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.

Region number supported by this unit
Region numbers are allocated to DVD players and DVD-Video according to where they are sold.

- The region number of this unit is “1”.
- The unit will play DVDs marked with labels containing “1” or “ALL”.

Example:

If you have any questions contact
1-800-211-PANA(7262)

The warranty can be found on page 77.

La guía rápida en español se encuentra en la página 79–86.
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.

Note to CATV system installer:
This reminder is provided to call the CATV system installer’s
attention to Article 820-40 of the NEC that provides guidelines for
proper grounding and, in particular, specifies that the cable
ground shall be connected to the grounding system of the
building, as close to the point of cable entry as practical.

The socket outlet shall be installed near the equipment and
easily accessible. The mains plug of the power supply cord shall
remain readily operable. To completely disconnect this
apparatus from the AC Mains, disconnect the power supply cord
plug from AC receptacle.

FCC Note:
This equipment has been tested and found to comply with the
limits for a Class B digital device, pursuant to Part 15 of the FCC
Rules. These limits are designed to provide reasonable
protection against harmful interference in a residential
installation. This equipment generates, uses, and can radiate
radio frequency energy and, if not installed and used in
accordance with the instructions, may cause harmful interference
to radio communications. However, there is no guarantee that
interference will not occur in a particular installation. If this
equipment does cause harmful interference to radio or television
reception, which can be determined by turning the equipment off
and on, the user is encouraged to try to correct the interference
by one or more of the following measures:
• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from
  that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for
  help.

FCC Caution: To assure continued compliance, follow the
attached installation instructions and use only shielded interface
cables when connecting to peripheral devices.
Any changes or modifications not expressly approved by the
party responsible for compliance could void the user’s authority
to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is
subject to the following two conditions: (1) This device may not
cause harmful interference, and (2) this device must accept any
interference received, including interference that may cause
undesired operation.

Responsible Party:
Panasonic Corporation of North America
One Panasonic Way
Secaucus, NJ, 07094
Telephone No.: 1-800-211-7262

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.
IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Unit care

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

To clean the unit, wipe with a soft, dry cloth.
- Never use alcohol, 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, possibly making it impossible to record or play discs.
Use the DVD lens cleaner about once every year, depending on frequency of use and the operating environment.
Carefully read the lens cleaner’s instructions before use.

Lens cleaner: RP-CL720PP

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.

Cautions as to condensation
Condensation can cause unreliable playback of VHS recordings.
Condensation may form in the following cases,
- The unit is brought from cold surroundings into a well-heated room.
- The unit is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.
- During the rainy season.
In any of the above-mentioned conditions, do not operate the unit for at least 2 hours. The unit is not equipped with a dew sensor.

Other 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’s designed to operate in the horizontal position.

When the unit is not to be used for a long time
To save power, unplug it from the household AC outlet. The unit consumes a small amount of power even when it is turned off.

Standby power consumption

<table>
<thead>
<tr>
<th>FL Display (DIG)</th>
<th>Automatic</th>
<th>Bright</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Start (63)</td>
<td>On</td>
<td>Approx. 7 W</td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Approx. 3 W</td>
</tr>
</tbody>
</table>

Quick Start (63)
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 POWER] and then sequentially pressing the [REC] (Quick Start Mode).
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Accessories

Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts.
(All product numbers correct as of January 2006. These may be subject to change.)

To order accessories, refer to "Accessory Purchases" on page 77.

1 AC power supply cord (VFA0461)
2 Remote control (EUR7699Y70)
3 Batteries for the remote control
5 Sound bar
6 AC power supply cord (VFA0461)
7 HDMI cable (K1HA19DA0002)
8 AC power supply cord (VFA0461)
9 HDMI cable (K1HA19DA0003)
10 DVI cable (K1HA19DA0003)
11 DVD-RAM
12 Remote control (EUR7699Y70)
13 Batteries for the remote control

Product Registration Card

Please complete and return the included product registration card, or register via the Internet at:
http://www.prodreg.com/panasonic
# Discs you can use for recording and play

<table>
<thead>
<tr>
<th>Disc type</th>
<th>DVD-RAM</th>
<th>DVD-R</th>
<th>DVD-R DL¹</th>
<th>DVD-RW</th>
<th>+R²</th>
<th>+R DL²</th>
<th>+RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disc space</td>
<td>≥ 4.7 GB/9.4 GB, 12 cm (5°)</td>
<td>≥ 4.7 GB, 12 cm (5°)</td>
<td>(dual layer on single side)</td>
<td>≥ 4.7 GB, 12 cm (5°)</td>
<td>(double layer on single side)</td>
<td>≥ 4.7 GB, 12 cm (5°)</td>
<td>≥ 4.7 GB, 12 cm (5°)</td>
</tr>
<tr>
<td>Capacity</td>
<td>2.6 GB, 8 cm (5°)</td>
<td>1.4 GB, 8 cm (5°)</td>
<td>8.5 GB, 12 cm (5°)</td>
<td>1.4 GB, 8 cm (5°)</td>
<td>8.5 GB, 12 cm (5°)</td>
<td>1.4 GB, 8 cm (5°)</td>
<td>8.5 GB, 12 cm (5°)</td>
</tr>
<tr>
<td>Logo</td>
<td>DVD-RAM</td>
<td>DVD-R</td>
<td>DVD-R DL¹</td>
<td>DVD-RW</td>
<td>+R²</td>
<td>+R DL²</td>
<td>+RW</td>
</tr>
<tr>
<td>Indicated in these instructions with</td>
<td>before finalization</td>
<td>before finalization</td>
<td>before finalization</td>
<td>before finalization</td>
<td>before finalization</td>
<td>before finalization</td>
<td>before finalization</td>
</tr>
<tr>
<td>Recording format</td>
<td>VR</td>
<td>DVD-Video</td>
<td>DVD-Video</td>
<td>+VR</td>
<td>+VR</td>
<td>+VR</td>
<td>+VR</td>
</tr>
</tbody>
</table>

## Compatibility

- **Main use**
  - Re-writable discs
  - One time recording discs (recordable until the disc is full)
  - One time recording discs (recordable until the disc is full)
  - One time recording discs (recordable until the disc is full)
  - Plausible discs

## Main use

- **Recording mode**
  - Up to 5x
  - Up to 16x
  - Up to 4x
  - Up to 6x
  - Up to 16x
  - Up to 2.4x
  - Up to 4x "**"

## What you can do on this unit

<table>
<thead>
<tr>
<th>Chasing playback</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
<th>x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recording broadcasts that allow one copy</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Recording both Main and SAP of MTS broadcast</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Recording 16:9 aspect picture</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Erasing titles</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Creating playlists</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

---

1. You can record onto the second layer of dual- or double-layer discs after closing the first layer (⇒ 62). You will no longer be able to record to the first layer after you do this (⇒ 5).
2. When playing a title recorded on both layers, video and audio may momentarily cut out when the unit is switching layers.
3. 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.
4. The amount of the recordable disc space doesn’t increase even if the program is deleted when you use a one time recording disc.
5. You can play 8x recording speed discs recorded on another equipment.
6. It is not necessary to finalize the disc.
7. CPRM (⇒ 76) compatible discs only
8. The recording space may increase slightly when other titles are deleted.
9. The explanations concerning discs are indicated by [DVD] and those concerning video are indicated by [VHS].
10. You may not be able to record depending on the condition of the discs and you may not be able to play due to the condition of the recording.
11. You cannot record programs that allow “One time only recording” to CPRM compatible DVD-R, DVD-R DL and DVD-RW on this unit. You can record other programs as DVD-Video format.
12. For the recording time, refer to “Recording modes and approximate recording times (DVD)” on page 26.

---

### DVD Video Recording format

- **This is a recording method which allows you to record and edit TV broadcasts and so on.**
- **Digital broadcasts that allow “One time only recording” can be recorded to a CPRM compatible disc. You can record to CPRM compatible DVD-RAM on this unit.**
- **Play is only possible on a compatible DVD player.**
- **Use a DVD-RAM to record in DVD Video Recording format.**

---

### DVD-Video format

- **This recording method is the same as commercially available DVD-Video.**
- **Digital broadcasts that allow “One time only recording” cannot be recorded.**
- **These can be played on a DVD player. However programs recorded on this unit must be finalized to be played on other DVD players.**
- **Use a DVD-R, DVD-R DL or DVD-RW to record in DVD-Video format.**
Play-only discs

<table>
<thead>
<tr>
<th>Disc type</th>
<th>DVD-Video</th>
<th>DVD-Audio</th>
<th>DVD-RW (DVD Video Recording format)</th>
<th>Audio CD</th>
<th>Video CD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logo</td>
<td>[DVD-V]</td>
<td>[DVD-A]</td>
<td>[RW-RW]</td>
<td>CD</td>
<td>VCD</td>
</tr>
</tbody>
</table>

Indicated in these instructions with:

- High quality movie and music discs
- Played on this unit in 2 channels
- DVD-RW* recorded on another DVD recorder
- You can play programs that allow "One time only recording" if they have been recorded to a CPRM compatible disc.
- By formatting (→ 81) the disc, you can record to it in DVD-Video format.
- It may be necessary to finalize the disc on the equipment used for recording.
- Recorded audio and music (including CD-R/RW*)
- CD-R* and CD-RW* with music recorded in MP3 (→ 34) Still pictures (JPEG and TIFF) recorded on CD-R/RW*
- Recorded music and video (including CD-R/RW*)

* 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 still pictures (JPEG/TIFF), CD-DA, Video CD and MP3 format data recorded on CD-R/RW. Close the session or finalize the disc after recording.
- The producer of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc’s instructions carefully.

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 (→ 76) 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 (5")
- 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), +R, +R DL recorded on another unit and not finalized (→ 61, “Enabling discs to be played on other equipment — Finalize”)
- PAL discs (you can still play the audio on DVD-Audio)
- DVD-Video with a region number other than “1” or “ALL”
- Blu-ray
- DVD-ROM, +R 8cm (3’), CD-ROM, CDV, CD-G, Photo CD, CVO, SVCD, SACD, MV-Disc, PD, DivX Video Disc, etc.

Concerning logo marks

Dolby Digital (→ 64)
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 (→ 64)
This surround system is used in many movie theaters around the world. The separation between channels is good and the compression ratio is low, so realistic sound effects are possible.

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.
Disc and card information

Cards usable on this unit

<table>
<thead>
<tr>
<th>Type</th>
<th>SD Memory Card, miniSD™ Card®, MultiMediaCard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicated in these instructions by</td>
<td>SD</td>
</tr>
<tr>
<td>Data that can be recorded and played</td>
<td>Still pictures</td>
</tr>
<tr>
<td>Instructions</td>
<td>You can insert directly into the SD card slot.</td>
</tr>
<tr>
<td></td>
<td>&quot;A miniSD™ card adaptor included with the miniSD™ card is necessary.</td>
</tr>
<tr>
<td></td>
<td>• You can play and copy still pictures taken on a digital camera, etc. (⇒ 35, 55)</td>
</tr>
<tr>
<td></td>
<td>• You can set the DPOF (Digital Print Order Format) for automatic printing on your home printer or at a photo developing store. (⇒ 48, 76)</td>
</tr>
</tbody>
</table>

Structure of folders displayed by this unit

The following folders can be displayed on this unit.

- **DVD-RAM**
- **Card**

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

- **Suitable SD Memory Cards**

You can use SD Memory Cards with the following capacities (from 8 MB to 2 GB).

