

**Optical digital audio cable**

Do not bend sharply when connecting.

**Audio cable**

\[\text{Audio cable} \]

\[\text{Red White} \]

\[\text{Red White} \]
STEP 2 Channel reception settings

When connecting to a television that has the Q Link functions (➡ 70) with a fully wired 21-pin Scart lead (➡ 15). “TV stations” tuning information and positions will be downloaded from the TV to this unit. The clock will be set automatically from data sent by the broadcaster.

1. Turn on the television and select the appropriate AV input to suit the connections to this unit.
2. Press [DVD] to turn the unit on. Downloading from the television starts.

3. When downloading has completed, the Owner ID settings screen appears.
   Press [>] and press the numbered buttons to enter a 4-digit PIN number.

4. Press [ENTER] twice to store the PIN number.
   The cursor moves to “Name”.
5. Press [ ].
6. Press [A, V] to select a letter and then press [ ].
   Repeat this to enter the name.
7. Press [ENTER] to store the name.
8. Press [V] and [ ], and then repeat steps 6, 7 to enter and store “House No.” and “Postcode”.
9. Press [RETURN].
   The Owner ID settings screen disappears.

To stop partway
Press [RETURN].

- If the clock setting menu appears
  Set the clock manually (➡ 61).
- To confirm that stations have been tuned correctly (➡ 60)
- To restart Preset Download (➡ 60)
- If you connect other equipment to AV2 terminal of this unit
  Change the “AV2 Input” in the SETUP menu to match the connected equipment (➡ 59).
- If there is interference or a very poor picture appears on the TV screen
  Refer to “Removing Interference” on page 21, and perform steps 1, 2 and 4 to stop the RF output. In step 2, press [0] to select “—”.

Note
If this unit is connected to a digital TV (IDTV), only the analogue station’s tuning information will be downloaded.
STEP 2 Channel reception settings

Auto-Setup (Setup without Q Link functions)

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

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

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

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

2 Press [DVD] to turn the unit on.

   Auto-Setup starts. This takes about 5 minutes.

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

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

   Press [RETURN] 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 [RETURN].

6 Press [A, V] to select a letter and then press [RETURN].

   Repeat this to enter the name.

7 Press [ENTER] to store the name.

8 Press [V] and [RETURN], 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].
Removing Interference

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

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.

2 Press [وخ] 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 appears.

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

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

4 Press [ENTER] to finish this setting.

   Clear picture

VIDEO Plus+ system for Satellite/ Digital terrestrial stations

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

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

1 Press [VIDEO Plus+].

2 Press the numbered buttons to enter a PlusCode number for a satellite station (e.g. Sky One) or digital terrestrial station.
   Press [◄] to move back to correct a digit.

3 Press [ENTER].
   “-- ---” will appear under “Name”.

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

5 Press [ENTER].
   The channel or AV input corresponding to the PlusCode number is memorised.

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

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

To exit the screen
Press [RETURN].
STEP 3 Set up to match your television and remote control

Selecting television type and aspect
Choose the setting to suit your television and preference.

1 While stopped
Press [FUNCTIONS].

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

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

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

5 Press [▲, ▼] to select “TV Aspect” and press [ENTER].

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

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

1 While stopped
Press [FUNCTIONS].

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

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

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

5 Press [▲, ▼] to select “AV1 Output” and press [ENTER].

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

7 Press [▲, ▼] to select “Progressive” and press [ENTER].

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

Output becomes progressive.

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.
Television operation

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

1 Point the remote control at the television
While pressing (TV), enter the code with the numbered buttons.

Manufacturer and Code No.

<table>
<thead>
<tr>
<th>Brand</th>
<th>Code</th>
<th>Brand</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANASONIC</td>
<td>01/02/03/04/45</td>
<td>NOKIA</td>
<td>25/26/27</td>
</tr>
<tr>
<td>AIWA</td>
<td>35</td>
<td>NORDMENDE</td>
<td>10</td>
</tr>
<tr>
<td>BLAUPUNKT</td>
<td>10/15</td>
<td>PHONOLA</td>
<td>31/33</td>
</tr>
<tr>
<td>BUSH</td>
<td>05/06</td>
<td>PIONEER</td>
<td>38</td>
</tr>
<tr>
<td>CURTIS</td>
<td>31</td>
<td>PYE</td>
<td>05/06</td>
</tr>
<tr>
<td>DESMET</td>
<td>05/31/33</td>
<td>RADIOLA</td>
<td>05/06</td>
</tr>
<tr>
<td>DUAL</td>
<td>05/06</td>
<td>SABA</td>
<td>10</td>
</tr>
<tr>
<td>ELEMSIS</td>
<td>31</td>
<td>SALORA</td>
<td>26</td>
</tr>
<tr>
<td>FERGUSON</td>
<td>10</td>
<td>SAMSUNG</td>
<td>31/32/43</td>
</tr>
<tr>
<td>GOODMANS</td>
<td>05/06/31</td>
<td>SANYO</td>
<td>21</td>
</tr>
<tr>
<td>GRUNDIG</td>
<td>09</td>
<td>SBR</td>
<td>06</td>
</tr>
<tr>
<td>HITACHI</td>
<td>22/23/31/40/41/42</td>
<td>SCHNEIDER</td>
<td>05/06/29/30/31</td>
</tr>
<tr>
<td>INNO HIT</td>
<td>34</td>
<td>SELECO</td>
<td>06/25</td>
</tr>
<tr>
<td>INNORADIO</td>
<td>30</td>
<td>SHARP</td>
<td>18</td>
</tr>
<tr>
<td>IT</td>
<td>25</td>
<td>SIEMENS</td>
<td>09</td>
</tr>
<tr>
<td>JVC</td>
<td>17/39</td>
<td>SINUDYNE</td>
<td>05/06/33</td>
</tr>
<tr>
<td>LDEWE</td>
<td>07</td>
<td>SONY</td>
<td>08</td>
</tr>
<tr>
<td>MCTZ</td>
<td>28/31</td>
<td>TELEFUNKEN</td>
<td>10/11/12/13/14</td>
</tr>
<tr>
<td>MITSUBISHI</td>
<td>06/19/20</td>
<td>THOMSON</td>
<td>10/15/44</td>
</tr>
<tr>
<td>MIVAR</td>
<td>24</td>
<td>TOSHIBA</td>
<td>16</td>
</tr>
<tr>
<td>NEC</td>
<td>36</td>
<td>WHITE</td>
<td>WESTINGHOUSE</td>
</tr>
</tbody>
</table>

2 Test by turning on the television and changing channels.
• Repeat the procedure until you find the code that allows correct operation.
• If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

Note
• If your television brand has more than one code listed, select the one that allows correct operation.

When other Panasonic products respond to this remote control

Change the remote control code on the main unit and the remote control (the two must match) if you place other Panasonic products close together.

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

1 While stopped
Press [FUNCTIONS].

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

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

4 Press [▲,▼] to select “Others” and press [1].

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

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

7 To change the code on the remote control
While pressing [ENTER], press and hold the numbered button ([1], [2] or [3]) for more than 2 seconds.

8 Press [ENTER].

When the following indicator appears on the unit’s display

REMOTE DVD 12

Remote Control

Press “ and “ together for more than 2 seconds on the remote control.

Disc
Press “±” and “ENTER” on the remote control.

Picture

Press [RETURN].
To exit the screen
Press [RETURN] several times.
Recording television programmes

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).

   • To record sound using LPCM (XP mode only):
     Set the “Audio Mode for XP Recording” to “LPCM” in the
     SETUP menu (58).

5 Press [REC] to start recording.

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

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

To stop recording
Press [ ].
• From the start to the end of the recording is called one title.
• 1 Sec. Quick Start for Recording on DVD-RAM and HDD
  takes about 30 seconds for the unit to complete
  recording management information after recording finishes.

If a station broadcasts Teletext information
The unit automatically records the programme’s and station’s name
if the station’s Title Page is correctly set (60).

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

Quick Start (59)
1 Sec. Quick Start for Recording on DVD-RAM and HDD
From the power off state, recording on DVD-RAM and HDD
starts about 1 second after first pressing the Power button and
then sequentially pressing the REC button (Quick Start Mode).

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

Note
Startup takes up to a minute when:
• You play a disc or start recording to discs other than DVD- RAM.
• You want to make other operations.
• The clock has not been set.
Recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated. (Unit: hour)

<table>
<thead>
<tr>
<th>Mode</th>
<th>HDD (80 GB)</th>
<th>DVD-RA M Single-sided (4.7 GB)</th>
<th>DVD-R Double-sided†1 (9.4 GB)</th>
<th>DVD-R Dual-layer†1 (4.7 GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XP (High quality)</td>
<td>17</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>24</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>LP (Long play)</td>
<td>68</td>
<td>4</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>EP (Extra long play)</td>
<td>142 (106†2)</td>
<td>8 (6†2)</td>
<td>16 (12†2)</td>
<td>8 (6†2)</td>
</tr>
<tr>
<td>FR (Automatic mode selection)</td>
<td>142 hours maximum</td>
<td>8 hours maximum</td>
<td>8 hours maximum</td>
<td>8 hours maximum</td>
</tr>
</tbody>
</table>

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

†2 When "Recording time in EP mode" is set to "EP (6 Hours)" in the SETUP menu ( 57).

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

FR (Flexible Recording Mode)
You can set FR (Flexible Recording) mode when transferring (dubbing) or programming timer recordings.
The unit automatically selects a recording rate between XP and EP (8 Hours) that will enable the recordings to fit in the remaining disc space with the best possible recording quality.
For example with a 90 minute recording to an unused DVD-RAM, the picture quality is adjusted to between "XP" and "SP".

When recording to the HDD, picture quality is automatically adjusted to precisely fit a transferred (dubbed) title on a 4.7 GB disc.

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

Before recording

• It is not possible to record to both HDD (Hard Disk Drive) and DVD drive simultaneously.
• It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.

• It is not possible to record digital broadcasts that allow ‘One time only recording’ onto DVD-R, DVD-RW, +R on 8 cm DVD-RAM discs. Use the HDD or CPRM compatible DVD-RAM.

• When transferring (dubbing) in high speed mode to DVD-R, DVD-RW (DVD-Video format) and +R, after you have recorded to the HDD, set “Rec for High Speed dubbing” to “On” before recording to the HDD ( 26).

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

Either the main or secondary audio can be recorded for bilingual broadcasts, when

• Recording to DVD-R, DVD-RW (DVD-Video format) and +R
• Recording sound in LPCM ( 58, Audio Mode for XP Recording)
• “Rec for High Speed dubbing” is set to “On” ( 26)

You have to select the audio recording type before recording.

If you do not connect external equipment

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

If you connect external equipment

Select “M 1” or “M 2” on the external equipment.

After recording

• FR (Flexible Recording) in order to play a disc recorded using this unit on another playback equipment, the disc must first be finalized ( 54).

To specify a time to stop recording—One Touch Recording

During recording

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

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

To stop recording partway

Press [Middle].

When using DVD-RW

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

To format a disc

“Erasing all contents of a disc or card—Format” ( 53)
Recording television programmes

Flexible Recording
(Recording that fits the remaining disc space)

HDD (RAM) [R] REM[RE] [K]
The unit sets the best possible picture quality that fits the recording within the remaining disc space. The recording mode becomes FR mode.

Using “FLEXPICAL REC” is convenient in these kinds of situations.

HDD [RAM] [RE] [RE] [RE]
• When the amount of free space on the disc makes selecting an appropriate recording mode difficult
• When you want to record a long programme with the best picture quality possible
• When you want to record a title to HDD so that it can then be transferred (dubbed) to fit one 4.7 GB disc perfectly
• You do not need to edit the recorded title, or change the recording mode when transferring (dubbing) to fit the disc space.

Preparation

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

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

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

However there will be 30 minutes remaining disc space.

If you select “FLEXIBLE REC” the programme will fit one disc perfectly.

Necessary space for recording

Preparation

Select the channel or the external input to record.
Press (HDD) or (DVD) to select the recording drive.

1 While stopped
Press [FUNCTIONS].

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

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

4 Press [◄, ►] to select “Hour” and “Min.” and press [▲, ▼] to set the recording time.

5 When you want to start recording
Press [▲, ▼, ◄, ►] to select “Start” and press [ENTER].

Maximum recording time

This is the maximum recording time in EP mode.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

To start recording

• Recording television programmes (≥ 24)
• Timer recording (≥ 28)
• Recording from a video cassette recorder (≥ 49)

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

Rec for High Speed dubbing

When transferring (dubbing) in high speed mode to DVD-R, DVD-RW (DVD-Video format) and +R, set “Rec for High Speed dubbing” to “Off”.

If you do not intend to transfer (dub) titles in high speed mode to DVD-R, DVD-RW (DVD-Video format) and +R after you have recorded

When transferring (dubbing) in high speed mode to DVD-R, set “Rec for High Speed dubbing” to “On” before

If transferring (dubbing) a title using the high speed mode to a

When recording bilingual broadcasts, either the main or

Even 16:9 aspect (Widescreen) programmes are recorded in 4:3 aspect.

Recording television programmes

1 While stopped
Press [RETURN].

2 Press [RETURN].

3 Press [RETURN] several times.

To show the remaining time
Press [STATUS].

To stop recording partway
Press [■] and press [STATUS].

Remaining

HDD REC 59 MIN
1 M/1 M 2 L/R

Notes

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

≥

≥
Press [ ] (PLAY) during recording.

There is no sound output while searching forward or backward.

To stop play
Press [ ]

To stop recording
2 seconds after play stops
Press [ ]

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

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

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

1 Press [HDD] or [DVD] to select the recording drive.
The HDD or DVD indicator lights up on the unit.
2 If you selected the DVD drive
Insert a disc. (➡ 24)
3 Press and hold [® DIRECT TV REC] for 1 second.
Recording starts.

To stop recording
Press [ ].

Preparation
Connect a digital/satellite receiver to this unit’s input terminals (➡ 15).
When recording bilingual programmes
[HDD] [RAM]
When both M 1 and M 2 is selected on the connected equipment, you can select the audio type in playback.
[HDD] [RAW]
Select either M 1 or M 2 on the connected equipment. (Only either one type of M 1 or M 2 can be recorded.)
When the output signal from the external equipment is NTSC, change the “TV System” to “NTSC” in the SETUP menu (➡ 62).
This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.)
You can also press and hold [ ] on the main unit for more than 3 seconds to stop recording.

Recording from digital/satellite receiver
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 [ ].

Playing while you are recording
[HDD] [RAW]
Playing from the beginning of the title you are recording—Chasing playback
Press [ ] (PLAY) during recording.
There is no sound output while searching forward or backward.

To stop play
Press [ ]

To stop recording
2 seconds after play stops
Press [ ]

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

Playing a title previously recorded while recording—Simultaneous rec and play
You can also change the drive and play while recording. Press [HDD] or [DVD].
1 Press [DIRECT NAVIGATOR] during recording.
2 Press [ , , , ] to select a title and press [ENTER].
There is no sound output while searching forward or backward.

To stop play
Press [ ]

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

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

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

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

1 Press [TIME SLIP] during recording.

Play starts from 30 seconds previous. The image currently being recorded
You will hear the playback audio.

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

To stop play
Press [ ].

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

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

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

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

1 Press [TIME SLIP] during recording.

Play starts from 30 seconds previous. The image currently being recorded
You will hear the playback audio.

