Dear customer

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

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

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.

[For Australia and New Zealand]
THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

[For Asia and the Middle East]
THIS UNIT IS INTENDED FOR USE IN TROPICAL CLIMATES.

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

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

CLASS 1 LASER PRODUCT

Caution for AC Mains Lead
(For Saudi Arabia)
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  الاحتک or the BSI mark  on the body of the fuse.
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

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

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

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

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

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use
Remove the connector cover.

How to replace the fuse
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.
1. Open the fuse cover with a screwdriver.

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

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

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

■ Precautions for installation
- The unit should not be installed or operated near large magnets or electromagnetic devices. Such devices can damage pre-recorded VHS recordings.
- Do not place any heavy objects atop the unit and do not install it in a confined space. Please allow for adequate air circulation.
- The unit should not be mounted in a vertical position. It is designed to operate in the horizontal position.

■ Important
Your attention is drawn to the fact that the recording of pre-recorded video cassettes or discs or other published or broadcast material may infringe copyright laws.

■ For your safety
Do not remove outer cover. Touching internal parts of the unit is dangerous and may seriously damage it.
To prevent electric shock, do not remove cover. There are no user-serviceable parts inside. Refer all servicing to qualified service personnel.

■ Conserve the environment
See “Power Save” of page 59.

■ Cautions before you operate this unit
Avoid:
- Humidity and dust.
- Extreme heat such as direct sunlight.
- Magnets or electromagnetic objects.
- Touching internal parts of the unit.
- Water or other liquid.
- Lightning. (Disconnect the aerial plug from the unit during lightning storms.)
- Anything heavy on the unit.
- Connecting or handling the equipment with wet hands.
- Using a cell phone near the unit because it may cause noise affecting the picture and sound.

Do:
- Wipe the unit with a clean and dry cloth.
- Install the unit in a horizontal position.
- Keep the unit, TV and other equipment switched off until all connections are finished.

■ Notes on these instructions
- Company names, product names and all other names in these instructions are the trademarks or registered trademarks of their respective corporations.
- These operating instructions describe operations mainly using the remote control.
- The contents of the screens used in these instructions may not necessarily match what you will see on your screen.

■ Displays
The displays shown in these instructions are examples. Actual displays depend on discs.
- In certain circumstances, icons will be displayed in grey and will not respond if clicked on. This means that the function represented by the icon is disabled.

About descriptions in these operating instructions
- Pages to be referred to are indicated as (⇒ CO).

Useful features
You can enjoy both DVD and VHS with the unit.
This DVD Recorder can record images and sounds in high quality to rapid random access capable DVD media. This has resulted in many new features that outperform older video cassette formats. The following information summarizes a few of these features.

■ DVD
Progressive output (⇒ 13, 16)
If you connect the unit with a progressive output-compatible TV, you can enjoy higher-quality and less-flicker images than conventional TVs (of the interface output type) can present.
Finalize (⇒ 56)
This function enables you to play recorded DVD-R, DVD-R DL, DVD-RW, +R and +R DL on other players.
Instant play (⇒ 26)
There is no need to rewind or search forward. Direct Navigator guides you to the beginning of a previously recorded video immediately.
Quick view (⇒ 26)
This function allows you to watch news, information and other programmes in a short time.
Chasing play (⇒ 21)
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 recording (⇒ 18)
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.
Simultaneous rec and play (⇒ 21)
With this function, you can play a previously recorded video programme while recording another programme.
Time slip (⇒ 27)
This function enables you to jump to the scene you specify during play.

■ Common
One Touch Transfer (Copying) (⇒ 45, 47)
This function can copy video from VHS to DVD and vice versa.

-If you see this symbol-

Information on Disposal in other Countries outside the European Union
This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.
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## Table of contents/Accessories

### Accessories

Please check and identify the supplied accessories. Use the numbers indicated in the brackets when asking for replacements.

(Product numbers correct as of April 2006. These may be subject to change.)

- **For Asia**
  - 1 AC mains lead
  - 1 RF coaxial cable
  - 1 Audio/Video cable
  - 2 Batteries for the remote control

- **For Australia and New Zealand**
  - 1 AC mains lead
  - 1 Remote control (EUR7659YJ0)

- **For Saudi Arabia**
  - 2 AC mains leads

- **For the Middle East**
  - 1 Remote control (EUR7659YJ0)

- For use with the unit only. Do not use it with other equipment. Also, do not use cords belonging to other equipment with the unit.
## Disc information

### Discs you can use for recording and play (12 cm/8 cm)

<table>
<thead>
<tr>
<th>Disc type</th>
<th>DVD-RAM</th>
<th>DVD-R</th>
<th>DVD-R DL (^1)</th>
<th>DVD-RW</th>
<th>+R (^2)</th>
<th>+R DL (^3)</th>
<th>+RW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.7 GB, 4.7 GB, 12 cm, 12 cm, 2.8 GB, 8 cm</td>
<td>4.7 GB, 12 cm, 1.4 GB, 8 cm</td>
<td>(dual layer on single side)</td>
<td>4.7 GB, 12 cm, 1.4 GB, 8 cm</td>
<td>4.7 GB, 12 cm</td>
<td>4.7 GB, 12 cm, 1.4 GB, 8 cm</td>
<td>4.7 GB, 12 cm</td>
</tr>
</tbody>
</table>

### Logo

- DVD: +R before finalization
- DVD-R: +R before finalization
- DVD-R DL: +R before finalization
- DVD-RW: +R before finalization
- +R: +R before finalization
- +R DL: +R before finalization
- +RW: +R before finalization

### Main use

<table>
<thead>
<tr>
<th>Use</th>
<th>Re-writable discs</th>
<th>One time recording discs (recordable until the disc is full)</th>
<th>One time recording discs (recordable until the disc is full)</th>
<th>Re-writable discs</th>
<th>Anything else</th>
<th>+VR format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Re-writable discs</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>One time recording discs</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>Discs to be finalized</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

### Usable high speed recording disc

- DVD-RAM compatible players: Up to 5x (double layer on 56, 62), 16x (single side)
- DVD-R compatible players: Up to 4x (double layer on 56, 62), 16x (single side)
- DVD-RW compatible players: Up to 6x (double layer on 56, 62), 16x (single side)
- +R compatible players: Up to 2.4x (double layer on 56, 62), 8x (single side)
- +RW compatible players: Up to 4x (double layer on 56, 62), 8x (single side)
- VR compatible players: Up to 4x (double layer on 56, 62), 8x (single side)

### Compatibility

- Recording broadcasts that allow one copy: Yes.

### What you can do on this unit

- Chasing playback: Yes.
- X: Impossible

### Deleting titles

- (Available space does not increase after deleting.): Yes.
- (Available space increases only when the title recorded last is deleted.): Yes.

### Creating playlists

- (Disc space does not increase after deleting.): Yes.
- (Disc space increases only when the title recorded last is deleted.): Yes.

---

1. You can record onto the second layer of dual- or double-layer discs after closing the first layer. However, you will no longer be able to record to the first layer (56).
2. You may not be able to use +R recorded on this unit in another Panasonic DVD recorder and vice versa. Once the disc is finalized, however, it can be played in the other unit.
3. The amount of the recordable disc space does not increase even if the programme is deleted when you use a one time recording disc.
4. You may use the high-speed recording discs shown in the chart, but using them will not shorten the recording time.
5. You cannot record programmes that allow “One time only recording” to CPRM compatible DVD-R, DVD-R DL and DVD-RW on this unit. You can record other programmes in the DVD-Video format.
6. You can use high-speed recording compatible discs on this unit.
7. This unit cannot record to discs containing both PAL and NTSC signals. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.

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.

---

Note: The explanations concerning discs are indicated by [DVD] and those concerning video cassettes are indicated by [VHS].
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>CD</th>
<th>Video CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logo</td>
<td>[DVD Video]</td>
<td>[DVD Audio]</td>
<td>[DVD-RW]</td>
<td>[CD]</td>
<td>[Video CD]</td>
</tr>
<tr>
<td>Indicated in these instructions with</td>
<td>[DVD]</td>
<td>[DVD-A]</td>
<td>[DVD-RW]</td>
<td>[CD]</td>
<td>[Video CD]</td>
</tr>
<tr>
<td>Instructions</td>
<td>High quality movie and music discs</td>
<td>High fidelity music discs</td>
<td>DVD-RW recorded on another DVD Recorder</td>
<td>Recorded audio and music (including CD-R/RW)</td>
<td>CD-R and CD-RW with DivX video contents, music recorded in MP3 and still pictures (JPEG and TIFF)</td>
</tr>
</tbody>
</table>

* Play may be impossible on some DVD-RW (DVD Video Recording format), CD-R or CD-RW discs due to the condition of the recording.
* You can play DivX video contents recorded on DVD-R and DivX video contents, 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 on the computer.
* 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.

Note about using a DualDisc

The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so play may not be possible.

Regarding DVD-Audio

Some multi-channel DVD-Audio will prevent down-mixing (⇒ 62) of all or part of their contents if this is the manufacturer's intention. Tracks that are prevented from being down-mixed will not play properly on this unit (e.g., audio is played from the front two channels only). Refer to the disc's jacket for more information.

**Discs that cannot be played**

- 2.6/5.2 GB DVD-RAM, 12 cm
- 3.95/4.7 GB DVD-R for Authoring
- DVD-R recorded in DVD Video Recording format
- DVD-R (DVD-Video format), DVD-R DL, DVD-RW (DVD-Video format), DVD-R+R DL recorded on another unit and not finalized (⇒ 62, Finalize)
- For Asia
  - DVD-Video with a region number other than “3” or “ALL”
- For Australia and New Zealand
  - DVD-Video with a region number other than “4” or “ALL”
- For the Middle East
  - DVD-Video with a region number other than “2” or “ALL”
- Blu-ray, DVD-ROM, +R 8 cm, CD-ROM, CDV, CD-G, Photo CD, CDV, SVCD, SACD, MV-Disc, PD, etc.

**Concerning logo marks**

**Dolby Digital (⇒ 58)**
This is a method of coding digital signals developed by Dolby Laboratories. Not only stereo (2 channel) audio, these signals can also be multi-channel audio. A large amount of audio information can be recorded on one disc by this method.

**DTS Digital Surround (⇒ 58)**
This surround system is used in many movie theatres around the world. The separation between channels is good and the compression ratio is low, so realistic sound effects are possible.
Disc information

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

<table>
<thead>
<tr>
<th>TV type</th>
<th>Disc</th>
<th>Playable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-system TV</td>
<td>PAL</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>NTSC</td>
<td>×</td>
</tr>
<tr>
<td>NTSC TV</td>
<td>PAL</td>
<td>×</td>
</tr>
<tr>
<td></td>
<td>NTSC</td>
<td>√-2</td>
</tr>
<tr>
<td>PAL TV</td>
<td>PAL</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>NTSC</td>
<td>√-3(PAL 60)</td>
</tr>
</tbody>
</table>

-° Possible
-× Impossible

If you select “NTSC” in “TV System” (59), the picture may be clearer.
Select “NTSC” in “TV System” (59).

If your TV is not equipped to handle PAL 525/60 signals, the picture will not be displayed correctly.

How to hold a disc
Do not touch the recorded 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 the discs. (This may cause disc warping and unbalanced rotation, rendering it unusable.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not drop, stack, or cause impact to 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 differences 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.

Maintenance

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

To clean the unit, wipe with a soft, dry cloth.
- Never use alcohol, paint thinner or benzine to clean the 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 lens cleaner about once every year depending on the frequency of use and the operating environment.
Carefully read the lens cleaner’s instructions before use.

Optional accessories
(Product numbers correct as of April 2006. These may be subject to change.)

DVD-RAM
- 9.4 GB, double-sided, cartridge type:
  - LM-AD240LE (compatible with high speed recording 3X)
  - LM-AE240LE (Pro Hard Coating, compatible with high speed recording 3X)
- 4.7 GB, single-sided, cartridge type:
  - LM-AB120LE (compatible with high speed recording 3X)
  - LM-AE120LE (Pro Hard Coating, compatible with high speed recording 3X)
  - 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)

DVD-RW
- 4.7 GB, single-sided, non-cartridge:
  - LM-RW120E (compatible with high speed recording 2X)
Using DVD-R, DVD-R DL, DVD-RW, +R, +R DL and +RW 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-R DL, DVD-RW, +R, +R DL and +RW 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 (copying).
Some television programmes are broadcast with main (M 1) and secondary audio (M 2). You have to select the audio recording type before recording or transferring (copying) them to DVD-R, etc.

- When recording from a TV tuner
- When recording from the external equipment
  - Select M 1 or M 2 on the external equipment.

- Playing the disc on other DVD players
The disc must be finalized after recording or transferring (copying) (56).
It is necessary to finalize DVD-R, etc. on this unit after recording or transferring (copying) titles to them. You can then play them as a commercially sold DVD-Video. However the discs become play-only and you can no longer record or transfer (copy).
  - You can record and transfer (copy) again if you format DVD-RW and +RW.

- Recording to a DVD-R DL and +R DL
DVD-R DL and +R DL discs have two layers of recordable surfaces on one side.
It is not possible to record continuously from the first layer to the second layer. Recording stops when the space on the first layer becomes full. You must close the first layer to start recording on the second layer. Closing makes the first layer unavailable for recording (editing is still available). You cannot cancel closing. Make certain before proceeding. (56)
Mishandling of batteries can cause electrolyte leakage which can damage the fluid contacts and may cause a fire.

Do not:
- Attempt to recharge alkaline or manganese batteries.
- Take apart or short circuit.
- Heat or expose to flame.
- Use different types at the same time.
- Mix old and new type batteries.
- Use batteries with the covering peeled off.
- Insert so the poles match those in the remote control.

Notes
- To stop them from being pressed accidentally, buttons such as [REC] do not protrude as much as other buttons.
- The word “button” is not used in these operating instructions so “Press [ENTER].” is shown as “Press [ENTER].”
- You can use this remote control to operate your TV if you set the TV manufacturer code (→ 15).

Remote control

About batteries
- Insert the poles (+ and −) match those in the remote control.
- Do not use rechargeable type batteries.
- Do not mix old and new batteries.
- Use different types at the same time.
- Heat or expose to flame.
- Take apart or short circuit.
- Attempt to recharge alkaline or manganese batteries.
- Use batteries with the covering peeled off.
Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

How to use the remote control
- Aim at the sensor, avoiding obstacles, at a maximum range of 7 m directly in front of the unit.
- Keep the transmission window and the unit’s sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, inverter fluorescent lamps and the glass doors on cabinets.
- If you cannot operate the unit or TV using the remote control after changing the batteries, please re-enter the codes (→ 15).
**Main unit**

- **1** Cassette eject button (▲, EJECT) .................................................................................................................. 17
- **2** Disc tray open/close button (▲, OPEN/CLOSE) ................................................................................................. 17
- **3** Stop button (■) .................................................................................................................................................. 19, 32
- **4** Play button (►) .................................................................................................................................................. 26
- **5** Recording button (●, REC) ................................................................................................................................ 18
- **6** Standby/on switch (Í/I) ...................................................................................................................................... 14
- **7** AV2 input terminals (AV2) .................................................................................................................................. 50
- **8** DVD-SEARCH ................................................................................................................................................... 27, 29
- **9** VHS-REW/FF buttons (V/5, 5/W) ................................................................................................................... 32
- **10** Channel up/down Tracking/V-Lock buttons (CH, X, W) .................................................................................. 14, 18, 33, 61

**The unit’s display**

- **A** Recording mode indicator
  - **DVD:** (⇒ 19)
    - XP, SP, LP, EP (all on): FR mode (⇒ 22)
    - VHS: (⇒ 19)
    - SP: When recording or playing in Normal mode.
    - LP: When recording or playing in Long play mode.
    - EP: When recording or playing in Extra long play mode.
  - **B** Main display
  - Current time
  - Disc recording and play counter
  - VHS recording and play counter
  - Miscellaneous messages, etc.

**Common to DVD/VHS**

- **1** Timer recording indicator ( ) (⇒ 23, 24)
  - On: When a timer recording programme is registered and a recordable video cassette is inserted.
  - Flashes: When the unit cannot record a timer recording programme (e.g., there is no video cassette, etc.).
- **2** Tape indicator
- **3** Tape operation status

**VHS**

- **1** Timer recording indicator ( ) (⇒ 23, 24)
  - On: When a timer recording programme is registered and a recordable video cassette is inserted.
  - Flashes: When the unit cannot record a timer recording programme (e.g., there is no video cassette, etc.).
- **2** Disc operation status
- **3** Disc indicator

**DVD**

- **1** Timer recording indicator ( ) (⇒ 23, 24)
  - On: When a timer recording programme is registered and a recordable disc is inserted.
  - Flashes: When the unit cannot record a timer recording programme (e.g., there is no disc, etc.).
- **2** Disc operation status
- **3** Disc indicator

- **Cassette compartment**
- **Remote control signal sensor**
- **Disc tray**
- **The unit’s display**
STEP 1 Connection

- Please read “IMPORTANT SAFETY INSTRUCTIONS”. (→ 2)
- Before connection, turn off all equipment and read the appropriate operating instructions.

Connecting a TV

**Connect in the following order**

1. Aerial lead (not supplied)
2. RF Coaxial cable (supplied)
3. Audio/Video cable (supplied)
4. AC mains lead (supplied)

**Connect the unit directly to the television**

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

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

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

To save power, unplug it from the household mains socket. The unit consumes a small amount of power even when it is turned off.

**Standby power consumption**

<table>
<thead>
<tr>
<th>FL Display (→ 58)</th>
<th>Bright/Dim</th>
<th>Auto</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Start (→ 69)</td>
<td>On</td>
<td>Approx. 7.0 W</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Approx. 2.6 W</td>
</tr>
</tbody>
</table>

- When ‘Power Save’ is set to “On”, the “Quick Start” function does not work.

**Quick Start** (→ 59)

1 Sec. Quick Start for Recording on DVD-RAM:
- From the power off state, recording on DVD-RAM starts about 1 second after first pressing the [■], DVD/VHS] and then sequentially pressing the [■, REC] (Quick Start Mode).
To enjoy multi-channel surround sound on DVD-Video

- Connect an amplifier with a built-in Dolby Digital or DTS decoder displaying the logos on the right.
- Change the settings in “Digital Audio Output.” (p. 58)
- Before purchasing an optical digital audio cable (not supplied), check the terminal shape of the connected equipment.
- You cannot use any amplifier with a DTS Digital Surround decoder not suited to DVD.
- Even if the unit is connected as illustrated, the output of DVD-Audio will only be in 2 channels.

1. Rear panel of the unit
2. Digital output terminal
3. Optical digital audio cable (not supplied)
4. Insert fully, with this side facing up.
5. Optical digital input terminal
6. Amplifier’s rear panel

Connecting an amplifier or system component

Connecting an amplifier with a digital input terminal

To enjoy multi-channel surround sound on DVD-Video

- Connect an amplifier with a built-in Dolby Digital or DTS decoder displaying the logos on the right.
- Change the settings in “Digital Audio Output.” (p. 58)
- Before purchasing an optical digital audio cable (not supplied), check the terminal shape of the connected equipment.
- You cannot use any amplifier with a DTS Digital Surround decoder not suited to DVD.
- Even if the unit is connected as illustrated, the output of DVD-Audio will only be in 2 channels.

1. Rear panel of the unit
2. Optical digital output terminal
3. Optical digital audio cable (not supplied)
4. Insert fully, with this side facing up.
5. Optical digital input terminal
6. Amplifier’s rear panel

Connection to an analogue stereo amplifier

1. Rear panel of the unit
2. Audio output terminals (L/R)
3. Audio cable (not supplied)
4. Red (R)
5. White (L)
6. Audio input terminals (L/R)
7. Amplifier’s rear panel

DVD output and DVD/VHS output

The unit has DVD/VHS COMMON OUT terminals and DVD PRIORITY OUT terminals.

DVD/VHS COMMON OUT
- For DVD/VHS COMMON OUT terminals, both DVD and VHS signals can be output.

DVD PRIORITY OUT
- This is the dedicated terminal to enjoy pictures played on DVD in higher picture quality. (p. right)
- The DVD PRIORITY OUT terminals can also output the VHS signal. However this is not possible during DVD recording or DVD timer recording.

To enjoy even higher fidelity

Connection to the TV’s S Video terminal

S VIDEO OUT terminal
The S VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the TV.) After connecting the unit to the TV (p. 12), connect the S Video cable as illustrated below.

1. Audio input terminals (L/R)
2. S Video input terminal
3. Audio cable (not supplied)
4. White (L)
5. S Video cable (not supplied)
6. Rear panel of the unit
7. S Video output terminal

Connection to the TV’s component video terminals

COMPONENT VIDEO OUT terminal
These terminals can be used for either interlace or progressive output (p. 62) and provide a purer picture than the S VIDEO OUT terminal. Connection using these terminals outputs the colour difference signals (PB/PR) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours.

If the TV is compatible with progressive output, a high quality picture can be output because the unit’s component video output terminal outputs a progressive output signal.
- For progressive output (p. 16)
- After connecting the unit to the TV (p. 12), connect the video cable as illustrated below.
- Connect to terminals of the same colour.

1. Component input terminals
2. Audio input terminals (L/R)
3. Video cables (not supplied)
4. Audio cable (not supplied)
5. Red (R)
6. White (L)
7. Component video output terminals
8. Audio output terminals (L/R)

Connecting an amplifier with a digital input terminal

To enjoy multi-channel surround sound on DVD-Video

- Connect an amplifier with a built-in Dolby Digital or DTS decoder displaying the logos on the right.
- Change the settings in “Digital Audio Output.” (p. 58)
- Before purchasing an optical digital audio cable (not supplied), check the terminal shape of the connected equipment.
- You cannot use any amplifier with a DTS Digital Surround decoder not suited to DVD.
- Even if the unit is connected as illustrated, the output of DVD-Audio will only be in 2 channels.

1. Rear panel of the unit
2. Digital output terminal
3. Optical digital audio cable (not supplied)
4. Insert fully, with this side facing up.
5. Optical digital input terminal
6. Amplifier’s rear panel

Connection to a system component

1. Rear panel of the unit
2. Optical digital output terminal
3. Optical digital audio cable (not supplied)
4. Insert fully, with this side facing up.
5. Optical digital input terminal
6. Amplifier’s rear panel

DVD output and DVD/VHS output

The unit has DVD/VHS COMMON OUT terminals and DVD PRIORITY OUT terminals.

DVD/VHS COMMON OUT
- For DVD/VHS COMMON OUT terminals, both DVD and VHS signals can be output.

DVD PRIORITY OUT
- This is the dedicated terminal to enjoy pictures played on DVD in higher picture quality. (p. right)
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To enjoy even higher fidelity

Connection to the TV’s S Video terminal

S VIDEO OUT terminal
The S VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the TV.) After connecting the unit to the TV (p. 12), connect the S Video cable as illustrated below.

1. Audio input terminals (L/R)
2. S Video input terminal
3. Audio cable (not supplied)
4. White (L)
5. S Video cable (not supplied)
6. Rear panel of the unit
7. S Video output terminal

Connection to the TV’s component video terminals

COMPONENT VIDEO OUT terminal
These terminals can be used for either interlace or progressive output (p. 62) and provide a purer picture than the S VIDEO OUT terminal. Connection using these terminals outputs the colour difference signals (PB/PR) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours.