<table>
<thead>
<tr>
<th>8 MB</th>
<th>32 MB</th>
<th>64 MB</th>
<th>128 MB</th>
<th>256 MB</th>
<th>512 MB</th>
<th>1 GB</th>
<th>2 GB (Maximum)</th>
</tr>
</thead>
</table>

● Useable memory is slightly less than the card capacity.

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

● If the SD Memory Card is formatted on other equipment, the time spent for recording may become longer. Also if the SD Memory Card is formatted on a PC, you may not be able to use it on this unit.

In these cases, format the card on this unit. (⇒ 61, 76)

● This unit supports SD Memory Cards formatted in FAT 12 system and FAT 16 system based on SD Memory Card Specifications.
Using DVD-R, DVD-R DL, DVD-RW, +R, +R DL and +RW on this unit

Restrictions with DVD-R, etc.*
- 16:9 aspect programs are recorded in 4:3 aspect.
- Either Main or SAP can be recorded for MTS 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 an SAP program to DVD-R, etc.
Select the audio to record before recording or transferring (copying).
Some television programs are broadcast in SAP (Secondary Audio Program). You have to select the audio recording type before recording or transferring (copying) them to DVD-R, etc.

Playing the disc on other DVD players
The disc must be finalized after recording or transferring (copying). 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).

Recording to a DVD-R DL and +R DL
DVD-R DL and +R DL discs have two layers of recording surface on one side. It is not possible to record continuously from the first layer to the second layer. Recording stops when space on the first layer becomes full.

Disc and card information
The remote control

**About batteries**
- Insert so the poles (+ and −) match those in the remote control.
- Do not use rechargeable type batteries.

**Do not:**
- Mix old and new batteries.
- 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 if the covering has been peeled off.

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

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

**Note**
- If you cannot operate the unit or TV using the remote control after changing the batteries, please re-enter the codes (p. 21).

**How to use the remote control**
Aim at the sensor, avoiding obstacles, at a maximum range of 7 m (23 feet) directly in front of the unit.

**Remote control signal sensor**

Remote control signal sensor

**Disc and card handling**

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

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

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

**Handling precautions**
- Do not attach labels or stickers to discs. (This may cause disc warping and 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 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 changes (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.
Video cassette information

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

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

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 (part number NV-TCL30PT). If the problem persists, seek advice from a qualified service person.

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

Automatic drive select function
If you insert an SD card while the unit is stopped, the “SD Card Operations” screen is displayed. Select an item and press [ENTER] to switch to the SD drive (→ 35, 55). If you remove an SD card, the DVD drive is automatically selected.

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

Useful features
You can enjoy both DVD, VHS and SD 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 tape formats. The following information summarizes a few of these features.

DVD
Progressive output (→ 16, 20)
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 (→ 61)
This function enables you to play recorded DVD-R, DVD-R DL, DVD-RW (DVD-Video format) +R and +R DL on other players.
Instant play (→ 32)
This function can quickly find and play a video program you wish to watch. Direct Navigator guides you to the beginning of a previously recorded video immediately.
Quick view (→ 32)
This function allows you to watch news, information and other programs in a short time.
Chasing play (→ 28)
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 (→ 25)
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 recording and play (→ 28)
With this function, you can play a previously recorded video program while recording another program.
Time Slip (→ 33)
This function enables you to jump to the scene you specify during play.
One touch transfer (copy) (→ 50, 52)
This function can copy video from VHS to DVD and vice versa.
DV input terminal (→ 57)
The DV camcorder recording function of this unit lets you easily copy a video to the DVD by connecting only a single DV cable.

VHS
Long recording (→ 26)
With this function, you can record approx. 10 hours of video onto a T-120 cassette, for example.

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

- [DRIVE SELECT] button
  - Before performing DVD operations, be sure to press the [DRIVE SELECT] button to select DVD side. Also, make sure the DVD indicator lights up on the unit.
  - Before performing VHS operations, be sure to press the [DRIVE SELECT] button to select VHS side. Also, make sure the VHS indicator lights up on the unit.
  - Before performing SD card operations, be sure to press the [DRIVE SELECT] button to select SD side. Also, make sure the SD card indicator lights up on the unit.

Turn the unit on ................................................................. → 18
Select drive (DVD, VHS or SD) ........................................... above
Select channels and title numbers etc./Enter numbers ......
Cancel/Reset the tape counter ........................................... 18
Basic operations for recording and play ......................... 23
Skip the specified time/ .................................................... 33
Jet rewind button (JET REW). ............................................ 37
Direct Navigator ............................................................. 32, 34
Selection/Enter, Frame-by-frame .................................... 18, 33
Show sub menu ............................................................ 36, 41, 45
Select audio ................................................................. 27, 33
View select (A). ................................................................ 53
Show on-screen menu .................................................... 39
View select (B). ................................................................ 53
Start recording .............................................................. 25
Change recording mode .................................................. 25, 30
Transmission window ...................................................... 21, 28
TV operations ............................................................... 21, 28
Channel select/ TRACKING/V-LOCK. ............................... 38
Select channel (IN1, IN2, DV). ......................................... 19
Delete items ................................................................. 59
Skip a minute forward ..................................................... 33
Show scheduled recording list ....................................... 30
Show FUNCTIONS window ............................................. 40
Return to previous screen .............................................. 23
Select VCR/TV ............................................................. 33
Create chapters ........................................................... 29
Start Flexible Recording .................................................. 29
Show status messages ................................................... 38, 40

Notes
- Buttons such as the [REC] button do not protrude as much as other buttons to stop them from being pressed accidentally.
- The word “button” is not used in these operating instructions so “Press the [ENTER] button.” is shown as “Press [ENTER].”
- You can use this remote control to operate your TV if you set the TV manufacturer code (→ 21).
Main unit

- **Cassette eject button** (EJECT)
- **Disc tray open/close button** (OPEN/CLOSE)
- **Stop button** (∫)
- **Play/π button** (π)
- **Recording button** (REC)
- **DVD/VHS POWER on/off button** (ON/OFF)
- **IN2 input terminals** (IN2)
- **DVD-SEARCH, VHS-REW/FF buttons** (V/6)
- **Channel up/down buttons** (CH, X)
- **DVD/VHS/SD drive indicator**
- **DRIVE SELECT button**
- **SD card slot**
- **Connector for a digital video (DV) camcorder**
- **One Touch Transfer (copying) operation button**
- **Common to DVD/VHS/SD**
  - **Recording mode indicator**
  - **Scheduled recording indicator**
  - **Tape indicator**
  - **Tape operation status**
- **Main display**
  - **Current time**
  - **Disc recording and play counter**
  - **VHS recording and play counter**
  - **Transfer (Copying) messages**
  - **Miscellaneous messages, etc.**
- **VHS**
  - **Scheduled recording indicator**
- **DVD**
  - **Scheduled recording indicator**
- **SD**
  - **SD Card indicator**
STEP 1 Connection

This section includes diagrams of two common methods of connection (A-B, pages 14 to 15). Please connect using the one that best suits you.

- Visit Panasonic’s homepage for more information about connection methods. (This is in English only.)
- Before doing any connection, turn off all the equipments and read the appropriate operating instructions.
- Peripheral equipments and optional cables are sold separately unless otherwise indicated.
- You need to subscribe to a cable TV service to enjoy viewing their programme.
- Consult your service provider regarding appropriate cable box.

The unit’s RF OUT terminal
The picture and sound signal from this unit go through the RF OUT terminal to the television. Refer to page 15 if the antenna connector doesn’t match.

When the unit is not to be used for a long time
To save power, unplug it from the household AC outlet. This unit consumes a small amount of power, even when it is turned off (approx. 8 W).

Do not connect the unit through a video cassette recorder
Video signals sent through video cassette recorders will be affected by copyright protection systems and the picture will not be shown correctly on the TV.

A Connection with a television

Connection (with Audio/Video cable)
Connect in numerical order 1 to 4.
- After this connection, set the RF output channel “OFF” (→ 18), and then press TV/VIDEO button of TV remote controller to select the AV input mode to the connected TV terminal. You can watch a video from this unit on your TV.

Connection (without Audio/Video cable)
You do not need to connect “3”.
The unit supplies a signal to the TV via the 75 Ω coaxial cable on channel 3 or 4. It is possible to view the video picture on your TV in the same way that you watch TV broadcasts.
- After this connection, set the RF output channel “CH3” or “CH4” (→ 18).
**B Connection with a television and cable box or satellite receiver**

If the antenna connector doesn’t match

Use one of the following connections to suit the antenna lead to the unit’s RF IN terminal, and the 75 Ω coaxial cable to the antenna terminals on the equipment (television etc.). Refer to other equipment’s operating instructions.

<table>
<thead>
<tr>
<th>Other antenna connections to the unit</th>
<th>Other antenna connections to the television</th>
</tr>
</thead>
<tbody>
<tr>
<td>A single twin lead from the antenna</td>
<td>A twin lead terminal</td>
</tr>
<tr>
<td>(Flat) Twin lead</td>
<td>75–300 Ω transformer</td>
</tr>
<tr>
<td>300 Ω cable</td>
<td>75 Ω coaxial cable</td>
</tr>
<tr>
<td></td>
<td>To this unit’s RF IN terminal</td>
</tr>
<tr>
<td>A twin lead and a coaxial cable</td>
<td>A twin lead and coaxial plug terminal</td>
</tr>
<tr>
<td>from the antenna</td>
<td>VHF/UHF band separator</td>
</tr>
<tr>
<td>(Flat) Twin lead 300 Ω cable</td>
<td>75 Ω coaxial cable</td>
</tr>
<tr>
<td>(Round) 75 Ω coaxial cable</td>
<td>VHF/UHF band separator</td>
</tr>
<tr>
<td>Two twin leads from the antenna</td>
<td>75 Ω coaxial cable</td>
</tr>
<tr>
<td>(Flat) Twin lead 300 Ω cable</td>
<td>75 Ω coaxial cable</td>
</tr>
<tr>
<td>300–75 Ω transformer</td>
<td>VHF/UHF band separator</td>
</tr>
<tr>
<td></td>
<td>To this unit’s RF IN terminal</td>
</tr>
<tr>
<td>Two twin leads from the antenna</td>
<td>Two twin lead terminals</td>
</tr>
<tr>
<td>(Flat) Twin lead 300 Ω cable</td>
<td>VHF/UHF band separator</td>
</tr>
<tr>
<td>300–75 Ω transformer</td>
<td>75 Ω coaxial cable</td>
</tr>
<tr>
<td></td>
<td>To this unit’s RF IN terminal</td>
</tr>
</tbody>
</table>

**DVD output and DVD/VHS output**

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

**DVD/VHS COMMON OUT**

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

**DVD PRIORITY OUT**

- You can also playback a tape with the DVD PRIORITY output terminal except while recording, or making a scheduled recording, on the DVD.
STEP 1 Connection

To enjoy higher picture quality

■ Connecting to the TV S VIDEO IN 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 television.) After completing “Connection with a television” (14) or “Connection with a television and cable box or satellite receiver” (15), connect S VIDEO cable as illustration below. Usually you can watch a picture from INPUT2 terminal. When you want to playback VHS while recording on DVD, change to INPUT1 terminal.