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

To stop play
Press [ ].

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

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

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

Using VIDEO Plus+ system to make timer recordings

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

- Using PlusCode numbers for Satellite stations or Digital terrestrial stations
- Using PlusCode numbers for Satellite stations or Digital terrestrial stations before you start the following operations
- You can enter up to 36 programmes up to a month in advance.

1. Press [VIDEO Plus+].

2. Press the numbered buttons to enter the PlusCode number. 

3. Press [ENTER].

- Confirm the programme and make corrections if necessary using [A, B, C, D] (30, step 3).
- When “M 1” or “M 2” appears in the “Name” column, you cannot set timer recording. Press [A, B] to select desired programme position. After you have entered the information of a TV station, it is kept in the unit’s memory.
- You can also press [HDD] or [DVD] to select the recording drive.
- When the recording drive is “DVD” and there is not enough remaining space, recording automatically switches to the “HDD” (29, Relief Recording).
- You can also press [REC MODE] to change the recording mode.
- [PDC] (29)
  ON—OFF (— —)
- [RENEW (Auto Renewal Recording)] [HDD] (30)
  ON—OFF
- [Programme Name]

4. Press [ENTER].

The settings are stored.

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

5. Press [TIMER].

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

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

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

To cancel recording when recording has already begun
Press [F TIMER].

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

Note

Timer recordings are activated regardless of whether the unit is turned on/off.
Timer recordings begin when the set time is reached even when playing.
Timer recordings do not begin while editing or transferring (dubbing) in normal speed mode (➡ 45).
If the unit is turned on when timer recording begins, it remains turned on after recording finishes. It does not turn off automatically. You can turn the unit off during timer recording.
"F" 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 "F" flashes on the unit display. In this case, press [F TIMER] to put the unit in the timer recording standby mode.
When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes (a few seconds when recording with HDD or DVD-RAM and approximately 30 seconds when recording with DVD-R, DVD-RW (DVD-Video format) and +R).

PDC function (➡ 70)
As long as a PDC signal is being broadcast by the TV station, even if the broadcast programme time changes, the recording time automatically changes to match the new broadcast time.

To activate the PDC function
In step 3 in the PDC column (➡ 28), press [3, 4] to select "ON".

Relief Recording

When the recording drive is "DVD" and there is not enough remaining space, recording automatically switches to the "HDD".
If there is no disc in the tray or the disc cannot be recorded on or when timer recording starts while transferring (dubbing), the recording drive will be altered to the HDD.
The Direct Navigator shows which programmes were relief-recorded ("[ ]" is displayed.) (➡ 32).
If the time remaining on the HDD is insufficient, as much of the programme as possible will be recorded onto the HDD.
Relief recording is not activated when recording the programme with PDC and it is extended so that it no longer fits on the disc.
Refer to the control reference on page 28.

Manually programming timer recordings

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

1 Press [PROG/CHECK].


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

- Press and hold [▲, ▼] to alter the Start (Start time) and Stop (Finish time) in 30-minute increments.
- You can also set Name (Programme position/TV Station Name), Date, Start (Start time), and Stop (Finish time) with the numbered buttons.
- Date: Current date up to one month later minus one day
- Daily timer: SUN-SAT → MON-SAT → MON-FRI
- Weekly timer: SUN → → SAT
- You can also press [HDD] or [DVD] to select the recording drive.
- When the recording drive is “DVD” and there is not enough remaining space, recording automatically switches to the “HDD” (Relief Recording).
- You can also press [REC MODE] to change the recording mode.
- PDC (29) ON→→OFF (→→)
- RENEW (Auto Renewal Recording) OFF (right) OFF
- Programme Name
  Press [◄, ►] to select “Programme Name” and press [ENTER]. (55, Entering text)

4 Press [ENTER].

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

5 Press [② TIMER].

The unit turns off and “②” lights on the unit’s display to indicate timer recording standby has been activated.
- If you turn on the unit, a message screen appears.
- Recording is not possible while timer recording is in standby. (Playback is possible however you cannot play a title recorded using a different encoding system (PAL or NTSC) from that of the TV system currently selected on the unit.)

To release the unit from recording standby
Press [② TIMER].
- “②” goes out.
- Be sure to press [② TIMER] before the programme start time to put the unit on recording standby. Timer recording will work only if “②” is displayed.

To cancel recording when recording has already begun
Press [② TIMER].
- You can also press and hold [∫] on the main unit for more than 3 seconds to stop recording.

Note
- Timer recordings are activated regardless of whether the unit is turned on/off.
- Timer recordings begin when the set time is reached even when playing.
- Timer recordings do not begin while editing or transferring (dubbing) in normal speed mode (→ 45).
- If the unit is turned on when timer recording begins, it remains turned on after recording finishes. It does not turn off automatically. You can turn the unit off during timer recording.
- “②” 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 “②” flashes on the unit display. In this case, press [② TIMER] to put the unit in the timer recording standby mode.
- When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes (a few seconds when recording with HDD or DVD-RAM and approximately 30 seconds when recording with DVD-R, DVD-RW (DVD-Video format) and +R).

Auto Renewal Recording

HDD
- If you record a programme onto HDD repeatedly everyday or every week using timer recording, the unit will record the new programme over the old one.
- This function can be used only when weekly recording or daily recording is selected.

1 Press [PROG/CHECK].

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

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

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

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

HDD (RAM) [H] [RWV] [R]
Preparation
- Make sure you connect the AV2 input terminal of this unit to “VCR Scart terminal” of a SKY Digital STB/digital terrestrial receiver with a 21-pin scart lead (13).
- Set the “AV2 Input” in the SETUP menu to “RGB/Video” or “RGB” (59).

Follow the steps indicated for manually programming timer recordings (30).
- Set your Sky Digital STB to output “RGB” signals.
- After setting the Personal Planner programmes as required, Sky Digital STB must be kept turning on (not set to standby) to ensure continuous output of RGB signals.

Check, change or delete a programme

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

Press [PROG/CHECK].

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

Message displayed in the “Disc space” line
- OK: Displayed if the recording can fit in the remaining space.
- (Date): For recordings made daily or weekly, the display will show until when recordings can be made (up to a maximum of one month from the present time) based on the time remaining on the disc.
- 1: 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 [A, Y] to select the programme and press [ENTER]. (30, step 3)

To delete a programme

Press [A, Y] 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 [O TIMER]. “ST” lights on the unit’s display to indicate timer recording standby has been activated.

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

Making timer recordings on the television

(e.g., of digital broadcasts)

HDD (RAM) [H] [RWV] [R]
To make a timer recording with your television, connect to a television with a Q Link function (70) that you can use for setting timer recordings using a fully wired 21-pin Scart lead (13).

1 Make timer programming on the TV. 
2 Press [HDD] or [DVD] to select the recording drive. 
   If you selected the DVG drive, insert a disc (24).
3 Turn off this unit.
   The start and end of recording is controlled by the TV.

To stop recording

Press [O].

Note
- When this unit is in timer recording standby or EXT LINK standby (“ST” or “EXT Link” is shown on the unit’s display), recording from television does not start.
- Programmes are recorded as one title on this unit when the end time of the earlier timer recording and the start time of the later timer recording are close to each other. To divide the titles, go to “Divide Title” (41).

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

HDD (RAM) [H] [RWV] [R]
To record programmes from a SKY Digital STB/digital terrestrial receiver using timer programming.

Preparation
- Make sure you connect the AV2 input terminal of this unit to “VCR Scart terminal” of a SKY Digital STB/digital terrestrial receiver with a 21-pin Scart lead (13).
- Change the “AV2 Input” in the SETUP menu to match the connected equipment (59).
- Change the “Ext Link” in the SETUP menu to match the connected equipment (59).

Ext Link 1: Start and stop timings of recording are controlled by the TV (SKY Personal Planner function).
Ext Link 2: When external equipment with a timer function turns on, recording starts. When it turns off, recording stops.

1 Make timer programming on SKY Digital STB/digital terrestrial receiver.
2 Press [HDD] or [DVD] to select the recording drive.
   If you selected the DVG drive, insert a disc (24).
3 Press [EXT LINK].
   The unit turns off and “EXT Link” lights on the unit’s display to indicate timer recording standby has been activated.

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

To cancel the external control

Press [EXT LINK] to stop recording or to cancel linked timer recording standby.
- In order to prevent accidental operation, press [EXT LINK] to cancel the setting after recording is finished.

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

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

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

2 If you selected the DVD drive
Press [OPEN/CLOSE] on the main unit to open the tray and insert a disc.
- Press the button again to close the tray.
- When using 8 cm DVD-RAM, or 8 cm DVD-R, remove the disc from the cartridge.

Insert label-up.

3 Press [PLAY] (PLAY).

HDD RAM \ SD Play starts from the most recently recorded title.
DVD, DVD-A \ CD \ DVD Video Play starts from the beginning of the disc.

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

Selecting recorded programmes (titles) to play—Direct Navigator

1 Press [DIRECT NAVIGATOR].

Thumbnails Display
- Table Display

Switching the Direct Navigator appearance
- Press [SUB MENU] while Thumbnail Display is displayed.
- Press [A, Y] to select “Table Display” and press [ENTER].
- The display appearance last used is saved even after the unit is turned off.

2 HDD RAM
Press [A] to select “VIDEO”.

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


Table Display
- You can also select titles with the numbered buttons.
- You can also press [A, Y, X, Z] to show other pages.

To exit the screen
Press [DIRECT NAVIGATOR].

Direct Navigator screen icons
- Currently recording.
- Title protected.
- Title that was not recorded due to recording protection (Digital broadcasts etc.)
- Title cannot be played (When transferring (dubbing) a title to the HDD, or when data is damaged etc.)
- Titles that have been resorted to the HDD (\ 29, Relief Recording)
- Title with “One time only recording” restriction (\ 68, CPRM)
- Title recorded using a different encoding system from that of the TV system currently selected on the unit.
- Alter the “TV System” setting on this unit to suit (\ 62).
When a menu screen appears on the television

Press \[ \downarrow, \uparrow, \leftarrow, \rightarrow \] to select the item and press [ENTER].

Some items can also be selected using the numbered buttons.

Press the numbered buttons to select the item.

e.g., 5: \[0\] ≥ \[5\]  

To return to the menu screen

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

Note

- It is not possible to play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- Depending on the disc, it may take time for the menu screen, pictures, sound, etc. to start.
- Discs continue to rotate while menus are displayed. Press \[\] when you have finished playback to protect the unit's motor, your television screen and so on.
- When playing back a title recorded on the HDD, ensure that you match the "TV System" setting to the recorded title ( \[\] 62).

Operations during play

Stop

Press \[\].

The stopped position is memorized.

When stop position is memorized (resume), the indicator on the right appears in the unit's display. (Excluding when playing from the Direct Navigator and when playing a playlist.)

Resume play function

Press \[\] (PLAY) to restart from this position.

Stopped position

- \[\] is pressed several times, the indicator on the right disappears and the position is cleared.
- The position is cleared if the unit is turned off or the tray is opened.

Pause

Press \[\].

Press \[\] again or \[\] (PLAY) to restart play.

Search

Press \[\] or \[\] .

- The speed increases up to 5 steps.
- The position is cleared if the unit is turned off or the tray is opened.
- You can also turn the Smart Wheel left or right for operation (excluding \[\] \[VCD\]).
- Audio is heard during all levels of search.
- Audio is heard during first level search forward.
- Audio is heard during all levels of search.

Skip

During play or while paused, press \[\] or \[\] .

Skip to the title, chapter or track you want to play.

- Each press increases the number of skips.

Starting from a selected title

Press the numbered buttons.

Press the numbered buttons.

e.g., 5: \[0\] = \[0\] = \[5\]  

15: \[0\] = \[1\] = \[5\]  

After pressing \[\] (PLAY), you can select a track with DVD Audio. (excluding moving picture parts)

Selecting groups

While stopped (screen saver is displayed on the television \[\] right)

Input a 1-digit number

e.g., 5: \[5\]  

Other discs (You can select a track with DVD Audio.)

Input a 2-digit number

e.g., 5: \[0\] = \[5\]  

15: \[1\] = \[5\]  

This works only when stopped (screen saver is displayed on the television \[\] above) with some discs.

Quick View

Press and hold \[\] (PLAY/ \[1.3\] ).

Play speed is quicker than normal.

Press again to return to normal speed.

Slow-motion

While paused, press \[\] or \[\] .

While paused, press \[\] (PLAY/ \[1.3\] ).

The speed increases up to 5 steps.

- You can also turn the Smart Wheel left or right for operation (excluding \[\] \[VCD\]).
- Audio is heard during all levels of search.
- Audio is heard during all levels of search.

Frame-by-frame

While paused, press \[\] (PLAY/ \[1.3\] ).

Each press shows the next frame.

- Press and hold to change in succession forward or backward.
- Audio is heard during all levels of search.

Frame-by-frame (Motion picture parts only)

While paused, press \[\] (PLAY/ \[1.3\] ).

Each press shows the next frame.

- Press and hold to change in succession forward or backward.
- Audio is heard during all levels of search.
Playing recorded video contents/Playing play-only discs

Refer to the control reference on page 32.

Operations during play

Displaying the television image as a picture-in-picture

Press [TIME SLIP].

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

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

Press images

Current receiving images

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

Skipping the specified time (Time Slip)

1. Press [TIME SLIP].
2. Press [A, V] to select the time and press [ENTER].

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

Note

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

Manual Skip

Press [MANUAL SKIP].

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

Simple editing operations during play

Erase

Press [ERASE].

- A title cannot be restored once it is erased. Make certain before proceeding.
- You cannot erase while recording or transferring (dubbing)
- Available space does not increase after erasing.

Create Chapter

Press [CREATE CHAPTER].

Chapters are divided at the point pressed.

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

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

Changing audio during play

Press [AUDIO].

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

Note

- You cannot change the audio type in the following cases.
- When a DVD-R, DVD-RW (DVD-Video format) or +R disc is in the disc tray while DVD drive is selected.
- When the recording mode is XP and “Audio Mode for XP Recording” is set to “LP CM” (➡58).
- When “Rec for High Speed dubbing” is set to “On” (➡26).
Regarding MP3
- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- Maximum number of files (tracks) and folders (groups) recognizable: 999 files (tracks) and 99 folders (groups)
- This unit is compatible with multi-session but reading or playing of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files and folders (groups) and some files (tracks) may not display or be playable.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- File format: MP3
  - Files must have the extension ".mp3" or ".MP3".
  - Bit rates: 32 kbps to 320 kbps
  - Sampling frequency: 16 kHz/22.05 kHz/24 kHz/32 kHz/44.1kHz/48 kHz
  - This unit is not compatible with ID3 tags.

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

Order of play

Using the tree screen to find a group
1 While the file list is displayed
   Press [►] while a track is highlighted to display the tree screen.

2 Press [◄, ◄, ◄, ◄] to select a group and press [ENTER].
   The file list for the group appears.

   To return to the previous screen
   Press [RETURN].
Playing back still pictures (JPEG/TIFF)

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

   The indicator lights up on the unit.
   *On the main unit, press [DRIVE SELECT] several times.

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

2 Press [DIRECT NAVIGATOR].

3 Press [B] to select “PICTURE”.

   Direct Navigator screen icons
   • Picture protected.
   • Picture in which the number of prints is set (DPOF) (44, 69).