If the TV is compatible with progressive output, a high quality picture can be output because the unit’s component video output terminal outputs a progressive output signal.
- For progressive output (p. 16)
- After connecting the unit to the TV (p. 12), connect the video cable as illustrated below.
- Connect to terminals of the same colour.

1. Component input terminals
2. Audio input terminals (L/R)
3. Video cables (not supplied)
4. Audio cable (not supplied)
5. Red (R)
6. White (L)
7. Component video output terminals
8. Audio output terminals (L/R)
STEP 2 Auto-Setup

Auto-Setup automatically tunes all available stations.

1. Switch on the TV.
2. Select the AV input on your TV.
3. Press [DVD/VHS] to switch the unit on.

4. For Asia and the Middle East
   Auto-Setup starts automatically. Skip to step 5.

5. For Australia and New Zealand
   Press [3, 4] to select the country and then press [ENTER].
   The pre-set channel settings are used and the clock setting menu appears when “Australia” is selected.
   However, Auto-Setup starts when “New Zealand” or “Others” is selected.

Auto-Setup starts. This takes about 8 minutes.

6. Press [ENTER] when you have finished the settings.
   After the clock settings are complete the TV aspect setting screen appears.

7. Press [3, 4] to select the TV aspect and then press [ENTER].
   • 16:9: 16:9 widescreen television
   • 4:3: 4:3 aspect television
     - PAL: Titles are recorded as they appear on the screen.
     - DVD-V: Video recorded for a widescreen is played as Pan & Scan (unless prohibited by the producer of the disc) (→ 62).
     - Letterbox: 4:3 aspect television Widescreen picture is shown in the letterbox style (→ 62).

To stop in the middle
Press [RETURN].

To change the channel settings (→ 60)
To change the TV aspect settings (→ 59)

To restart Auto-Setup (→ 61)
You can also use the following method to restart Auto-Setup.
When the unit is on and stopped.
Press and hold down [CH, ↓] and [CH, ↑] on the main unit simultaneously for about 5 seconds.
All the settings except for the ratings level including the password and time settings return to the factory preset. The timer recording programmes are also cancelled.
STEP 3 Set up to match your TV and remote control

When other Panasonic products respond to this remote control

If you place other Panasonic products close together, change the remote control code on the main unit and on the remote control (the two must match). When changing the remote control code, make sure the two codes are the same. Use “DVD 1”, the factory set code, under normal circumstances.

1 While stopped
   Press [FUNCTIONS].
2 Press [△, ▽] to select “To Others” and then press [ENTER].
3 For Australia and New Zealand
   Press [△, ▽] to select “Setup” and then press [ENTER].
   Check that “Setup” is selected and then press [ENTER].
   If a disc is inserted and “Setup” is not selected, press [△, ▽] to select “Setup” and then press [ENTER].
4 Press [△, ▽] to select “Others” and then press [2, 1].
5 Press [△, ▽] to select “Remote Control” and then press [ENTER].
6 Press [△, ▽] to select the code (“DVD 1”, “DVD 2” or “DVD 3”) and then press [ENTER].
   The code on the unit has been set.
7 While pressing [ENTER], press and hold for about 2 seconds the numbered button ([1], [2] or [3]) corresponding to the code you selected in step 6.
   The code on the remote control has been set.
8 Press [ENTER].
   The unit’s remote control code
   Change the code on the remote control to match the main unit’s code (⇒ step 7).

Selecting the television type

Choose the setting to suit your television and preference.

1 While stopped
   Press [FUNCTIONS].
2 Press [△, ▽] to select “To Others” and then press [ENTER].
3 For Australia and New Zealand
   Press [△, ▽] to select “Setup” and then press [ENTER].
   Check that “Setup” is selected and then press [ENTER].
   If a disc is inserted and “Setup” is not selected, press [△, ▽] to select “Setup” and then press [ENTER].
4 Press [△, ▽] to select “Connection” and then press [2, 1].
5 Press [△, ▽] to select “TV Aspect” and then press [ENTER].
   16:9: 16:9 widescreen television
   4:3: 4:3 aspect television
   LETTERBOX: 4:3 aspect television
   Widescreen picture is shown in the letterbox style (⇒ 62).
6 Press [△, ▽] to select the TV aspect and then press [ENTER].
   16:9: 16:9 widescreen television
   4:3: 4:3 aspect television
   LETTERBOX: 4:3 aspect television
   Widescreen picture is shown in the letterbox style (⇒ 62).

Television operation

Set the remote control as follows to turn the TV On/Off, change the TV input mode, select the TV channel and change the TV volume by means of this remote control.

Point the remote control at the TV
While pressing [◇, TV], enter the code using the numbered buttons.
   e.g., 02: press [0] > [2].

Manufacturer and Code No.

<table>
<thead>
<tr>
<th>Brand</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panasonic/National</td>
<td>01/02/03/04</td>
</tr>
<tr>
<td>GOLDSTAR/LG</td>
<td>15/16</td>
</tr>
<tr>
<td>HITACHI</td>
<td>08</td>
</tr>
<tr>
<td>JVC</td>
<td>07</td>
</tr>
<tr>
<td>MITSUBISHI</td>
<td>08/10</td>
</tr>
<tr>
<td>NEC</td>
<td>13</td>
</tr>
<tr>
<td>PHILIPS</td>
<td>12</td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>17/18</td>
</tr>
<tr>
<td>SANYO</td>
<td>14/19</td>
</tr>
<tr>
<td>SHARP</td>
<td>11</td>
</tr>
<tr>
<td>SONY</td>
<td>05</td>
</tr>
<tr>
<td>TOSHIBA</td>
<td>06</td>
</tr>
</tbody>
</table>

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

This remote control is not compatible with your TV if your TV brand is not listed or if the code listed for your TV does not allow control of your TV.

To return to the previous screen
Press [RETURN].

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

- 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 (13).

- If you have a regular television (CRT: Cathode Ray Tube)
Use component output with progressive “Off” (factory setting 59), even if the television is progressive compatible. Progressive output can cause some flickering. This is the same for multi system televisions using the PAL mode.

To enjoy progressive video
You can enjoy progressive video by connecting the unit’s COMPONENT VIDEO OUT terminals to an LCD/plasma television or LCD projector compatible with progressive scan (62).

1. While stopped
Press [FUNCTIONS].
2. Press [▲, ▼] to select “To Others” and then press [ENTER].
3. Press [▲, ▼] to select “Setup” and then press [ENTER].
4. Press [▲, ▼] to select “Connection” and then press [◄, ►].
5. Press [▲, ▼] to select “Progressive” and then press [ENTER].
6. Press [▲, ▼] to select “On” and then press [ENTER].
Output becomes progressive.

Notes
- 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 (35).
- If the unit is connected to the television through VIDEO OUT or S VIDEO OUT 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.
Recording television programmes

Inserting a disc

1. Press [OPEN/CLOSE] on the main unit to open the tray.
   - You can insert a cartridge or non-cartridge disc.

2. Press [OPEN/CLOSE] on the main unit to close the tray.
   - If you insert a DVD-RAM with the write-protect tab set to "PROTECT" ( Kontakt → 55), play starts automatically.

Notes

- A double-sided disc should be loaded with the side you want to record/play facing down.
- It is not possible to record continuously from one side of a double-sided disc to the other. You will need to eject the disc and turn it over.
- When using 8 cm DVD-RAM or 8 cm DVD-R, remove the disc from the cartridge.

- The surface on which you can see a roll of tape should face up.

Inserting a video cassette

1. Insert label-up.
2. Insert fully so it clicks into place.
3. Insert label-up with the arrow facing in.

Before recording

- CDV
   - The created title menu is deleted when recording on the disc. Create the title menu again by using "Create Top Menu" in DVD Management ( Kontakt → 55).

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

Video cassette maintenance

Cleaning the video heads

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

After recording

- DVD
  - Finalize ( Kontakt → 56) the disc to make it playable on other equipment or set the protection ( Kontakt → 55) so that you do not accidentally erase the contents.

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

**Recording procedures**

1. Insert a disc. (→ 17)
   - If the "Format" screen appears (→ 20, When the format confirmation screen is displayed).
   - When using a DVD-RAM for the first time with this unit, format it to ensure accurate recording (→ 55, Format Disc)
   - Or
   - Insert a video cassette with an intact accidental erasure prevention tab. (→ 17)

2. Press [CH, , , ] to select the channel.

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

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


- You cannot change the channel or recording mode during the recording.

**Preparation**

- Select the unit viewing channel (e.g., AV input) on the TV.
- Release protection (disc → 55, cartridge → 55).
- Press [ , DVD/VHS] to turn the unit on.
- Press [DRIVE SELECT] to select the drive you want to record on (DVD or VHS).
- Select the audio type you want to record. (→ 21)

- You can record up to 99 titles on a disc.
- You can record up to 49 titles on a disc.
- It is not possible to record digital broadcasts that allow "One time only recording" onto DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW or 8 cm DVD-RAM discs. Use a CPRM compatible DVD-RAM.
- The recording will take place on the open space in the disc.
- Existing data will not be overwritten.
- If there is no space left on the disc you intend to record on, you will need to delete unwanted titles (→ 27, 37) or use a new disc.

- When recording to DVD-R, DVD-R DL, DVD-RW (DVD-Video format) +R, +R DL or +RW
  - You can record up to 99 titles on a disc.
  - You can record up to 40 titles on a disc.
  - It is not possible to record digital broadcasts that allow "One time only recording" onto DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW or 8 cm DVD-RAM discs. Use a CPRM compatible DVD-RAM.
  - The recording will take place on the open space in the disc.
  - Existing data will not be overwritten.
  - If there is no space left on the disc you intend to record on, you will need to delete unwanted titles (→ 27, 37) or use a new disc.

- When recording bilingual TV broadcasts
  - If you are not recording from external equipment
    Select "M 1" or "M 2" in "Bilingual Audio Selection" in the Setup menu (→ 58).
  - If you are recording from external equipment
    Select M 1 or M 2 on the external equipment.
  - The aspect ratio of the recorded image will be 4:3.

- In order to play a DVD-R, DVD-R DL, DVD-RW (DVD-Video format)
  +R, +R DL or +RW recorded with this unit on other playback equipment, the disc must first be finalized (→ 56).
  - To enable play on other DVD equipment, use "Create Top Menu" in the DVD Management menu (→ 55).

- You can change the audio being received by pressing [AUDIO] during the recording. (This does not affect the actual audio being recorded.)
To pause recording
Press [PAUSE]. (Press again to restart recording.)
- RAM: Title is not split into separate titles.
- You can also press [RECORD] to restart recording.

To stop recording
Press [STOP].
- DVD: Recorded as a title until the position where stopped.
- HR: RWHV: HR: RAVM
It takes about 30 seconds for the unit to complete recording the management information after the recording finishes.

To show the remaining time
- DVD: Press [STATUS] several times. (⇒ 36)
- VHS: Make sure that the corresponding video cassette length is correctly selected for "Tape Length" in the Setup menu.
Press [STATUS] several times. (⇒ 36)
- The remaining time may not be displayed correctly depending on the video cassette being used.

Notes
- Even if the video cassette is labelled "S-VHS", it is not possible to record in the S-VHS system with this unit.
- This unit records in the normal VHS system.
- When recording is paused for 5 minutes or more, the unit returns to stop.

Recording modes and approximate recording times

### DVD recording modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Picture quality</th>
<th>Recording time</th>
</tr>
</thead>
<tbody>
<tr>
<td>XP (High quality)</td>
<td>1 h</td>
<td>55 min</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>1 h 40 min</td>
<td>1 h 50 min</td>
</tr>
<tr>
<td>LP (Long play)</td>
<td>4 h 30 min</td>
<td>3 h 50 min</td>
</tr>
<tr>
<td>EP (Extra long play)</td>
<td>7 h 25 min (5 h 30 min)</td>
<td>6 h 45 min (5 h 15 min)</td>
</tr>
<tr>
<td>FR (Flexible Recording)</td>
<td>7 h 25 min maximum</td>
<td>6 h 50 min maximum</td>
</tr>
</tbody>
</table>

This unit uses variable bit rate (VBR) recording which varies the amount of data recorded to suit the images, so actual recording times and remaining recording times shown by the unit will be different. (The difference will be especially noticeable with DVD-R DL and +R DL.) Use a disc with plenty of remaining time to be sure.

1 If it is not possible to record 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.
3 The sound quality is better when using "EP (6 Hours)" than when using "EP (8 Hours)".
4 It is not possible to record continuously from the first layer to the second layer.

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

FR (Flexible Recording mode ⇒ 22):
- You can set FR mode when transferring (copying) or programming timer recordings.

Quick Start (⇒ 59)
- 1 Sec. Quick Start for Recording on DVD-RAM:
  - From the power off state, recording on DVD-RAM starts about 1 second after first pressing the [DVD/VHS] and then sequentially pressing the [REC] (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.

VHS recording modes

### Recording mode

- SP: When recording or playing in the Normal mode.
- LP: When recording or playing in the Long play mode.
- EP: When recording or playing in the Extra long play mode.
- To have a longer recording capacity, select "LP" or "EP".
- If the image quality is important to you or if you wish to store the video cassette for a long period, select "SP".

<table>
<thead>
<tr>
<th>Mode</th>
<th>Single-sided (4.7 GB)</th>
<th>Double-sided (9.4 GB)</th>
<th>DVD-R DVD-RW +R, +RW (4.7 GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XP (High quality)</td>
<td>1 h</td>
<td>2 h</td>
<td>1 h</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>2 h</td>
<td>4 h</td>
<td>2 h</td>
</tr>
<tr>
<td>LP (Long play)</td>
<td>4 h</td>
<td>8 h</td>
<td>4 h</td>
</tr>
<tr>
<td>EP (Extra long play)</td>
<td>8 h (6 h)</td>
<td>16 h (12 h)</td>
<td>8 h (6 h)</td>
</tr>
<tr>
<td>FR (Flexible Recording)</td>
<td>8 h maximum</td>
<td>8 h maximum on one side</td>
<td>8 h maximum</td>
</tr>
</tbody>
</table>
When you insert a new disc or a disc recorded on a computer or other equipment, a format confirmation screen might be displayed. Format the disc to use it. However all the recorded contents will be deleted.

Press [2] to select “Yes” and then press [ENTER].

≥ Several steps are necessary to format a disc. Refer to “Format Disc” (p. 55).

When you press [<], OPEN/CLOSE on the main unit:
The following screen appears when you have not processed the disc for play on other equipment.

To finalizing the disc
Press [ ], REC on the main unit.
≥ You cannot stop this process once you have started it.
≥ If you want to provide the disc with a name or set a play menu, select “Disc Name” (p. 54) or “Auto-Play Select” (p. 55) before finalizing.

When opening the tray without disc finalization
Press [ ], OPEN/CLOSE on the main unit.
Specifying the time when recording will stop

Press [DIRECT NAVIGATOR].

Playing while you are recording

Playing DVD while recording VHS

Playing VHS while recording DVD

Watching the TV while recording

Select audio to record

Playing VHS while recording DVD

You can play video cassettes while recording to discs. The recording will not be affected.

For your reference

You cannot record on video cassettes while recording on DVD.

Press [DIRECT NAVIGATOR].

To exit the Direct Navigator screen

Press [DIRECT NAVIGATOR].

For your reference

During simultaneous recording and play, you cannot edit or delete titles with the Direct Navigator or playlists.

Even if you start play while the unit is on standby for timer recording, recording starts when the time you set is reached.

To stop play and recording

Press [DIRECT NAVIGATOR].

Recording television programmes

While recording

Press [DIRECT NAVIGATOR].

Playing while you are recording

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

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

For your reference

During simultaneous recording and play, you cannot edit or delete titles with the Direct Navigator or playlists.

Even if you start play while the unit is on standby for timer recording, recording starts when the time you set is reached.

To stop play and recording

Press [DIRECT NAVIGATOR].

Hint

Sound is not output while fast-forwarding.

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

For your reference

Sound is not output while fast-forwarding.

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

For your reference

Play cannot be started until at least 2 seconds after recording starts.

Playing DVD while recording VHS

You can play discs while recording VHS. The recording will not be affected.

For your reference

You cannot record on discs while recording on VHS.

Playing VHS while recording DVD

You can play video cassettes while recording to discs. The recording will not be affected.

For your reference

You cannot record on video cassettes while recording on DVD.

Watching the TV while recording

Press [AV] to change the input mode to “TV”.

Press TV’s [CH, , , ] to select the desired TV channel.

For your reference

You can also do this if the unit is making a timer recording.

The recording is not affected.
Recording television programmes

Flexible Recording mode (FR)

The unit calculates a recording rate that enables the recording to fit in the time you set (within the remaining time on the disc) with the best picture quality.

Using “Flexible Rec” is convenient in the following situations.

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

E.g., Recording a 90 minute programme to disc
If you select XP mode, the programme will not fit on one disc.

A second disc is necessary for 30 minutes of the programme.

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

However there will be 30 minutes remaining disc space.

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

Preparation

- Press [DRIVE SELECT] to select the DVD.
- Select the channel to record.

1. While stopped
- Press [F Rec].

Maximum recording time
This is the maximum recording time in FR mode.

2. Press [, ] to select “Hour” and “Min.” and then press [, ] to set the recording time.

- You can also set the recording time with the numbered buttons.
- Maximum recording time is 8 hours. (This depends on disc capacity.)

3. When you want to start recording
- Press [, , , ] to select “Start” and then press [ENTER].

- Recording starts.

To exit the Flexible Rec window without recording
Press [RETURN].

To stop recording in the middle
Press [■, STOP].

To show the time remaining until the recording finishes
Press [STATUS] several times. ( 36)

- The remaining time is displayed in hours and minutes.

For your reference

- During a Flexible Recording, all recording mode indicators light up on the unit’s display.
- It is not possible to change the channel or recording mode while Flexible Recording is paused.
Timer Recording

Cautions for using timer recording

- Timer recording automatically starts at the set time.
  - When the timer recording starts, the unit will turn off the sound and the video cannot be output to the TV.
- Timer recording cannot be executed on both DVD and VHS at the same time.
  - Make sure that the timer recording times do not overlap on the Timer Recording screen (⇒ 25).

When the timer recording settings overlap:

- Recording of the programme with the later start time starts when the earlier programme finishes recording.
- If there is a VHS timer recording that overlaps a DVD timer recording that is currently being recorded, it may not be possible to operate the VHS during the overlap.

Timer Recording

RAM [±R] DL [±RW] [±R] SP [±R] LP [±R] AUTO

It is possible to enter a total of 16 DVD and VHS programmes a month in advance.

Preparation

- Select the unit viewing channel (e.g., AV input) on the TV.
- Check that the clock is set to the correct time. If it has not been set, set it (⇒ 61).
- RAM - Release protection (disc ⇒ 55, cartridge ⇒ 55).
- Insert a disc (⇒ 17) and confirm there is sufficient empty space for recording on it (⇒ 36).
- Insert a video cassette with an intact accidental erasure prevention tab (⇒ 17).
- RL/FL/DL/RWVL/HR/HR/DL/HRW When recording bilingual broadcasts, only the audio selected in “Bilingual Audio Selection” (⇒ 58) is recorded (“M 1” or “M 2”).
- Press [DRIVE SELECT] to select the drive you want to record on (DVD or VHS).

Using G-CODE system

Entering the G-CODE® numbers is an easy way of timer recording. You can find these numbers in the TV listings in newspapers and magazines.

1. Press [G-Code].

2. Press the numbered buttons to enter the G-CODE number.

3. Press [ENTER].

4. Press [DRIVE SELECT] to start recording on the selected drive.

Notes

Refer to “Notes on timer recording” (⇒ 24).

G-CODE® is a registered trademark of Gemstar Development Corporation.

The G-CODE system is manufactured under license from Gemstar Development Corporation.
Notes on timer recording

- "○" flashes when the unit cannot go to timer recording standby (non-recordable disc or protected disc, etc.). Check the disc or video cassette carefully.
- When the disc or video cassette is removed, timer recording standby is cancelled (the "○" indicator goes out). You can put the unit back on standby by inserting a recordable disc or video cassette (the "○" indicator comes on again).
- If the unit is not put in the timer recording standby mode at least 10 minutes before the programmed timer recording starting time, the "○" indicator flashes on the unit’s display. In this case, insert a recordable disc or video cassette to put the unit in the timer recording standby mode.
- When you set 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 DVD-RAM and approximately 30 seconds when recording with DVD-R, DVD-R DL, DVD-RW, +R, +R DL and +RW).
- You can play or record on DVD, play or record on VHS even if the timer recording standby mode is activated.
- Timer recording can be started whether the unit is turned on or off. When the timer recording starts while the unit is turned on, the unit will not automatically turn off after the timer recording is complete. To save power turn the unit off by pressing [DRIVE SELECT]. You can turn the unit off during timer recording. This will not affect the recording.
Check, change or delete programmes

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

It is also possible to edit the Timer Recording screen while timer recording is performing. However, you cannot edit the programme that is currently being recorded.

1. Press [PROG/CHECK].

<table>
<thead>
<tr>
<th>Icon explanations (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>◎: Currently recording</td>
</tr>
<tr>
<td>◎: Programmes are overlapped. Recording of the programme with the latest start time starts when the earlier programme finishes recording.</td>
</tr>
<tr>
<td>◎: Timer recording standby is on. The recording will start at the set time.</td>
</tr>
<tr>
<td>◎: You stopped a weekly or daily timer recording. The icon disappears when the next timer recording starts.</td>
</tr>
<tr>
<td>◎: The TV programme may not be recorded due to copy-protect.</td>
</tr>
<tr>
<td>◎: Recording stopped. (Dirty disc or video cassette, etc.)</td>
</tr>
<tr>
<td>Check (3): Recordable. DVD</td>
</tr>
<tr>
<td>OK: When (Date): The last day of daily or weekly recording. DV</td>
</tr>
<tr>
<td>(1): It may not be possible to record because:</td>
</tr>
<tr>
<td>◎: The disc is write-protected.</td>
</tr>
<tr>
<td>◎: There is no more space left.</td>
</tr>
<tr>
<td>◎: The number of possible titles has reached its maximum.</td>
</tr>
<tr>
<td>◎: The new timer recording will completely or partially record over this timer recording.</td>
</tr>
<tr>
<td>◎: The timer recording was not performed or completed for the following reasons:</td>
</tr>
<tr>
<td>◎: A disc or a video cassette was not inserted.</td>
</tr>
<tr>
<td>◎: A disc or a video cassette without a secure accidental erasure prevention tab was inserted.</td>
</tr>
<tr>
<td>◎: The remaining recording time on the video cassette was insufficient.</td>
</tr>
<tr>
<td>◎: All other recordable cases.</td>
</tr>
</tbody>
</table>

2. Press [▲, ▼] to select the programme.
   - You can also select the programme by inputting a 2-digit number using the numbered buttons.
     - e.g.: “5”: [0]→[5] |
     - “15”: [1]→[5] |
     - Press [◄, ►] to move to the preceding or following page.

3. Press [◄] to delete or press [ENTER] to change.
   - You cannot delete or change the programme that is currently being recorded.

4. If you pressed [ENTER] in step 3, Press [▲, ▼, ◄, ►] to change the settings and then press [ENTER].

To continue changing the programmes, repeat steps 2 to 4.

5. Press [RETURN].

The timer recording standby mode is activated.

However, the unit will not be turned off automatically.

- If a timer recording starts while the unit is turned on, the unit will not automatically turn off after the timer recording is complete. To save power turn the unit off by pressing [0] (DVD/VHS).
- You can turn the unit off during timer recording. This will not affect the recording.