■ Connecting to the TV COMPONENT VIDEO IN terminals

COMPONENT VIDEO OUT terminal
These terminals can be used for either interlace or progressive output (76) and provide a purer picture than the S VIDEO OUT terminal. After completing “Connection with a television” (14) or “Connection with a television and cable box or satellite receiver” (15), connect COMPONENT VIDEO cable as illustration below. Usually you can watch a picture from COMPONENT VIDEO INPUT terminal. When you want to playback VHS while recording on DVD, change to INPUT1 terminal. ■Connect to terminals of the same color.

■ Connecting an amplifier or system component

■ Connecting an amplifier with a digital input terminal
- To enjoy multi-channel surround on DVD-Video, connect an amplifier with a built-in decoder displaying these logo marks using an optical digital audio cable and change the settings in “Digital Audio Output” (64).
- Before purchasing an optical digital audio cable (not included), check the terminal shape of the connected equipment.
- You cannot use DTS Digital Surround decoders not suited to DVD.
- Even if using this connection, output will be only 2 channels when playing DVD-Audio.

■ Connection to a stereo amplifier

Amplifier's rear panel
Insert fully, with this side facing up.

This unit’s rear panel
Optical digital audio cable
Do not bend sharply when connecting.
Connecting with an HDMI (High Definition Multimedia Interface) terminal

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

Set the following:

From the Setup menu (→ 65), set “HDMI Video Output” and “HDMI Audio Output” to “On”.

- Please use HDMI cables that have the HDMI logo (as shown on the cover).

Television

HDMI cable (Only included in DMR-ES46V)

This Unit

Television

HDMI AV OUT

Connecting to a TV

Connecting to an amplifier

HDMI AV OUT

For your reference

- The HDAVI Control function will only work if you can connect this unit with Panasonic’s HDMI cable.

- Recommended part number: RP-CDHG15 (1.5 m/4.9 ft.), RP-CDHG30 (3.0 m/9.8 ft.), RP-CDHG50 (5.0 m/16.4 ft.), etc.

- Control with HDMI (HDAVI Control) function.

If connecting with a Panasonic television equipped with the HDAVI Control function, you can use this convenient function to control both the recorder and the television.

After connecting the unit to a television using an HDMI cable, set “Ctrl with HDMI” to “On”. (∗ 65)

- It is recommended that you use Panasonic’s HDMI cable.

- Recommended part number: RP-CDHG15 (1.5 m/4.9 ft.), RP-CDHG30 (3.0 m/9.8 ft.), RP-CDHG50 (5.0 m/16.4 ft.), etc.

- Depending on the cable used, this function may not be possible.

- For the connection to be completed and activate correctly, turn on all HDAVI Control compatible equipment and select this unit’s input channel on the connected television. Also when the connection or settings are changed, repeat this procedure.

Automatic input switching

When the following operations are performed the television will automatically switch the input channel and displays the corresponding action.

- When play starts on the unit
- When an action that uses the display screen is performed (e.g., Direct Navigator screen, schedule recording screen)

Note

- When the unit is recording on the DVD drive, the output does not automatically switch even if you operate the VHS.

Power on link

The television automatically turns on and the corresponding display appears when the following operations are performed with the television in standby mode:

- When play starts on the unit
- When an action that uses the display screen is performed (e.g., Direct Navigator screen, schedule recording screen)

Note

- When the unit is recording on the DVD drive, the television does not automatically turn on even if you operate the VHS.

Power off link

When the television is turned off, this unit is also automatically turned off. The unit automatically turns off even if the FUNCTIONS screen, the status message or the on-screen menu is displayed, during playback or when the unit is only scheduled recording.

Note

- Even if the television is turned off, the unit will not turn off at the same time in the following conditions:
  - When you pressed [ , REC] and the unit is recording
  - When copying
  - When finalizing

For your reference

- When [ , PLAY] is pressed on this unit for “automatic input switching” or “power on link”, the playback is not immediately displayed on the screen and it may not be possible to watch the contents from where playback started.

- In this case, press [ , SKIP] or [ , SLOW/SEARCH] to go back to where playback started.

- When the DIGITAL AUDIO OUT (Optical) terminal is used for audio output and the unit is connected to the television with a HDMI cable, set “HDMI Audio Output” to “Off” in the setup menu. (∗ 65)

Equipment compatible with and equipment scheduled to be compatible with HDAVI Control (as of January 2006)

- Plasma TVs: TH-42/50/58PX600, TH-37/42/46PX60
- LCD TVs: TC-26/30/32/36LX60, TC-23/26/32/36/42/46LX60, TC-26/32/36LXE60

Receiver: SA-XR57P

- The HDAVI Control function will only work if you can connect this unit with Panasonic equipment equipped with the HDAVI control function.

Before purchasing equipment, confirm that it has the HDAVI Control function.
STEP 2 Plug-in Auto Tuning

1. Press [O, DVD/VHS POWER].
2. Press [CH, <, >, V] to select an RF output channel number.

3. Use [4, V] to select the language and press [ENTER].
6. Press [A, V] to select “Internal TV Tuner” or “Input” and press [ENTER].
7. Press [ENTER] to start Plug-in Auto Tuning.

After plugging the unit into your household AC outlet and pressing [O, DVD/VHS POWER] to turn the unit on for the first time, the unit assists you to set the on-screen language, and automatically tunes in all the channels it can receive and sets the clock.

The unit automatically determines the type of transmission (airwaves or cable) and puts them into channels as follows.

<table>
<thead>
<tr>
<th>Band</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna Mode</td>
<td></td>
</tr>
<tr>
<td>(Airwaves)</td>
<td></td>
</tr>
<tr>
<td>VHF</td>
<td>2 to 13</td>
</tr>
<tr>
<td>UHF</td>
<td>14 to 69</td>
</tr>
<tr>
<td>CableTV Mode</td>
<td></td>
</tr>
<tr>
<td>(Cable)</td>
<td></td>
</tr>
<tr>
<td>CATV LOW BAND</td>
<td>95 to 99</td>
</tr>
<tr>
<td>CATV MID/SUPER BAND</td>
<td>14 to 36</td>
</tr>
<tr>
<td>CATV HYPER BAND</td>
<td>37 to 65</td>
</tr>
<tr>
<td>ULTRA BAND</td>
<td>66 to 94</td>
</tr>
<tr>
<td>SPECIAL CATV CHANNEL</td>
<td>100 to 125</td>
</tr>
</tbody>
</table>

Regarding DST (Daylight Saving Time) (19)

Legal revision is expected to change the DST period in 2007. When you use the unit with DST on, the change may cause the unit’s clock to go behind the actual time. Check the DST setting in Set Clock manually in the Setup menu, set DST off and reset the clock precisely if you are using this function.

Preparation
- Turn on the TV and select the appropriate video input to suit the connections to the unit. (Example: AV input, CH3 or CH4)
- If you connect the unit through a cable box or satellite receiver (15), tune to your local PBS for Auto Clock Setting to work. If there is no local PBS, set the clock manually (19, “Set Clock Manually”).

1. Press [O, DVD/VHS POWER].
2. Press [CH, <, >, V] to select an RF output channel number.

3. Use [4, V] to select the language and press [ENTER].
6. Press [A, V] to select “Internal TV Tuner” or “Input” and press [ENTER].
7. Press [ENTER] to start Plug-in Auto Tuning.

- The unit then proceeds with Auto Clock Setting. The time is displayed when Auto Clock Setting is finished.

- DST, Daylight Saving Time, shows the summertime setting.
- Time Zone shows the time difference from Greenwich Mean Time (GMT).
  - EST (Eastern Standard Time) = GMT – 5
  - CST (Central Standard Time) = GMT – 6
  - MST (Mountain Standard Time) = GMT – 7
  - PST (Pacific Standard Time) = GMT – 8
  - AST (Alaska Standard Time) = GMT – 9
  - HST (Hawaii Standard Time) = GMT – 10

For other areas: xx hr

When one of the following screens appears

“No channels were found.”

After turning off the unit, confirm following and perform setup again.
- Confirm the antenna cable is firmly connected to RF IN terminal.
- If you do not set channels on this unit, select “Input” in step 6.
- “Auto Clock Setting is incomplete.” Press [ENTER] and set clock manually. (19)

8. Press [ENTER].
Add or delete channels if necessary channels are not set or unnecessary channels are set.

Press the numeric buttons to select a channel.

- **Antenna Mode (Airwaves)**
  
  - e.g., "0": [0]  
  - "15": [1]  
  - "115": [1]  

- **Cable TV Mode (Cable)**
  
  - e.g., "0": [0]  
  - "15": [1]  
  - "115": [1]  

- You can also use [CH, Å, ] to select a channel.

Press [CH, ADD/DLT].

- e.g., The channel is deleted.

- Channel 15 Deleted

Set Clock Manually

- "Clock Settings" made here are applied to VHS as well.

While stopped
Press [FUNCTIONS].

Select “Other Functions” with [Å, Ñ] and press [ENTER].

Select “Setup” with [Å, Ñ] and press [ENTER].

Select “Channel” with [Å, Ñ] and press [Å, Ñ].

Select “Signal Source (RF IN)” with [Å, Ñ] and press [ENTER].

Select “Antenna” or “Cable TV” with [Å, Ñ] and press [ENTER].

Select “Set Channels Automatically” with [Å, Ñ] and press [ENTER].

Press [ENTER].
  - Auto Channel Setting starts. This takes a few minutes.

Press [ENTER].

- To cancel in the middle
  - Press [RETURN].

- To exit the screen
  - Press [RETURN].
Other settings

Channel captions
You can use the preset captions, or manually enter new ones yourself.
The captions you enter are used as channel names and displayed on the Direct Navigator screen.

1. While stopped
   Press [FUNCTIONS].
2. Select “Other Functions” with [A, V] and press [ENTER].
   Go to the item you want to set next.

- Preset Channel Captions
  Follow steps 1 to 4 of “Channel captions”.
5. Select “Preset Channel Captions” with [A, V] and press [ENTER].
6. Use [A, V] to select the caption and press [ENTER].
   You can choose from the following captions:
   - ABC, PBS, CBS, CNN, FOX, ESPN, NBC, HBO, A&E, AMC, FAM, MAX, MTV, SHOW, TBS, USA, TNT, CBC, UPN, CTV, WB, TSN, DISC, GLOB
   - When selecting the caption, press and hold [A, V] to scroll up and down the screen quickly.
7. Use [A, V] to select the channel corresponding to the caption and press [ENTER].
   Channels are displayed only when they contain a station and if captions have not been added manually.
   - To delete the channel number, press [A, CANCEL].
   - Repeat steps 6 and 7 as necessary.
8. Press [ENTER].

- Manual Channel Captions
  Follow steps 1 to 4 of “Channel captions”.
10. Use [A, V] to select the channel and press [ENTER].
    Channels are only displayed if they contain a station and if preset captions have not been added.
11. Use [A, V] to select the first character and press [ENTER].
    - You can choose from the following characters:
    - A to Z, 0 to 9, &, !, /, (space)
    - To delete the caption, press [A, CANCEL].
    - Repeat this step to enter the other characters.
12. Use [A, B] to return to the “Channel Number” column.
    - Repeat steps 6 to 8 to enter other channels.
13. Press [ENTER].

Selecting television type
You do not have to change the setting when connected to a 4:3 standard aspect TV that is not compatible with progressive output. (→ 76)

1. While stopped
   Press [FUNCTIONS].
2. Select “Other Functions” with [A, V] and press [ENTER].
5. Select “TV Type” with [A, V] and press [ENTER].