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

   To return to the Direct Navigator screen
   Press [DIRECT NAVIGATOR].

   To exit the screen
   Press [STATUS] twice.

   To show the picture properties
   Press [STATUS].

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

   To select JPEG
   
   E.g., SD card drive

   Playback mode is set to MP3.
   Select “JPEG” from MENU in FUNCTIONS if you play pictures (JPEG).

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] [0] [0] [5] 115: [0] [1] [1] [1] [5]
   Press [◄, ▼, ◄, ►] to display the previous or next still picture.
   *Useful functions during still picture play (37)

To exit the picture properties screen
Press [STATUS].

Note

To select JPEG with MP3 files and still pictures (JPEG/TIFF):

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

1 Press [ENTER].

2 Press [FUNCTIONS].

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

4 Press [◄, ▼] to select “JPEG” and press [ENTER].
To switch to another higher folder

1 Press [ ] to select "Folder" and press [ENTER].
2 Press [ ] to select the higher folder and press [ENTER].
3 Press [ ] to select the desired folder and press [ENTER].
Using on-screen menus

Common procedures

1 Press [DISPLAY].

<table>
<thead>
<tr>
<th>Menu</th>
<th>Item</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc</td>
<td>Soundtrack</td>
<td>HDD, RAM, [DVD/W], [DVD/VR]</td>
</tr>
<tr>
<td>Disc</td>
<td>Subtitle</td>
<td>HDD, RAM, [DVD/W], [DVD/VR]</td>
</tr>
<tr>
<td>Disc</td>
<td>Language</td>
<td>HDD, RAM, [DVD/W], [DVD/VR]</td>
</tr>
<tr>
<td>Picture</td>
<td>Audio channel</td>
<td>HDD, RAM, [DVD/W], [DVD/VR]</td>
</tr>
<tr>
<td>Other</td>
<td>Audio channel</td>
<td>HDD, RAM, [DVD/W], [DVD/VR]</td>
</tr>
</tbody>
</table>

- 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].
Play back

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

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

1 While stopped

Press [FUNCTIONS].

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

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

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

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

To exit the FUNCTIONS window

Press [FUNCTIONS].

Status messages

Press [STATUS].

The display changes each time you press the button.

FUNCTIONS window

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

1 While stopped

Press [FUNCTIONS].

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

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

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

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

To exit the FUNCTIONS window

Press [FUNCTIONS].

Status messages

Press [STATUS].

The display changes each time you press the button.
Editing titles/chapters

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

Title
Start

You can divide a title into multiple chapters.


e H D D

RAM

If you select “Chapter View”


Chapter

Chapter

Chapter

Chapter

Chapter

You can change the order of chapters and create a playlist

Note

The maximum number of items on a disc:

HDD

– Titles: 500
– Chapters: Approx. 1000 per title

(Depends on the state of recording.)

RAM

– Titles: 99
– Chapters: Approx. 254

(Depends on the state of recording.)

Once erased, divided or partially erased, recorded content cannot
be restored to its original state. Make certain before proceeding.

You cannot edit during recording or transferring (dubbing), etc.

Restricted recording information remains even after editing (e.g.
dividing a title etc.).

Editing titles/chapters and playing chapters

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

Preparation

• Turn on the television and select the appropriate video input to suit
the connection to this unit.

• Turn the unit on.

• Press [HDD] or [DVD] to select the drive containing the recorded
title to be edited.

• Press [RAM] Release protection (\( \geq 52 \)).

1 During play or while stopped

Press [DIRECT NAVIGATOR].

2

Press [A] to select “VIDEO”.

3

Press [\( \geq \), \( \geq \), \( \geq \), \( \geq \)] to select the title.

To show other pages

Press [\( \geq \), \( \geq \), \( \geq \)] to show other pages.

Multiple editing

Select with [\( \geq \), \( \geq \), \( \geq \)] and press [\( \geq \)], (Repeat.)

A check mark appears. Press [\( \geq \)] again to cancel.

4

Press [SUB MENU].

5

Press [\( \geq \), \( \geq \)] to select the operation and press [ENTER].

• If you select “Edit”, press [\( \geq \), \( \geq \)] to select the operation and press [ENTER]. (\( \geq 41 \))

Refer to “Title operations” (\( \geq 41 \)).

Switching the Direct Navigator

Playing still pictures (JPEG/TIFF)

36, step 3

6

Press [\( \geq \), \( \geq \), \( \geq \), \( \geq \)] to select the chapter.

To start play \( \Rightarrow \) Press [ENTER].

To edit \( \Rightarrow \) Step 7.

7

Press [SUB MENU], then [\( \geq \), \( \geq \)] to select the operation and press [ENTER].

• To show other pages/Multiple editing (\( \geq \) above)

Refer to “Chapter operations” (\( \geq 41 \)).

• You can go back to Title View.

To return to the previous screen

Press [RETURN].

To exit the screen

Press [DIRECT NAVIGATOR].
### Title operations

After performing steps 1–6 (40)

<table>
<thead>
<tr>
<th>Erase</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press [emies, emes] to select “Erase” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The available recording space on DVD-R or +R does not increase when you erase titles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Available recording space on DVD-RW (DVD-Video format) increases only when the last recorded title is erased. It does not increase if other titles are erased.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Properties</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information (e.g., time and date) is shown.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Press [ENTER] to exit the screen.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enter Name</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can give names to recorded titles.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• 55, Entering text</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Set up Protection</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If set, this will protect the title from accidental erasure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press [emies, emes] to select “Yes” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The lock symbol appears when the title is protected.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Partial Erase</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can remove unnecessary part of the recording.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Press [ENTER] at the start point and end point of the section you want to erase.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Press [emies, emes] to select “Exit” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Select “Next” and press [ENTER] to erase other sections.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Press [emies, emes] to select “Erase” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change Thumbnail</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can change an image to be shown as the thumbnail picture in the Title View.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Press [emies] (PLAY) to start play.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Press [ENTER] when the image you want to use as a thumbnail is shown.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To change the thumbnail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restart play and press [emies, emes] to select “Change”, then press [ENTER] at the point you want to change.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Press [emies, emes] to select “Exit” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Divide Title</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>You can divide a title into two.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Press [ENTER] at the point you want to divide the title.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Press [emies, emes] to select “Exit” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Press [emies, emes] to select “Divide” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To confirm the division point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press [emies, emes] to select “Preview” and press [ENTER]. (The unit plays 10 seconds before and after the division point.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To change the division point</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Restart play and press [emies, emes] to select “Divide”, then press [ENTER] at the point where you want to divide the title.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The divided titles retain the title name and CPRM property (69) of the original title.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Video and audio just before and after the dividing point may momentarily cut out.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Multiple editing is possible.

### Chapter operations

After performing steps 1–7 (40)

<table>
<thead>
<tr>
<th>Erase Chapter</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press [emies, emes] to select “Erase” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Create Chapter</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select the point where you want to start a new chapter while viewing the title.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Press [ENTER] at the point you want to divide.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Repeat this step to divide at other points.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Press [emies, emes] to select “Exit” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Combine Chapters</th>
<th>HDD</th>
<th>RAM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Press [emies, emes] to select “Combine” and press [ENTER].</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The selected chapter and following chapter are combined.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Multiple editing is possible.

---

For your reference

- Use search (33), Time Slip (34) to find the desired point.
- To find the desired point correctly, use Slow-motion (33) and Frame-by-frame (33).
- Press [emies, emes] to skip to the end of a title.
Creating, editing and playing playlists

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

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Chapter</th>
<th>Chapter</th>
<th>Chapter</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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

• Playlists are not recorded separately so this doesn’t use much capacity.
• Editing chapters in a playlist does not modify the source titles and source chapters.

Creating playlists

HDD EXAM

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

1 While stopped

Press [FUNCTIONS].

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

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

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

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

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

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

8 Press [RETURN].

All the selected scenes become the playlist.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.
Editing and playing playlists/chapters

1. While stopped, press [FUNCTIONS].
2. Press [▲, ▼] to select “To Others” and press [ENTER].
3. Press [▲, ▼] to select “PLAYLISTS” and press [ENTER].
4. Press [▲, ▼, ◀, ▶] to select the playlist.
   To start play ➡ Press [ENTER].
   To edit ➡ Step 5.
5. Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].

   - To show other pages/Multiple editing (➡ 40)

   - If you select “Chapter View”
6. Press [▲, ▼, ◀, ▶] to select the chapter.
   To start play ➡ Press [ENTER].
   To edit ➡ Step 7.

   - To show other pages/Multiple editing (➡ 40)
7. Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].

   Refer to “Chapter operations”.

   ➡ You can go back to PLAYLIST View.

Playlist operations

After performing steps 1–5 (➡ left)

- Erase
- Properties
- Create
- Copy
- Enter Name
- Change Thumbnail

Refer to “Playlist operations”.

Chapter operations

After performing steps 1–7 (➡ left)

- Add Chapter
- Move Chapter
- Create Chapter
- Combine Chapters
- Erase Chapter

Refer to “Chapter operations”.

ं Multiple editing is possible.
Editing still pictures

1 Press [DIRECT NAVIGATOR].
2 Press [B] to select “PICTURE”.

3 Press [ ], [ ], [ ], [ ] to select the still picture.
   To show other pages
   Press [ ], [ ], [ ], [ ] to select “Previous” or “Next” and press [ENTER].
   You can also press [ ], [ ], [ ] to show other pages.
   Multiple editing
   Select with [ ], [ ], [ ], [ ] and press [I] (Repeat.)
   A check mark appears. Press [I] again to cancel.
   To select the still pictures in another folder (⇒ 37)

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
      (⇒ above)
   ③ Press [SUB MENU], then [ ], [ ] to select the operation and press [ENTER].

   To switch to another higher folder ⇒ 37

To return to the previous screen
Press [RETURN].
To exit the screen
Press [DIRECT NAVIGATOR].

Picture and folder operation

After performing steps 1–4

- Erase Picture
  Press [ ], [ ] to select “Erase” and press [ENTER].
  • Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.
  • When erasing a folder, the files not containing still pictures will also be erased if they are inside the folder.
  (This does not apply to folders under the folder concerned.)

- Folder Name
  You can give names to still picture folders.
  ⇒ 55, Entering text
  • Folder names input using this unit may not be displayed on other equipment.

- Set up Protection
  If set, this will protect the still picture or folder from accidental erasure.
  Press [ ], [ ] to select “Yes” and press [ENTER].
  The lock symbol appears when the still picture or folder is protected.
  • Even if the protection setting is used by this unit to protect a folder, the folder may be erased by another unit.

- DPOF
  You can select a whole folder or individual pictures for printing and specify the number of prints to be made.
  Press [ ], [ ] to select number of print (0 to 9) and press [ENTER].
  The DPOF mark appears. (This appears on the still pictures inside a folder when you make the DPOF setting for the folder.)
  To cancel the print setting
  Set the number of print to “0”.
  • Print settings (DPOF) made using this unit may not be viewable on other equipment.
  • When this is set by this unit, any settings established by other units will be released.
  • Settings cannot be made for folders and files not in accordance with DCF standards or if there is no remaining space on the card.

* Multiple editing is possible.
Transferring (dubbing) titles or playlists

**Transferring (dubbing) direction**

You can transfer (dub) your favorite titles and playlists to discs.

- Transferring (dubbing) a playlist will create a title.

<table>
<thead>
<tr>
<th>High speed mode</th>
<th>Normal speed mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD RAM</td>
<td>DVD-R, etc.</td>
</tr>
</tbody>
</table>

- When you want to play a transferred (dubbed) disc on other equipment, you must finalize the disc after transferring (dubbing). (54, 69).

**Transferring (dubbing) speed mode types and features**

<table>
<thead>
<tr>
<th>Features</th>
<th>High speed</th>
<th>Normal speed (XP, SP, LP, EP, FR)</th>
</tr>
</thead>
</table>
| You can transfer (dub) in a very short amount of time. You can transfer (dub) even faster if you use a high speed recording compatible disc. You can record and play using the HDD while high speed transferring (dubbing). | You can record for a long period of time on 1 disc. For example, using LP mode, you can record approximately 4 hours on 1 (4.7 GB) disc (25).
| Approximate transferring (dubbing) times | Only one episode using XP mode |
| Approximate transferring (dubbing) times | 4 episodes using LP mode |
| Original picture quality | Can change** |
| Are chapters/thumbnails maintained? | Yes** |
| Other operations while transferring (dubbing) | You can record/play using the HDD. |

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

(excludes time required to write data management information)

<table>
<thead>
<tr>
<th>HDD</th>
<th>Recording mode</th>
<th>Recording time</th>
<th>Fx high speed recording compatible DVD-RAM</th>
<th>Fx high speed recording compatible DVD-R</th>
<th>Fx high speed recording compatible DVD-RAM</th>
<th>Fx high speed recording compatible DVD-R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XP</td>
<td>1 hour</td>
<td>Approx. 12 min.</td>
<td>Approx. 8.7 min.</td>
<td>Approx. 15 min.</td>
<td>Approx. 8.7 min.</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td></td>
<td>Approx. 6 min.</td>
<td>Approx. 3.8 min.</td>
<td>Approx. 7.5 min.</td>
<td>Approx. 3.8 min.</td>
</tr>
<tr>
<td></td>
<td>EP (6 Hours)</td>
<td></td>
<td>Approx. 3 min.</td>
<td>Approx. 1.9 min.</td>
<td>Approx. 2.5 min.</td>
<td>Approx. 1.9 min.</td>
</tr>
<tr>
<td></td>
<td>EP (8 Hours)</td>
<td></td>
<td>Approx. 1.5 min.</td>
<td>Approx. 1.5 min.</td>
<td>Approx. 56 sec.</td>
<td>Approx. 56 sec.</td>
</tr>
</tbody>
</table>

**Note**

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

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

To high speed transfer (dub) titles (or playlists created from those titles), set “Rec for High Speed dubbing” to “On” before recording to the HDD. (25).

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

- You cannot transfer (dub) titles which have been treated to prevent copying.
- You cannot transfer (dub) titles that have been treated with copy protection.

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

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

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

Approximate transferring (dubbing) times

<table>
<thead>
<tr>
<th>HDD</th>
<th>Recording mode</th>
<th>Recording time</th>
<th>Fx high speed recording compatible DVD-RAM</th>
<th>Fx high speed recording compatible DVD-R</th>
<th>Fx high speed recording compatible DVD-RAM</th>
<th>Fx high speed recording compatible DVD-R</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>XP</td>
<td>1 hour</td>
<td>Approx. 12 min.</td>
<td>Approx. 8.7 min.</td>
<td>Approx. 15 min.</td>
<td>Approx. 8.7 min.</td>
</tr>
<tr>
<td></td>
<td>SP</td>
<td></td>
<td>Approx. 6 min.</td>
<td>Approx. 3.8 min.</td>
<td>Approx. 7.5 min.</td>
<td>Approx. 3.8 min.</td>
</tr>
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<td></td>
<td>EP (6 Hours)</td>
<td></td>
<td>Approx. 3 min.</td>
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<td>Approx. 2.5 min.</td>
<td>Approx. 1.9 min.</td>
</tr>
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<td></td>
<td>EP (8 Hours)</td>
<td></td>
<td>Approx. 1.5 min.</td>
<td>Approx. 1.5 min.</td>
<td>Approx. 56 sec.</td>
<td>Approx. 56 sec.</td>
</tr>
</tbody>
</table>

**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.
Transferring (dubbing) titles or playlists

1. While stopped
   Press [FUNCTIONS].
2. Press [\(\downarrow\), \(\uparrow\)] to select "DUBBING" and press [ENTER].
   - If you are not going to change the registered list press [\(\downarrow\)] several times (step 5).
3. Set the transfer (dubbing) direction.
   - If you are not going to change the dubbing direction, press [\(\downarrow\)] (step 4).
   1. Press [\(\downarrow\), \(\uparrow\)] to select "Dubbing Direction" and press [ENTER].
   2. Press [\(\downarrow\), \(\uparrow\)] to select "Source" and press [ENTER].
   3. Press [\(\downarrow\), \(\uparrow\)] to select the drive and press [ENTER].
   4. Press [A, \(\downarrow\)] to select “Destination” and press [ENTER].
   The same drive as the transfer (dubbing) source cannot be selected.
   5. Press [COPY] to confirm.