For your reference

- Programmes that failed to record are deleted from the timer recording list at 4 a.m. 2 days later.

Cancel a timer recording that has already begun

1. Press [DRIVE SELECT] to select the drive currently recording and then press [■, STOP].

- A confirmation screen appears.

2. Press [▲] to select “Stop Recording” and then press [ENTER].

- The recording stops and the timer recording programme is deleted from the Timer Recording screen. (Daily and weekly timer recordings are not deleted and timer recording will start as set.)

Release programme from standby

Each programme in the Timer Recording screen can be released from recording standby.

1. Press [PROG/CHECK].

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

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

- It is also possible to press [A] to release recording standby. The Timer Recording icon disappears.

- Be sure to repeat these steps and select “Timer On” in step 3 or press [A] in step 3 before the set recording time to put the programme on recording standby. The timer recording will only work if the programme is in recording standby and the timer icon is displayed.

Auto SP/LP mode

If, at the beginning of a timer recording, there is not enough tape remaining to complete the recording, the Auto SP/LP function will automatically run the tape at LP speed for recording. This ensures that the entire programme will be recorded. If LP mode is not enough to stretch the remaining tape to fit the whole programme you will not be able to record the whole TV programme.

**VHS**

- 30 min. in SP |
- 15 min. in LP (45 min.)

Video cassette (e.g., 60-minute cassette)

- It is not possible to automatically activate EP mode.
- The tape length must be set correctly. (59)
- This may not work correctly with some video cassettes.
- It may not work correctly when NTSC is set as the “TV System”. (59)
- If the recording mode changes from SP to LP during a timer recording, some picture distortion occurs at that point.
Playing discs

Preparation
• Select the unit viewing channel (e.g. AV input) on the TV.

Playing discs

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

1. Press [DIRECT NAVIGATOR].

2. Press [A, V, , , ] to select the title you want to watch and then press [ENTER].
   ● Play starts.
   ● You can also select titles by entering a 2-digit number with the numbered buttons.
   e.g.: "5" [0] [5]
   "15" [1] [5]
   ● If you enter a number larger than the total number of titles, the last title is selected.
   ● Press [ ] to select an item and press [ENTER].
   ● Press [ , SKIP] or [ , SKIP] to show other pages.

To stop play
Press [ , STOP]. (The Title View screen appears.)

To exit the screen
Press [RETURN].

For your reference
Direct Navigator screen icons
Title protected
Copy-protected so it was not recorded.
Unable to play
Current recording
Title with "One time only recording" restriction (⇒ 62, CPRM)
Title recorded using a different encoding system from that of the TV system currently selected on the unit.

Quick View (Play × 1.3)

RAM
The play speed can be increased without distorting the audio.
During Play
Press and hold [ , PLAY].

To return to normal speed
Press [ , PLAY].

Manual Skip

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

Press [MANUAL SKIP].
Each time you press [MANUAL SKIP], play restarts approximately 30 seconds later.

When a menu screen appears on the TV

VCD
Press the numbered buttons to select an item.
e.g.: "5" [0] [5]
"15" [1] [5]

DVD-A
Press [A, V, , , ] to select an item and press [ENTER].
You can sometimes use the numbered buttons to select an item.

Other buttons used to operate menus
Read the disc’s instructions for further details about operation.

Note
● If " appears on the TV, the operation is prohibited by the unit or disc.

Selecting recorded titles to play

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

1. Press [DIRECT NAVIGATOR].

2. Press [A, V, , , ] to select the title you want to watch and then press [ENTER].
   ● Play starts.
   ● You can also select titles by entering a 2-digit number with the numbered buttons.
   e.g.: "5" [0] [5]
   "15" [1] [5]
   ● If you enter a number larger than the total number of titles, the last title is selected.
   ● Press [ ] to select an item and press [ENTER].
   ● Press [ , SKIP] or [ , SKIP] to show other pages.

To stop play
Press [ , STOP]. (The Title View screen appears.)

To exit the screen
Press [RETURN].

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Quick View (Play × 1.3)

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The play speed can be increased without distorting the audio.
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Press and hold [ , PLAY].

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Press [ , PLAY].

Manual Skip

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

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When a menu screen appears on the TV

VCD
Press the numbered buttons to select an item.
e.g.: "5" [0] [5]
"15" [1] [5]

DVD-A
Press [A, V, , , ] to select an item and press [ENTER].
You can sometimes use the numbered buttons to select an item.

Other buttons used to operate menus
Read the disc’s instructions for further details about operation.

Note
● If " appears on the TV, the operation is prohibited by the unit or disc.

Selecting recorded titles to play

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

1. Press [DIRECT NAVIGATOR].

2. Press [A, V, , , ] to select the title you want to watch and then press [ENTER].
   ● Play starts.
   ● You can also select titles by entering a 2-digit number with the numbered buttons.
   e.g.: "5" [0] [5]
   "15" [1] [5]
   ● If you enter a number larger than the total number of titles, the last title is selected.
   ● Press [ ] to select an item and press [ENTER].
   ● Press [ , SKIP] or [ , SKIP] to show other pages.

To stop play
Press [ , STOP]. (The Title View screen appears.)

To exit the screen
Press [RETURN].

For your reference
Direct Navigator screen icons
Title protected
Copy-protected so it was not recorded.
Unable to play
Current recording
Title with "One time only recording" restriction (⇒ 62, CPRM)
Title recorded using a different encoding system from that of the TV system currently selected on the unit.

Quick View (Play × 1.3)

RAM
The play speed can be increased without distorting the audio.
During Play
Press and hold [ , PLAY].

To return to normal speed
Press [ , PLAY].

Manual Skip

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

Press [MANUAL SKIP].
Each time you press [MANUAL SKIP], play restarts approximately 30 seconds later.

When a menu screen appears on the TV

VCD
Press the numbered buttons to select an item.
e.g.: "5" [0] [5]
"15" [1] [5]

DVD-A
Press [A, V, , , ] to select an item and press [ENTER].
You can sometimes use the numbered buttons to select an item.

Other buttons used to operate menus
Read the disc’s instructions for further details about operation.

Note
● If " appears on the TV, the operation is prohibited by the unit or disc.

Selecting recorded titles to play

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

1. Press [DIRECT NAVIGATOR].

2. Press [A, V, , , ] to select the title you want to watch and then press [ENTER].
   ● Play starts.
   ● You can also select titles by entering a 2-digit number with the numbered buttons.
   e.g.: "5" [0] [5]
   "15" [1] [5]
   ● If you enter a number larger than the total number of titles, the last title is selected.
   ● Press [ ] to select an item and press [ENTER].
   ● Press [ , SKIP] or [ , SKIP] to show other pages.

To stop play
Press [ , STOP]. (The Title View screen appears.)

To exit the screen
Press [RETURN].

For your reference
Direct Navigator screen icons
Title protected
Copy-protected so it was not recorded.
Unable to play
Current recording
Title with "One time only recording" restriction (⇒ 62, CPRM)
Title recorded using a different encoding system from that of the TV system currently selected on the unit.

Quick View (Play × 1.3)

RAM
The play speed can be increased without distorting the audio.
During Play
Press and hold [ , PLAY].

To return to normal speed
Press [ , PLAY].

Manual Skip

RAM  RS  +R  +R DL  +R DL  +R  -R  -R DL

Press [MANUAL SKIP].
Each time you press [MANUAL SKIP], play restarts approximately 30 seconds later.
## Fast forward and rewind — SEARCH

**During Play**
- Press [⏪, SLOW/SEARCH] or [⏩, SLOW/SEARCH].
  - There are 5 search speeds. Each press increases the search speed.
  - Press [▷ PLAY] to restart playback.
  - DivX: Audio is not heard during search.

**For your reference**
- Sound is output only in the first level of fast forward. However, with DVD-Audio (except motion picture parts), CD and MP3, it is output in all levels.
- Depending on the disc, search may not be possible.

**Skipping**
- Press [⏪,.Skip] or [⏩, Skip].
  - Each press increases the number of skips.
  - DivX: Backward [⏪, Skip] only.

**Slow-motion play**
- Press [⏪, SLOW/SEARCH] or [⏩, SLOW/SEARCH].
  - When slow-motion play is continued for about 5 minutes it pauses automatically (excluding DVD-Audio).
  - There are 5 play speeds. Each press increases the play speed.
  - Press [▷ PLAY] to restart playback.

**Frame-by-frame viewing**
- Press [⏪,寅] or [⏩,寅] ([⏸], [▶] or [▶]).
  - Each press shows the next or previous frame.
  - Press [▷ PLAY] to restart playback.

**Direct play**
- You can play from the title, chapter or track you select.

**During Play**
- Press the numbered buttons to select an item.
  ```
  e.g.: "5": [0] [1] [5]
  "15": [0] [0] [0] [0] [1] [5]
  
  DVD-A
  A group number can be specified while the screen saver is displayed.
  e.g.: "5": [5]
  ```
  - With some discs, this only works when stopped (screen saver is displayed).
  - Playing bonus groups
    - Some discs contain bonus groups. If a password screen appears after selecting a group, enter the password with the numbered buttons and press [ENTER]. For the password, refer to the disc’s jacket, etc.

## Deleting a title that is being played

**Once a title is deleted, it cannot be restored.**
Make certain before proceeding.

1. **During Play**
   - Press [DELETE].

2. **Press [>Delete" and press [ENTER].

**For your reference**
- You cannot delete while recording or transferring (copying).
- The disc’s available recording time may not increase after deleting short titles.
- Available space does not increase after deleting.
- Available space increases when the title recorded last is deleted. (The recording space may increase slightly when other titles are deleted.)

## Select an amount of time to skip — Time Slip

**During play**
- Press [TIME SLIP].

**While observing the time indicator at the top right**
- Press [▲, ▼] to set an amount of time to skip and press [ENTER].
  - Play is skipped for the amount of time you specified.
  - Each time you press [▲, ▼] the time increases [▲] or decreases [▼] in 1 minute intervals. (Press and hold for 10-minute intervals)

## Create chapters

**During play**
- Press [CREATE CHAPTER].
  - Press [⏪, Skip] or [⏩, Skip] to skip to the start of a chapter.
  - You cannot activate this function when you are carrying out Transfer (Copy) (44).

**It may not be possible to create the new chapter, if the created chapter is going to be extremely short.**

## Changing audio during play

**Press [AUDIO] to select the audio type.**
- Depending on the type of disc and format, the audio that can be selected varies.

```python
| Format         | Audio Types
|----------------|-------------
| DVD-RAM        | DVD, RAM    |
| DVD-Video      | DTS, Dolby  |
| VCD            | MP3, SD     |
| DVD-A          | Dolby Digital |
| DVD+R          | AAC, LPCM   |
| DVD+R DL       | AAC, LPCM   |
| DVD+RW         | AAC, LPCM   |
| DVD-R          | AAC, LPCM   |
| DVD-R DL       | AAC, LPCM   |
| DVD-RW         | AAC, LPCM   |
```

**E.g.:**
- DVD-A
  - English is the selected language.

**Note**
- If you cannot change the audio type when you are only using an optical digital cable for connection, set “Dolby Digital” to “PCM” (58).
  - Alternatively, you may connect to an amplifier with an Audio/Video cable and change the input on the amplifier to suit the connection.
Using menus to play DivX, MP3 and still pictures (JPEG/TIFF)

You can play DVD-R which contain DivX video contents and CD-R/RW which contain DivX video contents, MP3 and still pictures that have been recorded on a computer.

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

1. Press [ENTER] to play the file type displayed on the screen.
2. Follow the steps below when you want to play files other than the one displayed on the screen.
   1. Press [RETURN] if the illustration above is displayed.
   2. Press [FUNCTIONS].
   3. Press [3, 4] to select "Menu" and then press [ENTER].
   4. Press [3, 4] to select the playback mode and then press [ENTER].
      - If "DivX" is selected: Go to "Playing DivX video contents" step 2, below.
      - If "MP3" is selected: Go to "Playing MP3" step 2 on page 29.
      - If "JPEG" is selected: Go to "Playing a still picture" step 2 on page 30.

Playing DivX video contents

1. Press [DIRECT NAVIGATOR].

- Files are treated as titles.
- Press [9], SKIP or [9], SKIP to show other pages.
- When the MP3 or JPEG Menu is displayed, follow steps 1 to 4 in "To select file type" on the left column and select "DivX" in step 4 to change the playback mode.

2. Press [3, 4] to select the title and then press [ENTER].
   Play starts on the selected title.
   - You can also select a video contents by entering 3-digits with the numbered buttons and then press [ENTER].

To stop play
Press [STOP].
To Exit the screen
Press [DIRECT NAVIGATOR].

Notes
- The picture sizes that were set at the time of recording may prevent the unit from showing pictures in the adequate aspect. You may be able to adjust the aspect through the TV.
- Successive play is not available.

Using the tree screen to find a folder

1. While the file list is displayed
   Press [3] while the title is highlighted to display the tree screen.

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

You cannot select folders that contain no compatible files.

2. Press [A, V] to select the folder and then press [ENTER].
   The file list for the folder appears.

To return to the previous screen
Press [RETURN].
About DivX VOD content

DivX Video-on-Demand (VOD) content is encrypted for copyright protection. In order to play DivX VOD content on this unit, you first need to register the unit. Follow the on line instructions for purchasing DivX VOD content to enter the unit’s registration code and register the unit.

Visit www.divx.com/vod for more information.

Display the unit’s registration code.

1. Press [DIRECT NAVIGATOR].
   - The file list appears.
   - Selected Group No. and Name

G: The Group Number
T: Track Number in the Group
TOTAL: Selected Track Number/Total Track Number

When the DivX or JPEG menu is displayed, follow steps 1 to 4 in “To select the file type” on page 28 and select “MP3” in step 4.

Press [A, V] to select the track and press [ENTER].

- Play starts on the selected track.
- "(" indicates the track currently playing.
- You can also select a track by entering 4-digits with the numbered buttons.
  e.g., "5": [0] [5] "15": [0] [0] [0] [15]

Using the tree screen to find a group (→ below)

To show other groups
Press [◄] (Prev.) or [►] (Next) to show other pages.

To exit the file list
Press [DIRECT NAVIGATOR] or [RETURN].

Using the tree screen to find a group

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

Selected Group Number/Total Group Number
- If the group has no track, "--" is displayed as group number.

- A group (folder) which has no MP3 files is indicated in black. You cannot select groups with no MP3 files.
- Press [◄, ►] to jump layers in the tree screen.

Press [A, V] to select a group and press [ENTER].

The file list of the selected group appears.

To return to the file list
Press [RETURN].

Playing MP3

CD
The unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ 62) on a computer. Files are treated as tracks and folders are treated as groups.

During stop or play
Press [DIRECT NAVIGATOR].

- The file list appears.
- Selected Group No. and Name

G: The Group Number
T: Track Number in the Group
TOTAL: Selected Track Number/Total Track Number

When the DivX or JPEG menu is displayed, follow steps 1 to 4 in “To select the file type” on page 28 and select “MP3” in step 4.

Press [A, V] to select the track and press [ENTER].

- Play starts on the selected track.
- "(" indicates the track currently playing.
- You can also select a track by entering 4-digits with the numbered buttons.
  e.g., "5": [0] [5] "15": [0] [0] [0] [15]

Using the tree screen to find a group (→ below)

To show other groups
Press [◄] (Prev.) or [►] (Next) to show other pages.

To exit the file list
Press [DIRECT NAVIGATOR] or [RETURN].

Using the tree screen to find a group

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

Selected Group Number/Total Group Number
- If the group has no track, "--" is displayed as group number.

- A group (folder) which has no MP3 files is indicated in black. You cannot select groups with no MP3 files.
- Press [◄, ►] to jump layers in the tree screen.

Press [A, V] to select a group and press [ENTER].

The file list of the selected group appears.

To return to the file list
Press [RETURN].
Using menus to play DivX, MP3 and still pictures (JPEG/TIFF)

The unit plays still pictures (JPEG/TIFF) files recorded on CD-R/RW that are finalized (62) on a computer. Files are treated as pictures and folders are treated as albums.

1. Press [DIRECT NAVIGATOR].

When the DivX or MP3 menu is displayed, follow steps 1 to 4 in “To select the file type” on page 28 and select “JPEG” in step 4.

2. Press [DIRECT NAVIGATOR] or [RETURN] to exit the JPEG menu.

To show other pages
1. Press [◄, ►,◄, ►] to select a still picture you want to watch and then press [ENTER].

≥ You can also select a still picture by entering 4-digits with the numbered buttons.
≥ You can watch the still pictures in order by pressing [◄] (previous) or [►] (next).

To rotate a still picture
1. Press [SUB MENU].

2. Press [▲, ▼] to select “Rotate RIGHT” or “Rotate LEFT” and then press [ENTER].

≥ The rotation information will not be stored:
- [CD] Still pictures
- When the disc is protected.
- When played on other equipment.
- When copying pictures.

3. Press [SUB MENU].

4. Press [▲, ▼] to select “Start Slide Show” and then press [ENTER].

≥ Display the JPEG Menu screen by following the steps in “Playing a still picture”. (Left)

You can display still pictures one by one with a regular interval.

1. Press [▲, ▼] to select “Folder” and then press [ENTER].

≥ Display the JPEG Menu screen by following the steps in “Playing a still picture”. (Left)

2. Press [▲, ▼] to select “Folder” and then press [ENTER].

A Selected folder no./Total folder no.

B You cannot select folders that contain no compatible files.

∫ To return to the file list
Press [RETURN].

Using menus to play DivX, MP3 and still pictures (JPEG/TIFF)
Regarding DivX video contents, MP3 and still pictures (JPEG/TIFF)

- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (tracks) and/or folders (groups) and some files (tracks) may not display or be playable.
- The English alphabet and Arabic numbers are displayed correctly. Other characters may not be displayed correctly.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
- This unit is not compatible with ID3 tags.
- The operation may take more time to complete when playing TIFF format still pictures.
- Motion JPEG is not supported.

<table>
<thead>
<tr>
<th>DivX[^1]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Playable discs</strong></td>
<td>CD</td>
</tr>
<tr>
<td><strong>File format</strong></td>
<td>DivX</td>
</tr>
<tr>
<td>Files must have the extension &quot;.DIVX&quot;, &quot;.divx&quot;, &quot;.AVI&quot; or &quot;.avi&quot;.</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum number of folders</strong></td>
<td>300 (including the root folder)</td>
</tr>
<tr>
<td><strong>Maximum number of files</strong></td>
<td>200[^2]</td>
</tr>
<tr>
<td><strong>Supported version</strong></td>
<td>DivX ver.2.11, 4.x, 5.x</td>
</tr>
<tr>
<td>Video</td>
<td></td>
</tr>
<tr>
<td>Number of streams: 1</td>
<td></td>
</tr>
<tr>
<td>Codec: DIV3, DIV4, DIVX, DV50</td>
<td></td>
</tr>
<tr>
<td>Picture size: 32 x 32 to 720 x 576</td>
<td></td>
</tr>
<tr>
<td>FPS (Frames Per Second): Up to 30 fps</td>
<td></td>
</tr>
<tr>
<td>Audio</td>
<td></td>
</tr>
<tr>
<td>Number of streams: Up to 8</td>
<td></td>
</tr>
<tr>
<td>Format: MP3, Dolby Digital (AC3), MPEG</td>
<td></td>
</tr>
<tr>
<td>Multi channel: Dolby Digital (AC3) is possible, MPEG multi is 2 ch conversion.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MP3[^3]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Playable discs</strong></td>
<td>CD</td>
</tr>
<tr>
<td><strong>File format</strong></td>
<td>MP3</td>
</tr>
<tr>
<td>Files must have the extension &quot;.mp3&quot; or &quot;.MP3&quot;.</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum number of folders</strong></td>
<td>300 (including the root folder)</td>
</tr>
<tr>
<td><strong>Maximum number of files</strong></td>
<td>3000[^2]</td>
</tr>
<tr>
<td><strong>Bit rate</strong></td>
<td>32 kbps to 320 kbps</td>
</tr>
<tr>
<td><strong>Sampling frequency</strong></td>
<td>16 kHz/22.05 kHz/24 kHz/32 kHz/44.1 kHz/48 kHz</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Still pictures (JPEG/TIFF)[^4]</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Playable discs</strong></td>
<td>CD</td>
</tr>
<tr>
<td><strong>File format</strong></td>
<td>JPEG, TIFF[^4] (non-compressed RGB chunky format)</td>
</tr>
<tr>
<td>Files must have the extension &quot;.jpg&quot;, &quot;.JPG&quot;, &quot;.tif&quot; or &quot;.TIF&quot;</td>
<td></td>
</tr>
<tr>
<td><strong>Number of pixels</strong></td>
<td>34 x 34 to 6144 x 4096</td>
</tr>
<tr>
<td>(Sub sampling is 4:2:2 or 4:2:0)</td>
<td></td>
</tr>
<tr>
<td><strong>Maximum number of folders</strong></td>
<td>300 (including the root folder)</td>
</tr>
<tr>
<td><strong>Maximum number of files</strong></td>
<td>3000[^2]</td>
</tr>
</tbody>
</table>

[^1]: GMC (Global Motion Compensation) is not supported.
[^2]: The total number of recognizable DivX, MP3, JPEG and other types of files is 4000.
[^3]: This unit is not compatible with ID3 tags.
[^4]: The operation may take more time to complete when playing TIFF format still pictures.
[^5]: Motion JPEG is not supported.

- You can play MP3 and still pictures (JPEG/TIFF) on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.
- When the highest level folders are ‘DCIM’ folders, they are displayed first on the tree.

**Structure of MP3 folders**

Prefix with 4-digit numbers in the order you want to play them.

**Structure of still pictures (JPEG/TIFF)**

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

**Order of play**

A Folder = Group
B File = Track
C Folder

**Order of play**

A Folder = Group
B File = Track
C Folder
Playing a video cassette

Fast-forward/Rewind

While stopped
Press [◄◄, REW] (backward)/[►►, FF] (forward).
*Press [■, STOP] to stop fast-forward/Rewind.

Cue/Review

During play
Press or press and hold [◄◄, REW] (backward)/[►►, FF] (forward).
*Press [►►, PLAY] to restart normal playback.
*If you press and hold these buttons, normal playback restarts by releasing them.

Jet Search

During play
Press [◄◄, REW] (backward)/[►►, FF] (forward) twice. You can increase Cue/Review search speed.
*Press [►►, PLAY] to restart normal playback.
*The picture may not be in colour or the picture may be distorted depending on the TV.

Slow-motion play

During play
Press and hold [II, PAUSE] for about 2 seconds or more.
*Press [►►, PLAY] to restart normal playback.

Jet Rewind

To perform a higher speed rewind
Press [◄◄◄, JET REW].
*The “◄◄” indication appears on the TV screen and “JETREW” appears on the unit’s display.
*Depending on the video cassettes, this function may not work.

S-VHS Quasi Playback (SQPB)

It is also possible to play back video cassettes recorded in the S-VHS system.
*Some picture noise may occur depending on the type of video cassette used.
*It is not possible to fully obtain the high resolution that S-VHS is capable of.
*It is not possible to record in the S-VHS system with the unit.

Repeat Playback

During play or while stopped
Press and hold [II, PLAY] for about 5 seconds or more.
*At the end of the programme the tape automatically rewinds to the beginning of the programme and play starts again (it only works if there is at least 5 seconds of blank space at the end of the programme).
*This continues until you cancel it.
*Depending on the video cassette, this function may not work.