- Aspect 4:3/Aspect 16:9:
  - 4:3 standard aspect TV
  - 16:9 widescreen TV
- 480p/480i:
  - Select “480p” if the TV is compatible with progressive output.
6. Use [A, V] to select the item and press [ENTER].

- To return to the previous screen
  Press [RETURN].
- To exit the screen
  Press [RETURN].
Television operation

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, set the remote control as follows.

Point the remote control at the TV

While pressing \([\text{POWER TV}]\), enter the code using the numeric buttons.

e.g., 0250: press \([0] \rightarrow [2] \rightarrow [5] \rightarrow [0]\).

Manufacturer and Code No.

| Panasonic 0051, 0250 | PHILIPS (RC-5) 0054 |
| National QUASAR | RCA 0047 |
| FISHER 0154 | SANYO 0154 |
| GE 0047 | SHARP 0093, 0165 |
| GOLDSTAR 0178, 0317, 0457 | SONY 0000 |
| HITACHI 0145 | SYLVANIA 0054 |
| JVC 0053 | THOMSON 0047 |
| LG 0178, 0317, 0467 | TOSHIBA 0156 |
| MAGNAVOX 0054 | ZENITH 0017 |
| MITSUBISHI 0150 |

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

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

When other Panasonic products respond to this remote control

Change the remote control code on the main unit and on the remote control (the two must match) if you place other Panasonic products close together. When changing the remote control code, make sure the two codes are same.

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

1. While stopped
   Press [FUNCTIONS].

2. Select “Other Functions” with \([\text{\uparrow}, \text{\downarrow}]\) and press [ENTER].

3. Select “Setup” with \([\text{\uparrow}, \text{\downarrow}]\) and press [ENTER].

4. Select “Setup” with \([\text{\uparrow}, \text{\downarrow}]\) and press [ENTER].

5. Select “Remote Control Code” with \([\text{\uparrow}, \text{\downarrow}]\) and press [ENTER].

6. Use \([\text{\uparrow}, \text{\downarrow}]\) to select the code (1, 2 or 3) and press [ENTER].

   - The code on the unit has been set.

7. While pressing [ENTER], press and hold for about 2 seconds the numeric 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].

When the following indicator appears on the unit’s display

The unit’s remote control code

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

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

- To exit the screen
  Press [RETURN].
Clock Settings

“Clock Settings” made here are applied to VHS as well.

1 While stopped
   Press [FUNCTIONS].

2 Select “Other Functions” with [▲, ▼] and press [ENTER].
3 Select “Setup” with [▲, ▼] and press [◄, ►].
4 Select “Setup” with [▲, ▼] and press [2, 1].
5 Select “Clock Settings” with [▲, ▼] and press [ENTER].

Set Clock Automatically

6 Select “Set Clock Automatically” with [▲, ▼] and press [ENTER].
7 Press [ENTER].
   • Auto setting starts. This can take some time, up to a few hours
     in some cases. The following screen appears when setting is
     complete.

   • If the time was not set correctly, use manual clock setting or
     time zone adjust.
   • DST, (Daylight Saving Time) shows the summertime setting.

Other settings

Time Zone shows the time difference from Greenwich Mean
Time (GMT).

EST (Eastern Standard Time) = GMT – 5
CST (Central Standard Time) = GMT – 6
MST (Mountain Standard Time) = GMT – 7
PST (Pacific Standard Time) = GMT – 8
AST (Alaska Standard Time) = GMT – 9
HST (Hawaii Standard Time) = GMT – 10
For other areas: xx hr

Press [ENTER].

Adjust Time Zone

Follow steps 1 to 5 of “Clock Settings”.
Adjust the time zone (-1 or +1) if it was not set correctly with auto
clock setting.
You can set this menu only after “Set Clock Automatically” is
completed.

Select “Adjust Time Zone” with [▲, ▼] and press [ENTER].
Select “–1” or “+1” with [▲, ▼] and press [ENTER].

To cancel in the middle
Press [RETURN].

To return to the previous screen
Press [RETURN].
Removing Interference

Connection (without Audio/Video cable) only

---

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

1. Press [FUNCTIONS] for more than 5 seconds. The RF output channel number is displayed on the unit display.
2. Press [CH, \_ , \_] to select a channel number (CH3 or CH4).
3. Press [ENTER] to finish this setting.

---

When you set the RF output channel to “CH3” or “CH4”
A picture is output on CH3 or CH4 from RF output. Press [VCR/TV] to switch the mode from TV to VCR, and vice versa.
- When the TV mode is selected, the “TV” indicator lights on the unit’s display and you can watch TV.
- When the “TV” indicator does not light on, then VCR mode is selected and you can watch images from the unit.
Recording television programs

Inserting a video cassette

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

Insert a video cassette.
- The unit is automatically turned on.

To eject a video cassette
- You can eject a video cassette even when the unit is in standby mode. It switches back to standby once it ejects the video cassette.

For main unit
- Press [DRIVE SELECT] on the main unit.

For remote control
- Press [DRIVE SELECT] to select VHS side and then press and hold [STOP] for about 3 or more seconds.

Before recording

- The created title menu is deleted when recording on the disc.
- Create the title menu again by using “Create DVD Top Menu” in DVD Management. (p. 62)

The Main or SAP only can be recorded for MTS broadcasts, when recording to DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, +RW
- If you do not connect a cable box
  - Select “Main” or “SAP” in “Multi-channel TV sound (MTS)” in the Setup menu. (p. 64)
- If you connect a cable box
  - Select “Main” or “SAP” on the cable box.

Inserting discs

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” (p. 60), 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 (3”) DVD-RAM or 8 cm (3”) DVD-R, remove the disc from the cartridge.

Non-cartridge disc

(1) Insert label-up.
(2) Insert fully so it clicks into place.

Cartridge disc

(3) Insert label-up with the arrow facing in.

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

You can record up to 99 titles on a disc.
- RAM -R
- RAM -RW
- DVD-R
- DVD-R DL
- DVD-RW

- You can record up to 49 titles on a disc.
- RAM -R
- RAM -RW
- DVD-R
- DVD-R DL
- DVD-RW

- 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 (3") DVD-RAM discs. Use a CPRM compatible DVD-RAM.
- Recording will take place on open space on the disc. Data will not be overwritten.
- If there is no space left on the recording disc, you will need to erase unwanted titles (±41, 59) or use a new disc.

When recording to DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW
- When recording MTS broadcasts
  - If you do not connect a cable box
    Select “Main” or “SAP” in “Multi-channel TV sound (MTS)” in the Setup menu (±64).
  - If you connect a cable box
    Select “Main” or “SAP” on the cable box.
- The aspect ratio of the recorded image will be 4:3.
- 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 first be finalized (±61).
- To enable play on other DVD equipment, please use “Create DVD Top Menu” in DVD Management menu (±62).

Preparation
- Release protection (disc ±60, cartridge ±60, RAM
- Select the unit viewing channel (e.g. AV input) on the TV.
- Select an audio type you want to record. (±27)

1. Press [Ç, DVD/VHS POWER] to turn the unit on.
2. Press [DRIVE SELECT] to select the drive you want to record on (DVD or VHS).
3. Insert a disc. (±24)
   - When using a DVD-RAM for the first time with the unit, format it to ensure accurate recording (±61, “Deleting all contents of a disc or card – Format”).
   - Insert a video cassette with an intact accidental erasure prevention tab. (±24)

4. Press [CH, , ] to select the channel.
   - To select with the numeric buttons:
     - Antenna Mode (Airwaves)
       e.g., “ST”: [0]→[5]
     - CableTV Mode (Cable)
       e.g., “CH”: [0]→[15]
      "15": [0]→[15]
     - "ST": [0]→[1]→[5]
     - "15": [1]→[1]→[5]

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

   DVD
   XP, SP, LP or EP
   VHS
   SP, EP or VP

   ≥ You cannot change the channel or recording mode during recording. You can change them while recording is paused, but the material is recorded as a separate title.

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

- To stop recording
  Press [I, STOP]
  ≥ Recorded as 1 title until the position where stopped, DVD
  ≥ You can press [Ç, REC] to restart recording.
  ≥ It takes about 30 seconds for the unit to complete recording management information after recording finishes.

- To show the remaining time
  - DVD
    Press [STATUS] several times. (±40)
  - VHS
    1. Select “Select Tape Length” from the Setup and select the corresponding tape length. (±65)
    2. Press [STATUS] several times.
   The remaining tape time may not be displayed correctly depending on the tape used.

Notes
- Even if the video cassette you use is labeled “S-VHS”, it is not possible to record in the S-VHS system with the unit. It records in the normal VHS system. VHS
- When recording is paused for 5 or more minutes, the unit returns to stop mode. VHS
- The remaining tape time is only displayed during playback or recording. VHS
Recording television programs

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

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 It is not possible to record or play continuously from one side of a double sided disc to the other.
° 2 When “Recording Time in EP Mode” has been set to “EP (6H)” in the Setup menu. (64)

The sound quality is better when using “EP (6H)” than when using “EP (8H).”
° 3 It is not possible to record continuously from first layer to second layer.

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

FR (Flexible Recording mode ➔ 29):
- You can set FR mode when transferring (copying) or programming scheduled recordings.

Recording modes (VHS)

Recording mode
SP: You can record the length shown on the tape.
EP: 3 times the length of SP mode.
VP: 5 times the length of SP mode.
- To have a longer recording capacity, select “EP” or “VP.”
- If the image quality is important to you or if you wish to store the tape for a long period, select “SP.”
- The unit can play tapes recorded in LP mode on other equipment ("LP" lights on the unit’s display).

VP mode:
- A tape recorded in VP mode by the unit cannot be played back by other VCRs. It is recommended to distinguish it from other tapes by writing “VP” on the tape label, etc.
- It takes more time for automatic tracking to work when playing tapes recorded with VP mode, and it may not work at all with some tapes. Do tracking manually if this is the case (➔ 38).

Note
You cannot play VP recording on other equipment.

Recording modes and approximate recording times (DVD)

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

<table>
<thead>
<tr>
<th>DVD-RAM</th>
<th>DVD-R DVD-RW</th>
<th>DVD-R DL, +R DL+ (8.5 GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single-sided (4.7 GB)</td>
<td>Double-sided (9.4 GB)</td>
</tr>
<tr>
<td>XP (High quality)</td>
<td>1 hour</td>
<td>2 hours</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>2 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>LP (Long recording)</td>
<td>4 hours</td>
<td>8 hours</td>
</tr>
<tr>
<td>EP (Extra long recording)</td>
<td>6 hours (12 hours*)</td>
<td>8 hours (6 hours*)</td>
</tr>
<tr>
<td>FR (Flexible Recording)</td>
<td>8 hours maximum</td>
<td>8 hours maximum for one side</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 It is not possible to record or play continuously from one side of a double sided disc to the other.
*2 When “Recording Time in EP Mode” has been set to “EP (6H)” in the Setup menu. (64)

The sound quality is better when using “EP (6H)” than when using “EP (8H).”
*3 It is not possible to record continuously from first layer to second layer.
Off Timer

The unit automatically switches to standby when it has not been used for about 6 hours. You can turn this feature off or change the time to 2 hours. (63, “Off Timer”)

When the format confirmation screen is displayed

When you insert a new disc and 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 are deleted.