4. Set the recording mode.
   - If you are not going to change the recording mode, press [\(\downarrow\)] (step 5).
   1. Press [\(\downarrow\), \(\uparrow\)] to select “Dubbing Mode” and press [ENTER].
   2. Press [\(\downarrow\), \(\uparrow\)] to select “Format” and press [ENTER].
   3. Press [\(\downarrow\), \(\uparrow\)] to select “VIDEO” and press [ENTER].
   4. Press [\(\downarrow\), \(\uparrow\)] to select “Recording Mode” and press [ENTER].
   5. Press [\(\downarrow\), \(\uparrow\)] to select the mode and press [ENTER].

5. Register titles and playlists for transfer (dubbing).
   - If you are going to transfer (dub) a registered list without making any changes to it (step 6).
   1. Press [\(\downarrow\), \(\uparrow\)] to select “Create List” and press [ENTER].
   2. Press [\(\downarrow\), \(\uparrow\)] to select “New item” and press [ENTER].
   3. Press [A] to select “VIDEO” or press [B] to select “PLAYLISTS”.
   4. Press [\(\downarrow\), \(\uparrow\), \(\leftarrow\), \(\rightarrow\)] to select the titles or playlists and press [ENTER].
   5. Press [\(\downarrow\), \(\uparrow\)] to select “Dubbing Mode” and press [ENTER].
   6. Press [\(\downarrow\), \(\uparrow\)] to select “Recording Mode” and press [ENTER].
   7. Press [\(\downarrow\), \(\uparrow\)] to select “Format” and press [ENTER].
   8. Press [\(\downarrow\), \(\uparrow\)] to select “Size” and press [ENTER].
   9. Press [\(\downarrow\), \(\uparrow\)] to select “Recording Mode” and press [ENTER].
   10. Press [\(\downarrow\), \(\uparrow\)] to select the drive and press [ENTER].
   11. Press [\(\downarrow\), \(\uparrow\)] to select “Dubbing” and press [ENTER].
   12. Press [\(\downarrow\), \(\uparrow\)] to select “Recording Mode” and press [ENTER].
   13. Press [\(\downarrow\), \(\uparrow\)] to select the drive and press [ENTER].

6. Press [\(\downarrow\), \(\uparrow\)] to select “Start Dubbing” and press [ENTER].

Selecting the DVD drive speed
   1. Press [\(\downarrow\)] to select “Dubbing”.
   2. Press [\(\downarrow\)] to select “Format” and press [ENTER].
   3. Selecting “Normal (Silent)” means the noise generated by the recording will be doubled (approximately).
   4. Only when transferring (dubbing) to DVD-R or DVD-RW using high speed mode, you cannot transfer (dubbing) with the value of "Destination Capacity" exceeds 100%.

7. Press [\(\downarrow\), \(\uparrow\)] to select “Yes” and press [ENTER] to start transferring (dubbing).
To edit the transferring (dubbing) list
Select the item in step 5–4 (➡46, right column)
1 Press [SUB MENU].
2 Press [△, ▽] to select the operation and press [ENTER].

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

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

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

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

To cancel all registered transferring (dubbing) setting and lists
After performing steps 1–2 (➡46, left column)
1 Press [◄, ►] to select “Cancel All” and press [ENTER].
2 Press [◄, ►] to select “Yes” and press [ENTER].

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

To stop transferring (dubbing)
Press and hold [RETURN] for 3 seconds.
–If stopped midway, transferring (dubbing) will be up to that point. However, in high speed mode, only titles that have completed transferring (dubbing) at the point stopped are transferred (dubbed). [Even if the title was not transferred (dubbed) to the DVD-R, DVD-RW (DVD-Video format) or +R, the amount of remaining writable disc space becomes less.]

To return to the previous screen
Press [RETURN].

Recording and playing while transferring (dubbing)
You can record and play using the HDD while high speed transferring (dubbing).
Press [ENTER] to cancel the screen display.

To confirm the current progress
Press [STATUS].

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

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

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

Data size of each registered item

Size:
Data size recorded to the transfer (dubbing) destination
● When transferring (dubbing) at normal speed, the total data size will change according to the recording mode.
● The total data size shown may be larger than the sum of the data sizes for each registered item, because of data management information being written to the transfer (dubbing) destination, etc.
Transferring (dubbing) titles or playlists

Refer to the control reference on page 46.

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

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

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

Preparation

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

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

5 Set “Dubbing Time”.

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

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

   1. Press [▲, ▼] to select “Dubbing Time” and press [►].
   4. Press [▼] to confirm.

- Setting the transferring (dubbing) time


   b. Press [ENTER].
   c. Press [▼] to confirm.
   d. Set a few minutes longer than the source title, in order to include the operation time before play begins.
   e. You can also set the recording time with the numbered buttons.

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

Press [▲, ▼] to select “Yes” and press [ENTER] to start transferring (dubbing).

The disc top menu is displayed.

- Disc play automatically begins from title 1 when “Title 1” is selected from the “Auto-Play Select” menu when finalizing the disc (➡ 54).

7 When the top menu is displayed

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

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

To return to the previous screen
Press [RETURN].

To stop transferring (dubbing)
Press [▲].
You can also press and hold [RETURN] for 3 seconds to stop transferring (dubbing).

If stopped partway, transferring (dubbing) will be up to that point.

Note

- The screen saver on the right is recorded at the beginning.
- The content is recorded as 1 title from the start of transfer (dubbing) to the end.
- If play does not begin automatically or if the top menu does not display automatically, press [►] (PLAY) to start.
- Even if you transfer (dub) a high quality video/audio DVD, the original picture and audio quality cannot be exactly replicated.

- 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).

Transferring (dubbing) a finalized DVD-R, DVD-RW (DVD-Video format) and +R etc to the HDD and re-edit.

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

- Preparation

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

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

5 Set “Dubbing Time”.

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

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

   1. Press [▲, ▼] to select “Dubbing Time” and press [►].
   4. Press [▼] to confirm.

- Setting the transferring (dubbing) time


   b. Press [ENTER].
   c. Press [▼] to confirm.
   d. Set a few minutes longer than the source title, in order to include the operation time before play begins.
   e. You can also set the recording time with the numbered buttons.

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

Press [▲, ▼] to select “Yes” and press [ENTER] to start transferring (dubbing).

The disc top menu is displayed.

- Disc play automatically begins from title 1 when “Title 1” is selected from the “Auto-Play Select” menu when finalizing the disc (➡ 54).
Recording from a video cassette recorder

**Preparation**
- Press [HDD] or [DVD] to select the recording drive.
- When recording bilingual programmes
  - **HDD** or **DVD**
    - When both M 1 and M 2 is selected on the connected equipment, you can select the audio type in playback.
  - **DVD** or **HDD**
    - Select either M 1 or M 2 on the connected equipment. (Only either one type of M 1 or M 2 can be recorded.)
- When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the SETUP menu (**62**).
- This unit cannot record to discs containing both PAL and NTSC signals. (However, both types of programmes can be recorded onto the HDD.)
- To reduce noise in input from a video cassette recorder, set “AV-in NR” to “On” in the on-screen menu (**39**).

1. While stopped
   - Press [INPUT SELECT] to select the input channel for the equipment you have connected.
2. Press [REC MODE] to select the recording mode.
3. Start play on the other equipment.
4. When you want to start recording
   - Press [REC].
   - Recording starts.

To skip unwanted parts
- Press [1] to pause recording. (Press again to restart recording.)

To stop recording
- Press [1].

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

- Using Flexible Recording (**26**), you can save the content of a video cassette (approx. 1–8 hours) to a 4.7 GB disc with the best possible quality of recording without wasting disc space.

*The S VIDEO terminal achieves a more vivid picture than the VIDEO terminal.*
Transferring (dubbing) still pictures

1. While stopped, press [FUNCTIONS].
2. Press [▲, ▼] to select “DUBBING” and press [ENTER].

3. Set the transfer (dubbing) direction.
   - If you are not going to change the dubbing direction, press [▼] (step 4).
   ① Press [▲, ▼] to select “Dubbing Direction” and press [▶].
   ② Press [▲, ▼] to select “Source” and press [ENTER].
   ③ Press [▲, ▼] to select “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. Set the recording mode.
   - If you are not going to change the recording mode, press [▼] (step 5).
   ① Press [▲, ▼] to select “Dubbing Mode” and press [▶].
   ② Press [▲, ▼] to select “Picture” and press [ENTER].
   “Recording Mode” is automatically set to “High Speed”.
   ③ Press [▲] to confirm.

5. Register still pictures for transfer (dubbing).
   - If you are going to transfer (dub) a registered list without making any changes to it (step 6).
   You can register still pictures or still picture folders.
   - Still pictures and folders cannot be registered on the same list.

   - To register individual still pictures
     ① Press [▲, ▼] to select “Create List” and press [▶].
     ② Press [▲, ▼] to select “New item” and press [ENTER].
     ③ Press [▲, ▼] to select the still picture and press [ENTER].
     ④ You can register a multiple number of still pictures on the transferring (dubbing) list by repeating steps 2-3.
     ⑤ To select a multiple number of items together, press [▶] to add the check mark and press [ENTER] (step 11, Multiple editing).
     ⑥ To show other pages (step 51).
     ⑦ To select the still pictures in another folder (step 51).
     ⑧ To edit the transferring (dubbing) list (step 51).
     ⑨ Press [▲] to confirm.

   - To register on a folder by folder basis
     ① Press [▲, ▼] to select “Create List” and press [▶].
     ② Press [▲, ▼] to select “Picture/Folder” and press [ENTER].
     ③ Press [▲, ▼] to select “Folder” and press [ENTER].
     ④ You can register a multiple number of folders on the transferring (dubbing) list by repeating steps 2-5.
     ⑤ To select a multiple number of items together, press [▶] to add the check mark and press [ENTER] (step 51, Multiple editing).
     ⑥ To show other pages (step 51).
     ⑦ To switch to another higher folder (step 51).
     ⑧ To edit the transferring (dubbing) list (step 51).
     ⑨ Press [▲] to confirm.

6. Press [▲, ▼] to select “Start Dubbing” and press [ENTER].
   - For individual still pictures only
     When specifying another folder as the transferring (dubbing) destination, select “Folder”.


To stop transferring (dubbing)
Press and hold [RETURN] for 3 seconds.
To return to the previous screen Press [RETURN].
To edit the transferring (dubbing) list

Select the item in step 5–4 (for a still picture) or 5–5 (for a folder) (⇒ 50, right column)
1 Press [SUB MENU].
2 Press [A, V, <, >] to select the operation and press [ENTER].

Erase All:
Erase all items registered on the transferring (dubbing) list.
Press [<, >] to select “Yes” and press [ENTER].
Add:
Add new items to the transferring (dubbing) list.
Press [A, V, <, >] to select the still picture or folder to be added and press [ENTER].
Erase:
Erase the selected items.
Press [<, >] to select “Yes” and press [ENTER].
You can also erase multiple items (⇒ above, Multiple editing). To cancel all registered transferring (dubbing) settings and lists
After performing steps 1–2 (⇒ 50)
1 Press [A, V] 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 steps have been taken, for instance, to turn off the unit, remove the card, open the tray, change the transfer (dubbing) source, direction, etc.

To select another folder
⇒ 11, Structure of folders displayed by this unit
1 Press [A, V, <, >] to select “Folder” and press [ENTER].
If you want to switch to another higher folder (⇒ below),
2 Press [A, V] to select the folder and press [ENTER].
You can also select folders with the numbered buttons.
E.g., 5: [0] ⇒ [5]
15: [0] ⇒ [1] ⇒ [5]
115: [1] ⇒ [1] ⇒ [5]
The still pictures of different folders cannot be registered on the same list.

To switch to another higher folder
⇒ Only when selecting the source folder
If there is a multiple number of higher folders recognizable, while the screen on the right appears
1 Press [SUB MENU].
2 Press [A, V] to select “Folder” and press [ENTER].
3 Press [<, >] to select the higher folder and press [ENTER].
4 Press [A, V] to select the desired folder and press [ENTER].
HDD, disc and card management

Convenient functions

HDD, disc and card management

Setting the protection

RAM

Preparation

* Press [DVD] to select the DVD drive.

After performing steps 1–3 (➡ left)


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

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Cartridge-protection

For a DVD-RAM with a cartridge

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

SD
Switch the write-protect switch to the “LOCK” position.

Providing a name for a disc

RAM, DVD-RW

You can provide a name for each disc.

Preparation

* Press [DVD] to select the DVD drive.

* RAM Release protection (➡ above).

After performing steps 1–3 (➡ left)

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

➡ 55, Entering text

* The disc name is displayed in the FUNCTIONS window.

* With a finalized DVD-R, DVD-RW (DVD-Video format) and +R, the name is displayed on the Top Menu.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Common procedures

1 While stopped

Press [FUNCTIONS].

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

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

RAM

* When HDD has been selected, “Erase all titles” and “Format HDD” are displayed.

* When SD has been selected, “Format Card” only is displayed.

Preparation

* Press [DVD] to select the DVD drive.

After performing steps 1–3 (➡ left)


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

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Convenient functions

HDD, disc and SD

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

1 While stopped

Press [FUNCTIONS].

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

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

Preparation

* Press [DVD] to select the DVD drive.

After performing steps 1–3 (➡ left)


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

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

For a DVD-RAM with a cartridge

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

SD
Switch the write-protect switch to the “LOCK” position.

Providing a name for a disc

RAM, DVD-RW

You can provide a name for each disc.

Preparation

* Press [DVD] to select the DVD drive.

* RAM Release protection (➡ above).

After performing steps 1–3 (➡ left)

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

➡ 55, Entering text

* The disc name is displayed in the FUNCTIONS window.

* With a finalized DVD-R, DVD-RW (DVD-Video format) and +R, the name is displayed on the Top Menu.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Common procedures

1 While stopped

Press [FUNCTIONS].

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

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

Preparation

* Press [DVD] to select the DVD drive.

After performing steps 1–3 (➡ left)


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

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

For a DVD-RAM with a cartridge

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

SD
Switch the write-protect switch to the “LOCK” position.

Providing a name for a disc

RAM, DVD-RW

You can provide a name for each disc.

Preparation

* Press [DVD] to select the DVD drive.

* RAM Release protection (➡ above).