Notes
*Play starts automatically if you insert a video cassette without the accidental erasure prevention tab.

Preparation
*Select the unit viewing channel (e.g. AV input) on the TV.
*Press [0; DVD/VHS] to turn the unit on.
*Press [DRIVE SELECT] to select the VHS.

Insert a recorded video cassette. (► 17)
*Play starts automatically if you insert a video cassette without the accidental erasure prevention tab.

Press [►►, PLAY].

To pause play
Press [II, PAUSE]. (Press again, to restart play.)

To stop play
Press [■, STOP].

During play
Jet Search, cue, review or slow-motion play will be automatically cancelled after 10 minutes and pause play will be automatically cancelled after 5 minutes.
During playback functions other than normal playback, horizontal noise bars may appear on the picture, the colour of the picture may be unstable or the picture may be otherwise distorted.
When playing back a video cassette which was recorded on another VCR, it may be necessary to adjust the tracking (► 33). In some cases the picture quality may still be inferior. This is due to format constraints.
Adjusting the playback picture

■ Manual tracking
The unit usually makes tracking adjustments automatically, but you may need to adjust it manually if noise appears on a video cassette recorded on other equipment.

During play
Press and hold [TRACKING/V-LOCK, +] or [TRACKING/V-LOCK, −] until the noise bars disappear.
* If the noise bars appear during still playback, start slow-motion play and then adjust the tracking.

■ Vertical locking adjustment
If the still picture shakes, perform the following operation.

While paused
Press and hold [TRACKING/V-LOCK, +] or [TRACKING/V-LOCK, −] until the picture stops shaking.

To return to auto tracking
Press both [TRACKING/V-LOCK, +] and [TRACKING/V-LOCK, −] simultaneously.

To remove the noise from a paused picture
Start slow-motion play, then adjust the tracking.

Notes
* This function may not work with some TVs and video cassettes.
* You can also adjust the tracking and vertical synchronization with [CH, x] and [CH, w] on the main unit.

VHS Index Search System (VISS)
The unit automatically records special index signals onto the tape every time a recording is started. The index search function makes use of these index signals to let you find the beginning of a desired programme quickly and easily.

Index signals are recorded in the following cases.
* When a recording is started by pressing [ ], REC).
* When timer recording is started.

While stopped or during normal play
Press [ ], INDEX] or [ ], INDEX].
* The unit automatically starts playback after the index signal is found.
* Each press increases the number of skips.

To cancel the index search
Press [ ], STOP].

Notes
* Up to 20 index signals can be searched for in both directions.
* When you press either of the buttons too much, you can correct the number of skips by pressing the opposite button.
* The figure on the display decreases by 1 each time an index signal is located.
* This feature may not work correctly if the index signals are too close together. Make recordings of at least 5 minutes.

Changing audio during play

Press [AUDIO] to select the audio type.
The audio changes as follows:
L R (Stereo) → L → R → No display (Normal audio track)

Various indications in on-screen display

When playing back VHS, the on-screen displays that are illustrated below can be displayed.

The following displays appear.

1. Currently selected drive
2. Audio indicators
   The Left (L) and Right (R) indicators show which sound mode is selected as follows:
   L R (Stereo): Both the L and R indicators appear.
   L: The L indicator appears.
   R: The R indicator appears.
3. Operation status display
4. Tape running display
   Pressing [STATUS] once makes the on-screen display appears. After that, press the button repeatedly to change the display as follows:
   No display → Tape counter → Remaining tape time
   • Press [ ], RESET] to reset the tape counter (elapsed time) to “0:00.00”. The tape counter is automatically reset to “0:00.00” when inserting a video cassette.
   • The remaining time is approximate. It will be incorrect if you set the wrong tape time in the “Tape length” item in the “Setup” menu and if the tape is of poor quality.
5. Tape indicator
   Displayed when a video cassette is inserted.
6. Recording mode

Note
* The on-screen display may be distorted depending on the video cassette being played back or the input signal.
Using on-screen menus/FUNCTIONS window

Using DISPLAY menus

Disc menu

Soundtrack
- The disc’s audio attributes appear. (See Audio attributes)

DVD-A DVD-V
- Select the audio and language. (See Soundtrack/Subtitle language)

DivX
- Select the soundtrack number. (Unchangeable)

Subtitle
- The settings are changed automatically.
- Turn the subtitle on/off and select the language. (See Audio attributes)

Audio channel
- 27, Changing audio during play

Source select (DivX only)
- Automatic
- Progressive
- Interlace

Common procedures

RAM HR R DL RW VR AR HR DL RW DVD-A DVD-V

Press [DISPLAY].

1 Press [DISPLAY].

2 Press [ , ] to select a menu and then press [ ].

3 Press [ , ] to select an item and then press [ ].

4 Press [ , ] to select a setting.
- Depending on the condition of the unit (playing, stopped, etc.) and the type of software you are playing, there are some items that you cannot select or change.

Disc menu

Soundtrack

DVD-A DVD-V
- The disc’s audio attributes appear. (See Audio attributes)

DivX
- Select the audio and language. (See Soundtrack/Subtitle language)

Subtitle
- Turn the subtitle on/off and select the language. (See Soundtrack/Subtitle language)

Audio channel
- 27, Changing audio during play

Source select (DivX only)
- Automatic
- Progressive
- Interlace

PREPARE

Preparation
- Press [DRIVE SELECT] to select the DVD.

Press [DISPLAY].

For your reference
- The screens depend on the disc contents.
- Depending on the condition of the unit (playing, stopped, etc.) and the type of software you are playing, there are some items that you cannot select or change.

Angle
- Change the number to select an angle.

STILL-P (Still picture) DVD-A
- Selects the play method for still pictures.
- Page: Select the still picture number and play.
- RANDOM: Plays in random order.
- Repeat: Returns to the default still picture on the disc.
- Repeat: Returns to the default still picture on the disc.

PBC (Playback control) VCD
- Indicates whether menu play (playback control) is On or Off.
- (Unchangeable)

Source select
- For your reference
- The display changes according to the disc content. You cannot make a change when there is no recording. Some discs only allow changes to soundtracks, subtitles and angles by using the disc’s setup menus.
When the output signal is PAL

- Film: Select if the edges of the film contents is distorted.
- Video: Select when using "Auto" and the video contents is distorted.

- Auto: Detects 25 frames-per-second film content and appropriately converts it.
- Auto2: Compatible with 30 frames-per-second film content in addition to 24 frames-per-second film content.
- Video: Select when the video contents is distorted while using "Auto1" and "Auto2".

When the output signal is NTSC

- Auto1 (normal):
  - Detects 24 frames-per-second film content and appropriately converts it.
- Auto2:
  - Converts 30 frames-per-second film content to 24 frames-per-second film content.
- Video:
  - Select this when the video contents is distorted while using "Auto1" and "Auto2".

Copy NR (Only when AV1, AV2 or DV IN is selected)

- Reduces video cassette noise during transfer (copy).

Transfer (Only when "Progressive" is set to "On")

- Select the method of conversion for progressive output to suit the type of material being played (62, Film and Video).
- Only when you have set "Progressive" to "On" in the Setup menu.

Position

- To change the display position
  - 1 (Standard) – 5:
    - The higher the setting the lower the screen moves.
Status messages

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

1 While stopped
Press [FUNCTIONS].

2 Press [△, ▽] to select an item and then press [ENTER].
   If you select “To Others” and press [ENTER], select an item with [△, ▽] and press [ENTER].

3 To exit the FUNCTIONS window
Press [FUNCTIONS].

Status displays

Changing the information displayed
Status messages appear on the TV screen when operating the unit, to show you what operation was performed and what condition the unit is in.

Press [STATUS] to change the information displayed.

Display examples

1 Current medium
2 Current recording or play status, input channel
   • Shows the current state of the unit and the input channel.
   REC: Recording
   PAUSE: Recording paused
   PLAY: Playing
   PLAY x1.3: Quick Viewing (Play x 1.3)
   ▶: Fast forwarding (5 speeds)
   ◀: Rewinding (5 speeds)
   ▾: Slow-motion (5 speeds)
   ◇: Reverse slow-motion (5 speeds)
   OPEN/CLOSE: Indicates the status of the disc tray
   (1) Current medium
   (2) Current recording or play status, input channel
   • Shows the current state of the unit and the input channel.
   REC: Recording
   PAUSE: Recording paused
   PLAY: Playing
   PLAY x1.3: Quick Viewing (Play x 1.3)
   ▶: Fast forwarding (5 speeds)
   ◀: Rewinding (5 speeds)
   ▾: Slow-motion (5 speeds)
   ◇: Reverse slow-motion (5 speeds)
   OPEN/CLOSE: Indicates the status of the disc tray
   (3) TV audio type being received
   Stereo: STEREO/NICAM stereo broadcast
   M1/M2: Bilingual/NICAM dual-sound broadcast
   M1: NICAM monaural broadcast
   (4) Selected audio type
   (5) Other drive mode

Display examples

1 Current medium
2 Current recording or play status, input channel
   • Shows the current state of the unit and the input channel.
   REC: Recording
   PAUSE: Recording paused
   PLAY: Playing
   PLAY x1.3: Quick Viewing (Play x 1.3)
   ▶: Fast forwarding (5 speeds)
   ◀: Rewinding (5 speeds)
   ▾: Slow-motion (5 speeds)
   ◇: Reverse slow-motion (5 speeds)
   OPEN/CLOSE: Indicates the status of the disc tray
   (1) Current medium
   (2) Current recording or play status, input channel
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   M1/M2: Bilingual/NICAM dual-sound broadcast
   M1: NICAM monaural broadcast
   (4) Selected audio type
   (5) Other drive mode

(1) Current medium
(2) Current recording or play status, input channel
(3) TV audio type being received
(4) Selected audio type
(5) Other drive mode

(6) Available recording time and recording mode
   (e.g. “1:23 SP” indicates 1 hour and 23 minutes in SP mode)
(7) The current date and time
(8) Elapsed play time/Recording mode
(9) Recording time/Recording mode

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

Simultaneously press and hold [ENTER] and [RETURN] until “X HOLD” appears on the unit’s display.

“X HOLD” appears on the display if you press a button while Child Lock is on and the operation is impossible.

To Cancel the Child Lock
Simultaneously press and hold [ENTER] and [RETURN] until “X HOLD” disappears.
### Edit titles

#### Editing titles with SUB MENU button

**Note**
- Once deleted, divided or partially deleted, the title cannot be restored to its original state. Make certain before proceeding.

**Preparation**
- RAM: Release protection (disc ⇒ 55, cartridge ⇒ 55).
- Press [DRIVE SELECT] to select the DVD.

1. Press [DIRECT NAVIGATOR].
2. Press [▲, ▼, ◀, ▶] to select a desired title.
3. To show other pages ⇒ below
4. Press [SUB MENU].
5. Press [▲, ▼] to select a desired item and then press [ENTER].
   - After this operation, follow the desired operation.

#### To return to the previous screen
Press [RETURN].

#### To exit the screen
Press [RETURN] several times.

### Title operations

#### Delete

- RAM: (Multiple editing ⇒ below)
  - Follow steps 1 to 3 of “Editing titles with SUB MENU button”. (⇒ Above)
  - Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.
  - Press [▲, ▼] to select “Delete” and then press [ENTER].

- Press [▲, ▼] to select “Properties” and then press [ENTER].

For your reference
- The disc’s available recording time may not increase after deleting short titles.
- The available recording space on DVD-R, DVD-R DL, +R or +R DL does not increase when you delete titles.
- Available recording space on a DVD-RW (DVD-Video format) or +RW increases only when the title recorded last is deleted. The recording space may increase slightly when other titles are deleted.

#### Properties

- Follow steps 1 to 3 of “Editing titles with SUB MENU button”. (⇒ Above)
  - Title information (e.g., date and time) is shown.
  - Press [▲, ▼] to select “Properties” and then press [ENTER].

### Various operations

#### To show other pages
Press [▲, ▼, ◀, ▶] to select “Previous” or “Next” and press [ENTER].
- You can also press [◄, SKIP] or [►, SKIP] to show other pages.

#### Multiple editing

- Press [▲, ▼, ◀, ▶] to select and then press [II, PAUSE]. (Repeat this to select multiple items.)

---

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

Note: You can divide a title into multiple chapters. (- 27, Create chapters, - 39, Create Chapter)

RAM: You can change the order of chapters and create a playlist (- 40).

RAM: You can divide a title into multiple chapters. (- 56).

RAM: You can change the order of chapters and create a playlist (- 56).

For your reference
- The maximum number of items on a disc:
  - DVD-R, DVD-R DL: Approximately 1000
  - -R, +R, +R DL: Approximately 254

Note: You can play and edit a desired title. Press [DIRECT NAVIGATOR] and the list of titles recorded (Title View) is shown. You can change the order of chapters and create a playlist (Title View). The maximum number of items on a disc:
- DVD-R, DVD-R DL: Approximately 1000
- -R, +R, +R DL: Approximately 254

Note: Management information is recorded in unused sections when you edit the disc. The available space decreases each time you edit the contents.

Note: You cannot edit during recording or transferring (copying), etc.

Note: For your reference
- The disc's available recording time may not increase after deleting short titles.
- The available recording space on DVD-R, DVD-R DL, +R or +R DL does not increase when you delete titles.
- Available recording space on a DVD-RW (DVD-Video format) or +RW increases only when the title recorded last is deleted. The recording space may increase slightly when other titles are deleted.

Note: Various operations
- To show other pages:
  - Press [▲, ▼, ◀, ▶] to select “Previous” or “Next” and press [ENTER].
  - You can also press [◄, SKIP] or [►, SKIP] to show other pages.

Note: To show other pages:
- Press [DRIVE SELECT] to select the DVD.
Edit titles

You can perform various kinds of title editing.

**Preparation**
- Press [DIRECT NAVIGATOR] and then press [ENTER] to select a desired title.
- To show other pages ➔ 37
- Multiple editing ➔ 37

1. Press [DIRECT NAVIGATOR] and then press [ENTER] to select the DVD.

2. Press [SUB MENU].

3. Press [<, >] to select “Edit” and then press [ENTER].

4. Press [<, >] to select a desired item and then press [ENTER].

5. The editing screen for the selected item appears.

6. Press [↓] to select “Yes” and then press [ENTER].

    - Press [DIRECT NAVIGATOR] to select “Set up Protection” and then press [ENTER].

    - The padlock mark appears.

    - Press [DIRECT NAVIGATOR] to select “Cancel Protection” and then press [ENTER].

    - The padlock mark disappears.

For your reference
Protected titles will be deleted if you format the disc with “DVD Management” (➔ 55).

- **Partial Delete**

    - Follow steps 1 to 3 of “Edit”. (➔ Left)

    - You can remove unnecessary parts of the title such as commercials.

4. Press [<, >] to select “Partial Delete” and then press [ENTER].

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

   - For quicker editing ➔ 39

6. Press [<, >] to select “Exit” and then press [ENTER].

7. Press [↓] to select “Delete” and then press [ENTER].

To delete another part of the same title
After setting the point of “Start” and “End” in step 5, select “Next” in step 6 and perform step 7, then repeat steps 5 to 7.

For your reference
- You may not be able to specify start and end points which are within 3 seconds of each other.
- The disc’s available recording time may not increase after deleting short parts of titles.

- **Change Thumbnail**

    - Follow steps 1 to 3 of “Edit”. (➔ Left)

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

4. Press [<, >] to select “Change Thumbnail” and then press [ENTER].

5. Press [>, PLAY] to play.

6. Press [ENTER] at the point you want to display.

   - For quicker editing ➔ 39

   - To change to another point in the same title
     - Press [<, >] to select “Change” and press [>, PLAY] and then repeat step 6.

7. Press [<, >] to select “Exit” and then press [ENTER].

   - The thumbnail picture will be changed at this point.
Divide Title

Press [A, V] to select “Divide Title” and then press [ENTER].

Press [ENTER] at the point you want to divide the title.
- For quicker editing: Press [A, V] to select “Divide”, press [►, Play] and then repeat steps 5 to 7.

Press [A, V] to select “Exit” and then press [ENTER].

Press [A, V] to select “Divide” and then press [ENTER].
- The title is divided at that point.

To check the division point

By selecting “Preview” in step 5 and pressing [ENTER], play will begin from 10 seconds before the division point to 10 seconds after the division point.

For your reference
- The divided titles retain the name of the original title. They also retain the CPRM property (≥ 62) of the original.
- Video and audio just before and after the division point will be momentarily cut out.
- It is not possible to carry out “Divide” in the following cases:
  - When the resulting part(s) are extremely short.
  - When the total number of titles is more than 99.

Chapter View

Press [DIRECT NAVIGATOR] and then press [A, V, ◄, ►] to select a desired title.
- To show other pages: Press [ENTER].
- To change the page: Press [SUB MENU].
- To select “Chapter View” and then press [ENTER].

Press [A, V, ◄, ►] to select “Chapter View” and then press [ENTER].
- To start play: Press [ENTER].
- To edit: Press [SUB MENU].
- To select a desired item: Press [A, V] and then press [ENTER].

Delete Chapter

Press [A, V] to select “Delete Chapter” and then press [ENTER].

Press [A, V] to select “Delete” and then press [ENTER].

Create Chapter

Follow steps 1 to 5 of “Chapter View”. (→ Left)

Press [A, V] to select “Create Chapter” and then press [ENTER].

Press [ENTER] at the point you want to divide.
- For quicker editing: Press [A, V] to select “Create Chapter” and then press [ENTER].
- Press [A, V] to select “Exit” and then press [ENTER].

For your reference
- The divided titles retain the name of the original title. They also retain the CPRM property (≥ 62) of the original.
- Video and audio just before and after the division point will be momentarily cut out.
- It is not possible to carry out “Create Chapter” in the following cases:
  - When the resulting part(s) are extremely short.
  - When the total number of titles is more than 99.

Combine Chapters

Follow steps 1 to 5 of “Chapter View”. (→ Left)

Press [A, V] to select “Combine Chapters” and then press [ENTER].

Press [A, V] to select “Combine” and then press [ENTER].
- The selected chapter and the next chapter are combined.

Title View

Follow steps 1 to 5 of “Chapter View”. (→ Left)

Press [A, V] to select “Title View” and then press [ENTER].

You return to the Title View screen.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

For quicker editing
- Use search (► 27), Time Slip (► 27) or slow-motion (► 27) to find the desired point.
- Press [◄, SKIP] or [►, SKIP] to skip to the end of a title.
Creating, editing and playing playlists

Creating playlists

**Preparation**
- Press [FUNCTIONS] to select the disc.

1. While stopped, press [FUNCTIONS].
2. Press [▲, ▼] to select “To Others” and then press [ENTER].
3. Press [▲, ▼] to select “Playlists” and then press [ENTER].
   - The Playlist View screen appears.
4. Press [▲, ▼, ▶, ◀] to select “Create” and then press [ENTER].
5. Press [▲, ▼] to select the source title and then press [ENTER].
   - When you want to select all the chapters in the title, use [▲, ▼] to select the source title and press [ENTER], then skip to step 7.
6. Repeat steps 5 to 7 to add other titles or chapters.
7. Press [▲, ▼, ▶, ◀] to select the chapter you want to add to a playlist and then press [ENTER].
   - Press [▲] to cancel.
8. Press [RETURN].
   - The chapter is registered in the playlist.
9. Repeat steps 6 to 7 to add other chapters.
10. To select other source titles, press [▲] several times to return to step 5.
11. Press [RETURN].
   - To return to the previous screen
     - Press [RETURN].
   - To exit the screen
     - Press [RETURN] several times.

**Preparing to create playlists**

You can create a playlist by gathering your favourite chapters from your recordings. You can also play and edit the created playlist.

- The maximum number of items on a disc:
  - Playlists: 99
  - Chapters in playlists: Approximately 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.
- You cannot create or edit a playlist while recording.
- Editing playlists does not modify titles.
- Playlists are not recorded separately so this does not use much capacity.
- The number of items in a playlist can exceed 1000.

**Numbered buttons**

You can create a playlist by gathering your favourite chapters from your recordings. You can also play and edit the created playlist.

<table>
<thead>
<tr>
<th>Numbered buttons</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOP</td>
<td>Stop</td>
</tr>
<tr>
<td>RETURN</td>
<td>Return</td>
</tr>
<tr>
<td>DELETE</td>
<td>Delete</td>
</tr>
<tr>
<td>SUB MENU</td>
<td>Sub menu</td>
</tr>
<tr>
<td>ENTER</td>
<td>Enter</td>
</tr>
<tr>
<td>FUNCTIONS</td>
<td>Functions</td>
</tr>
</tbody>
</table>

**Playlist**

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

**Playlist**

- Creating playlists
- Editing playlists does not modify titles.
- Playlists are not recorded separately so this does not use much capacity.

**Additional information**

- The maximum number of items on a disc:
  - Playlists: 99
  - Chapters in play lists: Approximately 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.
- You cannot create or edit a playlist while recording.

---

![Remote control diagram](image.png)

**Creating playlists**

1. While stopped, press [FUNCTIONS].
2. Press [▲, ▼] to select “To Others” and then press [ENTER].
3. Press [▲, ▼] to select “Playlists” and then press [ENTER].
4. Press [▲, ▼] to select “Create” and then press [ENTER].
5. Press [▲, ▼] to select the source title and then press [ENTER].
   - When you want to select all the chapters in the title, use [▲, ▼] to select the source title and press [ENTER], then skip to step 7.
6. Repeat steps 5 to 7 to add other titles or chapters.
7. Press [▲, ▼, ▶, ◀] to select the chapter you want to add to a playlist and then press [ENTER].
   - Press [▲] to cancel.
8. Press [RETURN].
   - The chapter is registered in the playlist.
9. Repeat steps 6 to 7 to add other chapters.
10. To select other source titles, press [▲] several times to return to step 5.
11. Press [RETURN].
   - To return to the previous screen
     - Press [RETURN].
   - To exit the screen
     - Press [RETURN] several times.
Playing playlists

RAM (Play only)

Preparation
- Create playlists. (⇒ 40)
  - Press [DRIVE SELECT] to select the DVD.

1 While stopped
  Press [FUNCTIONS].

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

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

4 Press [▲, ▼, ◀, ▶] to select a playlist and then press [ENTER].
  - Playlists are not displayed if you have not created any playlist on the inserted disc.
  - You can also select a playlist from the Playlist View screen by entering a 2-digit number with the numbered buttons.
    e.g.: “5”: [0] ▼ [5]
    “15”: [1] ▼ [5]
  - If you enter a number that is larger than the total number of playlists, “Create” is selected.

To stop playlist play
Press [■, STOP].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

To delete a playlist during play

1 Press [DELETE].

2 Press [◄] to select “Delete” and then press [ENTER].

For your reference
  - You can use fast-forward, rewind, pause and slow-motion while playing playlists just as you can during normal play.

Editing playlists with SUB MENU button

RAM (Properties only)

Preparation
- Create playlists. (⇒ 40)
  - RAM Release protection (disc ⇒ 55, cartridge ⇒ 55).
  - Press [DRIVE SELECT] to select the DVD.

1 While stopped
  Press [FUNCTIONS].

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

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

4 Press [▲, ▼, ◀, ▶] to select a playlist.
  - To show other pages ➔ 37
  - Press [SUB MENU].

5 Press [▲, ▼] to select a desired item and then press [ENTER].

Playlist operations

- Delete

Press [▲, ▼] to select “Delete” and then press [ENTER].