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

Several steps are necessary to format a disc. Refer to “Deleting all contents of a disc or card –Format”. (61)

When remove a recorded disc

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

When finalizing the disc

You cannot stop this process once you have started it. If you want to provide the disc with a name or set play menu select, select “Disc Name” (60) or “Playback will start with” (61) in “DVD Management” before finalizing.

When opening the tray without disc finalization

Press [►, OPEN/CLOSE] on the main unit.

To specify a time to stop recording – One Touch Recording

While recording

Press [DRIVE SELECT] to select the drive you want to specify the time to stop recording (DVD or VHS).

Press [►, REC] to select the recording time.

On the main unit, press [►, REC].

The unit’s display

Each time you press the button:
Counter (Cancel) → OFF 0:30 → OFF 1:00 → OFF 1:30 → OFF 4:00 → OFF 3:00 → OFF 2:00 → OFF 1:30 → OFF 0:30 → OFF 1:00 → OFF 1:30

For your reference

This does not work during scheduled recording or Flexible Recording.

Recording stops and the set time is cleared if you press [►, STOP].

The set time is cleared if you change the recording mode or channel while recording is paused.

Selecting audio to record

Press [AUDIO].

Stereo → SAP Audio → Mono

Stereo: Main audio (stereo). If the broadcast is “Mono+SAP”, audio will be monaural even if you select Stereo mode.

SAP Audio: Secondary audio program (SAP). If recorded in SAP, main audio is also recorded.

Mono: Main audio (monaural). Select “Mono” if reception is poor during a stereo broadcast.

If you change the sound setting while recording, the recorded sound will also change.

Select the audio (Main or SAP) in “Multi-channel TV sound (MTS)” in the Setup menu. (64)

Auto Bilingual Choice Function

When a stereo broadcast or SAP broadcast is recorded and played back on the unit, stereo sound will be automatically selected in the case of a stereo broadcast and SAP sound will be automatically selected in the case of a dual-sound broadcast (Mono and SAP or Stereo and SAP).

This function may not work properly if the program is played back from a mid point. In a case like this, press [AUDIO] and select the right sound.

The function will not work with a cassette which has been recorded using external equipment.

Recording television programs


Recording television programs

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

For your reference

- You cannot record on discs while VHS recording.

You can play tapes while DVD recording. The recording will not be affected.

For your reference

- You cannot record on tapes while DVD recording.

Playing while you are recording

RAM
Preparation
- Select DVD side with pressing [DRIVE SELECT].

Hint
- Sound is not output while fast-forwarding.

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

You can start play from the beginning of the title while continuing to record it.

While recording or scheduled recording
Press [►, PLAY].
- Play starts while recording proceeds.

For your reference

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

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

You can play a title previously recorded while you are recording another title.

1 While recording or scheduled recording
Press [DIRECT NAVIGATOR]. (→ 32)

- Currently recording

2 Use [◄, ◄, ◄, ◄] to select a title and press [ENTER].
- Play starts while recording proceeds.

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

For your reference

- During simultaneous recording and play, you cannot edit or erase titles with the Direct Navigator or playlists.
- Even if you start play while the unit is on standby for scheduled recording, recording starts when the time you set is reached.

Playing DVD while recording VHS

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

- DVD playback (→ 32)

For your reference

- You cannot record on discs while VHS recording.

Playing VHS while recording DVD

You can play tapes while DVD recording. The recording will not be affected.

- VHS playback (→ 37)

For your reference

- You cannot record on tapes while DVD recording.

Watching the TV while recording

Preparation

- Connection (without Audio/Video cable)
  - Make sure that the TV indicator is lit on the unit's display. If it is not lit, press [VCR/TV] to light it.
- Connection (with Audio/Video cable)
  - Press [TV/VIDEO] 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 scheduled recording.
- The recording is unaffected.
Flexible Recording
(Recording that fits the remaining disc space)

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 RECORDING” is convenient in these kinds of situations.
- When the amount of free space on the disc makes selecting an appropriate recording more difficult
- When you want to record a long program with the best picture quality possible
  e.g., Recording a 90 minute program to disc
  If you select XP mode, the program will not fit one disc.

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

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

However there will be 30 minutes remaining disc space

If you select “FLEXIBLE RECORDING” the program will fit one disc perfectly.

Preparation
- Select DVD side with pressing [DRIVE SELECT].
- Select the channel to record.

1 While stopped
Press [F Rec].

<table>
<thead>
<tr>
<th>Flexible Recording</th>
<th>Maximum recording time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max recording time</td>
<td>1 Hour 23 Min.</td>
</tr>
<tr>
<td>2x recording speed</td>
<td>46 Min 23 Sec.</td>
</tr>
<tr>
<td>4x recording speed</td>
<td>11 Min 58 Sec.</td>
</tr>
<tr>
<td>Off</td>
<td>Not recorded</td>
</tr>
</tbody>
</table>

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

2 Press [◄, ▶] to select “Hour” and “Min.” and press [▲, ▼] to set the recording time.
- You can also set the recording time with the numbered buttons.
- You cannot record for more than 8 hours.

3 When you want to start recording
Press [▲, ▼, ◄, ▶] to select “Start” and press [ENTER].
- Recording starts.

To exit the screen without recording
Press [RETURN].

To stop recording partway
Press [◄, STOP].

To show the remaining time
Press [STATUS] several times. (► 40)

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.
Scheduled Recording

Cautions for using scheduled recording on DVD and VHS

- Scheduled recording automatically starts at the set time.
- Scheduled recording can be started whether the unit is turned on or off. When the unit is turned off, the sound and the video cannot be outputted to the TV.
- Scheduled recording for TV programs cannot be executed on both DVD and VHS at the same time.
  
  Make sure the scheduled recording start times do not overlap on both DVD and VHS Scheduled Recording List screens.
  
  When the scheduled recording settings overlap:
  - When the start time of both scheduled recordings is the same, the programme that you register later has priority.
  - If there is a VHS scheduled recording that overlaps a DVD programme that you register later, it may not be possible to operate the VHS during the overlap.

Programming scheduled recordings

RAM 1R 1R-DL RAW 1R W   VHS

You can enter up to 16 programs a month in advance.

Preparation
- Release protection (disc ⇒ 60, cartridge ⇒ 60) RAM.
- Insert a disc (⇒ 24) and confirm there is sufficient empty space for recording on it (⇒ 40).
- Check that the clock is set to the correct time.
- When connecting a cable box or satellite receiver, select the channel on the cable box or satellite receiver before scheduled recording starts.

1. Press [SCHEDULE],
   - Make sure “New Scheduled Recording” is selected.

2. Press [ENTER], to move and change the items using [▲, ▼, ◄, ►].

- You may use the numeric buttons to enter “Channel”, “Date”, “On”, and “Off”.
- Channel (Program Position/TV Station Name)
- Date
  - You can also make a daily or weekly program.
  - Each daily or weekly program is counted as one program.
  - On (start time)/Off (finish time)
  - The time increases or decreases in 30-minute intervals if you hold down the button.
- Drive
  - You can select DVD or VHS drive.
  - You can also press [DRIVE SELECT] to select the drive.
- DVD
- VHS
- Mode (Recording mode)
  - You can also press [REC MODE] to change the recording mode.
  - DVD XP⇒SP⇒LP⇒AUTO⇒FR⇒XP... (⇒ 26)
  - VHS SP⇒EP⇒AUTO⇒SP... (⇒ 26)
  - “Auto SP/EP mode” (⇒ 31)
- Title Name
  - Press [◄,►] to select “Title Name” and press [ENTER] (⇒ 58).

3. Press [ENTER] when you have finished making changes.
  - “ ” lights on the unit’s display. (⇒ 13)
  - “Invalid Entry” is displayed when you enter the wrong item. Reenter the item.
  - Make sure that the scheduled recording has been programmed correctly on the SCHEDULE LIST screen (⇒ 31).
  - To continue programming:
    Select “New Scheduled Recording” and repeat steps 2 to 3.

4. Press [RETURN].

Notes
- When the unit is carrying out a scheduled recording, you may utilize playback.
- When the disc or video cassette is removed, scheduled 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).
- When a video cassette is not inserted in a video cassette with no accidental erasure prevention tab is inserted, the warning message appears before the recording starts because scheduled recording cannot be executed.
- When recording more than one program in a row, for DVD-RAM the first few seconds, and for DVD-R, DVD-R DL, DVD-RW, +R, +R DL or +RW about the first 30 seconds of all programs from the second one onwards will not be recorded.
- Even if you set the Title Name on the scheduled recording screen, it is not recorded on video cassette.
- If you set “DST” (Daylight Saving Time) to “ON” when manually setting the clock (⇒ 19), scheduled recording may not work when summer switches to winter and vice versa.
Cancel scheduled recording that has already begun

Preparation
• Select the drive with the scheduled recording you want to cancel by pressing [DRIVE SELECT].

1 When unit is on
Press [STOP].
• Confirmation screen appears.

2 Press [\ , STOP] to select “Stop Recording” and press [ENTER].
• Recording stops and the scheduled recording is deleted. (Daily and weekly schedules remain and scheduled recording will start as programmed.)

Release program from recording standby

1 Press [SCHEDULE].
2 Press [A, Y] to select the program and press [SUB MENU].
3 Press [A, Y] to select “Schedule set to Off” and press [ENTER].
• Cancelled icon is displayed in left column.

Note
• When a scheduled recording program cannot start (no tape, etc.), “Schedule set to On.” is cancelled one minute before the start time. (If a daily or weekly scheduled recording program cannot start, the following daily or weekly scheduled recording will not be affected.)

Auto SP/EP mode

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

Scheduled recording

<table>
<thead>
<tr>
<th>1st program (30 min)</th>
<th>2nd program (60 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 min at SP 15 min at SP</td>
<td>45 min at EP</td>
</tr>
</tbody>
</table>

Video tape (e.g.: 60-minute cassette)
• It is not possible to automatically activate VP mode.
• The tape length must be set correctly. (+ 65)
• Some tapes may not work correctly.
• If the recording mode changes from SP to EP during a scheduled recording, some picture distortion occurs at that point.

Check, change or delete programs

Even when the unit is turned off, you can display the scheduled recording list by pressing [SCHEDULE].

1 Press [SCHEDULE].

Icon explanations
• Currently recording
• Programs are overlapped. Recording of the program with the later start time starts when the earlier program finishes recording.
• Scheduled recording standby is cancelled. Recording will not start at the scheduled time.
• You stopped a weekly or daily scheduled recording. The icon disappears when the next scheduled recording starts.
• The disc was full. (not enough space)
• The TV program may not be recorded due to copy-protect. (disc)
• Recording stopped (Dirty disc or tape, etc.)

Check

OK: Recordable (disc)
F: The disc was full. (not enough space)
X: Recording stopped (Dirty disc or tape, etc.)

Overlap: When the date and time overlap with another scheduled recording, only a part of the program can be recorded.

Overlap:

Check, change or delete programs

1 Press [SCHEDULE].
2 Press [A, Y] to select the program.
• You may also select program by inputting a 2-digit number using the numeric buttons. e.g.: “5”: [0]→[5] “15”: [1]→[5]
• Press [\ , CANCEL] or [CH, ADD/DLT] to delete,
• You cannot delete programs that are currently recording, or press [ENTER] to change.
• The scheduled recording setting screen appears.
3 If you pressed [ENTER] in step 3, Use [A, Y, \, \] to change and press [ENTER].
4 Press [RETURN].