After performing steps 1–3 (➡ left)

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

➡ 55, Entering text

* The disc name is displayed in the FUNCTIONS window.

* With a finalized DVD-R, DVD-RW (DVD-Video format) and +R, the name is displayed on the Top Menu.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.
Convenient functions

Erasing all titles and playlists—Erase all titles

**HDD**  **RAM**

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

**After performing steps 1–3 (☞ 52)**

4. Press [▲, ▼] to select “Erase all titles” and press [ENTER].
5. Press [◄, ►] to select “Yes” and press [ENTER].
A message appears when finished.
7. Press [ENTER].

To return to the previous screen
Press [RETURN].
To exit the screen
Press [RETURN] several times.

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

Erasing all the contents of a disc or card—Format

**HDD**  **RAM**  **-RW‹V›**  **-RW‹VR›**  **SD**

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

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

**After performing steps 1–3 (☞ 52)**

5. Press [◄, ►] to select “Yes” and press [ENTER].
A message appears when formatting is finished.

**Note**
- Formatting normally takes a few minutes; however, it may take up to a maximum of 70 minutes (RAM).
- Do not disconnect the AC mains lead while formatting. This can render the disc or the card unusable.
7. Press [ENTER].

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

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

To return to the previous screen
Press [RETURN].
To exit the screen
Press [RETURN] several times.
Refer to the control reference on page 52.

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

### Preparation
Press [DVD] to select the DVD drive.

### After performing steps 1–3 (⇒ 52)

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

1. Press [▲, ▼] to select “Top Menu” and press [ENTER].
2. Press [▲, ▼, ◀, ▶] to select the background and press [ENTER].
3. Press [▲, ▼, ◀, ▶, 2, 1] to select the background and press [ENTER].
4. You can change thumbnails displayed in the top menu. (⇒ 41, Change Thumbnail)

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

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

6. Press [▲, ▼] to select “Top Menu” or “Title 1” and press [ENTER].
   - Top Menu: The top menu appears first.
   - Title 1: The disc content is played without displaying the top menu.

#### Finalize
Make selections from “Top Menu” and “Auto-Play Select” (above) before finalizing the disc.


### After finalizing
- **[R]** **[+R]** The disc becomes play-only and you can no longer record or edit.
- **[RW]** You can record and edit the disc after formatting (⇒ 53) although it becomes play-only after finalizing.
- **When transferring (dubbing) in high speed, chapters will be replicated.**
- **Titles are divided into about 5-minute chapters, if**
- **– the titles were directly recorded to the disc.**
- **– the titles were transferred (dubbed) using any mode other than the high speed mode.**
- **This time varies greatly depending on the condition and mode of recording.**
- **There is a pause of several seconds between titles and chapters during play.**

### Disc display on this unit
<table>
<thead>
<tr>
<th>Before finalizing</th>
<th>After finalizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD-R</td>
<td>DVD-R(V)</td>
</tr>
<tr>
<td>+R</td>
<td>DVD-V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recording/Editing/Entering name</th>
<th>DVD-R</th>
<th>DVD-R(V)</th>
<th>DVD-V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play on other players</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

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

Visit Panasonic’s homepage for more information about DVDs. [http://www.panasonic-europe.com](http://www.panasonic-europe.com)

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

### Convenient functions

#### HDD, disc and card management

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

You can give names to recorded titles, etc.
The maximum number of characters:

<table>
<thead>
<tr>
<th>Media</th>
<th>Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>64 (44)</td>
</tr>
<tr>
<td>Playlist</td>
<td>64</td>
</tr>
<tr>
<td>Folder of still pictures</td>
<td>36</td>
</tr>
<tr>
<td>Disc</td>
<td>64</td>
</tr>
</tbody>
</table>

*Title name for timer recording

<table>
<thead>
<tr>
<th>Media</th>
<th>Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>44</td>
</tr>
<tr>
<td>Disc</td>
<td>40</td>
</tr>
<tr>
<td>Folder of still pictures</td>
<td>36</td>
</tr>
</tbody>
</table>

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

1 Show Enter Name screen.

- **Title (timer recording)**
  - Select “Programme Name” in step 3 on page 28, 30.
  - Select “Enter Name” in step 5 on page 43.
- **Playlist**
  - Select “Enter Name” in step 5 on page 40.
- **Disc**
  - Select “Disc Name” in step 4 of “Providing a name for a disc” on page 52.
  - Select “Folder Name” in step 3 on page 44, “To edit still picture folders”.

- **Name field:** shows the text you have entered

2 Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select a character and press [ENTER].
Repeat this step to enter other characters.

- **To erase a character**
  - Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select the character in the name field and press [DELETE]. (The selected characters are erased.)
- **Using the numbered buttons to enter characters**
  - e.g., entering the letter “R”
  3. Press [ENTER].
- **To enter a space**
  - Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] (CANCEL) and press [ENTER].
- **Save/recall phrases (\(\uparrow, \downarrow, \leftarrow, \rightarrow\) below)**

3 Press [\(\square\)] (Set).

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

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

- **To add a name**
  - You can add frequently used names and recall them later.
  - Maximum number of added names: 20
  - Maximum number of characters per name: 20
  - After entering the name (step 1–2).
  1. Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select “Add to List” and press [ENTER].
  2. Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select “List Names” and press [ENTER].
  3. Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select the character in the name field and press [RETURN].
- **To recall an added name**
  - 1. Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select “List Names” and press [ENTER].
  2. Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select “List Names”.
  3. Press (SUB MENU) to show “Erase Name” and press [ENTER].
  4. Press [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] to select “Erase” and press [ENTER].
  5. Press [ENTER].

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

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

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

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

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

Changing the unit’s settings

Common procedures

1. While stopped
   - Press [FUNCTIONS].

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


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

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

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

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

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

### Tabs
- Manual (➡ 60)
- Auto-Setup Restart (➡ 60)
- Download from TV (➡ 60)

### Disc Settings for playback
- Press [ENTER] to show the following settings.

#### Ratings
- Set a ratings level to limit DVD-Video play.
- Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown.
- Do not forget your password.

#### DVD-Audio
- Video mode Playback
- Select “On” to play DVD-Video content on some DVD-Audio.
  - On: The setting returns to “Off” when you change the disc or turn the unit off.
  - Off

#### Soundtrack
- Choose the language for audio, subtitle and disc menus.
  - English
  - French
  - German
  - Italian
  - Spanish
  - Original: The original language of each disc will be selected.
  - Other

#### Subtitle
- Automatic: If the language selected for “Soundtrack” is not available, subtitles of that language will automatically appear if available on that disc.
- English
- French
- German
- Italian
- Spanish
- Other

#### Menus
- English
- French
- German
- Italian
- Spanish
- Original
- Other

### Settings for recording
- Press [ENTER] to show the following settings.

#### Recording time in EP mode
- Select the maximum number of hours for recording in EP mode (➡ 25, Recording modes and approximate recording times).
  - EP (6 Hours): You can record for 6 hours on an unused 4.7 GB disc.
  - EP (8 Hours): You can record for 8 hours on an unused 4.7 GB disc.

#### Rec for High Speed dubbing
- When high speed transferring (dubbing) a title to DVD-R, DVD-RW (DVD-Video format) and +R, it is necessary to turn this setting “On” before recording to the HDD; however, the screen size, etc. is restricted (➡ right). We recommend turning the setting “Off” if high speed transfer (dubbing) to DVD-R, etc. is not necessary when recording a programme.
  - On: Makes high speed mode transferring (dubbing) to DVD-R, etc. possible. Press [4, 1] to select “Yes” and press [ENTER]. “[ ]” appears in the transferring (dubbing) list (➡ 47).
    - Pictures are saved in 4:3.
    - Select the type of audio in advance from “Bilingual Audio Selection” (➡ 58).
  - Off

### Picture
- Comb Filter
- Select the picture sharpness when recording.
  - The setting is fixed with “On” if you set “TV System” to “NTSC” (➡ 62).

#### Still Mode
- Select the type of picture shown when you pause play (➡ 69, Frames and fields).
  - Automatic
  - Field: Select if jittering occurs when “Automatic” is selected. (The picture is coarser.)
  - Frame: Select if small text or fine patterns cannot be seen clearly when “Automatic” is selected. (The picture is clearer and finer.)

### Seamless Play
- Selects the play mode for playlist chapter segments.
  - On: The chapters in playlists are played seamlessly. This does not work when there are several audio types included on the playlist and when using Quick View. Additionally, the positioning of chapter segments may change slightly.
  - Off: The points where chapters in playlists change are played accurately, but the picture may freeze for a moment.
### Convenient functions

#### Changing the unit's settings

<table>
<thead>
<tr>
<th>Tabs</th>
<th>Menus</th>
<th>Options (Underlined items are the factory presets.)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sound</strong></td>
<td><strong>Dynamic Range Compression</strong> <em>(DVD-V)</em> (Dolby Digital only)</td>
<td></td>
</tr>
<tr>
<td>Change the dynamic range for late night viewing.</td>
<td><img src="#" alt="On" /> <img src="#" alt="Off" /></td>
<td></td>
</tr>
<tr>
<td><strong>Bilingual Audio Selection</strong></td>
<td>Select whether to record the main or secondary audio type when:</td>
<td></td>
</tr>
<tr>
<td>--Recording or transferring (dubbing) to a DVD-R, DVD-RW (DVD-Video format) and +R.</td>
<td><img src="#" alt="M 1" /> <img src="#" alt="M 2" /></td>
<td></td>
</tr>
<tr>
<td>--&quot;Rec for High Speed dubbing&quot; is set to &quot;On&quot; <em>(➡ 26).</em></td>
<td>You cannot select the audio on this unit when recording from an external source, such as when transferring (dubbing) from a video cassette recorder. Select on the other equipment.</td>
<td></td>
</tr>
<tr>
<td>--Recording or transferring (dubbing) sound in LPCM <em>(➡ below,</em> &quot;Audio Mode for XP Recording&quot;).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Digital Audio Output</strong></td>
<td>Change the settings when you have connected equipment through this unit's DIGITAL AUDIO OUT terminal <em>(➡ 18).</em></td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Press ENTER to show the following settings." /> <strong>PCM Down Conversion</strong></td>
<td>Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz.</td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Signals are converted to 48 kHz or 44.1 kHz despite the settings across if the signals have a sampling frequency of over 96 kHz or 88.2 kHz, or the disc has copy protection." /> <img src="#" alt="On" /> <img src="#" alt="Off" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Dolby Digital</strong> <em>(DPL)</em></td>
<td>Select how to output the signal. Select &quot;Bitstream&quot; if the connected equipment decodes the signal. Select &quot;PCM&quot; if this unit decodes the signal and outputs it as 2 channels.</td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Bitstream" /> <img src="#" alt="PCM" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>DTS</strong> <em>(DTS)</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Bitstream" /> <img src="#" alt="PCM" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MPEG</strong> <em>(MPEG)</em></td>
<td>Not making the proper settings may result in noise or some trouble for digital recording.</td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Bitstream" /> <img src="#" alt="PCM" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Audio Mode for XP Recording</strong></td>
<td>Choose the audio type when recording or transferring (dubbing) with XP mode.</td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Dolby Digital" /> <img src="#" alt="LPCM" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--The picture quality of LPCM recordings may be lower than that of normal XP mode recordings.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--The audio recording becomes Dolby Digital even if you selected LPCM when using a recording mode other than XP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>--When recording a bilingual broadcast, select the type of audio in advance from &quot;Bilingual Audio Selection&quot; <em>(➡ above).</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td><strong>On-Screen Messages</strong></td>
<td>Choose whether to show status messages automatically.</td>
</tr>
<tr>
<td><img src="#" alt="Automatic" /> <img src="#" alt="Off" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Grey Background</strong></td>
<td>Select &quot;Off&quot; if you do not want to have the unit show the grey background when tuner reception is weak.</td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="On" /> <img src="#" alt="Off" /></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FL Display</strong></td>
<td>Changes the brightness of the unit's display.</td>
<td></td>
</tr>
<tr>
<td><img src="#" alt="Bright" /> <img src="#" alt="Dim" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Tabs

### Connection
- **TV Aspect** (22): Set to match the type of television connected. Underlined items are the factory presets.
  - **16:9**
  - **4:3**
  - **Letterbox**
- **Progressive** (22): This setting cannot be made when the “AV1 Output” is set to “RGB (without component)” (below).
  - **On**
  - **Off**
- **TV System** (62): Underlined items are the factory presets.
  - **PAL**
  - **NTSC**
- **AV1 Output** Selects the output from the AV1 terminal.
  - **Audio (with component)**
  - **Video (with component)**
  - **RGB (without component)**
- **Progressive** (22): This setting cannot be made when the “AV1 Output” is set to “RGB (without component)” (below).
  - **On**
  - **Off**
- **TV System** (62): Underlined items are the factory presets.
  - **PAL**
  - **NTSC**

### AV2 Settings
Set to match the connected equipment.

- **AV2 Input** Set to “RGB/Video” or “RGB” when receiving or recording RGB output from external equipment.
  - **RGB/Video**
  - **RGB**
  - **Video**
  - **S Video**
- **Ext Link** This setting cannot be made when the “TV System” is set to “NTSC” (62).
  - **Ext Link 1**: When a digital receiver (SKY Digital STB etc.) which transmits a special control signal recordings via the 21-pin Scart lead is connected.
  - **Ext Link 2**: When external equipment with a timer function is connected.

### Others
- **Remote Control** (23)
  - **DVD 1**
  - **DVD 2**
  - **DVD 3**
- **Clock**
  - **Auto Clock Setting** (61)
  - **Manual Clock Setting** (61)
- **Owner ID** (19, 20)
  - **PIN number**
  - **Name**
  - **House No.**
  - **Postcode**
- **Quick Start** The Quick Start feature enables this unit to be ready to start recording as quick as approx. 1 second after turning it on. You can start recording soon after deciding you want to record something.
  - **On**
  - **Off**: Standby power consumption is less than when this is set to “On”
- **Shipping Condition** All the settings except for the ratings level, ratings password, Owner ID and time settings return to the factory preset. The timer recording programmes are also cancelled.
  - **Yes**
  - **No**
- **Default Settings** All the settings except for the programmed channels, time settings, disc language settings, ratings level, ratings password, Owner ID and remote control code return to the factory presets.
  - **Yes**
  - **No**
Changing the unit’s settings

Refer to the control’s settings at the bottom of page 56.

**Tuning**

1. While stopped
   Press [FUNCTIONS].
2. Press [▲, ▼] to select “To Others” and press [ENTER].
4. Press [▲, ▼] to select “Tuning” and press [▲].

**Manual**

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


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

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

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

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

<table>
<thead>
<tr>
<th>Pos</th>
<th>Name</th>
<th>Ch</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

**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.

- To find the correct title page for the station, refer to its Teletext TV guide.
- The unit’s clock must be set correctly.

---

**Auto-Setup Restart, Download from TV**

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

After performing steps 1–4 (left)...

1. **Auto-Setup Restart**
3. Press [▲, ▼] to select “Yes” and press [ENTER].

Auto-Setup starts.

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

Downloading from the television starts.

--

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.
Chief functions

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

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

1 While stopped
   Press [FUNCTIONS].
2 Press [▲, ▼] to select “To Others” and press [ENTER].
3 Press [▲, ▼] to select “SETUP” and press [ENTER].
4 Press [▲, ▼] to select “Others” and press [▶].
5 Press [▲, ▼] to select “Clock” and press [ENTER].