- Properties

Press [▲, ▼] to select “Properties” and then press [ENTER].

Properties

Press [▲, ▼] to select “Properties” and then press [ENTER].

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

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.
Creating, editing and playing playlists

You can edit the playlist in various ways.

**While stopped**

1. Press [FUNCTIONS].
2. Press [3, 4] to select “To Others” and then press [ENTER].
3. Press [3, 4] to select “Playlists” and then press [ENTER].

Playlists are not displayed if you have not created any playlist on the inserted disc.

5. Press [3, 4, 2, 1] to select a desired item and then press [ENTER].

7. Press [3, 4] to select a desired item and then press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

**Create**

- Follow steps 1 to 5 of “Edit”. (→ Left)

8. Press [A, V] to select “Create” and then press [ENTER].

Refer to “Creating playlists”, steps 5 to 8. (→ 40)

**Copy**

(Multiple editing. → 37)
- Follow steps 1 to 5 of “Edit”. (→ Left)


**Enter Name**

- Follow steps 1 to 5 of “Edit”. (→ Left)

11. Press [A, V] to select “Enter Name” and then press [ENTER].

Refer to “Entering text”. (→ 52)

**Change Thumbnail**

- Follow steps 1 to 5 of “Edit”. (→ Left)

You can change the image to be shown as a thumbnail picture in the Playlist View screen.

13. Press [1, PLAY] to play.
14. Press [ENTER] at the point you want to display.
   - For quicker editing → 39
   - To change to another point in the same title:

15. Press [A, V] to select “Exit” and then press [ENTER].

The displayed scene is changed at this point.
Creating, editing and playing playlists

Chapter operations

- Chapter View

  Follow steps 1 to 7 of "Chapter View". (➡ 42)
  You can play and edit the chapters in a playlist.
  5 Press [SUB MENU], press [A, V] to select "Chapter View" and then press [ENTER].
    - You can also select a chapter from the Chapter View screen by entering a 3-digit number with the numbered buttons.
    - E.g.: "05": [0]→[0]→[5]
    - E.g.: "15": [0]→[1]→[5]
    - If a number larger than the total number of chapters is entered, the last chapter is selected.
    - Editing chapters in a playlist does not modify the source titles or the source chapters.
    - To show other pages ➡ 37
    - To start play ➡ Press [ENTER].
    - To stop play ➡ Press [M, STOP].
    - To edit ➡ Follow the steps below.

  Press [SUB MENU].
  7 Press [A, V] to select a desired item and then press [ENTER].

    - Create Chapter
        Follow steps 1 to 7 of "Chapter View". (➡ Left)
        8 Press [A, V] to select "Create Chapter" and then press [ENTER].
        9 Press [ENTER] at the point you want to divide.
        - For quicker editing ➡ 39
        - Repeat this step to select other division points.
        10 Press [A, V] to select "Exit" and then press [ENTER].

    For your reference
    - The divided titles retain the name of the original title. They also retain the CPRM property (➡ 62) of the original.
    - Video and audio just before and after the division point will be momentarily cut out.
    - It is not possible to carry out "Create Chapter" in the following cases:
      - CPRM property.
      - When the resulting part(s) are extremely short.
      - When the total number of titles is more than 99.

    - Combine Chapters
        Follow steps 1 to 7 of "Chapter View". (➡ Left)
        8 Press [A, V] to select "Combine Chapters" and then press [ENTER].
        9 Press [4, 3] to select "Combine" and then press [ENTER].
        - The selected chapter and next chapter are combined.

    - Delete Chapter
        Follow steps 1 to 7 of "Chapter View". (➡ Left)
        8 Press [A, V] to select "Delete Chapter" and then press [ENTER].
        9 Press [4, 3] to select "Delete" and then press [ENTER].
        - Even if you delete the chapter, the original title is not deleted.
        - The playlist itself is deleted if you delete all the chapters in it.
        - Once deleted, the playlists cannot be restored.
        Make certain before proceeding.

    - Playlist View
        Follow steps 1 to 7 of "Chapter View". (➡ Left)
        8 Press [A, V] to select "Playlist View" and then press [ENTER].
        You return to the Playlist View screen.
**Transfer (Copying)**

**Before transferring (copying)**

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

**Direction**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Type of transfer (copying) you want</th>
<th>Suitable methods</th>
</tr>
</thead>
</table>
| VHS        | DVD-RAM, DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW | Easy transferring (copying) with one button
- When you want to transfer (copy) from a selected start point to the end of the tape | One Touch Transfer (45)                  |
|            |                     | Transferring (copying) with detailed settings
- When you want to transfer (copy) from a selected start point to the end of the tape
- When you want to transfer (copy) to fit in the remaining capacity of the disc
- When you want to transfer (copy) for a limited amount of time | GUI Transfer (46)                        |
| DVD-RAM, +RW or DVD-RW (DVD Video Recording format) | VHS | Easy transferring (copying) with one button
- When you want to transfer (copy) a whole disc
- When you want to transfer (copy) from the beginning of a selected title or playlist to the end of the disc | One Touch Transfer (47)                  |
|            |                     | Transferring (copying) with detailed settings
- When you want to transfer (copy) multiple titles and playlists | GUI Transfer (48)                        |
| DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL | VHS | Easy transferring (copying) with one button
- When you want to transfer (copy) a whole disc
- When you want to transfer (copy) from the beginning of the selected title to the end of the disc | One Touch Transfer (47)                  |
|            |                     | Transferring (copying) with detailed settings
- When you want to transfer (copy) a whole disc
- When you want to transfer only for a limited amount of time | Cannot transfer                          |
| Finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL | VHS | Easy transferring (copying) with one button
- When you want to transfer (copy) a whole disc
- When you want to transfer only for a limited amount of time | Cannot transfer                          |
|            |                     | Transferring (copying) with detailed settings | DVD-Video Transfer (49)                  |

* +RW Since you cannot create playlists on +RW, you cannot transfer (copy) them either.

**Caution for transfer (copying) from VHS to DVD**

- Copy-protected video cassettes cannot be transferred (copied).
- Most of the commercially sold/purchased video cassettes are copy-protected to prevent illegal reproduction and they cannot be transferred (copied).
- When a copy-protected cassette is inserted, a message appears on the display and the recording stops.

Only the following operations are allowed while transferring (copying):

- Stopping transfer (copy) (One Touch or GUI Transfer) by pressing and holding [RETURN] for about 3 seconds or more.
- Stopping transfer (copy) (One Touch Transfer) by pressing [STOP].

When transfer (copying) starts, the following operation also starts automatically

- "On-Screen Messages" in the Display menu in Setup → "Off" (58) (One Touch or GUI Transfer)

In order to play a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL recorded using this unit on another playback source, the disc must be finalized (56).

**Caution for transfer (copying) from DVD to VHS**

- Copy-protected discs cannot be transferred (copied). Most DVD-Videos are copy-protected to prevent illegal reproduction and they cannot be transferred (copied).

Only the following operations are allowed while transferring (copying):

- Stopping transfer (copy) (One Touch or GUI Transfer) by pressing and holding [RETURN] for about 3 seconds or more.
- Stopping transfer (copy) (One Touch Transfer) by pressing [STOP].

When transfer (copying) is started, the following operations also start automatically

- "On-Screen Messages" in the Display menu in Setup → "Off" (58) (One Touch or GUI Transfer)

- R&D Audio output when playing back DVD → Stereo (LR)

When the playback location of the disc is memorized by the resume play function (26) and you start transferring (copying), the transfer (copying) is executed from the top of the title which contains the starting position of playback to the end of the disc.
**Transfer (Copying)**

**One Touch Transfer (copying) (VHS → DVD)**

You can transfer (copy) programmes recorded on a video cassette onto a disc with one stroke of the button. In One Touch Transfer (copying), programmes are automatically transferred (copied) onto the disc from the location of playback at the time when the transfer (copying) of the tape starts.

**Preparation**
- Select the unit viewing channel (e.g. AV input) on the TV.
- Press [DRIVE SELECT] to select the VHS.
- Insert the video cassette containing the programme to be copied.
- Stop the tape at the position where you wish to start recording.

**DVD (Recording target)**
- Press [DRIVE SELECT] to select the DVD.
  - [RAM] Release protection. (disc → 55, cartridge → 55)
  - Insert a disc and confirm there is sufficient empty space for recording on it. (→ 17, 36)
  - Select the recording mode. (→ 18)

**Settings**
- [59, TV System]
  - When transferring (copying) an NTSC tape to a DVD
    - Set “TV System” on “Connection” in Setup to “NTSC”.
    - Be certain that the inserted disc only contains NTSC video contents.
  - When transferring (copying) a PAL tape to a DVD
    - Set “TV System” on “Connection” in Setup to “PAL”.
    - Be certain that the inserted disc only contains PAL video contents.

**Notes**
- To stop transfer (copying) in the middle
  - Press [STOP] or press and hold [RETURN] for about 3 seconds or more.
  - However you cannot stop finalize after it has started.

**Dividing a title to be transferred (copied)**
When transferring (copying) from VHS to DVD, the title is divided by index signal (→ 33) detected and then recorded. You can search desired titles with the Direct Navigator (→ 26) after transfer (copy) to DVD.
- Titles recorded within 15 minutes of each other may not be divided properly.
- The recording time may become longer than the original title depending on the number of index signals.
- If you want to transfer (copy) without dividing the contents into titles, follow the method below.
  - Set “Time Setting” to “On” on the GUI Transfer (→ 46).
Transfer (Copying)

**GUI (Graphical User Interface)**

**Transfer (Copying) (VHS → DVD)**

You can transfer (copy) programmes recorded on a video cassette onto a disc from the location of playback as of the transfer (copying) start of the tape.

- When you set the recording mode to “FR” (+ right) and “Time Setting” to “Off” (+ right), you can transfer (copy) the whole tape from the beginning to the end.

**Preparation**

- Set the recording mode.
- Press [DRIVE SELECT] to select the VHS.
- Insert the video cassette containing the programme to be copied.
- While both DVD and VHS are stopped, press [DRIVE SELECT] to select the VHS.
- Press [FUNCTIONS] to select the VHS.
- Press [MEMORY] to select the VHS.
- Insert a disc and confirm there is sufficient empty space for recording on it.
- Select the audio type you wish to record.
- Select the unit viewing channel (e.g. AV input) on the TV.
- Set the recording mode, (→ 18)

**Settings (→ 59, TV System)**

- When transferring (copying) an NTSC tape to a DVD
- Set “TV System” on “Connection” in Setup to “NTSC”.
- Be certain that the inserted disc only contains NTSC video contents.
- When transferring (copying) a PAL tape to a DVD
- Set “TV System” on “Connection” in Setup to “PAL”.
- Be certain that the inserted disc only contains PAL video contents.

**1** Press [DRIVE SELECT] to select the VHS.
**2** While both DVD and VHS are stopped, Press [MEMORY].
**3** Press [A, V] to select “Copy” and then press [ENTER].

**Set the transfer (copying) direction.**

- Set “Source” to “VHS”.
- If you are not going to change the transfer (copying) direction, press [V] and skip to step 5.

**To change the setting**

- Make sure “Copy Mode” is selected and press [V].
- Make sure “Source” is selected and press [A, V].
- Press [A, V] to select “VHS” and then press [ENTER].
- Press [A, V] to select “Destination”.
- You can also set the time with the numbered buttons.
- Maximum recording time is 8 hours.

**4** Press [FUNCTIONS] to select the DVD.
**5** Press [MEMORY] to select the DVD.
**6** Press [MEMORY] to select the DVD.
**7** Press [MEMORY] to select the DVD.

**Set the recording mode.**

- If you are not going to change the recording mode, press [V] and skip to step 6.

**To change the setting**

- Make sure “Copy Mode” is selected and press [V]

**Set the time limit.**

- If you are not going to change the recording time, press [V] and skip to step 7.

**To change the setting**

- Make sure “Copy Time” is selected and press [V].
- Make sure “Time Setting” is selected and press [ENTER].

**Press [A, V] to select the time setting ("On" or "Off") and then press [ENTER].**
- When you select “Off”, proceed to Step (6) below.
- Press [V] to select “Copy Time” and then press [ENTER].
- Press [A, V] to select “Hour” and “Min.” and press [A, V] to set the recording time and then press [ENTER].
- You can also set the time with the numbered buttons.
- Maximum recording time is 8 hours.

**Press [V].**

**Press [V].**

**Make sure “Start Copying” is selected and press [ENTER].**

The confirmation screen appears.

**Press [A, V] to select “Yes” and then press [ENTER].**

**Press [A, V] to select “Copy & Finalize” or “Copy Only” and then press [ENTER].**
- Transfer (copying) starts.
- Transfer (copying) is automatically stopped when the tape reaches the end, the remaining capacity of the disc is filled or when a timer recording starts. (A message appears on the TV screen and then disappears a few seconds later.)
- If “Copy & Finalize” is selected;
- After finalizing, the disc becomes play-only and you can play them on other DVD equipment.
- However, you can no longer record or edit.
- Finalizing will not start if copying is not completed (e.g., due to shortage of remaining disc space).

**To stop transfer (copying) in the middle (process)**

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

- However you cannot stop finalize after it has started.

**About FR mode**

When “Time Setting” is set to “Off” in step 6 above:

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

When “Time Setting” is set to “On” in step 6 above:

- The recording mode is automatically determined by estimating the remaining capacity of the disc for transfer (copying) of the contents equivalent to the recording time set from the start point of the transfer (copying) on the video cassette (unrecorded parts will also be recorded).

- The recording is not divided into titles.
You can transfer (copy) titles recorded on a disc onto a video cassette with one stroke of the button.

In One Touch Transfer (copying), all contents on the disc are automatically transferred (copied) onto the video cassette.

Press and hold [FUNCTIONS, VHS, COPYING] on the main unit for about 3 seconds or more (until “START” on the unit’s display stops flashing).

Press [VHS, STOP] or press and hold [RETURN] for about 3 seconds or more.

Notes
- While One Touch Transfer (copying) is activated, a timer recording cannot be started.
- If you start transfer (copying) when the resume play function (26) is activated, the DVD is transferred (copied) from the beginning of the title which you stopped.

About Recording VISS (33)
When transferring (copying) from DVD to VHS, the index signal is automatically recorded for each title. You can search desired titles with [INDEX] or [INDEX].
Set "Copy Direction".

Select "Copy" and press [ENTER].

When transferring (copying) a PAL disc to a tape
- Set "TV System" on "Connection" in Setup to "NTSC".
- Set "Source" to "DVD".

When transferring (copying) a PAL disc to a tape
- Set "TV System" on "Connection" in Setup to "PAL".

Register titles and playlists for transfer (copying).
- If you are not going to change the transfer (copy) direction, press [ ], then skip to step 6.

To set for the registration
(1) Make sure "Create List" is selected and press [ ].
(2) Make sure "New item (Total = 0)" is selected and press [ENTER].
(3) Press [A] to select "VIDEO" or press [B] to select "Playlists".
- You can also select the view by selecting "Other View" from the SUB MENU.
(4) Press [SUB MENU].
(5) Make sure "Other View" is selected and press [ENTER] twice.
(6) Press [ ].
- Before pressing [ ], make sure that the value on "Size" is smaller than the value in "Destination Remaining".
(7) When you finish creating the transferring (copying) list,
Make sure to select "Start Copying" and press [ENTER].
- The confirmation screen appears.
(8) Select "Yes" with [ ] and press [ENTER].
- Transfer (copying) is started.

To stop transfer (copying) in the middle
Press and hold [RETURN] for about 3 seconds or more.

Various operations
To show other pages
Press [ ], [ ], [ ], [ ], [ ], [ ], [ ].
Press [ ] or [ ] to select "Previous" or "Next" and press [ENTER] to show other pages.

Multiple editing
Select with [ ], [ ], [ ] and press [ ], [ ], [ ]. (Repeat this to select multiple items.)
Press [ENTER] to register to the list.
- A check mark appears. Press [ ], [ ], [ ] again to cancel.
- When you switch between the "VIDEO" and "Playlists" tab, the check mark is cancelled.
- Titles or playlists are registered to the transferring (copying) list in the ascending order of the title number.
Transferring (copying) list display and convenient functions

- Transferring (copying) list icons
  - Title with "One time only recording" restriction (e.g., 62, CPRM)
  - Title with "Title Copying" restriction
  - Titles and playlists that contain only still pictures cannot be transferred (copied).
  - Titles and playlists displaying the following marks cannot be selected.
    - X: Unable to play
    - E: NTSC/PAL
    - Titles or playlists recorded using a different encoding system from that of the TV system currently selected on the unit.

- To edit the transferring (copying) list
  - In step 6 (48)
    1. Select a desired item in the transferring (copying) list with [▲, ▼], and press [SUB MENU].
    2. Press [▲, ▼] to select the operation and press [ENTER].

Delete All:
Delete all items registered on the transferring (copying) list.
- Press [▲] to select "Yes" and press [ENTER].
- Add:
  - Add new items to the transferring (copying) list.
  - Press [▲, ▼, ◄, ►] to select the titles and playlists to be added and press [ENTER].
- Delete:
  - Delete the selected item.
  - Press [▲] to select "Yes" and press [ENTER].
  - Multiple editing:
  - Press [▲, ▼] to select the operation and press [ENTER].

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

To cancel all registered transferring (copying) settings and lists
After performing steps 1 to 6 of "GUI (Graphical User Interface) Transfer (copying) DVD Video to VHS)" (48).
- Press [▲] to select "Cancel All" and press [ENTER].
- Press [▲] to select "Yes" and press [ENTER].
- The settings and lists may be cancelled in the following situations.
  - When a title or a playlist has been recorded or deleted at the transferring (copying) source.
  - When steps have been taken, for instance, to turn off the unit or open the tray.

Transfer (copying) a finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or DVD-Video
You can transfer (copy) the contents of a disc being played onto a video cassette for the set time while playing the disc.
- Operations and on screen displays during transfer (copying) are also recorded.
- Almost all DVD-Video on sale have been treated to prevent illegal copying and cannot be transferred (copied).
- The following cannot be transferred (copied): DVD-Audio, Video CD, Audio CD and so on.

After performing steps 1 to 5 of "GUI (Graphical User Interface) Transfer (copying) DVD (→ VHS)" (48).

- Set "Copy Time".
  - If you are not going to change the setting, press [▼], then skip to step 7.

- Setting the unit to transfer (copy) according to the set time
  - (1) Make sure "Copy Time" is selected and press [▲].
  - (2) Make sure "Time Setting" is selected and press [ENTER].
  - Setting the unit to transfer (copy) all the content on the disc
  - (3)Press [▲, ▼] to select "Off" and press [ENTER].
  - (4)Press [▲].
  - (5)Press [▲].
  - Setting the transfer (copying) time
  - (3)Press [▲, ▼] to select "On" and press [ENTER].
  - (4)Press [▲] to select "Copy Time" and press [ENTER].
  - (5)Press [▲, ▼] to select "Hour" and "Min." and press [▲, ▼] to set the recording time and then press [ENTER].
  - You can also set the time with the numbered buttons.
  - Maximum recording time is 8 hours.
  - (6)Press [▲].
  - (7)Press [▲].

- Make sure "Start Copying" is selected and press [ENTER].
  - Press [▲] to select "Yes" and press [ENTER] to start transfer (copy).

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 (55).

- When the top menu is displayed
  - Press [▲, ▼, ◄, ►] to select the title you want to start transferring (copying) 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 stop transfer (copying) in the middle
  - Press [▲, ▼, STOP] or press and hold [RETURN] for about 3 seconds or more.

Notes:
- The screen saver on the right is recorded at the beginning.
- If play does not begin automatically or if the top menu is not displayed automatically, press [▲, ▼, PLAY] to start.
- The contents is recorded as 1 title from the beginning of transfer (copy) to the end (even if there are multiple programmes).
- "REC" only appears on the unit's display when transferring from DVD-Video.
Transferring (Copying)

When connecting to the AV2 input terminals or the DV IN terminal on the front of the unit.

1. You can also connect to the AV1 input terminals on the rear of the unit.
2. Before connecting any cables, first make sure that the power for the unit and the external device are off. Then, after connecting the cables, turn on both.

Notes
1. If the audio output from the external device is monaural, connect the audio cable to L/MONO. (Both left and right channels are recorded when connected through L/MONO.)
2. The S VIDEO IN terminal achieves a more vivid picture than the VIDEO IN terminal.

### Recording from an external device

![Remote Control Diagram](image)

- Press [REC MODE] to select the recording mode. (18)
- While stopped, press [CH, W, X] or [INPUT SELECT] to select the input channel for the external device you have connected.
- Select AV1, AV2 or DV.

**DVD**

1. Start play on the external device.
   - Press [DRIVE SELECT] to select the DVD.
   - When recording bilingual programmes
     - When both M1 and M2 are selected on the external device, you can select the audio type in playback.
     - Select either M1 or M2 on the external device. (You cannot switch between audio types during playback.)
     - When the output signal from the external device is NTSC, change the “TV System” to “NTSC” in the Setup menu (59).
     - This unit cannot record to discs containing both PAL and NTSC signals.
   - Insert a video cassette with a secure accidental erasure prevention tab. (17)
   - Press [DRIVE SELECT] to select the VHS.

2. Press [REC MODE] at the point where you want to start recording.

**VHS**

Follow the above steps 1 to 2.

3. Press [ , PLAY].
   - Start playing the video cassette and find the recording start point.
4. Press [II, PAUSE] and then press [ , REC].
   - Put the unit in recording standby mode.
5. Start play on the external device.
6. Press [II, PAUSE] at the point where you want to start recording.

**To skip unwanted parts**


**To stop recording**

Press [ , STOP].

For your reference

Almost all videos and DVD software on sale have been treated to prevent illegal copying. Such software cannot be recorded.
**DV automatic recording**

When the "DV Auto Rec" function is used, programmes are recorded as one title.

**RAM Chapters** are created at each break in the images and if programmes were recorded continuously on the source, a playlist is created automatically.

**Preparation**
- Turn off the unit and the DV equipment and connect the DV equipment to the unit’s DV IN terminal.
- If the output signal from the DV equipment is NTSC, change the "TV System" to "NTSC" in the Setup menu (→ 59).
- Press [FUNCTIONS] and select "DV Auto Rec" in "To Others" and go to step 3.

1. **Press [1] DVD/VHS** to turn the unit on and after the unit has started up completely, turn the DV equipment on.
   - The “DV Auto Rec” screen appears.
   - If the “DV Auto Rec” screen does not appear, press [FUNCTIONS] and select “DV Auto Rec” in “To Others” and go to step 3.

2. **Press [2] to select “Rec to DVD” and then press [ENTER].**

3. **Pause play on the DV equipment at the point you want to start recording.**

4. **Check that “Rec” is selected and then press [ENTER].**
   - It is not possible to start recording when “Rec” is not selected.

When recording finishes
The confirmation screen appears. Press [ENTER] to finish the DV Auto Rec.

To stop recording
Press [I, STOP].
The confirmation screen appears. Press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

**Notes**
- Only one piece of DV equipment (e.g., digital video camera) can be connected to the unit via the DV IN terminal.
- Video cameras from other manufacturer’s are not guaranteed to work.
- If the DV equipment is in a mode for operating the SD card, it is not possible to record with "DV Auto Rec".
- It is not possible to operate the unit from the connected DV equipment.
- The DV IN terminal on this unit is for use with DV equipment only. (It cannot be connected to a computer, etc.)
- The DV equipment name may not be shown correctly.
- Depending on the DV equipment, the images or the audio may not be input properly.
- The date and time information on the tape in the DV equipment will not be recorded.
- You cannot record and play simultaneously.