Note
• When a scheduled recording program cannot start (no tape, etc.), “Schedule set to On.” is cancelled one minute before the start time.
• The TV program may not be recorded due to copy-protect. (disc)

VHS

Auto SP/EP mode

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

Scheduled recording

<table>
<thead>
<tr>
<th>1st program (30 min)</th>
<th>2nd program (60 min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 min at SP 15 min at SP</td>
<td>45 min at EP</td>
</tr>
</tbody>
</table>

Video tape (e.g.: 60-minute cassette)
• It is not possible to automatically activate VP mode.
• The tape length must be set correctly. (+ 65)
• Some tapes may not work correctly.
• If the recording mode changes from SP to EP during a scheduled recording, some picture distortion occurs at that point.
When a menu screen appears on the TV

Press the numeric buttons to select an item.

- VCD: [0]→[5]
- DVD-A: [0]→[5]
- DVD-V: [0]→[5]

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

Other buttons used to operate menus

Read the disc’s instructions for further details about operation.

Note
- If “Q” appears on the TV, the operation is prohibited by the unit or disc.

Selecting recorded titles to play

1. Press [DIRECT NAVIGATOR].
2. Use [A, V, <, >] to select the title you want to watch and press [ENTER].
   - Play starts.
   - You can also select titles by entering a 2-digit number with the numeric buttons.
     e.g.: [“5”: [0]→[5]
     [“15”: [1]→[5]
   - RAM: Press [A] to switch to the Title View screen, when the Album View screen is displayed.
   - If you enter a number larger than the total number of titles, the last title is selected.
   - “To show other pages” (➔ 41)

To exit the Title View screen

Press [RETURN].

For your reference
- Direct Navigator screen icons
  - : Title protected
  - : Copy-protected so it was not recorded
  - : Unable to play
  - : Currently recording
  - : Title with “One time only recording” restriction (➔ 76, CPRM)

Quick View (Play ×1.3)

RAM

The play speed can be increased without disturbing the audio.

During Play

Press and hold [►, PLAY].

To return to normal speed

Press [►, PLAY].

Fast forward and rewind—SEARCH

RAM

During Play

Press [◄, SLOW/SEARCH] or [►, SLOW/SEARCH].

- There are 5 search speeds. Each press increases the search speed. [FR, RAW] Up to 3 speeds
- Press [►, PLAY] to restart playback.

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

Playing discs

Press [O, DVD/VHS POWER] to turn the unit on.

Insert a disc. (➔ 24)

Press [DRIVE SELECT] to select the DVD drive.

Press [RAM]

Insert a disc.
**Skipping**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

During play or while paused
Press [◄◄, SKIP] or [►►, SKIP].
Each press increases the number of skips.

**Slow-motion play**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

While paused
Press [◄◄, SLOW/SEARCH] or [►►, SLOW/SEARCH].
- When slow motion play is continued for about 5 minutes it pauses automatically (excluding DVD-A, DVD-V).
- There are 5 play speeds. Each press increases the play speed.
- Press [◄◄, PLAY] to restart playback.
- Press and hold to change in succession forward or backward.
- Press [◄◄, SLOW/SEARCH] only.

**Frame-by-frame viewing**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

While paused
Press [◄◄] ([◄]) or [►►] ([►]).
- Each press shows the next or previous frame.
- Press and hold to change in succession forward or backward.
- Press [◄◄, PLAY] to restart playback.
- Press and hold to change in succession forward or backward.
- Press [◄◄, SLOW/SEARCH] only.

**Direct play**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

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

*During Play*

Press the numeric buttons to select an item.
- e.g.: “5” [0]

CD (MP3, JPEG and TIFF disc only)
- A group number can be specified while the screen saver is displayed.
- This works only when stopped (screen saver is displayed) with some discs.
- Playing bonus groups
  Some discs contain bonus groups. If a password screen appears after selecting a group, enter the password with the numeric buttons and press [ENTER]. For the password, refer to the disc’s jacket, etc.

**CM Skip**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

You can skip approximately 1 minute with one press.

*During play*

Press [CM SKIP].

**Create chapters**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

*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).

**Skipping the specified time — Time Slip**

RAM RR RL RW VR AR CR LR LW DVD-A DVD-V
RAM VR VR VR CO

During play

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

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

**Changing audio during play**

Press [AUDIO] to select the audio type.
- You can select audio types depend on the recording medium.

**RAM**

Stereo → Mono L → Mono R
- e.g.: RAM “Stereo” is selected.

**RAM**

When playing an SAP broadcast recorded on DVD-RAM, DVD-RW (DVD Video Recording format)
MAIN Audio → SAP Audio

This allows you to change items like the audio channel number and the sound track language. (439)
- e.g.: English is the selected language.

**Note**
- If you cannot change the audio type when you have used only an optical digital cable for connection, set “Dolby Digital” to “PCM” (434). 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 MP3 and still pictures (JPEG/TIFF)**

**Playing discs which contain both MP3 and still pictures**

**CD**

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

**Press [ENTER].**

**To play MP3**

Refer to “Playing MP3” (p. 35) below.

**To play still pictures**

Refer to “To show pictures Menu” (p. 35).

**Playing MP3**

The unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (tracks) and folders (groups) containing MP3 files and still pictures (JPEG/TIFF).

**Preparation**

- Turn on the TV and select the appropriate video input to suit the connections to the unit.
- Select DVD side with pressing [DRIVE SELECT].

**Playing discs which contain both MP3 and still pictures**

**1. 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

2. **Press [△, ▽] to select the track and press [ENTER].**

   - Play starts on the selected track.
   - "[△, ▽]" indicates the track currently playing.
   - You can also directly select the track with the numeric buttons.

   e.g.: "0": [0]→[0]→[0]

   "10": [0]→[1]→[0]

3. **Using the tree screen to find a group (→ right)**

   - To show other groups
   
     Press [◄◄] (Prev.) or [►►] (Next) to show other pages.
   
   - After listing all the tracks in one group, the list for the next group appears.

4. **To exit the file list**

   Press [DIRECT NAVIGATOR] or [RETURN].

**Regarding MP3**

- **Compatible formats:** ISO9660 level 1 or 2 (except for extended formats) and Joliet.
- **Maximum number of files (tracks) and folders (groups)**
  - Recognizable: 999 files (tracks) and 99 (including the root folder) folders (groups)
  - Total number for all the MP3, JPEG and other types of files
  - This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
  - Operation may take time to complete when there are many files (tracks) and/or folders (groups) and some files (tracks) may not display or be playable.
  - The display order on this unit may differ from how the order is displayed on a computer.
  - Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
  - This unit is not compatible with packet-write format.
  - Depending on the recording, some items may not be playable.
  - File format: MP3
  - Files must have the extension ".mp3" or ".MP3".
  - Bit rates: 32 kbps to 320 kbps
  - Sampling frequency: 16 kHz/22.05 kHz/24 kHz/32 kHz/44.1 kHz/48 kHz
  - This unit is not compatible with ID3 tags.
  - If there is a large amount of still picture data etc. within a MP3 file, play may not be possible.
  - You can play MP3 on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.
  - English alphabetical characters and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
  - When the highest level folders are "DCIM" folders, they are displayed first on the tree.

**Structure of MP3 folders**

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

**Order of play**

- A 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.

**Using the tree screen to find a group**

**1. While the file list is displayed (→ left)**

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

- Selected Group Number/Total

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

2. **Press [△, ▽] to select a group and press [ENTER].**

- The file list for the selected group appears.

**To return to the file list**

Press [RETURN].
Playing still pictures (JPEG/TIFF)

RAM SD CD
1. You can use SD Memory Cards with capacities from 8 MB to 2 GB.
2. CD Still pictures (JPEG/TIFF) recorded on a CD-R/RW can be played on this unit.
3. Still pictures cannot be played during recording or copying.
4. Inserting, Removing the SD card.

Press [DRIVE SELECT] to select the drive (DVD or SD).
- The indicator lights up on the unit.
- If there are multiple drives recognizable, select the drive below automatically displayed.

Press [DIRECT NAVIGATOR].
- Album View screen is displayed (go to step 3).

Press [DIRECT NAVIGATOR].
- Album View screen is displayed (go to step 3).

[To select the still pictures in another folder]

When the Title View screen is displayed RAM
Press (B) to switch to the Album View screen.

[To show other pages]

Press [( ] (Previous) or [ ] (Next) to show other pages.
- You can also press [ ] (Previous) or [ ] (Next) and press [ENTER] to show other pages.

[To exit the Pictures Menu]

Press [DIRECT NAVIGATOR] or [RETURN].
Using menus to play MP3 and still pictures (JPEG/TIFF)

1. While the Picture View screen is displayed
   - Press [A, V, ], to select “Folder” and press [ENTER].
   - You cannot select folders that contain no compatible files.

Start Slideshow/Slideshow settings
You can display still pictures one by one with constant interval.

1. While the Album View screen is displayed
   - Press [A, V, ], to select the album and press [SUB MENU].
   - You can start slideshow quickly by pressing [PLAY].

To change the display timing
2. Press [A, V, ] to select the desired timing (0 to 30 seconds) and press [ENTER].
To repeat play
2. Press [A, V] to select “Repeat Play”.

To rotate a still picture

1. While playing
   - Press [SUB MENU].
2. Select “Rotate Right” or “Rotate Left” with [A, V] and press [ENTER].

To return the rotated picture to its original position
1. Press [A, V] to select the opposite rotation in step 2 and press [ENTER].

For your reference
- Rotation information will not be stored:
  - [CD] When Still pictures
  - When disc is protected
  - When played on other equipment
  - When Still pictures or when there are many files and/or folders, some files may not display or be playable.
  - The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files and folders may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording, some items may not be playable.
- File format: JPEG, TIFF (non-compressed RGB chunky format)
- Number of pixels: 34x34 to 6144x4096
- This unit can handle a maximum of 3000 files and 300 folders as shown below. However depending on how you create folders and some files may not display or be playable.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files and folders may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording, some items may not be playable.
- File format: JPEG, TIFF (non-compressed RGB chunky format)
- Number of pixels: 34x34 to 6144x4096
- This unit cannot play images that have resolutions beyond the range shown.
- Operation may take time to complete when playing TIFF format still pictures.
- The display order on this unit may differ from how the order is displayed on a computer.

To delete a still picture

1. While playing
   - Press [DELETE].

To show the picture properties

1. While playing
   - Press [STATUS].
   - Press [STATUS] again, the properties disappear.

Regarding still pictures (JPEG/TIFF)

- Compatible formats: DCF compliant (Content recorded on a digital camera, etc.)
  - Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).
- File format: JPEG, TIFF (non-compressed RGB chunky format)
- Number of pixels: 34x34 to 6144x4096
- This unit can handle a maximum of 3000 files and 300 folders (included higher folders).
- Operation may take time to complete when playing TIFF format still pictures, or when there are many files and/or folders, some files may not display or be playable.
- MOTION JPEG is not supported.
- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet
- Maximum number of files and folders recognizable: 999 files and 99 folders
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files and/or folders and some files may not display or be playable.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files and folders may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording, some items may not be playable.
- File format: JPEG, TIFF (non-compressed RGB chunky format)
- Files must have the extension “.jpg”, “.JPG”, “.tif” and “.TIF”.
- Number of pixels: 34x34 to 6144x4096
- This unit cannot play images that have resolutions beyond the range shown.
- Operation may take time to complete when playing TIFF format still pictures.
- MOTION JPEG is not supported.
- You can play still pictures (JPEG/TIFF) on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.
- English alphabetical characters and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
- When the highest level folders are “DCIM” folders, they are displayed first on the tree.