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.

Auto clock setting starts.

The following screen appears when setting is complete.


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

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

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

Clock settings

To stop partway
Press [RETURN].
• If the unit cannot set the clock automatically, set the clock manually (→ right, step 6).

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Auto Clock Setting

Manual Clock Setting

Clock

On

Off

Date

1/8/2005

Time

15:45:39

Month

8

Year

2005

Select

Enter

RETURN

CHANGE

SELECT
Changing the unit’s settings

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

**TV System**

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

1. While stopped
   - Press [FUNCTIONS].
2. Press [▲, ▼] to select “To Others” and press [ENTER].
5. Press [▲, ▼] to select “TV System” and press [ENTER].
6. Press [▲, ▼] to select the TV system and press [ENTER].
   - **PAL** (factory preset)
     - Select when connecting to a PAL or Multi-system television. Titles recorded using NTSC are played as PAL 60.
     - Select to record television programmes and PAL input from other equipment.
   - **NTSC**
     - Select when connecting to a NTSC television. Television programmes cannot be recorded properly.
     - Select to record NTSC input from other equipment.
     - **[HDD]** Select when playing a NTSC input title recorded on the HDD.
7. Press [◄, ►] to select “Yes” and press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

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

<table>
<thead>
<tr>
<th>Language code list</th>
<th>Enter the code with the numbered buttons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abkhazian: 6566</td>
<td>Catalan: 6765</td>
</tr>
<tr>
<td>Alar: 6565</td>
<td>Chinese: 9072</td>
</tr>
<tr>
<td>Afghani: 6570</td>
<td>Corsican: 6779</td>
</tr>
<tr>
<td>Albanian: 8381</td>
<td>Croatian: 7282</td>
</tr>
<tr>
<td>Amharic: 6577</td>
<td>Czech: 6783</td>
</tr>
<tr>
<td>Arabic: 6582</td>
<td>Danish: 6865</td>
</tr>
<tr>
<td>Armenian: 7289</td>
<td>Dutch: 7876</td>
</tr>
<tr>
<td>Assamese: 6583</td>
<td>English: 6978</td>
</tr>
<tr>
<td>Aymara: 6589</td>
<td>Esperanto: 6979</td>
</tr>
<tr>
<td>Azerbaijani: 6590</td>
<td>Estonian: 6984</td>
</tr>
<tr>
<td>Bashkir: 6965</td>
<td>Farsi: 7079</td>
</tr>
<tr>
<td>Basque: 6985</td>
<td>Fijian: 7074</td>
</tr>
<tr>
<td>Bengali, Bangla:</td>
<td>Finnish: 7073</td>
</tr>
<tr>
<td>Bhutan: 6980</td>
<td>French: 7082</td>
</tr>
<tr>
<td>Bihari: 6672</td>
<td>Galician: 7176</td>
</tr>
<tr>
<td>Breton: 6682</td>
<td>Georgian: 7565</td>
</tr>
<tr>
<td>Bulgarian: 6671</td>
<td>German: 8696</td>
</tr>
<tr>
<td>Burmese: 7789</td>
<td>Greek: 6976</td>
</tr>
<tr>
<td>Byelorussian: 6669</td>
<td>Greenlandic: 7576</td>
</tr>
<tr>
<td>Cambodian: 7577</td>
<td>Guarani: 7178</td>
</tr>
<tr>
<td></td>
<td>Lingala: 7678</td>
</tr>
<tr>
<td></td>
<td>Lithuanian: 7684</td>
</tr>
<tr>
<td></td>
<td>Macedonian: 7775</td>
</tr>
<tr>
<td></td>
<td>Malay: 7783</td>
</tr>
<tr>
<td></td>
<td>Malaysian: 7786</td>
</tr>
<tr>
<td></td>
<td>Maltese: 7784</td>
</tr>
<tr>
<td></td>
<td>Scots Gaelic: 7168</td>
</tr>
<tr>
<td></td>
<td>Tonga: 8479</td>
</tr>
<tr>
<td></td>
<td>Tamil: 8465</td>
</tr>
<tr>
<td></td>
<td>Tatar: 8484</td>
</tr>
<tr>
<td></td>
<td>Telugu: 8469</td>
</tr>
<tr>
<td></td>
<td>Russian: 8499</td>
</tr>
<tr>
<td></td>
<td>Serbo-Croatian: 8372</td>
</tr>
<tr>
<td></td>
<td>Serbo-Croatian: 8372</td>
</tr>
<tr>
<td></td>
<td>Serbian: 8382</td>
</tr>
<tr>
<td></td>
<td>Turkish: 8482</td>
</tr>
<tr>
<td></td>
<td>Ukrainian: 8575</td>
</tr>
<tr>
<td></td>
<td>Welsh: 8590</td>
</tr>
<tr>
<td></td>
<td>Uzbek: 8590</td>
</tr>
<tr>
<td></td>
<td>Volapük: 8679</td>
</tr>
<tr>
<td></td>
<td>Tajik: 8471</td>
</tr>
<tr>
<td></td>
<td>Zulu: 9085</td>
</tr>
</tbody>
</table>
## Messages

### On the television

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot finish recording completely.</td>
<td>62</td>
</tr>
<tr>
<td>The programme was copy-protected.</td>
<td>—</td>
</tr>
<tr>
<td>The unit may be full.</td>
<td>—</td>
</tr>
<tr>
<td>The maximum number of times you can record the programme is exceeded.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot playback.</td>
<td>—</td>
</tr>
<tr>
<td>TV system is different from the setting.</td>
<td>—</td>
</tr>
<tr>
<td>To playback, please change the TV System in SETUP.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot record on the disc.</td>
<td>5</td>
</tr>
<tr>
<td>The disc may be dirty or scratched.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot record.</td>
<td>37</td>
</tr>
<tr>
<td>Disc is full.</td>
<td>—</td>
</tr>
<tr>
<td>Cannot record.</td>
<td>6</td>
</tr>
<tr>
<td>Maximum number of titles exceeded.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error has occurred.</td>
<td>—</td>
</tr>
<tr>
<td>Please press ENTER.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote DVD</td>
<td>34, 41, 53</td>
</tr>
<tr>
<td>REMOTE DVD</td>
<td>—</td>
</tr>
<tr>
<td>“REMOTE DVD” stands for a number.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Disc</td>
<td>—</td>
</tr>
<tr>
<td>The disc may be upside down.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No folders.</td>
<td>11</td>
</tr>
<tr>
<td>There is no compatible folder in this unit.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No SD CARD</td>
<td>6</td>
</tr>
<tr>
<td>No valid SD card.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not enough space on dubbing destination.</td>
<td>34, 37, 41, 44, 47, 51</td>
</tr>
<tr>
<td>Create space by erasing any unnecessary items.</td>
<td>—</td>
</tr>
<tr>
<td>Erase one or more items registered on the transfer (dubbing) list to ensure that the “Capacity” is not exceeded.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please change the disc.</td>
<td>5</td>
</tr>
<tr>
<td>There may be a problem with the disc.</td>
<td>—</td>
</tr>
<tr>
<td>Press [OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>This is a non-recordable disc.</td>
<td>9</td>
</tr>
<tr>
<td>The unit cannot record on the disc you inserted.</td>
<td>—</td>
</tr>
<tr>
<td>Insert a DVD-Video format +R or +RW.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>This disc is not properly formatted. Formatting is necessary using DISC MANAGEMENT.</td>
<td>53</td>
</tr>
<tr>
<td>The message may appear when the DVD-RAM lens cleaner has finished cleaning.</td>
<td>—</td>
</tr>
<tr>
<td>Press [OPEN/CLOSE] on the main unit to eject the disc.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>On the unit’s display</td>
<td>—</td>
</tr>
<tr>
<td>The following messages or service numbers appear on the unit’s display when something unusual is detected during startup and use.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>REMOTE DVD</td>
<td>23</td>
</tr>
<tr>
<td>“REMOTE DVD” stands for a number.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARD ERR</td>
<td>—</td>
</tr>
<tr>
<td>If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDD SLP</td>
<td>4</td>
</tr>
<tr>
<td>In order to extend HDD life, the HDD is in SLEEP mode. Press [HDD] to activate.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO READ</td>
<td>5</td>
</tr>
<tr>
<td>The disc is dirty or badly scratched.</td>
<td>—</td>
</tr>
<tr>
<td>The unit cannot record, play, or edit.</td>
<td>—</td>
</tr>
<tr>
<td>The message may appear when the DVD-RAM lens cleaner has finished cleaning.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROG FULL</td>
<td>31</td>
</tr>
<tr>
<td>There are already 32 timer programmes. Delete unnecessary timer programmes.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELF CHECK</td>
<td>65</td>
</tr>
<tr>
<td>There was something unusual detected with the disc while recording, playing or transferring (dubbing), or there was a power failure or the AC plug was disconnected while the unit was on.</td>
<td>—</td>
</tr>
<tr>
<td>The unit is carrying out its recovery process. This process restores the unit to normal operation.</td>
<td>—</td>
</tr>
<tr>
<td>The unit is not broken. Wait until the message disappears.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNFORMAT</td>
<td>—</td>
</tr>
<tr>
<td>You have inserted a DVD-RAM or a DVD-RW that is not formatted or a DVD-RW recorded on another unit.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNSUPPORT</td>
<td>—</td>
</tr>
<tr>
<td>You have inserted a disc that the unit cannot play or record on.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>US9</td>
<td>9, 18</td>
</tr>
<tr>
<td>The unit is hot.</td>
<td>—</td>
</tr>
<tr>
<td>The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears.</td>
<td>—</td>
</tr>
<tr>
<td>Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>U99</td>
<td>—</td>
</tr>
<tr>
<td>The unit fails to operate properly. Press [(0)(1)] on the main unit to switch the unit to standby. Now press [(0)(1)] on the main unit again to turn the unit on.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>X HOLD</td>
<td>—</td>
</tr>
<tr>
<td>The X HOLD function is activated.</td>
<td>—</td>
</tr>
<tr>
<td>Press and hold [ENTER] and [RETURN] simultaneously until “X HOLD” disappears.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLD or PLL</td>
<td>—</td>
</tr>
<tr>
<td>There is something unusual. (The service number displayed after “R” and “P” depends on the unit’s condition.)</td>
<td>66–68</td>
</tr>
<tr>
<td>Check the unit using the troubleshooting guide. If the service number does not disappear, do the following.</td>
<td>—</td>
</tr>
<tr>
<td>1. Disconnect the plug from the household mains socket, wait a few seconds, then reconnect it.</td>
<td>—</td>
</tr>
<tr>
<td>2. Press [(0)(1)] to turn the power on. (The unit may be fixed.)</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLD or PLL</td>
<td>—</td>
</tr>
<tr>
<td>When the service number does not disappear despite doing the above, request service from the dealer.</td>
<td>—</td>
</tr>
<tr>
<td>Inform the dealer of the service number when requesting service.</td>
<td>—</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-XXXX (e.g., R44:00)</td>
<td>24</td>
</tr>
<tr>
<td>The unit is showing you the remaining time on the HDD or the disc.</td>
<td>—</td>
</tr>
<tr>
<td>(This does not indicate a malfunction.)</td>
<td>—</td>
</tr>
<tr>
<td>In the display across the letter “R” means “Remain” and the numbers mean remaining time (hours,minutes).</td>
<td>—</td>
</tr>
</tbody>
</table>
Frequently asked questions

Refer to the following items if you have any doubts about unit operations.

<table>
<thead>
<tr>
<th>Set up</th>
<th>Disc</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>What equipment is necessary to play multi channel surround sound?</td>
<td>DVD-Video: You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital, DTS or MPEG decoder.</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>DVD-Audio: This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound.</td>
<td>—</td>
</tr>
<tr>
<td>Are the headphones and speakers directly connected to the unit?</td>
<td>You cannot directly connect them to the unit. Connect through the amplifier, etc.</td>
<td>18</td>
</tr>
<tr>
<td>The television has a Scart terminal and component video input terminal. Which terminal should I connect with?</td>
<td>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.</td>
<td>15, 16</td>
</tr>
<tr>
<td>Is my television progressive output compatible?</td>
<td>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.</td>
<td>—</td>
</tr>
<tr>
<td>Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?</td>
<td>You cannot play DVD-Video if their region number does not include “2” or “ALL”. Refer to the disc’s jacket for more information.</td>
<td>Cover</td>
</tr>
<tr>
<td>Can I record from a commercially purchased video cassette or DVD?</td>
<td>Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>You can record if using the PCM signal. When recording DVD, change the &quot;Digital Audio Output&quot; settings in the following in the SETUP menu. &gt;PCM Down Conversion: On &gt;Dolby Digital/DT/S/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.</td>
<td>58</td>
</tr>
<tr>
<td>Can I switch to bilingual broadcast during recording?</td>
<td>You cannot change before recording with &quot;Bilingual Audio Selection&quot; in the SETUP menu.</td>
<td>34, 58</td>
</tr>
<tr>
<td>Can I high speed transfer (dub) to a disc?</td>
<td>• When using a high speed recording compatible disc, you can transfer (dub) a one hour programme to: &gt;DVD-R or +R in approximately 56 seconds © &gt;DVD-RAM in approximately 1.5 minutes © &gt;DVD-RW (DVD-Video format) in approximately 1.9 minutes ©</td>
<td>45</td>
</tr>
<tr>
<td>Is the headphones and speakers directly connected to the unit?</td>
<td>You cannot directly connect them to the unit. Connect through the amplifier, etc.</td>
<td>18</td>
</tr>
<tr>
<td>The television has a Scart terminal and component video input terminal. Which terminal should I connect with?</td>
<td>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.</td>
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</tr>
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<td>—</td>
</tr>
<tr>
<td>Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?</td>
<td>You cannot play DVD-Video if their region number does not include “2” or “ALL”. Refer to the disc’s jacket for more information.</td>
<td>Cover</td>
</tr>
<tr>
<td>Can a DVD-Video that does not have a region number be played?</td>
<td>You cannot play DVD-Video if their region number does not include “2” or “ALL”. Refer to the disc’s jacket for more information.</td>
<td>—</td>
</tr>
<tr>
<td>Please tell me about DVD-R, DVD-RW, +R and +RW compatibility with this unit.</td>
<td>This unit records and plays DVD-R, DVD-RW (DVD-Video format) and +R, and plays DVD-RW (DVD Video Recording format) and +RW. This unit also records and plays high speed recording compatible DVD-R, DVD-RW, +R discs.</td>
<td>9, 10</td>
</tr>
<tr>
<td>Please tell me about CD-R and CD-RW compatibility with this unit.</td>
<td>This unit plays CD-R/CD-RW discs which have been recorded in one of the following standards: CD-DA, Video CD, MP3 and still pictures (JPEG/TIFF). Close the session or finalize the disc after recording. This unit can recognize up to 99 folders (groups) and 999 files (tracks) on a disc with MP3 or still pictures (JPEG/TIFF). You cannot write to a CD-R or CD-RW with this unit.</td>
<td>10, 35, 37</td>
</tr>
<tr>
<td>Recording</td>
<td>Can I record digital audio signals using this unit?</td>
<td>You cannot record digital signals. The digital audio terminals on this unit are for output only.</td>
</tr>
<tr>
<td></td>
<td>Can a digital audio signal from this unit be recorded to other equipment?</td>
<td>You cannot record digital signals. The digital audio terminals on this unit are for output only.</td>
</tr>
<tr>
<td></td>
<td>Can I switch to bilingual broadcast during recording?</td>
<td>You cannot change before recording with &quot;Bilingual Audio Selection&quot; in the SETUP menu.</td>
</tr>
<tr>
<td>Can I switch to bilingual broadcast during recording?</td>
<td>With HDD and DVD-RAM, you can. Just press [AUDI0].</td>
<td>34</td>
</tr>
<tr>
<td>Can I switch to bilingual broadcast during recording?</td>
<td>With DVD-R, DVD-RW (DVD-Video format), +R you cannot. Change before recording with &quot;Bilingual Audio Selection&quot; in the SETUP menu.</td>
<td>58</td>
</tr>
<tr>
<td>Can I high speed transfer (dub) to a disc?</td>
<td>When using a high speed recording compatible disc, you can transfer (dub) a one hour programme to: &gt;DVD-R or +R in approximately 56 seconds © &gt;DVD-RAM in approximately 1.5 minutes © &gt;DVD-RW (DVD-Video format) in approximately 1.9 minutes ©</td>
<td>45</td>
</tr>
<tr>
<td>Can I high speed transfer (dub) to a disc?</td>
<td>Quickest possible time</td>
<td>—</td>
</tr>
</tbody>
</table>
Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, consult your dealer for instructions.