If the DV Auto Rec function does not work properly, check the connections and DV equipment settings then turn the unit off and back on.
If that does not work, follow the steps for Recording from an external device.
Entering text

Press [▼, ▲, ◀, ▶] to select the character you want to enter and then press [ENTER].

To delete a character
Press [▼, ▲] to select the name field and press [◄, ◀] to select the character you want to delete and then press [II, PAUSE].

Using the numbered buttons to enter characters
- Press [7] to move to the 7th row.
- Press [7] twice to highlight "R".
- Press [ENTER].

To enter space
Press [¢] and press [ENTER].

To add a name
You can save frequently used names and recall them later.
Maximum number of saved names: 20
Maximum number of characters per name: 20

- After entering the name (step 1 to 2, Entering text)
  1. Press [3, 4, 2, 1] to select "Add to List" and then press [ENTER].
  2. You can also press [9, SKIP] to select "Add to List".

- Press [ENTER] to select "Add" and then press [ENTER].

- Press [RETURN] to cancel.

To recall an added name
1. Press [3, 4, 2, 1] to select "List Names" and then press [ENTER].
   - You can also press [:, SKIP] to select "List Names".
2. Press [3, 4, 2, 1] to select the name to be recalled and then press [ENTER].
   - You can also press the numbered buttons to select the name.

To delete an added name
1. Press [3, 4, 2, 1] to select "List Names" and then press [ENTER].
   - You can also press [3, 4, 2, 1] to select "List Names".
2. Press [3, 4, 2, 1] to select the name to be deleted.
   - You can also press the numbered buttons to select the name.
3. Press [SUB MENU] to show "Delete Name" and then press [ENTER].
5. Press [RETURN].

For your reference
- If you enter a long name, only part of it is shown in the Top Menu after finalization (56). When entering a title name, the name that will appear in the Top Menu can be previewed in the "Title Menu Preview" window.

Preparation
- Insert a recorded disc.
- Press [3, 4, 2, 1] to select the DVD drive.

Show Enter Name screen.

Refer to the following pages regarding display of the Enter Name Screen.
- Title (38)
- Title (timer recording) (23, 24)
- Playlist (42)
- Disc (54)

You can give names to recorded titles, etc.
The maximum number of characters:
RAM  Characters
- Title  64
- Title (timer recording)  44
- Playlist  64
- Disc  64

- Title  44
- Disc  40

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

For your reference
- If you enter a long name, only part of it is shown in the Top Menu after finalization (56). When entering a title name, the name that will appear in the Top Menu can be previewed in the "Title Menu Preview" window.

You can save frequently used names and recall them later.
Maximum number of saved names: 20
Maximum number of characters per name: 20

- After entering the name (step 1 to 2, Entering text)
  1. Press [3, 4, 2, 1] to select "Add to List" and then press [ENTER].
     - You can also press [9, SKIP] to select "Add to List".

- Press [3, 4, 2, 1] to select "List Names" and then press [ENTER].
   - You can also press [:, SKIP] to select "List Names".
2. Press [3, 4, 2, 1] to select the name to be recalled and then press [ENTER].
   - You can also press the numbered buttons to select the name.

- Press [3, 4, 2, 1] to select "List Names" and then press [ENTER].
   - You can also press [3, 4, 2, 1] to select "List Names".
2. Press [3, 4, 2, 1] to select the name to be deleted.
   - You can also press the numbered buttons to select the name.
3. Press [SUB MENU] to show "Delete Name" and then press [ENTER].
5. Press [RETURN].

For your reference
- If you enter a long name, only part of it is shown in the Top Menu after finalization (56). When entering a title name, the name that will appear in the Top Menu can be previewed in the "Title Menu Preview" window.

You can save frequently used names and recall them later.
Maximum number of saved names: 20
Maximum number of characters per name: 20

- After entering the name (step 1 to 2, Entering text)
  1. Press [3, 4, 2, 1] to select "Add to List" and then press [ENTER].
     - You can also press [9, SKIP] to select "Add to List".

- Press [3, 4, 2, 1] to select "List Names" and then press [ENTER].
   - You can also press [:, SKIP] to select "List Names".
2. Press [3, 4, 2, 1] to select the name to be recalled and then press [ENTER].
   - You can also press the numbered buttons to select the name.

- Press [3, 4, 2, 1] to select "List Names" and then press [ENTER].
   - You can also press [3, 4, 2, 1] to select "List Names".
2. Press [3, 4, 2, 1] to select the name to be deleted.
   - You can also press the numbered buttons to select the name.
3. Press [SUB MENU] to show "Delete Name" and then press [ENTER].
5. Press [RETURN].

For your reference
- If you enter a long name, only part of it is shown in the Top Menu after finalization (56). When entering a title name, the name that will appear in the Top Menu can be previewed in the "Title Menu Preview" window.
Deleting titles

### Delete Navigator

#### Preparation
- Insert a recorded disc.
- Release protection (disc ➔ 55, title ➔ 38, cartridge ➔ 55).
- Press [DRIVE SELECT] to select the DVD drive.

- A title cannot be restored once it is deleted. Make certain before proceeding.
- You cannot delete while recording.
- Available space does not increase after deletion.
- Available space increases when the title recorded last is deleted. (The recording space may increase slightly when other titles are deleted.)

1. While stopped
   - Press [FUNCTIONS].
   - Press [3, 4, 2, 1] to select “Delete” and then press [ENTER].

2. Press [3, 4, 2, 1] to select the title and then press [ENTER].

#### To show other pages
- Press [3, 4, 2, 1] to select “Previous” or “Next” and then press [ENTER].
- You can also press [3, 4, 2, 1, SKIP] or [3, 4, 2, 1, SKIP] to show other pages.

#### Multiple editing
- Press [3, 4, 2, 1] to select and then press [3, 4, 2, 1, PAUSE]. (Repeat)
- A check mark appears. Press [3, 4, 2, 1, PAUSE] again to cancel.

3. Press [3, 4, 2, 1] to select “Delete” and then press [ENTER].

### Deleting a title during play

#### Preparation
- Insert a recorded disc.
- Release protection (disc ➔ 55, title ➔ 38, cartridge ➔ 55).
- Press [DRIVE SELECT] to select the DVD drive.

- A title cannot be restored once it is deleted. Make certain before proceeding.

1. During play
   - Press [DELETE].
   - Press [3, 4, 2, 1] to select “Delete” and then press [ENTER].

#### To return to the previous screen
- Press [RETURN].

#### To exit the screen
- Press [RETURN] several times.

For your reference
- You cannot delete while recording.
- The disc's available recording time may not increase after deleting short titles.
- Available space does not increase after deleting.
- Available space increases when the title recorded last is deleted. (The recording space may increase slightly when other titles are deleted.)
DVD Management

Preparation
- Insert a disc (→ 17).
- RAM Release protection (disc → 55, cartridge → 55).
- Press [DRIVE SELECT] to select the DVD drive.

1 While stopped
Press [FUNCTIONS].

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

3 Press [▲, ▼] to select “DVD Management” and then press [ENTER].

4 Press [▲, ▼] to select a desired item and press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN] several times.

Disc Name

Follow steps 1 to 3 of “DVD Management”. (→ Above)

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

Refer to “Entering text” (→ 52).
- The disc name is displayed in the DVD Management window.
- With a finalized disc and a +RW, the name is displayed on the top menu.
Disc Protection

Follow steps 1 to 3 of "DVD Management". (→ 54)

This allows you to protect the whole disc from accidental erasure.

Press [ ] to select “Disc Protection” and then press [ENTER].

Press [ ] to select “Yes” and then press [ENTER].

To protect

Press [ ] to select “Yes” and then press [ENTER].

To release protection

Create Top Menu

Follow steps 1 to 3 of "DVD Management". (→ 54)

RW discs do not contain Top Menu data. The Top Menu is a convenient function. We recommend that you create the menu before playing a +RW disc on other equipment.

Press [ ] to select “Create Top Menu” and then press [ENTER].

Press [ ] to select “Yes” and then press [ENTER].

Press [ ] to select “Start” and then press [ENTER].

Creating a Top Menu starts. You cannot cancel “Create Top Menu”.

Press [ENTER].

Recording or editing on the disc may delete the menu. In that case create the menu again.

You cannot use the title menu for playing on this unit.

Format Disc

Follow steps 1 to 3 of "DVD Management". (→ 54)

Formatting deletes all contents (including computer data) and they cannot be restored. Check carefully before proceeding.

Press [ ] to select “Format Disc” and then press [ENTER].

Follow steps 1 to 3 of “DVD Management”. (→ 54)

Formatting normally takes a few minutes.

A message appears when formatting is finished.

Formatting deletes all contents. (Including computer data.)

Notes

Formatting starts.

A message appears when formatting is finished.

Notes

Formatting normally takes a few minutes.

Formatting will delete all contents even if protected. Start formatting?

Notes

Formatting normally takes a few minutes.

Formatting normally takes a few minutes.

Do not disconnect the AC mains lead while formatting.

This can render the disc unusable.

To stop formatting

Press [ENTER].

Notes

When a disc has been formatted using this unit, it may not be possible to use it on other equipment.

DVD-R, DVD-R DL and CD-R/RW cannot be formatted.

You can only format DVD-RW in the DVD-Video format on this unit.

When a disc has been formatted using this unit, it may not be possible to use it on other equipment.

DVD-R, DVD-R DL and CD-R/RW cannot be formatted.

You can only format DVD-RW in the DVD-Video format on this unit.

When a disc has been formatted using this unit, it may not be possible to use it on other equipment.

DVD-R, DVD-R DL and CD-R/RW cannot be formatted.

You can only format DVD-RW in the DVD-Video format on this unit.

When a disc has been formatted using this unit, it may not be possible to use it on other equipment.

DVD-R, DVD-R DL and CD-R/RW cannot be formatted.

You can only format DVD-RW in the DVD-Video format on this unit.

When a disc has been formatted using this unit, it may not be possible to use it on other equipment.

DVD-R, DVD-R DL and CD-R/RW cannot be formatted.

You can only format DVD-RW in the DVD-Video format on this unit.
Finalize

Follow steps 1 to 3 of “DVD Management”. (6 54)
Select “Top Menu” or “Title 1” from “Auto-Play Select” before finalizing the disc. (6 55)
You can play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL on compatible DVD players after finalizing it on this unit, effectively making it into a DVD-Video that complies with DVD-Video standards.

1. Press [▲, ▼] to select “Finalize” and then press [ENTER].
2. Press [◄] to select “Yes” and then press [ENTER].
3. Press [◄] to select “Start” and then press [ENTER].

- Finalizing starts.
- You cannot cancel finalizing.

Notes
- Finalizing can take a few minutes or up to a maximum of 15 minutes, depending on the remaining space on the disc.
- Finalizing can take up to 60 minutes.
- Do not disconnect the AC mains lead while finalizing.
- This can render the disc unusable.

4. Press [ENTER].

Notes
- When finalizing a high-speed recording compatible disc, it may take longer than displayed on the confirmation screen (approximately 4 times longer).
- After finalizing
  - DVD-R, DVD-R DL, DVD-RW (although DVD-RW (DVD-Video format) becomes play-only after finalizing, you can record and edit the disc after re-formatting it.)
  - DVD-R DL, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL finalized on the unit may not be playable on other players depending on the condition of the recording.
  - There is a pause of several seconds between titles and chapters during play.
  - Titles are divided into about 5-minute chapters.

Close First Layer

1. Insert a disc (6 17).
2. Press [DRIVE SELECT] to select the DVD drive.
3. Follow steps 1 to 3 of “DVD Management”. (6 54)
4. Press [▲, ▼] to select “Close First Layer” and then press [ENTER].
5. Press [◄] to select “Yes” and then press [ENTER].
6. Press [◄] to select “Start” and then press [ENTER].
7. Press [ENTER].

Notes
- You cannot close the first layer when there are no recordings on it.
- By closing the first layer, you can record or edit discs that have been recorded on the second layer by other equipment.

To confirm the layer you can record
You can confirm the remaining recording time on the layer you can record.

Notes
- You cannot close the first layer when there are no recordings on it.
- By closing the first layer, you can record or edit discs that have been recorded on the second layer by other equipment.
Changing the unit’s settings

Use the following procedure to change the settings if necessary.

1. While stopped
   Press [FUNCTIONS].
2. Press [3,4] to select “To Others” and then press [ENTER].
3. Press [3,4] to select “Setup” and then press [ENTER].
4. Press [3,4] to select a menu and then press [2,1].
5. Press [3,4] to select an item to be changed and then press [ENTER].
6. Press [3,4] to select an option and then press [ENTER].

≥ Some options require different operations.
Follow the displayed instructions.

∫ To return to the previous screen
Press [RETURN].
• Even if you have changed an option, the change is not activated until you press [ENTER].

∫ To exit the screen
Press [RETURN] several times.

For your reference
• The settings remain intact even if you switch the unit to standby.

Entering a password (Ratings)
You can limit play of DVDs unsuitable for some audiences (e.g., children). Play and changes to the settings are not possible unless you enter a password.

When setting ratings (⇒ below)
The password screen is shown when you select levels 0 to 7.
1. Input a 4-digit password with the numbered buttons.
   • If you enter the wrong number, press [↓] to delete a digit at a time or press [←] to delete all the digits before you press [ENTER].
   • Do not forget your password.
2. Press [ENTER].
The password is entered and the unit is locked.
A message appears on the TV when you insert a DVD-Video that exceeds the ratings limit you set.
Follow the on-screen instructions.

When changing ratings (⇒ below)
The password screen is shown when you select “Ratings”.
1. Input a 4-digit password with the numbered buttons and press [ENTER].
2. Select a desired item with [3,4], press [ENTER] and then follow the on-screen instructions.

Summary of settings
This description shows the initial settings for the unit. For details on menu operation. ⇒ left
• Underlined items are the factory default settings.

Tuning
Manual (⇒ 60)
Auto-Setup Restart (⇒ 61)

Disc
Settings for Playback
Press [ENTER] to show the following settings.

Ratings (⇒ Above)
Set a ratings level to limit DVD-Video play.
Setting ratings (When level 8 is selected)
[8 No Limit]: All DVD-Video can be played.
[1] to [7]: Prohibits play of DVD-Video with corresponding ratings recorded on them.
[0 Lock All]: Prohibits play of all DVD-Video.

Changing ratings (When level 0 to 7 is selected)
[Unlock Recorder] [Change Password] [Change Level] [Temporary Unlock]

DVD-Audio Video mode Playback
Select “On” to play the DVD-Video content on some DVD-Audio.

On [Off]

Soundtrack
[English] [German] [French] [Italian] [Spanish] [Original]
[Other + + + +]

Subtitle
[Automatic] [English] [German] [French] [Italian] [Spanish] [Other + + + +]

Menus
[English] [German] [French] [Italian] [Spanish] [Other + + + +]

Common procedures
Use the following procedure to change the settings if necessary.
1. While stopped
   Press [FUNCTIONS].
2. Press [3,4] to select “To Others” and then press [ENTER].
3. Press [3,4] to select “Setup” and then press [ENTER].
4. Press [3,4] to select a menu and then press [2,1].
5. Press [3,4] to select an item to be changed and then press [ENTER].
6. Press [3,4] to select an option and then press [ENTER].

DVD Management/Changing the unit’s settings
Changing the unit’s settings

*Underlined items are the factory default settings.

- **DVD-V** Choose the language for audio, subtitles and disc menus.
- If a language which is not recorded is selected, or if languages are already fixed on the disc, the language set as the default on the disc will be played instead.

**Original**
The original language of each disc will be selected.

**Other**
This is the language code setting. Input a code number with the numbered buttons. (⇒ 59, Language code list)

**Automatic**
If the language selected for “Soundtrack” is not available, subtitles of that language will automatically appear if available on the disc.

**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 (⇒ 19, Recording modes and approximate recording times).

- **EP (6Hours)**: You can record for 6 hours on an unused 4.7 GB disc.
- **EP (8Hours)**: You can record for 8 hours on an unused 4.7 GB disc.

**Picture**
Comb Filter
Select the picture sharpness when recording. The setting is fixed to “On” if you set “TV System” (⇒ 59) to “NTSC”.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>On</strong></td>
<td>Pictures become clear and vivid. Normally, use this setting.</td>
</tr>
<tr>
<td><strong>Off</strong></td>
<td>Select it when recording noisy pictures.</td>
</tr>
</tbody>
</table>

**Still Mode**
Select the type of picture shown when you pause play. (⇒ 62, Frame and field)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automatic</strong></td>
<td>Select if you cannot see small text or fine patterns clearly when “Automatic” is selected.</td>
</tr>
<tr>
<td><strong>Field</strong></td>
<td>Select if jittering occurs when “Automatic” is selected.</td>
</tr>
<tr>
<td><strong>Frame</strong></td>
<td>Select if you cannot see small text or fine patterns clearly when “Automatic” is selected.</td>
</tr>
</tbody>
</table>

**Sound**

**Dynamic Range Compression**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>[Dolby Digital only]</strong></td>
<td>Change the dynamic range (⇒ 62) for easier listening in low volume.</td>
</tr>
<tr>
<td><strong>[On]</strong></td>
<td>Change the dynamic range (⇒ 62) for easier listening in low volume.</td>
</tr>
</tbody>
</table>

**Bilingual Audio Selection**
Select whether to record the main or secondary audio type when recording or transferring (copying) to DVD-R, DVD-R DL, DVD-RW (DVD-Video format) +R, +R DL or +RW. You cannot select the audio when recording from an external device. Select it on the external device. (Except for DV equipment connected to this unit’s DV IN terminal.)

- **M.1** (Main 1)
- **M.2** (Main 2)
- **S.1** (Secondary 1)
- **S.2** (Secondary 2)

**Digital Audio Output**
Change the settings when you have connected equipment through the unit’s DIGITAL AUDIO OUT terminal (⇒ 13).
Press [ENTER] to show the following settings.

**Note**
Incorrect settings can cause noise, which can be harmful to your ears and speakers to be output and the audio will not be recorded properly on media such as mini discs.

**PCM Down Conversion**
Select how to output audio that has a sampling frequency of 96 kHz or 88.2 kHz.

- **On**
  - Signals are converted to 48 kHz or 44.1 kHz. (Choose when the connected equipment cannot process signals with sampling frequency of 96 kHz or 88.2 kHz.)

- **Off**
  - Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment can process signals with sampling frequency of 96 kHz or 88.2 kHz.)

**Dolby Digital**
Choose whether to output by “Bitstream” which processes Dolby Digital signals on other connected equipment or to convert the signals to “PCM” (2 channels) on the unit before output.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bitstream</strong></td>
<td>When you have connected the unit to a piece of equipment with the Dolby Digital logo.</td>
</tr>
<tr>
<td><strong>PCM</strong></td>
<td>When you have connected the unit to a piece of equipment without the Dolby Digital logo.</td>
</tr>
</tbody>
</table>

**DTS**
Choose whether to output by “Bitstream” which processes DTS signals on other connected equipment or to convert the signals to “PCM” (2 channels) on the unit before output.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bitstream</strong></td>
<td>When you have connected the unit to a piece of equipment with the DTS logo.</td>
</tr>
<tr>
<td><strong>PCM</strong></td>
<td>When you have connected the unit to a piece of equipment without the DTS logo.</td>
</tr>
</tbody>
</table>

**MPEG**
Choose whether to output by “Bitstream” which processes MPEG signals on other connected equipment or to convert the signals to “PCM” (2 channels) on the unit before output.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bitstream</strong></td>
<td>When you have connected the unit with a built-in MPEG decoder.</td>
</tr>
<tr>
<td><strong>PCM</strong></td>
<td>When you have connected the unit with a built-in MPEG decoder.</td>
</tr>
</tbody>
</table>

**Audio Mode for DV Input**
You can select the kind of audio when recording from the unit’s DV IN terminal.

- **Stereo 1**
- **Stereo 2**
- **Mix**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stereo 1</strong></td>
<td>Records audio (L1, R1)</td>
</tr>
<tr>
<td><strong>Stereo 2</strong></td>
<td>Records added audio such as narration (L2, R2) subsequent to the original recording.</td>
</tr>
<tr>
<td><strong>Mix</strong></td>
<td>Records both Stereo 1 and Stereo 2</td>
</tr>
</tbody>
</table>

**FL Display**
Changes the brightness of the unit’s display.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bright</strong></td>
<td>The display turns dark during play and reappears momentarily if a button is pressed. The unit is turned off, the unit’s display disappears. While using this mode the standby power consumption can be reduced.</td>
</tr>
<tr>
<td><strong>Dim</strong></td>
<td>The display turns dark during play and reappears momentarily if a button is pressed. The unit is turned off, the unit’s display disappears. While using this mode the standby power consumption can be reduced.</td>
</tr>
<tr>
<td><strong>Automatic</strong></td>
<td>The display turns dark during play and reappears momentarily if a button is pressed. When the unit is turned off, the unit’s display disappears. While using this mode the standby power consumption can be reduced.</td>
</tr>
</tbody>
</table>

- **When “Power Save” is set to “On” (⇒ 59), this setting is automatically fixed to “Automatic”.**
### Playback Colour System

Select the playback system to match your TV set. Press [ENTER] to show the following settings.

- **Auto** (E-240)
  - The VHS automatically distinguishes E30, -60, -90, -120, -180, and -240 tapes.
- **E-195** For E195 tape
- **E-260** For E260 tape
- **E-300** For E300 tape

### TV System

Select the TV system to match the connected equipment.

- **PAL**
  - PAL automatically distinguishes E30, -60, -90, -120, -180, and -240 tapes.
- **NTSC**
  - NTSC automatically distinguishes E30, -60, -90, -120, -180, and -240 tapes.