Structure of still pictures (JPEG/TIFF)
Files inside a folder are displayed in the order they were updated or taken.

Order of play

Tree

- P000001.jpg
- P000002.jpg
- P000003.jpg
- P000004.jpg
- P000005.jpg
- P000006.jpg
- P000007.jpg
- P000008.jpg
- P000009.jpg
- P000010.jpg
- P000011.jpg
- P000012.jpg

Folder - Picture No.           102 - 0001
Playing a video cassette

1. Press [DVD/VHS POWER] to turn the unit on.
2. Select VHS side with pressing [DRIVE SELECT].
3. Select the unit viewing channel (e.g. the AV input) on the TV.
4. Insert a recorded video cassette. (⇒ 24)
5. Press [PLAY].
   - Play starts automatically if you insert a video cassette with the tab removed.

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

To stop play
Press [STOP].

Notes
- When the unit is on standby, an inserted video cassette can be played back by pressing [PLAY].
- When the tape reaches its end, the unit automatically rewinds it to the beginning. This function does not work during scheduled recording, fast-forwarding and specified stop recording.
- Jet Search, cue, review or slow playback will be automatically canceled after 10 minutes, and pause after 5 minutes.
- When viewing a still picture or during slow playback, the picture that appears in VP mode may be distorted.
- When playing back a tape which was recorded on another VCR, it may be necessary to adjust the tracking (⇒ 38). In some cases the picture quality may still be inferior. This is due to format constraints.

Fast-forward/Rewind
While stopped
Press [JET REW] (backward)/[REW] (forward).

Cue/Review
During play
Tap or keep pressing [JET REW] (backward)/[REW] (forward).
   - If you keep pressing these buttons, normal playback restarts by releasing them.
   - Tap [PLAY] to restart normal playback.

Jet Search
During play
Tap [JET REW] (backward)/[REW] (forward) twice. You can increase Cue/Review search speed.
   - Press [PLAY] to restart normal playback.
   - You can select search speed to view the recorded picture. (⇒ 65)
   - The picture recorded in EP or VP mode may be distorted if it is played at approx. 35 times speed. A vertical scroll may occur. It is not a malfunction but if it happens, change to approx. 27 times speed.
   - The picture may not be in color or may be distorted depending on the TV.

Slow
During play
Press and hold [PAUSE] for about 2 seconds or more.
   - Press [PLAY] to restart normal playback.

Jet Rewind
To perform a Higher Speed Rewind
Press [JET REW].
   - Depending on the tape or an operating condition, the rewind speed may change somewhat.
   - The tape counter is reset to “0:00.00” when the tape is rewound to the beginning.
   - Depending on the tape, this function may not work.

S-VHS Quasi Playback (SQPB)
It is also possible to play back tapes recorded in the S-VHS system.
   - Some picture noise may occur depending on the type of tape used.
   - It is not possible to fully obtain the high resolution that S-VHS is capable of.
   - It is not possible to record in the S-VHS system with the unit.

Repeat Playback
During play or while stopped
Keep pressing [PLAY] for about 5 or more seconds.
   - At the end of the program, the tape rewinds to the beginning of the program and plays it again (it only works if there is at least 5 seconds blank space at the end of the program). This repeats until you cancel it.

To restart normal playback
Press [PLAY].

To stop play
Press [STOP].


### Playing a video cassette

#### Adjusting the playback picture

**Manual tracking**

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

**During play**

Press [TRACKING/V-LOCK, +] or [TRACKING/V-LOCK, -]. Repeat until the noise disappears.

**Vertical locking adjustment**

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

**While paused**

Press [TRACKING/V-LOCK, +] or [TRACKING/V-LOCK, -]. Repeat until the jiggling stops.

**To return to auto tracking**

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

**To remove the noise from a paused picture**

Start slow play, then adjust the tracking.

**Notes**

- This function may not work with some TV models and tapes.
- You can also adjust the tracking and vertical synchronization with [CH, W, X] on the main unit.

#### VHS Index Search System (VISS)

The unit automatically records special index signals on the tape every time a recording is started. The index search function makes use of these index signals to let you find the beginning of a desired program quickly and easily.

**Index signals are recorded in the following cases.**

- When a recording is started by pressing [•, REC].
- When scheduled recording is started.

**Preparation**

- Select the unit viewing channel on the TV.
- Select VHS side with pressing [DRIVE SELECT].
- Insert a recorded video cassette.

**While stopped or during normal play**

Press [•••] or [•••].

- Each press increases the number of skips.

**To cancel the index search**

Press [•, STOP].

**Notes**

- You can search up to 20 index signals can be searched for in both directions.
- When you press either one of the buttons too much, you can control 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.

### Various on-screen display indications

On-screen display below appears during play on VHS.

To see these displays, set the “Status Messages” item in the “Setup” to “Automatic” (→ 65).

**Press [STATUS].**

The time and operation details appear on the screen.

#### Current drive

- **•** Audio indicators
  - The Left (Mono L) and Right (Mono R) indicators show which sound mode is selected as follows:
    - Stereo: Stereo indicator appears.
    - Mono L: The Mono L indicator appears.
    - Mono R: The Mono R indicator appears.
    - Normal: Neither the L nor R indicator appears.

#### Operation status display

- **•** Shows the tape counter and remaining tape time
  - Pressing [STATUS] once makes the on-screen display appear. After that, press the button repeatedly to change the display as follows:

- No display → Tape counter → Remaining tape time

  - Press [+ or CANCEL] 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 “Select Tape Length” in the “Setup” and if the tape is of poor quality. (→ 65)

- **•** Cassette-in indicator
  - Shows whether you have inserted a video cassette.

- **•** Recording mode indicator (→ 26)

**Note**

- The on-screen display may be distorted depending on the playback tape or the input signal.
Using on-screen menus

- Common procedures

1. Press [DISPLAY].
2. Select a menu with [A, V] and press [ ].
3. Select an item with [A, V] and press [ ].
4. Select a setting with [A, V].

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.

Disc menu-Setting disc content

Soundtrack
- Turn the subtitle on/off and select the language (See [A] Sound track/Subtitle language)
- Turn the subtitle on/off. (Only disc that contain subtitle on/off information)
- If the subtitles overlap the closed captions recorded on discs, turn the subtitles off.

Subtitle
- Select the audio and language. (See [B] Audio attributes)
- Select the audio and language, and select the language.

Audio channel
- “Changing audio during play” (p. 33)

Angle
- Change the number to select an angle.

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

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

[A] Sound track/Subtitle language

<table>
<thead>
<tr>
<th>Language</th>
<th>English</th>
<th>Danish</th>
<th>Dutch</th>
<th>Spanish</th>
<th>Italian</th>
<th>French</th>
<th>Norwegian</th>
<th>Swedish</th>
<th>Thai</th>
<th>Norwegian</th>
<th>Thai</th>
</tr>
</thead>
</table>

[B] Audio attributes

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

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

Play menu-Change play sequence

Repeat play
- This function works only when the elapsed play time is displayed.
- Select the item for repeat play. Depending on the disc, the items that can be selected will differ.
- All: CD (excluding MP3 discs)
- Chapter: CD (MP3 discs only)
- Group: CD (MP3 discs only)
- Playlists: CD
- Title: CD
- Track: CD

Select “Off” to cancel.
Using on-screen menus/FUNCTIONS window and Status messages

Video menu-Change picture quality

<table>
<thead>
<tr>
<th>RAM</th>
<th>BR</th>
<th>DVD</th>
<th>RW/VR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture</td>
<td>To select the picture mode during play</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal: Default setting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft: Soft picture with fewer video artifacts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fine: Details are sharper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cinema: Mellowes movies, enhances detail in dark scenes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DNR</td>
<td>Reduces noise and picture degradation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On –– Off</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Progressive* (→ 76)
Select “On” to enable progressive output. Select “Off” if the picture is stretched horizontally. When progressive output is on, closed captions cannot be displayed.
On –– Off

*Transfer (When “Progressive” is set to “On”)*
Select the method of conversion for progressive output to suit the type of material being played (→ 76, “Film and Video”).

Auto1 (normal): Detects 24 frame-per-second film content and appropriately converts it.

Auto2: Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content.

Video: Select when the video content is distorted by using Auto1 and Auto2.

Line-in NR (Only when IN1, IN2 or DV is selected)
Reduces video tape noise during transfer (copy). Depending on the software, jittering may occur.

Automatic: Noise reduction only works on picture input from a video tape.
On: Noise reduction works for any video input.
Off: Noise reduction is off. Select when you want to record input as is.

* Only when you have selected “480p” in “TV Type” (→ 20).

Audio menu-Change sound effect

<table>
<thead>
<tr>
<th>RAM</th>
<th>BR</th>
<th>DVD</th>
<th>RW/VR</th>
</tr>
</thead>
<tbody>
<tr>
<td>V. Surround Sound</td>
<td>Enjoy a surround-sound effect if you are using 2 front speakers (L/R) only</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural –– Emphasis –– Off</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes
- Turn V. Surround Sound off if it causes distortion.
- V. Surround Sound does not work for SAP recordings.

Dialog Enhancer

<table>
<thead>
<tr>
<th>RAM</th>
<th>BR</th>
<th>DVD</th>
<th>RW/VR</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Dolby Digital, 3-channel or over only, including a center channel)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The volume of the center channel is raised to make dialog easier to hear</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On –– Off</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other menu-Change the display position

<table>
<thead>
<tr>
<th>RAM</th>
<th>BR</th>
<th>DVD</th>
<th>RW/VR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position</td>
<td>To change the display position</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 (Standard) –– 5: The higher the setting the lower the screen moves</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FUNCTIONS window

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

1 While stopped
Press [FUNCTIONS].
- Functions displayed depend on the type of disc.

2 Select an item with [A, V] and press [ENTER].
- If you select “Other Functions”, press [A, V] to select an item and press [ENTER].

To exit the FUNCTIONS window
Press [FUNCTIONS].

Status messages

Status messages appear on the TV 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.
The display changes each time you press the button. For example,

<table>
<thead>
<tr>
<th>Display examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Current medium</td>
</tr>
<tr>
<td>(2) Current recording or play status, input channel</td>
</tr>
<tr>
<td>(3) Audio type (→ 27, 33)</td>
</tr>
<tr>
<td>(4) Other drive mode</td>
</tr>
<tr>
<td>(5) The current date and time</td>
</tr>
<tr>
<td>(6) Available recording time and recording mode</td>
</tr>
<tr>
<td>(e.g.: “1:34 SP” indicates 1 hour and 34 minutes in SP mode)</td>
</tr>
<tr>
<td>(7) Disc remaining time may slightly differ between different models.</td>
</tr>
<tr>
<td>(8) Recording time</td>
</tr>
<tr>
<td>Shows recording time, recording mode and a rough guide to how much space has been used for recording on the disc.</td>
</tr>
</tbody>
</table>

Display examples

(1) Current medium
(2) Current recording or play status, input channel
- Shows the current state of the unit and the input channel.
(3) Audio type (→ 27, 33)
(4) Other drive mode
(5) The current date and time
(6) Available recording time and recording mode
(e.g.: “1:34 SP” indicates 1 hour and 34 minutes in SP mode)
- Disc remaining time may slightly differ between different models.
(7) Elapsed play time
(8) Recording time
- Shows recording time, recording mode and a rough guide to how much space has been used for recording on the disc.
### Editing titles/chapters

#### Editing titles/Chapters and playing chapters

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

**Preparation**
- Release protection (disc → 60, cartridge → 60). RAM
- Press [DIRECT NAVIGATOR].

1. Press [DIRECT NAVIGATOR].
2. Use [△, ▽, ◄, ►] to select a desired title.
   - “To show other pages” (→ below)
3. Press [SUB MENU].
4. Use [△, ▽] to select a desired item and press [ENTER].
   - After this operation, follow the desired operation.