The following do not indicate a problem with this unit:

- Regular disc rotating sounds.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions in reception due to periodic satellite broadcasting breaks.
- A sound is heard when the HDD goes into SLEEP mode, or operations are slow to respond in SLEEP mode.
- Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)
- The unit freezes due to one of its safety devices being activated. (Press and hold [0/I] on the main unit for 10 seconds.)
- When the HDD has been automatically placed in the SLEEP mode (4), or the unit is turned on or off, there may be an unexpected sound. This does not indicate a problem with this unit.

<table>
<thead>
<tr>
<th>Power</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power.</td>
<td>15–17</td>
</tr>
<tr>
<td>The unit does not turn on pressing [0 DVD].</td>
<td>31</td>
</tr>
<tr>
<td>The unit switches to standby mode.</td>
<td></td>
</tr>
<tr>
<td>The display is dim.</td>
<td>58</td>
</tr>
<tr>
<td>“0:00” is flashing on the unit’s display.</td>
<td>61</td>
</tr>
<tr>
<td>The time recorded on the disc and the available time shown do not add up.</td>
<td></td>
</tr>
<tr>
<td>The play time shown for MP3 does not agree with the actual time.</td>
<td></td>
</tr>
<tr>
<td>The clock is not correct.</td>
<td>61</td>
</tr>
<tr>
<td>“SELF CHECK” is displayed and the disc cannot be ejected.</td>
<td></td>
</tr>
<tr>
<td>The display is wrong.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TV screen and video</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Television reception worsens after connecting the unit.</td>
<td>—</td>
</tr>
<tr>
<td>Status messages do not appear.</td>
<td>58</td>
</tr>
<tr>
<td>The grey background does not appear.</td>
<td>58</td>
</tr>
<tr>
<td>Picture does not appear during timer recording.</td>
<td>—</td>
</tr>
<tr>
<td>The 4:3 aspect ratio picture expands left and right.</td>
<td>39</td>
</tr>
<tr>
<td>Screen size is wrong.</td>
<td>22</td>
</tr>
<tr>
<td>There is a lot of after-image when playing video.</td>
<td>39</td>
</tr>
<tr>
<td>There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.</td>
<td>—</td>
</tr>
<tr>
<td>The images from this unit do not appear on the television.</td>
<td>15, 16</td>
</tr>
<tr>
<td>Picture is distorted.</td>
<td>—</td>
</tr>
</tbody>
</table>

Reference
## Troubleshooting guide

### Sound

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
</tr>
</thead>
</table>
| No sound. | ●Check the connections and the “Digital Audio Output” settings. Check the input mode on the amplifier if you have connected one.  
●Press [AUDIO] to select the audio.  
●Turn off V.S.S. in the following cases:  
  → When using discs that do not have surround sound effects such as Karaoke discs.  
  → When playing bilingual broadcast programmes.  
  → The disc may have a restriction on the method of audio output. If “D.MIX” does not appear in the display when playing multi-channel DVD-Audio, only audio for the two front channels will be output. Refer to the disc's jacket. |
| Low volume. | — |
| Distorted sound. | — |
| Cannot hear the desired audio type. | — |

### Cannot switch audio.

<table>
<thead>
<tr>
<th>Case</th>
<th>Solution</th>
</tr>
</thead>
</table>
| When a DVD-R, DVD-RW (DVD-Video format) or +R disc is in the disc tray while DVD drive is selected.  
When recording mode is XP and “Audio Mode for XP Recording” is set to “LPCM”.  
When “Rec for High Speed dubbing” is set to “On”.  
When connecting an amplifier using an optical digital cable, you cannot switch the audio if “Dolby Digital” is set to “Bitstream”. Set “Dolby Digital” to “PCM” or connect using audio cables.  
There are discs for which audio cannot be changed because of how the disc was created. | — |

### Operation

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Cannot operate the television. The remote control doesn’t work. | ●Change the manufacturer code. Some televisions cannot be operated even if you change the code.  
●The remote control and main unit are using different codes. Change the code on the remote control.  
Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.  
●The batteries are depleted. Replace them with new ones.  
●You are not pointing the remote control at the main unit’s remote control signal sensor during operation.  
●Coloured glass may obstruct the signal reception/transmission.  
●Don’t place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.  
●It may be necessary to set the code on the remote control again after changing the batteries.  
●It may be necessary to set the manufacturer code again after changing the batteries.  
●The child lock function is activated. |
| The unit is on but cannot be operated. | ●Recording drive or playback drive has not been selected properly.  
●Some operations may be prohibited by the disc.  
●One of the unit’s safety devices may have been activated.  
Reset the unit as follows:  
1. Press [||] on the main unit to switch the unit to standby.  
2. Press [||] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer.  
●The HDD is in SLEEP mode. (“HDD SLP” appears in the unit’s display.)  
●The unit is recording.  
●The unit may have a problem. While the unit is off, press and hold [I] 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. |
| HDD activation is slow. | — |
| Cannot eject disc. | — |
| Cannot tune channels. | — |
| Cannot download channel presets from the television. | — |
| Startup is slow. | ●Make sure that “Quick Start” is set to “On”.  
●Startup takes time in the following situations:  
  → A disc other than a DVD-RAM is inserted.  
  → The clock is not set.  
  → Immediately after a power failure or the AC mains lead is connected.  
  → For a few minutes after 5:15 am due to system maintenance of this unit. |
<p>| Takes time to read DVD-RAM. | — |</p>
<table>
<thead>
<tr>
<th><strong>Recording, timer recording and transferring (dubbing)</strong></th>
<th><strong>Page</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cannot record.</strong></td>
<td>9</td>
</tr>
<tr>
<td>- You haven’t inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.</td>
<td></td>
</tr>
<tr>
<td>- The disc is unformatted. Format the disc. <strong>[RAM]</strong> <strong>[RAW]</strong>.</td>
<td></td>
</tr>
<tr>
<td>- The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DISC MANAGEMENT.</td>
<td></td>
</tr>
<tr>
<td>- Some programmes have limitations on the number of times they can be recorded (CPRM).</td>
<td></td>
</tr>
<tr>
<td>- You cannot record when there is not enough space or when the number of titles has reached its limit. Erase unwanted titles or use a new disc.</td>
<td></td>
</tr>
<tr>
<td>- You cannot record on finalized DVD-R, DVD-RW (DVD-Video format), +R or DVD-RW (DVD Video Recording format) discs.</td>
<td></td>
</tr>
<tr>
<td>- Due to peculiarities of DVD-R, DVD-RW (DVD-Video format) and +R, you may be unable to record onto them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of fifty times.</td>
<td></td>
</tr>
<tr>
<td>- DVD-R, DVD-RW (DVD-Video format) and +R recorded on this unit may not be recordable on other Panasonic DVD Recorders.</td>
<td></td>
</tr>
<tr>
<td>- 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.</td>
<td></td>
</tr>
<tr>
<td><strong>Cannot record from external equipment.</strong></td>
<td>15, 16, 49</td>
</tr>
<tr>
<td>- Check that the connection is correct.</td>
<td></td>
</tr>
<tr>
<td>- Select the input channel (&quot;AV2&quot;, &quot;AV3&quot; or &quot;AV4&quot;) for the equipment you have connected.</td>
<td></td>
</tr>
<tr>
<td><strong>Timer recording does not work properly.</strong></td>
<td>31</td>
</tr>
<tr>
<td>- The timer programme is incorrect or different timer programme times overlap. Correct the programme.</td>
<td></td>
</tr>
<tr>
<td>- The unit is not on timer recording standby. (&quot;0&quot; on the unit’s display is not on.) Press [SET].</td>
<td></td>
</tr>
<tr>
<td>- Set the clock.</td>
<td></td>
</tr>
<tr>
<td><strong>VIDEO Plus+ programming does not work properly.</strong></td>
<td>28-30</td>
</tr>
<tr>
<td>- You tried to play a blank disc or disc unplayable on this unit.</td>
<td></td>
</tr>
<tr>
<td>- The disc is dirty.</td>
<td></td>
</tr>
<tr>
<td>- Insert the disc correctly with the label facing up.</td>
<td></td>
</tr>
<tr>
<td><strong>Timer recording does not stop even when [I] is pressed.</strong></td>
<td>28–30</td>
</tr>
<tr>
<td>- While using timer recording, press [SET]. (&quot;0&quot; disappears.)</td>
<td></td>
</tr>
<tr>
<td>- If you start recording immediately after turning on the unit while &quot;Quick Start&quot; is set to &quot;On&quot;, you cannot then stop recording for a few seconds.</td>
<td></td>
</tr>
<tr>
<td><strong>The timer programme remains even after recording finishes.</strong></td>
<td>30</td>
</tr>
<tr>
<td>- The timer programme remains if set to daily or weekly.</td>
<td></td>
</tr>
<tr>
<td><strong>A part or whole of a recorded title has been lost.</strong></td>
<td>53</td>
</tr>
<tr>
<td>- If there is a power failure or the plug is disconnected from the household mains socket while recording or editing, the title may be lost or the HDD/disc may become unusable.</td>
<td></td>
</tr>
<tr>
<td>- You will have to format the disc (<strong>[RAM]</strong> <strong>[RAW]</strong> <strong>[UNW]</strong> or use a new disc. We cannot offer any guarantee regarding lost programmes or discs.</td>
<td></td>
</tr>
<tr>
<td><strong>The programme name and the recorded title do not match.</strong></td>
<td>—</td>
</tr>
<tr>
<td>- There was a programme change after timer recording was set but the recorded title still has the old programme name.</td>
<td></td>
</tr>
<tr>
<td><strong>Cannot transfer (dub) to a DVD-R, etc. disc using the high speed mode.</strong></td>
<td>26</td>
</tr>
<tr>
<td>- When recording to the HDD, set &quot;Rec for High Speed dubbing&quot; to &quot;On&quot; in the SETUP menu.</td>
<td></td>
</tr>
<tr>
<td><strong>When transferring (dubbing), it takes a long time even when high speed mode is selected.</strong></td>
<td>—</td>
</tr>
<tr>
<td>- Use a disc that is compatible with high speed recording. Even if the disc is high speed recording compatible, the maximum speed may not be possible due to the condition of the disc.</td>
<td></td>
</tr>
<tr>
<td>- It takes longer than normal to transfer (dub) many titles.</td>
<td></td>
</tr>
<tr>
<td>- You cannot high speed transfer (dub) to DVD-R, DVD-RW (DVD-Video format) and +R, etc. disc using the high speed mode.</td>
<td></td>
</tr>
<tr>
<td>- It takes longer than 6 hours when using other Panasonic DVD Recorders that are not compatible with DVD-Video format.</td>
<td></td>
</tr>
<tr>
<td>- You cannot record on finalized DVD-R, DVD-RW (DVD-Video format), +R or DVD-RW (DVD-Video format) and +R that have been transferred (dubbed) using the high speed mode.</td>
<td></td>
</tr>
<tr>
<td>- The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DISC MANAGEMENT.</td>
<td></td>
</tr>
<tr>
<td>- The disc is not recordable because of its limit. Erase unwanted titles or use a new disc.</td>
<td></td>
</tr>
<tr>
<td><strong>An unusually loud sound is coming from the rotating DVD-R, etc.</strong></td>
<td>—</td>
</tr>
<tr>
<td>- When recording or high speed transferring (dubbing) to a DVD-R, DVD-RW (DVD-Video format) and +R, the sound of the disc rotating may be louder than normal, however, this is not a problem.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Play</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Play fails to start even when [I] (PLAY) is pressed.</strong></td>
</tr>
<tr>
<td>- Insert the disc correctly with the label facing up.</td>
</tr>
<tr>
<td>- The disc is dirty.</td>
</tr>
<tr>
<td>- You tried to play a blank disc or disc unplayable on this unit.</td>
</tr>
<tr>
<td>- You tried to play a +RW that needs to be finalized on the equipment used for recording.</td>
</tr>
<tr>
<td>- You may be able to transfer (dub) a &quot;One time only recording&quot; 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.</td>
</tr>
<tr>
<td>- When recording to DVD-RAM using &quot;EP (8 Hours)!&quot; mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use &quot;EP (6 Hours)!&quot; mode.</td>
</tr>
<tr>
<td><strong>Audio and video momentarily pause.</strong></td>
</tr>
<tr>
<td>- This occurs between playlist chapters.</td>
</tr>
<tr>
<td>- This occurs between chapters and with partially deleted titles on finalized DVD-R, DVD-RW (DVD-Video format) and +R that have been transferred (dubbed) using the high speed mode.</td>
</tr>
<tr>
<td>- This occurs as scenes change during Quick View.</td>
</tr>
<tr>
<td><strong>DVD-Video is not played.</strong></td>
</tr>
<tr>
<td>- You have set a ratings level to limit DVD-Video play. Change this setting.</td>
</tr>
</tbody>
</table>