#### TV Aspect

- **16:9**
- **4:3**

### Language code list

<table>
<thead>
<tr>
<th>Language code</th>
<th>Country</th>
<th>Language code</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>6566</td>
<td>Azerbaijan</td>
<td>7688</td>
<td>Lithuania</td>
</tr>
<tr>
<td>6665</td>
<td>Abkhazian</td>
<td>7689</td>
<td>Lithuanian</td>
</tr>
<tr>
<td>6663</td>
<td>Afrikaans</td>
<td>7690</td>
<td>Macedonian</td>
</tr>
<tr>
<td>6662</td>
<td>Albanian</td>
<td>7691</td>
<td>Romanian</td>
</tr>
<tr>
<td>6577</td>
<td>Amaphtic</td>
<td>7692</td>
<td>Russian</td>
</tr>
<tr>
<td>6582</td>
<td>Arabic</td>
<td>7693</td>
<td>Serbian</td>
</tr>
<tr>
<td>7268</td>
<td>Armenian</td>
<td>7694</td>
<td>Slovak</td>
</tr>
<tr>
<td>6583</td>
<td>Assamese</td>
<td>7695</td>
<td>Slovenian</td>
</tr>
<tr>
<td>6589</td>
<td>Aymerian</td>
<td>7696</td>
<td>Somali</td>
</tr>
<tr>
<td>6590</td>
<td>Azerbaijani</td>
<td>7697</td>
<td>Spanish</td>
</tr>
<tr>
<td>6665</td>
<td>Bashkir</td>
<td>7698</td>
<td>Spanish (Latin)</td>
</tr>
<tr>
<td>6986</td>
<td>Basque</td>
<td>7699</td>
<td>Spanish (Spanish)</td>
</tr>
<tr>
<td>6678</td>
<td>Bengali, Bangla</td>
<td>7700</td>
<td>Spanish (Spanish, Latin)</td>
</tr>
<tr>
<td>6690</td>
<td>Bhutanese</td>
<td>7701</td>
<td>Swahili</td>
</tr>
<tr>
<td>6691</td>
<td>Bihari</td>
<td>7702</td>
<td>Swedish</td>
</tr>
<tr>
<td>6692</td>
<td>Breton</td>
<td>7703</td>
<td>Swedish (Tagalog)</td>
</tr>
<tr>
<td>6672</td>
<td>Bulgarian</td>
<td>7704</td>
<td>Tajik</td>
</tr>
<tr>
<td>6789</td>
<td>Burmese</td>
<td>7705</td>
<td>Tamil</td>
</tr>
<tr>
<td>6663</td>
<td>Byelorussian</td>
<td>7706</td>
<td>Tanzanian-Romanian</td>
</tr>
<tr>
<td>6677</td>
<td>Cambodian</td>
<td>7707</td>
<td>Telugu</td>
</tr>
<tr>
<td>6765</td>
<td>Catalan</td>
<td>7708</td>
<td>Thai</td>
</tr>
</tbody>
</table>

### Remote Control (→ 15)

#### DVD

<table>
<thead>
<tr>
<th>DVD 1</th>
<th>DVD 2</th>
<th>DVD 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>[For Australia]</td>
<td>[New Zealand]</td>
<td>[Others]</td>
</tr>
</tbody>
</table>

### Clock (→ 61)

- **[On]**
- **[Off]**

### Power Save

- **[On]**
- **[Off]**

### Default Settings

- **[Yes]**
- **[No]**

### Shipping Condition

- **[Yes]**
- **[No]**

### Others

#### Remote Control (→ 15)

- **[DVD 1]**
- **[DVD 2]**
- **[DVD 3]**

#### DivX Registration (→ 29)

Displays the unit's registration code. You need this registration code to purchase and play DivX Video-on-Demand (VOD).

### Initialize

Press [ENTER] to show the following settings.

#### Language code list

<table>
<thead>
<tr>
<th>Language code</th>
<th>Country</th>
<th>Language code</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>6666</td>
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<td>7694</td>
<td>Somali</td>
</tr>
<tr>
<td>6589</td>
<td>Aymerian</td>
<td>7695</td>
<td>Spanish</td>
</tr>
<tr>
<td>6590</td>
<td>Azerbaijani</td>
<td>7696</td>
<td>Spanish (Spanish)</td>
</tr>
<tr>
<td>6665</td>
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<td>Spanish (Spanish, Latin)</td>
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<tr>
<td>6986</td>
<td>Basque</td>
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<tr>
<td>6678</td>
<td>Bengali, Bangla</td>
<td>7699</td>
<td>Spanish (Spanish, Latin)</td>
</tr>
<tr>
<td>6690</td>
<td>Bhutanese</td>
<td>7700</td>
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<tr>
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<tr>
<td>6765</td>
<td>Catalan</td>
<td>7707</td>
<td>Thai</td>
</tr>
</tbody>
</table>

### Changing the unit's settings

Changing the unit's settings
Resetting the channel setting

1. While stopped
   Press [FUNCTIONS].

2. Press [3, 4] to select “To Others” and then press [ENTER].

3. Press [3, 4] to select “Setup” and then press [ENTER].

4. Press [3, 4] to select “Tuning” and then press [2, 1].

You can add or delete channels or change programme positions.

- To add a channel
  Press [FUNCTIONS], then press [3, 4].

- To delete a channel
  Press [FUNCTIONS], then press [3, 4].

5. Press [FUNCTIONS] to select “Manual” and then press [ENTER].

To delete a programme position
Press [2, 1, 3, 4] to select a programme position and then press [A].

To add a blank programme position
Press [2, 1, 3, 4] to select a programme position and then press [B].

To move a TV station to another programme position
1. Press [3, 4, A, B] to select the programme position and then press [C].
2. Press [A, B] to select the new programme position to which you want to assign the TV station and then press [ENTER].

To change detailed station settings

- Pos: To change the programme position in which the TV stations are assigned
  Press [A, B] or the numbered buttons to select the number of the desired programme position and then press [ENTER].

- Name: To enter or change the name of a TV station
  Press [A, B] to enter the station name and then press [ENTER].
  If the station name needs a blank space, select the blank between “Z” and “£”.

- Channel: To enter newly available TV stations or change the channel number of an already tuned TV station
  Press [A, B] or the numbered buttons to enter the channel number of the desired TV station. Wait a few moments until the desired TV station has been tuned. After the desired TV station is tuned, press [ENTER].

- Fine Tuning: To obtain the best tuning condition
  Press [A, B] to adjust the best tuning condition and then press [ENTER].
  Press [C] to return to “Auto”.

- Video System: To select the video system type
  Press [A, B] to select “PAL” or “SECAM” if the picture lacks colour and then press [ENTER].
  Auto: This unit automatically distinguishes PAL and SECAM signals.
  PAL: For receiving PAL signals.
  SECAM: For receiving SECAM signals.
  This setting is also available when you select the external input channel (AV1, AV2 or DV IN) in step 5. In order to record properly, make sure the appropriate setting to match the connected equipment.

- Audio Mode: To select the audio reception type
  Press [A, B] to select the items and then press [ENTER].
  BG: PAL B.G
  I: PAL I
  DK: PAL D.K.K1

- Mono: To select the type of sound to be recorded
  Press [A, B] to select “On” and then press [ENTER]. If the stereo sound is distorted due to inferior reception conditions or if you want to record the normal (mono) sound during a stereo, bilingual or NICAM broadcast.

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].
Set the clock manually

- In the case of power failure the clock setting remains in the memory for approximately 60 minutes.
  1. While stopped
     Press [FUNCTIONS].
  2. Press [▲, ▼] to select “To Others” and then press [ENTER].
  3. Press [▲, ▼] to select “Setup” and then press [ENTER].
  4. Press [▲, ▼] to select “Others” and then press [►].
  5. Press [▲, ▼] to select “Clock” and then press [ENTER].
  6. Press [◄, ►] to select the item you want to change and then press [▲, ▼] to change the setting.

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

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

List of TV Reception Channels

For Asia and the Middle East

<table>
<thead>
<tr>
<th>Tuner System</th>
<th>Channel Coverage</th>
<th>VHF</th>
<th>UHF</th>
<th>CATV</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL-DK</td>
<td>OIRT</td>
<td>R1 - R12</td>
<td>CH 21 - 69</td>
<td>44 MHz - 470 MHz</td>
</tr>
<tr>
<td>PAL-BGH, SECAM-BG</td>
<td>CCIR</td>
<td>E2 - E12</td>
<td>E21 - E69</td>
<td>S01 - S05, M1 - M10, U1 - U10, S21 - S41</td>
</tr>
<tr>
<td>PAL-D</td>
<td>China</td>
<td>CH 1 - 12</td>
<td>CH 13 - 57</td>
<td>–</td>
</tr>
</tbody>
</table>

For Australia and New Zealand

<table>
<thead>
<tr>
<th>Tuner System</th>
<th>Channel Coverage</th>
<th>VHF</th>
<th>UHF</th>
<th>CATV</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAL-B</td>
<td>Australia</td>
<td>0-12</td>
<td>28-69</td>
<td>45 MHz - 470 MHz</td>
</tr>
<tr>
<td>PAL-BG</td>
<td>New Zealand</td>
<td>1-11</td>
<td>21-69</td>
<td>44 MHz - 470 MHz</td>
</tr>
</tbody>
</table>
**Glossary**

**Bitstream**
This is a signal compressed and converted into digital form. It is converted back to a multi-channel audio signal, e.g., 5.1-channel, by a decoder.

**Component video output**
Component signal outputs the colour difference signals (Pr/Ph) 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.

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

**Decoder**
A decoder restores the coded audio signals on DVDs to the state they were before being encoded.

**DivX**
DivX is a popular media technology created by DivX, Inc. DivX media files contain highly compressed video with high visual quality that maintains a relatively small file size.

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

**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 TV’s speakers. Some discs prohibit down-mixing. If this is the case, this unit can only output the front two channels.

**DTS (Digital Theater System)**
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 hear the dialogue clearly at low volume.

**Film and Video**
DVD-Videos are recorded using either film or video. The unit can determine which type has been used, then uses the most suitable method of progressive output.

*For PAL*
- Film is 25 frames per second.
- Video is 50 fields per second (2 fields making up 1 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 (2 fields making up 1 frame).

**Finalize**
A process that makes play of a recorded CD-R, CD-RW, DVD-R, etc. possible on equipment that can play such media. You can finalize DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R and +R DL on the unit. After finalizing, the disc becomes play-only and you can no longer record or edit. However, finalized DVD-RW can be formatted to become recordable.

**Formatting**
Formatting is the process of making media such as DVD-RAM recordable on recording equipment. You can format DVD-RAM, DVD-RW (only as DVD-Video format), +R, +R DL and +RW on the unit. Formatting irrevocably deletes all contents on the disc.

**Frame and field**
A Frame is a single image on the TV. Each frame consists of 2 fields.

- **Frame**
  - Video image
  - A frame shows 2 fields, so there may be some blurring between them, but picture quality is generally better.

- **Field**
  - A still frame shows 2 fields, so there may be some blurring between them, but picture quality is generally better.

**JPEG (Joint Photographic Experts Group)**
This is a system used for compressing/decoding colour still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

**MP3 (MPEG Audio Layer 3)**
A method that compresses audio to approximately a tenth of its size without any considerable loss to audio quality. You can play MP3s that you have recorded onto CD-R and CD-RW.

**Pan & Scan/Letterbox**
In general, DVD-Videos are produced with the intention that they will be viewed on a widescreen TV (16:9 aspect ratio), so images often do not fit regular TVs (4:3 aspect ratio). 2 styles of picture, “Pan & Scan” and “Letterbox”, deal with this problem.

- **Pan & Scan:** The sides are cut off so the picture fills the screen.
- **Letterbox:** Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

**Playback control (PBC)**
If a Video CD has playback control, you can select scenes and information with menus displayed on the screen. (The unit is compatible with version 2.0 and 1.1.)

**Progressive/Interlace**
The PAL video signal standard has 576 (or 625) interlaced (i) scan lines, whereas progressive scanning, called 576p (or 625p), uses twice the number of scan lines. For the NTSC standard, these are called 480i (or 525i) and 480p (or 525p) respectively. Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video.

Your television must be compatible to enjoy progressive video. Panasonic televisions with 576 (625)/50i · 50p, 480 (525)/60i · 60p input terminals are progressive compatible.

**Protection**
You can prevent accidental erasure by setting write-protection or erase protection.

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

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

**TIFF (Tag Image File Format)**
This is a still picture data standard. A common format for storing high quality images on digital cameras and other devices.
# Error messages

## On the television

<table>
<thead>
<tr>
<th>Error message</th>
<th>Description</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td><strong>Authorization Error</strong></td>
<td>You are trying to play a DivX VOD contents that was purchased with a different registration code. You cannot play the contents on this unit.</td>
<td>29</td>
</tr>
<tr>
<td><strong>Cannot finish recording completely.</strong></td>
<td>• The programme was copy-protected.</td>
<td>–</td>
</tr>
<tr>
<td>• The disc may be full.</td>
<td></td>
<td>–</td>
</tr>
<tr>
<td>• The maximum number of times you can record the programme is exceeded.</td>
<td></td>
<td>–</td>
</tr>
<tr>
<td>• DVD+R-DL/DVD+RW: There are already 99 recorded titles (49 DVD-RW, 49 recorded titles).</td>
<td></td>
<td>–</td>
</tr>
<tr>
<td><strong>Cannot playback.</strong></td>
<td>• You tried to play a title recorded using a different encoding system from that of the TV system currently selected on the unit. Alter the “TV System” setting on this unit to suit.</td>
<td>59</td>
</tr>
<tr>
<td><strong>To playback, please change the TV System in Setup.</strong></td>
<td></td>
<td>–</td>
</tr>
<tr>
<td><strong>Unable to format.</strong></td>
<td>• The disc may be dirty or scratched.</td>
<td>8</td>
</tr>
<tr>
<td><strong>Please check the disc.</strong></td>
<td></td>
<td>–</td>
</tr>
<tr>
<td><strong>Cannot record. Disc is full.</strong></td>
<td>• RAM [R] [RW] [V] Create space by deleting any unwanted titles.</td>
<td>27, 53</td>
</tr>
<tr>
<td>• Even if you delete recorded content from the DVD-R or +R, there is no increase in disc space. Available recording space on a DVD-RW (DVD-Video format) or +RW increases when the title recorded last is deleted. (The recording space may increase slightly when other titles are deleted.)</td>
<td></td>
<td>–</td>
</tr>
<tr>
<td><strong>Cannot record to the disc. TV system of the disc is different to the setting in Setup.</strong></td>
<td>The disc contains video contents of a different video system. Change the “TV System” settings in the Setup menu.</td>
<td>59</td>
</tr>
<tr>
<td><strong>Error has occurred. Please press ENTER.</strong></td>
<td>• Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering (“U88” appears on the unit’s display).</td>
<td>–</td>
</tr>
<tr>
<td><strong>No Disc</strong></td>
<td>• You have not inserted a disc. Correctly insert a disc that the unit can play.</td>
<td>17</td>
</tr>
<tr>
<td><strong>No cassette.</strong></td>
<td>• A video cassette is not inserted when recording programmes. Insert a video cassette with an accidental erasure prevention tab.</td>
<td>17</td>
</tr>
<tr>
<td><strong>Now recording on DVD.</strong></td>
<td>• It is possible to playback the VHS while recording on DVD. You can watch the VHS by connecting the unit to the TV with the DVD/VHS COMMON terminals.</td>
<td>12</td>
</tr>
<tr>
<td><strong>To watch pictures on VHS, use DVD/VHS COMMON OUT, and switch to an appropriate AV channel on your TV.</strong></td>
<td></td>
<td>–</td>
</tr>
<tr>
<td><strong>Please set clock.</strong></td>
<td>• The clock is not set. Set the clock.</td>
<td>61</td>
</tr>
<tr>
<td><strong>The cassette is write-protected.</strong></td>
<td>• A video cassette without a secure accidental erasure prevention tab is inserted when recording programmes. Use a video cassette with a secure accidental erasure prevention tab.</td>
<td>17</td>
</tr>
<tr>
<td><strong>This is a non-recordable disc. Cannot record.</strong></td>
<td>• The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW. You inserted an unformatted DVD-RAM, DVD-RW, +R, +R DL or +RW. Format the disc with the unit.</td>
<td>6</td>
</tr>
<tr>
<td><strong>This disc is not formatted properly.</strong></td>
<td>• The TV system set on the unit and the signal of the video contents of the video cassette being played is different. Connect the unit to the TV with the DVD/VHS COMMON terminals.</td>
<td>55</td>
</tr>
<tr>
<td><strong>To watch pictures on VHS, use DVD/VHS COMMON OUT, and switch to an appropriate AV channel on your TV.</strong></td>
<td></td>
<td>–</td>
</tr>
<tr>
<td><strong>Rental Expired</strong></td>
<td>• The DivX VOD contents has zero remaining plays. You cannot play it.</td>
<td>29</td>
</tr>
<tr>
<td><strong>Video system of the disc is different.</strong></td>
<td>• The input signal is different from the settings of this unit. Change the “TV System” settings in the Setup menu.</td>
<td>59</td>
</tr>
<tr>
<td><strong>The operation is prohibited by the unit or disc.</strong></td>
<td></td>
<td>–</td>
</tr>
</tbody>
</table>
### Error messages

**On the unit's display**

<table>
<thead>
<tr>
<th>Service Code</th>
<th>Error Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H, F</td>
<td>An error has occurred. The number following “H” or “F” depends on the status of the unit. Check the items in the “Error messages” section and the “Troubleshooting guide”.</td>
<td>–</td>
</tr>
<tr>
<td>≥</td>
<td>If the service numbers fail to clear, note the service numbers and contact a qualified service person.</td>
<td>–</td>
</tr>
<tr>
<td>X HOLD</td>
<td>The Child Lock function is activated. Press and hold [ENTER] and [RETURN] simultaneously until “X HOLD” disappears.</td>
<td>36</td>
</tr>
<tr>
<td>DVD</td>
<td>The remote control and the main unit are using a different code. Change the code on the remote control.</td>
<td>15</td>
</tr>
<tr>
<td>HARD ERR</td>
<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>
<tr>
<td>NoREAD</td>
<td>The disc is dirty or badly scratched. The unit cannot record, play, or edit. You have used a lens cleaner and it has finished. Press [+, OPEN/CLOSE] on the main unit to eject the disc.</td>
<td>8, 17</td>
</tr>
<tr>
<td>PLEASE WAIT</td>
<td>Displayed when the unit is turned on. This is not a malfunction. The unit is carrying out its recovery process. You cannot operate the unit while “PLEASE WAIT” is displayed.</td>
<td>–</td>
</tr>
<tr>
<td>PROG FULL</td>
<td>There are already 16 timer programmes. Delete unnecessary timer programmes.</td>
<td>25</td>
</tr>
<tr>
<td>UNSUPPORT</td>
<td>You have inserted a disc the unit cannot play or record.</td>
<td>6, 7</td>
</tr>
<tr>
<td>UNFORMAT</td>
<td>You have inserted a new DVD-RAM, DVD-RW, +R, +R DL, +RW or a DVD-RAM, DVD-RW (DVD-Video format), +RW recorded on other equipment.</td>
<td>55</td>
</tr>
<tr>
<td>NoCASSETTE</td>
<td>You have not inserted a video cassette for the recording.</td>
<td>17</td>
</tr>
<tr>
<td>PROTECT</td>
<td>You have inserted a video cassette without the accidental erasure prevention tab is inserted. Use a video cassette with an accidental erasure prevention tab.</td>
<td>17</td>
</tr>
<tr>
<td>U59</td>
<td>The unit is very warm. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.</td>
<td>–</td>
</tr>
<tr>
<td>U61</td>
<td>There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</td>
<td>–</td>
</tr>
<tr>
<td>U88</td>
<td>There was something unusual detected with the disc while recording, playing or transferring (copying), there was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</td>
<td>66</td>
</tr>
<tr>
<td>U99</td>
<td>The unit fails to operate properly. Press [O/I] on the main unit to switch the unit to standby. Now press [O/I] on the main unit again to turn the unit on.</td>
<td>–</td>
</tr>
</tbody>
</table>
## Frequently asked questions

### Set up

**What equipment is necessary to play multi channel surround sound?**
- **DVD Video:** You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital or DTS decoder.
- **DVD-Audio:** This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound.

**Can the headphones and speakers be directly connected to the unit?**
- You cannot directly connect them to the unit. Connect through the amplifier etc.

**The television has both S Video input terminal and component video input terminals. Which terminal should I connect with?**
- Connecting with the component video terminal provides a more vivid picture compared to connecting with the S Video terminal.

**Is my television progressive output compatible?**
- All Panasonic television that have 576 (625)/50i · 50p, 480 (525)/60i · 60p input terminals are compatible. Consult the manufacturer if you have another brand of television.

### Disc

**Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?**
- **For Asia**
  - You cannot play DVD-Video if its region number does not include “3” or “ALL”.
- **For Australia and New Zealand**
  - You cannot play DVD-Video if its region number does not include “4” or “ALL”.
- **For the Middle East**
  - You cannot play DVD-Video if its region number does not include “2” or “ALL”.

**Can a DVD-Video that does not have a region number be played?**
- The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.

**Please tell me about DVD-R, DVD-R DL, DVD-RW, +R, +R DL and +RW compatibility with the unit.**
- The unit records and plays high speed recording compatible discs.
- After recording but before finalizing +R, +R DL discs.
  - You may not be able to play and record discs on this unit after recording them on other Panasonic products or other manufacturer’s equipment.
  - You may not be able to play and record discs on other equipment after recording them on this unit.
- After finalizing the disc, however, you will be able to play it on any DVD-Video compatible player.

**Please tell me about CD-R and CD-RW compatibility with the unit.**
- The unit plays CD-R/CD-RW discs which have been recorded in one of the following standards: CD-DA, Video CD, DivX, MP3 and still pictures (JPEG/TIFF). Close the session or finalize the disc after recording. This unit can recognize up to 300 folders (groups) and 3000 files (tracks) on a disc with MP3 or still pictures (JPEG/TIFF) and up to 30 folders and 200 files with DivX.
- You cannot write to a CD-R or CD-RW with the unit.

### Recording

**Can I record from a commercially purchased video cassette or DVD?**
- Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.

**Can DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW recorded on the unit be played on other equipment?**
- You can play on compatible equipment such as DVD players after finalizing the disc on this unit. It is not necessary to finalize +RW. However, depending on the condition of the recording, the quality of the disc and capabilities of the DVD player, play may not be possible. To enable play on other DVD players, please use “Create Top Menu” in the DVD Management menu.

**Can I record digital audio signals using the unit?**
- You cannot record digital signals. The digital audio terminals on the unit are for output only. (The audio recorded from the digital video camera using the DV Auto Rec function, for example, is recorded digitally.)

**Can a digital audio signal from the unit be recorded to other equipment?**
- You can record if using the PCM signal. When recording DVD, change the “Digital Audio Output” settings to the following from the Setup menu.
  - “PCM Down Conversion”: “On”
  - “Dolby Digital”/“DTS”/“MPEG” : “PCM”
- As long as digital recording from the disc is permitted.
- As long as the recording equipment is compatible with 48 kHz of sampling frequency.
- You cannot record MP3 signals.

**Can I switch to bilingual broadcast during recording?**
- With DVD-VR video cassettes, you can. Just press [AUDIO].
- **With DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, +RW you cannot.**
  - Change before recording with “Bilingual Audio Selection” in the Setup menu.