Continued on the next page
### Troubleshooting guide

<table>
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<td>Alternative soundtrack and subtitles cannot be selected.</td>
<td>33</td>
</tr>
<tr>
<td>• The languages are not recorded on the disc.</td>
<td></td>
</tr>
<tr>
<td>• You may not be able to use the on-screen menus to change the soundtrack and</td>
<td></td>
</tr>
<tr>
<td>subtitles on some discs. Use the disc's menus to make changes.</td>
<td></td>
</tr>
<tr>
<td>No subtitles.</td>
<td>38</td>
</tr>
<tr>
<td>• Subtitles are not recorded on the disc.</td>
<td></td>
</tr>
<tr>
<td>• Turn the subtitles on. Set “Subtitle” on the on-screen menu to “On”.</td>
<td></td>
</tr>
<tr>
<td>You have forgotten your ratings password.</td>
<td></td>
</tr>
<tr>
<td>You want to cancel the ratings level.</td>
<td></td>
</tr>
<tr>
<td>• The ratings level returns to the factory preset. While the disc tray is open,</td>
<td></td>
</tr>
<tr>
<td>press [DVD] then press and hold [ REC] and [ PLAY] on the main unit at the</td>
<td></td>
</tr>
<tr>
<td>same time for 5 or more seconds (“INIT” will appear on the unit’s display).</td>
<td></td>
</tr>
<tr>
<td>Quick View does not work.</td>
<td></td>
</tr>
<tr>
<td>• This does not work when audio is other than Dolby Digital.</td>
<td></td>
</tr>
<tr>
<td>• This does not work when recording is in XP or FR mode.</td>
<td></td>
</tr>
<tr>
<td>The resume play function does not work.</td>
<td></td>
</tr>
<tr>
<td>• This function only works when the indicator on the right appears on the unit</td>
<td></td>
</tr>
<tr>
<td>display.</td>
<td></td>
</tr>
<tr>
<td>• Memorized positions are canceled when the unit is turned off or when the</td>
<td></td>
</tr>
<tr>
<td>tray is opened. The memorized position on the playlist is also canceled</td>
<td></td>
</tr>
<tr>
<td>when the playlist and title are edited.</td>
<td></td>
</tr>
<tr>
<td>The Video CD picture does not display properly.</td>
<td>62</td>
</tr>
<tr>
<td>• When connecting to Multi-system TV, select “NTSC” in “TV System” in the</td>
<td></td>
</tr>
<tr>
<td>SETUP menu.</td>
<td></td>
</tr>
<tr>
<td>• When connecting to PAL TV, the lower part of the picture cannot be</td>
<td></td>
</tr>
<tr>
<td>displayed correctly during search.</td>
<td></td>
</tr>
<tr>
<td>Time Slip does not work.</td>
<td>62</td>
</tr>
<tr>
<td>• Time Slip does not work when the unit’s “TV System” settings are different</td>
<td></td>
</tr>
<tr>
<td>from the title recorded on the disc.</td>
<td></td>
</tr>
<tr>
<td>Edit</td>
<td></td>
</tr>
<tr>
<td>Cannot format.</td>
<td>5</td>
</tr>
<tr>
<td>• The disc is dirty. Wipe with a damp cloth and then wipe dry.</td>
<td>9</td>
</tr>
<tr>
<td>• You tried formatting a disc that you may not be able to use in this unit.</td>
<td></td>
</tr>
<tr>
<td>Cannot create chapters.</td>
<td></td>
</tr>
<tr>
<td>• The unit writes the chapter division information to the disc when you turn</td>
<td></td>
</tr>
<tr>
<td>it off or remove the disc. The information is not written if there is an</td>
<td></td>
</tr>
<tr>
<td>interruption to the power before this.</td>
<td></td>
</tr>
<tr>
<td>• These operations are not possible with still pictures.</td>
<td></td>
</tr>
<tr>
<td>• You cannot set points if they are too close to each other. You cannot</td>
<td></td>
</tr>
<tr>
<td>set an end point before a start point.</td>
<td></td>
</tr>
<tr>
<td>Cannot erase chapters.</td>
<td>41</td>
</tr>
<tr>
<td>• When the chapter is too short to erase, use “Combine Chapters” to make the</td>
<td></td>
</tr>
<tr>
<td>chapter longer.</td>
<td></td>
</tr>
<tr>
<td>The available recording time doesn’t increase even after erasing recordings on</td>
<td></td>
</tr>
<tr>
<td>the disc.</td>
<td></td>
</tr>
<tr>
<td>• Available recording space on the DVD-R and +R does not increase even after</td>
<td></td>
</tr>
<tr>
<td>erasing previously recorded titles.</td>
<td></td>
</tr>
<tr>
<td>• Disc space on a DVD-RW (DVD-Video method) increases only when the last</td>
<td></td>
</tr>
<tr>
<td>recorded title is erased. It does not increase if other titles are erased.</td>
<td></td>
</tr>
<tr>
<td>Cannot create a playlist.</td>
<td></td>
</tr>
<tr>
<td>• You cannot select all the chapters at once in a title if the title also</td>
<td></td>
</tr>
<tr>
<td>includes still pictures. Select them individually.</td>
<td></td>
</tr>
<tr>
<td>Still pictures</td>
<td></td>
</tr>
<tr>
<td>Cannot display Direct Navigator screen.</td>
<td></td>
</tr>
<tr>
<td>• This screen cannot be displayed during recording or transfer (dubbing) or</td>
<td></td>
</tr>
<tr>
<td>while the unit is standing by for linked timer recording with external</td>
<td></td>
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<td>equipment.</td>
<td></td>
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<tr>
<td>Cannot edit or format a card.</td>
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<tr>
<td>• Release the card’s protection setting. With some cards, the “Write Protection</td>
<td></td>
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<tr>
<td>Off” message sometimes appears on the screen even when protection has been</td>
<td></td>
</tr>
<tr>
<td>set.</td>
<td></td>
</tr>
<tr>
<td>The contents of the card cannot be read.</td>
<td>11,</td>
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<tr>
<td>• The card format is not compatible with the unit. (The contents on the card</td>
<td>37</td>
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<td>may be damaged.)</td>
<td></td>
</tr>
<tr>
<td>• The card contains a folder structure and/or file extensions that are not</td>
<td>11</td>
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<td>compatible with this unit.</td>
<td></td>
</tr>
<tr>
<td>• Turn off and then turn on the unit again.</td>
<td>11</td>
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<tr>
<td>Transferring (dubbing), erasing and setting protection takes a long time.</td>
<td>53</td>
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<tr>
<td>• When there are a lot of folders and files, it may sometimes take a few hours.</td>
<td></td>
</tr>
<tr>
<td>• When repeating transferring (dubbing) or erasing, it may sometimes take a</td>
<td></td>
</tr>
<tr>
<td>long time, Format the disc or card.</td>
<td></td>
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<tr>
<td>To return all the settings other than the main ones to the factory preset.</td>
<td>59</td>
</tr>
<tr>
<td>• Select “Yes” in “Shipping Condition” in the SETUP menu. All the settings</td>
<td></td>
</tr>
<tr>
<td>except for the ratings level, ratings password, Owner ID and time settings</td>
<td></td>
</tr>
<tr>
<td>return to the factory preset. The timer recording programmes are also</td>
<td></td>
</tr>
<tr>
<td>cancelled.</td>
<td></td>
</tr>
<tr>
<td>• Select “Yes” in “Default Settings” in the SETUP menu. All the settings</td>
<td>59</td>
</tr>
<tr>
<td>other than the programmed channels, time settings, disc language settings,</td>
<td></td>
</tr>
<tr>
<td>ratings level, ratings password, Owner ID, remote control code, return to</td>
<td></td>
</tr>
<tr>
<td>the factory presets.</td>
<td></td>
</tr>
<tr>
<td>• Press and hold [ CH] and [ CH] on the main unit until the Auto-Setup screen</td>
<td></td>
</tr>
<tr>
<td>appears. The settings except for the ratings level, ratings password, Owner</td>
<td></td>
</tr>
<tr>
<td>ID and time settings return to the factory preset. The timer recording</td>
<td></td>
</tr>
<tr>
<td>programmes are also cancelled.</td>
<td></td>
</tr>
<tr>
<td>To reset the ratings level settings</td>
<td>59</td>
</tr>
<tr>
<td>• While the disc tray is open, press [DVD] then press and hold [ REC] and [ PLAY]</td>
<td></td>
</tr>
<tr>
<td>on the main unit at the same time for 5 or more seconds.</td>
<td></td>
</tr>
<tr>
<td>To restore the unit if it freezes due to one of the safety devices being</td>
<td>59</td>
</tr>
<tr>
<td>activated</td>
<td></td>
</tr>
<tr>
<td>• Press and hold [ REC] on the main unit for 10 seconds. (The settings remain.)</td>
<td></td>
</tr>
</tbody>
</table>
Glossary

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

CPMR (Content Protection for Recordable Media)
CPMR is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

Decoder
A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

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

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into two channels. It is useful when you want to listen to the 5.1-channel audio recorded on DVDs through your television's speakers. Some discs prohibit down-mixing and this unit can then only output the front two channels.

DPOF (Digital Print Order Format)
DPOF is the standard printing format for still picture data taken by a digital camera, etc. It is used for automatic printing at a photo developing store or on your home printer.

Drive
In the instance of this unit, this refers to the hard disk (HDD), disc (DVD) and SD card (SD). These perform the reading and writing of data.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.

Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialogue clearly.

Film and video
DVD-Videos are recorded using either film or video. This unit can determine which type has been used, and 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-RW on this unit DVD-RAM, DVD-RW (only as DVD-Video format) and SD Memory Card on this unit. Formatting erases irrevocably all contents.

Frames and fields
Frames refer to the single images that constitute the video you see on your television. Each frame consists of two fields.

Freeze (Freeze-Frame)
A feature that temporarily stops the video so that you can view a still image. When you press the PLAY button again, the video continues from where it was stopped.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.

Pan & Scan/Letterbox
In general, DVD-Videos 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.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

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

TIFF (Tag Image File Format)
This is a system used for compressing/decompressing colour still pictures, a common format for storing high quality images on digital cameras and other devices.
**Q Link**  
This function works only if the unit is connected via a fully wired 21-pin Scart lead to a TV featuring the Q Link or similar function. Q Link offers the following functions:  
- **Download from the TV**
  When you connect the unit to a TV, the station list data is automatically copied from the TV to the unit, and the TV stations are assigned to the programme positions on the unit in the same order as on the TV.  
- **Direct TV Recording**
  By simply pressing [DIRECT TV REC], you can at once record the same programme that you are watching on the TV.  
- **TV/DVD Auto On**
  Even if the TV and the unit are off (standby mode), pressing [PLAY], [DIRECT NAVIGATOR, TOP MENU], [VIDEO Plus+] or [FUNCTIONS] automatically turns on both the TV and the unit. If the TV is off (standby mode) and the unit is on, when you press [FUNCTIONS] or [PLAY], or insert the disc (except DVD-RAM, DVD-R, DVD-RW (DVD-Video format) and +R), the TV is automatically turned on.  
- **DVD Auto Standby**
  When you turn the TV off, the unit is turned off as well. However, this function works in the stop mode. This function does not work during the following operations: Preset Download, Auto-Setup, Auto Clock Setting, Child Lock and Manual Tuning.

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

**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:  

<table>
<thead>
<tr>
<th>Message</th>
<th>Message appears when:</th>
</tr>
</thead>
<tbody>
<tr>
<td>This programme has already started</td>
<td>A timer recording has just started.</td>
</tr>
<tr>
<td>Set DVD to timer standby mode</td>
<td>The unit is not in the timer standby mode and the unit is in the recording mode.</td>
</tr>
<tr>
<td>DVD is in timer recording mode</td>
<td>[REC] on the main unit or [VIDEO Plus+] was pressed while the unit is in the recording mode.</td>
</tr>
</tbody>
</table>

Depending on the type of TV used, the above messages may not appear correctly.  
* These operations are only available if the unit is connected to a TV featuring the Q Link function.  
* If you have an IDTV with electronic programme guide function for digital broadcasts, you can perform timer recording using the electronic programme guide function. Refer to the television’s operating instructions for further information.

**Safety precautions**

### Placement
Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit’s service life.  
Do not place heavy items on the unit.

### Voltage
Do not use high voltage power sources. This can overload the unit and cause a fire.  
Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

### AC mains lead protection
Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead. Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.  
Do not handle the plug with wet hands. This can cause electric shock.

### Foreign matter
Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.  
Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.  
Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

### Service
Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service centre. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.  
Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.
## Specifications

### Recording system
- **DVD Video Recording format (DVD-RAM), DVD-Video format (DVD-R), DVD-Video format (DVD-RW)

### Recordable discs
- **DVD-RAM**: Ver.2.0
  - Ver.2.1/3×-SPEED DVD-RAM Revision 1.0
  - Ver.2.2/5×-SPEED DVD-RAM Revision 2.0
  - for General Ver. 2.0
- **DVD-R**: for General Ver. 2.0
  - Ver. 2.0/4×-SPEED DVD-R Revision 1.0
  - Ver. 2.1/8×-SPEED DVD-R Revision 2.0
- **DVD-RW**: Ver.1.1
  - Ver. 1.1/2×-SPEED DVD-RW Revision 1.0
  - Ver. 1.2/4×-SPEED DVD-RW Revision 2.0
- **+R**: Ver.1.0
  - Ver.1.1
  - Ver.1.2

### Internal HDD capacity
- **80 GB**

### Recording time
- Maximum 8 hours (with 4.7 GB disc)
- XP: Approx. 1 hour, SP: Approx. 2 hours
- LP: Approx. 4 hours, EP: Approx. 6 hours/8 hours
- Maximum 142 hours (EP 8 hour mode, with built-in 80 GB HDD)

### Playable discs

### SD card slot
- **Still picture (JPEG, TIFF)**
  - SD Memory Card slot: 1 pc
- **Compatible media**: SD Memory Card*, MultiMediaCard
- **Format**: FAT12, FAT16
- **Image file format**: JPEG conforming DCF (Design rule for Camera File system), (sub sampling: 4:2:2 or 4:2:0)
- **TIFF** (Uncompressed RGB chunky), DPOF
- **Compatible Number of pixels**: 34 × 34 to 6144 × 4096
- **Viewing time**: Approx. 7 sec (2 M pixels)

### LASER specification
- **Class I LASER Product**
- **Wave length**:
  - CD: 795 nm wave length
  - DVD: 662 nm wave length
- **Laser power**: No hazardous radiation is emitted with the safety protection

### Television system
- **Tuner system**: PAL-I
- **Channel Coverage**: UHF: CH 21–68, 71 ± 3 dBu, 75 Ω termination
- **RF converter output**: UHF: CH 21–68

### Video
- **Video system**: PAL colour signal, 625 lines, 50 fields
- **Record system**: MPEG2 (Hybrid VBR)
- **Video in (PAL/NTSC)**:
  - AV1/AV2 (21 pin), AV3/AV4 (pin jack) 1 Vp-p 75 Ω, termination
  - S-Video in (PAL/NTSC):
    - AV2 (21 pin), AV3/AV4 (S terminal) 1 Vp-p 75 Ω, termination
  - RGB in (PAL):
    - AV2 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination
  - Video out (PAL/NTSC):
    - AV1/AV2 (21 pin), Video Out (pin jack) 1 Vp-p 75 Ω, termination
  - S-Video out (PAL/NTSC):
    - AV1 (21 pin), S-Video Out (S terminal) 1 Vp-p 75 Ω, termination
  - RGB out (PAL/NTSC):
    - AV1 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination

### Component video output (NTSC 480P/480I, PAL 576P/576I)
- Y: 1.0 Vp-p 75 Ω, termination
- P-Y: 0.7 Vp-p 75 Ω, termination
- P-C: 0.7 Vp-p 75 Ω, termination

### Others
- **Region code**: # 2
- **Operating temperature**: 5–40 °C
- **Operating humidity range**: 10–80 % RH (no condensation)
- **Power supply**: AC 220–240 V, 50 Hz
- **Power consumption**: 31 W
- **Dimensions (W×D×H)**: Approx. 430 mm × 350.5 mm × 63 mm
- **Mass**: Approx. 4.4 kg

### Note
- Specifications are subject to change without notice.
- Mass and dimensions are approximate.
- Includes miniSD™ cards. (A miniSD™ card adaptor needs to be inserted.)
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