---

### Error messages/Frequently asked questions

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<tr>
<td>Can the headphones and speakers be directly connected to the unit?</td>
<td>–</td>
</tr>
<tr>
<td>The television has both S Video input terminal and component video input terminals. Which terminal should I connect with?</td>
<td>13</td>
</tr>
<tr>
<td>Is my television progressive output compatible?</td>
<td>62</td>
</tr>
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<tr>
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<tr>
<td>Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?</td>
<td>Cover</td>
</tr>
<tr>
<td>Can a DVD-Video that does not have a region number be played?</td>
<td>–</td>
</tr>
<tr>
<td>Please tell me about DVD-R, DVD-R DL, DVD-RW, +R, +R DL and +RW compatibility with the unit.</td>
<td>6, 7, 6</td>
</tr>
<tr>
<td>Please tell me about CD-R and CD-RW compatibility with the unit.</td>
<td>7, 28, 31</td>
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</tbody>
</table>

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<tr>
<th>Recording</th>
<th>Page</th>
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<tbody>
<tr>
<td>Can I record from a commercially purchased video cassette or DVD?</td>
<td>–</td>
</tr>
<tr>
<td>Can DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW recorded on the unit be played on other equipment?</td>
<td>55, 56</td>
</tr>
<tr>
<td>Can I record digital audio signals using the unit?</td>
<td>–</td>
</tr>
<tr>
<td>Can a digital audio signal from the unit be recorded to other equipment?</td>
<td>58</td>
</tr>
<tr>
<td>Can I switch to bilingual broadcast during recording?</td>
<td>27, 33, 58</td>
</tr>
</tbody>
</table>
Troubleshooting guide

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

<table>
<thead>
<tr>
<th>The following do not indicate a problem with the unit:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>● Regular disc/video cassette rotating sound. The sound of the disc rotating may become louder especially when finalizing a DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL.</td>
<td></td>
</tr>
<tr>
<td>● Poor reception due to atmospheric condition.</td>
<td></td>
</tr>
<tr>
<td>● Image disturbance during search.</td>
<td></td>
</tr>
<tr>
<td>● Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)</td>
<td></td>
</tr>
<tr>
<td>● The unit freezes due to the activation of one of its safety devices. (Press and hold [O/I] on the main unit for 10 seconds.)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power</td>
<td>● Insert the AC mains lead securely into a known active household mains socket. 12</td>
</tr>
<tr>
<td>The unit switches to the standby mode.</td>
<td>● One of the unit’s safety devices is activated. Press [O/I] on the main unit to turn the unit on. –</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Displays</th>
<th>Page</th>
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<tbody>
<tr>
<td>The display is dim.</td>
<td>● Change “FL Display” in the “Setup” menu. 58</td>
</tr>
<tr>
<td>“0:00” is flashing on the unit’s display.</td>
<td>● Set the clock. 61</td>
</tr>
<tr>
<td>The recording time display, the transfer (copying) process display and the displayed recording time of MP3 are different from the actual time.</td>
<td></td>
</tr>
<tr>
<td>● The time on the unit’s display and the remaining recording time on the screen may be indicated less or more than the actual value.</td>
<td></td>
</tr>
<tr>
<td>● The available recording space on DVD-R, DVD-R DL, +R or +R DL does not increase when you delete titles.</td>
<td></td>
</tr>
<tr>
<td>● Available recording space on a DVD-RW (DVD-Video format) or +RW increases only when the title recorded last is deleted. It does not increase if other titles are deleted.</td>
<td></td>
</tr>
<tr>
<td>● If you repeat recording or editing about 200 times or more, the remaining capacity of the DVD-R, DVD-R DL, +R or +R DL is reduced and then recording or editing may be disabled. (For the second layer on DVD-R DL and +R DL, this happens after about 60 times.)</td>
<td></td>
</tr>
<tr>
<td>● The unit’s display is dim.</td>
<td></td>
</tr>
<tr>
<td>● The time during fast forward and rewind, or the process during transfer (copy) may not be displayed accurately.</td>
<td></td>
</tr>
<tr>
<td>Compared to the actual recorded time, the elapsed time displayed is less (only when recording in NTSC).</td>
<td>● The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be a slight difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording. –</td>
</tr>
<tr>
<td>The tape counter is not changing.</td>
<td>● The tape counter does not change while playing unrecorded parts. The “second” display changes as follows: (e.g., Blank after 1 h 36 min)</td>
</tr>
<tr>
<td>● The unit’s display also appears like this if the tape is dirty or damaged. Consult your dealer if this is the case.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“U88” is displayed and the disc cannot be ejected.</th>
<th>● The unit is carrying out the recovery process. Do the following to eject the disc:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Press [O/I] on the main unit to switch the unit to standby. If the unit does not switch to standby, press and hold [O/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby.</td>
<td>(2) While the unit is off, press and hold [■] and [CH, ▼] on the main unit at the same time for about 5 seconds. Remove the disc.</td>
</tr>
<tr>
<td>Operation</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td><strong>Cannot operate the TV.</strong> <strong>Cannot operate the DVD.</strong> <strong>Cannot operate the VHS.</strong></td>
<td>15, 10, 10</td>
</tr>
<tr>
<td><strong>Cannot operate the VHS.</strong> <strong>The remote control does not work.</strong></td>
<td>15, 10</td>
</tr>
<tr>
<td><strong>The unit is on but cannot be operated.</strong></td>
<td>64</td>
</tr>
<tr>
<td><strong>Cannot eject a disc.</strong> <strong>Cannot tune channels.</strong></td>
<td>36, 12</td>
</tr>
<tr>
<td><strong>Startup is slow.</strong> <strong>Takes time to read DVD-RAM.</strong></td>
<td>59, –</td>
</tr>
<tr>
<td><strong>Picture</strong></td>
<td></td>
</tr>
<tr>
<td><strong>TV reception worsens after connecting the unit.</strong></td>
<td>–</td>
</tr>
<tr>
<td><strong>The images from the unit do not appear on the TV.</strong></td>
<td>12, 13</td>
</tr>
<tr>
<td><strong>Picture is distorted.</strong></td>
<td>–</td>
</tr>
<tr>
<td><strong>The TV screen is distorted when switching the DVD/VHS.</strong></td>
<td>–</td>
</tr>
<tr>
<td><strong>On-screen messages do not appear.</strong></td>
<td>58</td>
</tr>
<tr>
<td><strong>The grey background does not appear.</strong></td>
<td>58</td>
</tr>
<tr>
<td><strong>The 4:3 aspect ratio picture expands left and right.</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>Screen size is wrong.</strong></td>
<td>59</td>
</tr>
<tr>
<td><strong>There is a lot of after-image when playing video.</strong></td>
<td>–</td>
</tr>
<tr>
<td><strong>When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.</strong></td>
<td>35</td>
</tr>
<tr>
<td><strong>There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.</strong></td>
<td>–</td>
</tr>
</tbody>
</table>

- **Note:** Some operations are prohibited by the disc.

- **Note:** The unit is warm (“US9” appears on the unit’s display). Wait until “US9” disappears.

- **Note:** The child lock function is activated.

- **Note:** You cannot operate the VHS.

- **Note:** Some operations are prohibited by the disc.

- **Note:** The unit is on but cannot be operated.
### Troubleshooting guide

**Recording, Timer recording, Transfer (copying), External input**

<table>
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<tr>
<td><strong>Cannot record.</strong></td>
<td></td>
</tr>
<tr>
<td>• You have not inserted a disc; the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.</td>
<td>6, 17</td>
</tr>
<tr>
<td>• RAM</td>
<td>RW</td>
</tr>
<tr>
<td>• The write-protect tab on the cartridge is set to “PROTECT” or the disc is protected with “DVD Management”.</td>
<td>55</td>
</tr>
<tr>
<td>• Some programmes have limitations on the number of times they can be recorded (CPRM).</td>
<td>6, 62</td>
</tr>
<tr>
<td>• The disc is full or nearly full. Delete unnecessary titles or use another disc.</td>
<td>27, 37, 53</td>
</tr>
<tr>
<td>• You cannot record on finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or DVD-RW (DVD Video Recording format) discs.</td>
<td>56</td>
</tr>
<tr>
<td>• If you repeatedly insert discs or turn the unit on and off about 50 times or more, the recording or editing of DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, +R may be disabled.</td>
<td>–</td>
</tr>
<tr>
<td>• A DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, +R RW recorded on the unit may not be recordable on other Panasonic DVD recorders.</td>
<td>–</td>
</tr>
<tr>
<td>• The material you are trying to record is copy-protected.</td>
<td>–</td>
</tr>
<tr>
<td>• This unit cannot record to discs containing both PAL and NTSC signals.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Timer recording does not work properly.</strong></td>
<td></td>
</tr>
<tr>
<td>• The timer programme is incorrect or different timer programme times overlap. Correct the programme.</td>
<td>25</td>
</tr>
<tr>
<td>• The clock is not correct. Set the clock.</td>
<td>61</td>
</tr>
<tr>
<td>• The programme is not in timer recording standby. ( is not displayed by the programme you want to record.)</td>
<td>25</td>
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<tr>
<td>[For] Australia, New Zealand</td>
<td></td>
</tr>
<tr>
<td>• G-CODE programming does not work properly.</td>
<td></td>
</tr>
<tr>
<td>• Press [A, V] to select the programme and then press [A].</td>
<td>–</td>
</tr>
<tr>
<td>• Timer recording will not be activated during formatting, transfer (copying) and other such operations which should not be interrupted when they are being carried out.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Timer recording does not stop even when [●, STOP] is pressed.</strong></td>
<td>59</td>
</tr>
<tr>
<td>• The timer programme remains even after timer recording finishes.</td>
<td>24</td>
</tr>
<tr>
<td>• If you start recording immediately after turning on the unit while “Quick Start” is set to “On”, you cannot stop recording for a few seconds.</td>
<td>–</td>
</tr>
<tr>
<td>• The timer programme remains if it is set to daily or weekly recording.</td>
<td>–</td>
</tr>
<tr>
<td><strong>A part or whole of a recorded title has been lost.</strong></td>
<td></td>
</tr>
<tr>
<td>• If the power shuts down or the plug is disconnected from the household AC mains while recording or editing, the programme may be lost or the disc may become unusable. We cannot offer any guarantee regarding lost titles or discs. You will have to format the disc RAM</td>
<td>–</td>
</tr>
<tr>
<td>• [A, V] or use a new disc.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Cannot transfer (copy) VHS to DVD.</strong></td>
<td>55</td>
</tr>
<tr>
<td>• The write-protect tab on the cartridge is set to “PROTECT” or the disc is protected with “DVD Management”.</td>
<td>–</td>
</tr>
<tr>
<td>• Some video cassettes on the market (including rental videos) are copy-protected to prevent illegal reproductions. Copy-protected video cassettes cannot be properly recorded.</td>
<td>–</td>
</tr>
<tr>
<td>• You cannot use the transfer (copying) function when the FUNCTIONS window, the Timer Recording List screen, etc. are displayed.</td>
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</tr>
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<td><strong>Cannot transfer (copy) DVD to VHS.</strong></td>
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<tr>
<td>• A video cassette without the accidental erasure prevention tab is inserted. Use a video cassette with an accidental erasure prevention tab.</td>
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<tr>
<td>• Some DVDs on the market (including rental DVD) are copy-protected to prevent illegal reproductions. Copy-protected DVDs cannot be properly recorded.</td>
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</tr>
<tr>
<td>• You cannot use the transfer (copying) function when the FUNCTIONS window, the Timer Recording List screen, etc. are displayed.</td>
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</tr>
<tr>
<td><strong>The sound level after transferring (copying) is not equal on DVD and on VHS.</strong></td>
<td>–</td>
</tr>
<tr>
<td>• The sound level on DVD and VHS may not match depending on the disc. When the sound level in a particular part of the sound source is soft or loud, the sound may be recorded softly or loudly on a video cassette.</td>
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</tr>
<tr>
<td><strong>Stripe-shaped black noise is recorded.</strong></td>
<td>–</td>
</tr>
<tr>
<td>• The device in playback is interfering with the TV because the device is too close to the TV. Move the device away from the TV.</td>
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</tr>
<tr>
<td><strong>Cannot record video or sound from the external device.</strong></td>
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<tr>
<td>• The device connected is not correctly connected.</td>
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<tr>
<td>• The proper external input channel (AV1, AV2 or DV IN) is not selected.</td>
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<td><strong>The DV automatic recording function does not work.</strong></td>
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<td>• If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings.</td>
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<td>• You cannot start recording until the images from the DV equipment appear on the television.</td>
<td>–</td>
</tr>
<tr>
<td>• Recording may not be performed as desired if the time codes on the tape in the DV equipment are not correct.</td>
<td>–</td>
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<tr>
<td>• Depending on the equipment, the DV Auto Rec may not operate properly.</td>
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<tr>
<td>• You can only record audio/video images on the DV cassette.</td>
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<td>Audio and video momentarily pause.</td>
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<td>DVD-Video is not played.</td>
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<td>Alternative soundtrack and subtitles cannot be selected.</td>
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<td>No subtitles.</td>
<td>–</td>
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<tr>
<td>Angle cannot be changed.</td>
<td>–</td>
</tr>
<tr>
<td>You have forgotten your ratings password.</td>
<td>–</td>
</tr>
<tr>
<td>Quick View does not work.</td>
<td>–</td>
</tr>
<tr>
<td>The resume play function does not work.</td>
<td>–</td>
</tr>
<tr>
<td>When playing a PAL disc, the picture is distorted.</td>
<td>35</td>
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<tr>
<td>When playing a DivX disc, the picture is distorted.</td>
<td>34</td>
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<tr>
<td>It takes time before play starts.</td>
<td>–</td>
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<td>Picture stops.</td>
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### Sound

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<td>No sound.</td>
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<td>Distorted sound.</td>
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<td>Cannot hear the desired audio type.</td>
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<tr>
<td>Cannot switch audio.</td>
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<tr>
<td>Low volume.</td>
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<tr>
<td>Cannot hear the desired audio type.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot switch audio.</td>
<td>13, 58</td>
</tr>
<tr>
<td>Check the connections and &quot;Digital Audio Output&quot; settings. Check the input mode on the amplifier if you have connected one.</td>
<td>–</td>
</tr>
<tr>
<td>Press [AUDIO] to select the audio.</td>
<td>–</td>
</tr>
<tr>
<td>Set &quot;V.S.S.&quot; in the Sound menu to &quot;Off&quot; in the following cases.</td>
<td>–</td>
</tr>
<tr>
<td>- When using discs that do not have surround sound effects such as Karaoke discs.</td>
<td>–</td>
</tr>
<tr>
<td>- When playing bilingual broadcast titles.</td>
<td>–</td>
</tr>
<tr>
<td>DVD-A The disc may have a restriction on the method of audio output. Some multi-channel DVD-Audio discs prohibit down-mixing. If this is the case, this unit can only output the front two channels. Refer to the disc’s jacket.</td>
<td>–</td>
</tr>
<tr>
<td>Audio may not be output due to how the DivX files are created.</td>
<td>–</td>
</tr>
<tr>
<td>You cannot change the audio type when playing DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or -RW. (You can select &quot;M 1&quot; or &quot;M 2&quot; in &quot;Bilingual Audio Selection&quot; in the Setup menu before recording.)</td>
<td>–</td>
</tr>
<tr>
<td>You have used a digital connection. Set “Dolby Digital” to “PCM” or connect using audio cables (analog connection).</td>
<td>–</td>
</tr>
<tr>
<td>There are discs whose audio cannot be changed because of how the disc was created.</td>
<td>–</td>
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## Troubleshooting guide

### Edit

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<td>Cannot format.</td>
<td>✷ The disc is dirty. Wipe with a damp cloth and then wipe dry. ✷ You tried formatting a disc that is not compatible with the unit.</td>
<td>8</td>
</tr>
<tr>
<td>Cannot mark the start point or the end point during “Partial Delete” operation.</td>
<td>✷ The unit writes the chapter division information to the disc when you turn it off or remove the disc. ✷ The information is not written if there is an interruption in the power before this. ✷ These operations are not possible with still pictures. ✷ You cannot set points if they are too close to each other. You cannot set an end point before a start point.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot delete chapters.</td>
<td>✷ When the chapter is too short to delete, use “Combine Chapters” to make the chapter longer.</td>
<td>39</td>
</tr>
<tr>
<td>The available recording time does not increase even after deleting recordings on the disc.</td>
<td>✷ Available recording space on the DVD-R, the DVD-R DL, the +R or the +R DL does not increase even after deleting previously recorded titles. ✷ Available recording space on a DVD-RW (DVD-Video format) or +RW increases only when the title recorded last is deleted. It does not increase if other titles are deleted.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot create a playlist.</td>
<td>✷ You cannot select all the chapters in a title at once as the source of playlist edition if the title also includes still pictures. Select them individually.</td>
<td>–</td>
</tr>
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</table>

### VHS Picture

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<tr>
<th>Issue</th>
<th>Possible Cause</th>
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<tbody>
<tr>
<td>Cannot create chapters.</td>
<td>✷ The disc is dirty. Wipe with a damp cloth and then wipe dry. ✷ You tried formatting a disc that is not compatible with the unit.</td>
<td>6</td>
</tr>
<tr>
<td>Cannot mark the start point or the end point during “Partial Delete” operation.</td>
<td>✷ The unit writes the chapter division information to the disc when you turn it off or remove the disc. ✷ The information is not written if there is an interruption in the power before this. ✷ These operations are not possible with still pictures. ✷ You cannot set points if they are too close to each other. You cannot set an end point before a start point.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot delete chapters.</td>
<td>✷ When the chapter is too short to delete, use “Combine Chapters” to make the chapter longer.</td>
<td>39</td>
</tr>
<tr>
<td>The available recording time does not increase even after deleting recordings on the disc.</td>
<td>✷ Available recording space on the DVD-R, the DVD-R DL, the +R or the +R DL does not increase even after deleting previously recorded titles. ✷ Available recording space on a DVD-RW (DVD-Video format) or +RW increases only when the title recorded last is deleted. It does not increase if other titles are deleted.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot create a playlist.</td>
<td>✷ You cannot select all the chapters in a title at once as the source of playlist edition if the title also includes still pictures. Select them individually.</td>
<td>–</td>
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</table>

### VHS Sound

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Cause</th>
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<tbody>
<tr>
<td>Cannot hear the desired audio type.</td>
<td>✷ Press [AUDIO] to select the audio.</td>
<td>33</td>
</tr>
<tr>
<td>There is noise when playing a video cassette.</td>
<td>✷ Adjust the tracking. ✷ The tape is old or damaged.</td>
<td>33</td>
</tr>
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</table>

### VHS Recording, Timer Recording

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Cause</th>
<th>Page</th>
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<tbody>
<tr>
<td>Cannot record.</td>
<td>✷ A video cassette is not inserted. Insert a video cassette with an intact accidental erasure prevention tab. ✷ The erasure prevention tab has been removed. Cover the hole with adhesive tape.</td>
<td>17</td>
</tr>
<tr>
<td>Cannot record TV programme.</td>
<td>✷ The desired channel is not selected. Select the desired TV programme.</td>
<td>–</td>
</tr>
</tbody>
</table>

### VHS Play

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Cause</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Playback does not work properly.</td>
<td>✷ The video head is dirty. ✷ The tape is too old or damaged. ✷ Check the “SQPB” setting. ✷ The video heads are clogged or worn: consult your dealer (for Australia only, Panasonic Customer Care Centre for advice on 132600).</td>
<td>17, 59</td>
</tr>
</tbody>
</table>
Specifications

Power supply:
- For Asia and the Middle East
  AC 220 V to 240 V, 50/60 Hz
- For Australia and New Zealand
  AC 220 V to 240 V, 50 Hz

Power consumption:
- Approx. 26 W

Standby mode:
- Display On: 7.0 W
- Display Off: 6.8 W
- Quick Start On: Approx. 7.0 W
- Quick Start Off: Approx. 2.6 W

Recordable discs:
- DVD-RAM: Ver. 2.0, Ver. 2.1/3X-SPEED, Ver. 2.2/5X-SPEED
- DVD-R: for General Ver. 2.0, Ver. 2.0/4X-SPEED, Ver. 2.0/8X-SPEED
- DVD-R DL (Dual Layer): Ver. 2.0, Ver. 2.0/4X-SPEED
- DVD-RW: Ver. 1.1, Ver. 1.1/2X-SPEED
- +R: Ver. 1.0/2.4X-SPEED
- +R DL (Double Layer): Ver. 1.0/4X-SPEED
- +RW: Ver. 1.1
- 1.2/4X-SPEED

Recording system:
- DVD-RAM: DVD Video Recording format
- DVD-R: DVD-Video format
- DVD-R DL: DVD-Video format
- DVD-RW: DVD-Video format
- +R: DVD Video Recording format
- +R DL (Double Layer): DVD Video Recording format
- +RW: DVD Video Recording format

Recording time:
- Max. 8 hours (using 4.7 GB disc)
- XP: Approx. 1 hour
- SP: Approx. 2 hours
- LP: Approx. 4 hours
- EP: Approx. 6 hours or 8 hours

Playable discs:
- DVD-RAM: DVD Video Recording format
- DVD-R: DVD Video format, DivX
- DVD-R DL (Dual Layer): DVD Video Recording format
- DVD-RW: DVD-Video format, DVD Video Recording format
- +R: DVD Video Recording format
- +R DL (Double Layer): DVD Video Recording format
- +RW: DVD Video format, DivX, CD-DA, Video CD, MP3, JPEG

Optical pick-up:
- System with 1 lens, 2 integration units
- Wavelength: 662 nm (DVDs), 780 nm (CDs)

LASER specification:
- Class 1 LASER Product
- Wave Length: 780 nm (CDs), 662 nm (DVDs)
- Laser Power: No hazardous radiation is emitted with the safety protection

Television system:
- TV system: PAL system, 625 lines, 50 fields
- NTSC system, 525 lines, 60 fields

Antenna reception input:
- VHF: CH 1 to 12 (PAL-DK), CH 1 to 11 (NZ), 75Ω
- UHF: CH 0 to 69 (Australia), CH 21 to 69 (NZ), 75Ω
- CATV: 34 MHz to 470 MHz, CH 44 MHz to 470 MHz (Australia), 44 MHz to 470 MHz (NZ), 75Ω

Video system:
- MPEG2 (Hybrid VBR)
- Input:
  - LINE (pin jack) x 2: 1.0 Vp-p, 75Ω
  - S connector x 2: Y: 1.0 Vp-p, 75Ω
- Output:
  - S connector x 1: Y: 1.0 Vp-p, 75Ω
- Component video output:
  - S connector x 1: Y: 1.0 Vp-p, 75Ω
- Number of channels: 2 channels
- Number of track: 2 channels
- Digital Output: Digital audio output connector x 1 (PCM, DOLBY DIGITAL, DTS)

VHS
- Recording format:
  - VHS Video Cassette System Standard with FM audio
- Heads:
  - 4 Helical Scan Heads for Video
  - 2 Helical Scan Heads for FM audio
- Fixed Head for Normal audio
- Tape speed/Recording time:
  - SP: 23.39 mms, 240 min (with E-240 cassette)
  - LP: 11.7 mms, 480 min (with E-240 cassette)
  - EP: 7.8 mms, 720 min (with E-240 cassette)
- FF/REW time:
  - FF: Approx. 60 s (E-180 cassette)
  - REW: Approx. 50 s (E-180 cassette)
Specifications

DV Input: IEEE 1394 Standard, 4 Pin x 1

Region code

- For Asia
- For Australia and New Zealand
- For the Middle East

Clock unit: Quartz-controlled 24-hour digital display

Operating temperature range: 5 °C to 40 °C

Operating humidity range: 10% to 80% RH (no condensation)

Dimensions: Approx. 430 mm (W) x 84 mm (H) x 343 mm (D)

Mass: Approx. 5.4 kg

DVD (DivX), CD (DivX): DivX 3.11, 4.x, 5.x

GMC (Global Motion Compensation) is not supported.

DVD (DivX), CD (DivX): Common items

- Maximum number of folders:
  - 300 Recognizable folders per disc on this unit
    (including the root folder)

- Maximum number of DivX files:
  - 200 Recognizable DivX files per disc on this unit

CD (DivX), CD (DivX): Common items

- Maximum number of folders:
  - 300 Recognizable folders per disc on this unit
    (including the root folder)

- Maximum number of MP3 files:
  - 3000 Recognizable MP3 files per disc on this unit

- Maximum number of JPEG files:
  - 3000 Recognizable JPEG files per disc on this unit

This unit is compatible with multi-session.

This unit is not compatible with packet writing.

Note:

Specifications are subject to change without notice.

Mass and dimensions shown are approximate.

Quick Start for Recording (Quick Start: ON)

1 Sec. Quick Start for Recording on DVD-RAM

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