**To stop in the middle**
- Press [RETURN].

**For your reference**
- When the title is protected (→ 42), some items are not accessible. Release the protection to access the inaccessible items. RAM

#### Title operations

<table>
<thead>
<tr>
<th>Item</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delete Title</td>
<td>Once deleted, divided or shortened, the title cannot be restored to its original state. Make certain before proceeding.</td>
</tr>
</tbody>
</table>

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

#### Properties

**For your reference**
- (Multiple editing is possible. → below)
- Follow steps 1 to 3 of “Editing titles/Chapters and playing chapters”.
- Corresponding playlist’s chapters will be deleted.

#### Album View

**For your reference**
- “Playing still pictures (JPEG/TIFF)” → 35

---

**Various operations**

<table>
<thead>
<tr>
<th>Item</th>
<th>Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>To show other pages</td>
<td>Press [△, ▽, ◄, ►] to select “Previous” or “Next” and press [ENTER].</td>
</tr>
<tr>
<td></td>
<td>You can also press [◄, ▼, ◄] or [►, ▼, ►] to show other pages.</td>
</tr>
<tr>
<td>Multiple editing</td>
<td>Select with [△, ▽, ◄, ►] and press [II, PAUSE]. (Repeat)</td>
</tr>
</tbody>
</table>

Editing titles/chapters

■ Edit Title

You can perform various kinds of title editing.

Preparation
- Release protection (disc  ➔ 60, cartridge ➔ 60) RAM
- Select DVD side with pressing [DRIVE SELECT].

   - “To show other pages” ➔ 41
   - “Multiple editing” ➔ 41

2. Press [SUB MENU].


4. Use [A, V] to select a desired item and press [ENTER].
   - The editing screen for the selected item appears.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN].

- Title Name

- Follow steps 1 to 3 of “Edit Title”.

4. Select “Title Name” with [A, V] and press [ENTER].
   - Refer to “Entering text”. (➔ 58)

- Set Protection/Cancel Protection

- Follow steps 1 to 3 of “Edit Title”.
- You can prevent accidental erasure of titles by setting and canceling the write-protection.


5. Select “Yes” with [◆] and press [ENTER].

Set Protection
- The padlock mark appears.

Cancel Protection
- The padlock mark disappears.

For your reference
Titles will be erased even if they are protected if you format the disc with DVD Management (➔ 60).

- Shorten Title

- Follow steps 1 to 3 of “Edit Title”.

4. Select “Shorten Title” with [A, V] and press [ENTER].

5. Press [ENTER] at the start point and end point of the section you want to erase.
   (➔ 43, “For quicker editing”)


7. Select “Delete” with [◆] and press [ENTER].

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

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

- Change Thumbnail

- Follow steps 1 to 3 of “Edit Title”.


5. Press [◆, PLAY] to play.

6. Press [ENTER] at the point you want to display.
   (➔ 43, “For quicker editing”)
   - To change to another point in the same title:
     Select “Change” with [A, V] and press [◆, PLAY] and then repeat step 6.

7. Select “Exit” with [A, V] and press [ENTER].
   - The thumbnail picture will be changed at this point.
### Divide Title

**RAM**
- Follow steps 1 to 3 of “Edit Title”.
- You can divide a selected title into two. You must be careful when dividing a title because it cannot be recovered after the procedure.

1. Select “Divide Title” with [△, ▽] and press [ENTER].
2. Press [ENTER] at the point you want to divide the title.
   - To change the point to divide:
     - Select “Divide” with [△, ▽] and press [△, PLAY], and then repeat steps 5 to 7.
4. Select “Divide” with [△] and press [ENTER].
5. To check the division point

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

   - The divided titles retain the name of the original title. They also retain the CPRM property (→ 76) 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.

### Create Chapter

**RAM**
- Follow steps 1 to 5 of “View Chapters”.

1. Select “Create Chapter” with [△, ▽] and press [ENTER].
2. Press [ENTER] at the point you want to divide.
3. Select “Exit” with [▽] and press [ENTER].

### Combine Chapters

**RAM**
- Follow steps 1 to 5 of “View Chapters”.

1. Select “Combine Chapters” with [△, ▽] and press [ENTER].
2. Select “Combine” with [△] and press [ENTER].
3. Press [SUB MENU].
4. Select a desired item with [△, ▽] and press [ENTER].

### View Titles

**RAM**
- Follow steps 1 to 5 of “View Chapters”.

1. Select “View Titles” with [△, ▽] and press [ENTER].
2. You go back to Title View.

### Chapter operations

- **View Chapters**
  - Press [DIRECT NAVIGATOR] and use [△, ▽, ←, →] to select a desired title.
  - “To show other pages” → 41
  - Press [SUB MENU].

#### E.g. RAM
- Select “View Chapters” with [△, ▽] and press [ENTER].

<table>
<thead>
<tr>
<th>Selected Chapter</th>
<th>Following Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>002</td>
</tr>
</tbody>
</table>

- **Create Chapter**
  - Press [SUB MENU].

#### E.g. RAM
- Select a chapter and press [ENTER].

- **Delete Chapter**
  - “Multiple editing” → 41

#### E.g. RAM
- Select “Delete Chapter” with [△, ▽] and press [ENTER].
- Select “Delete” with [△] and press [ENTER].

- **Combine Chapters**
  - The selected chapter and next chapter are combined.

#### E.g. RAM
- Select “Combine Chapters” with [△, ▽] and press [ENTER].

- **View Titles**
  - You go back to Title View.

For quicker editing
- Use search (→ 32), Time Slip (→ 33) or slow-motion (→ 33) to find the desired point.
- Press [△, SKIP] or [▷▷, SKIP] to skip to the end of a title.
Creating, editing and playing playlist

You can create a playlist by gathering your favorite chapters (⇒ 41) from your recordings. You can also play and edit the created playlist.

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

- Editing playlists doesn’t modify titles.
- Playlists are not recorded separately so this doesn’t use much capacity.

- 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.

Creating playlists

**Preparation**
- Release protection. (disc ⇒ 60, cartridge ⇒ 60)
- Press [DRIVE SELECT] to select the DVD drive.

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

2. Select “Other Functions” with [▲, ▼] and press [ENTER].

3. Select “Playlists” with [▲, ▼] and press [ENTER].
   - The Playlist View appears.

4. Select “Create” with [▲, ▼, ◀, ▶] and press [ENTER].

5. Use [◀, ▶] to select the source title and press [▼].
   - When you want to select all chapters in the title, use [◀, ▶] to select the source title and press [ENTER], then skip to step 7.
   - Repeat steps 5 to 7 to add other titles or chapters.

6. Use [◀, ▶] to select the chapter you want to add to a playlist and press [ENTER].
   - Press [▲] to cancel.

7. Use [◀, ▶] to select the position to insert the chapter and press [ENTER].
   - The chapter is registered in the playlist.
   - Repeat steps 5 to 7 to add other chapters.
   - To select other source titles, press [▲] several times to return to step 5.

8. Press [RETURN].

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

Playing playlists

**RAM (Play only)**
- Preparation
  - Create playlists.
  - Select DVD side with pressing [DRIVE SELECT].

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

2. Select “Other Functions” with [▲, ▼] and press [ENTER].

3. Select “Playlists” with [▲, ▼] and press [ENTER].

4. Press [RETURN].

To return to the previous screen Press [RETURN].
To exit the screen Press [RETURN].
Use [A, V,  4, ] to select a playlist and press [ENTER].
- Chapters are not displayed if you have not yet created a playlist on the disc.
- You can also select a playlist from the Playlist View by entering a 2-digit number with the numeric buttons.
- If you enter a number larger than the total number of playlists, "Create" is selected.
- "To show other pages" ➔ 41

Press [RETURN].

Select "Properties" with [A, V] and press [ENTER].
- Follow steps 1 to 5 of "Creating playlists/chapters".
- Follow steps 1 to 5 of "Editing playlists/chapters".
- Follow steps 1 to 5 of "Edit".

Select "Playlist Name" with [A, V] and press [ENTER].
- Refer to "Creating playlists", steps 5–8. (➔ 44)

Press [FUNCTIONS].

Select "Other Functions" with [A, V] and press [ENTER].
Select "Playlists" with [A, V] and press [ENTER].
Use [A, V,  4, ] to select a playlist.
- "To show other pages" ➔ 41

Press [SUB MENU], then select "Edit" with [A, V] and press [ENTER].
Use [A, V] to select a desired item and press [ENTER].

Press [RETURN].

Use [A, V,  4, ] to select a playlist.
- "To show other pages" ➔ 41

Press [SUB MENU].

Use [A, V] to select a desired item and press [ENTER].

Press [RETURN].
Creating, editing and playing playlist

**Change Thumbnail**
- Follow steps 1 to 5 of “Edit”.
- You can change the image to be shown as a thumbnail picture in the Playlist View.

**Select “Change Thumbnail” with [▲, ▼] and press [ENTER].**

**Press [►, PLAY] to play.**

**Press [ENTER] at the point you want to display.**
- Select “Change” with [▲, ▼] and press [►, PLAY], and then repeat step 8.

**Select “Exit” with [▲, ▼] and press [ENTER].**
- The displayed scene is changed at this point.

---

**Chapter operations**

**View Chapters**

**RAM (RW/VR) (Play only)**
- You can play/edit the chapters in a playlist.

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

**Select “Other Functions” with [▲, ▼] and press [ENTER].**

**Select “Playlists” with [▲, ▼] and press [ENTER].**

**Use [▲, ▼, ◀, ▶] to select a playlist.**
- “To show other pages” ➔ 41

**Press [SUB MENU], and select “View Chapters” with [▲, ▼] and press [ENTER].**

**Use [▲, ▼, ◀, ▶] to select a desired chapter.**
- You can also select a chapter from the chapter view by entering a 3-digit number with the numeric buttons.
  - e.g.: “51: [0] → [0] → [5]”
  - “15: [0] → [1] → [5]”
  - If you enter a number larger than the total number of chapters, the last chapter is selected.
  - Editing chapters in a playlist does not modify the source titles and source chapters.
  - “To show other pages” ➔ 41

**Press [SUB MENU].**

**Use [▲, ▼] to select a desired item and press [ENTER].**

**To play a chapter**

**To stop chapter play**
- Press [■, STOP]. (The Chapter View screen appears.)

**Add Chapter**

**RAM**
- Follow steps 1 to 7 of “View Chapters”.

**Select “Add Chapter” with [▲, ▼] and press [ENTER].**
- Refer to “Creating playlists”, steps 5–8. ➔ 44

**Move Chapter**

**RAM**
- Follow steps 1 to 7 of “View Chapters”.

**Select “Move Chapter” with [▲, ▼] and press [ENTER].**

**Use [▲, ▼, ◀, ▶] to select the position to insert the chapter and press [ENTER].**
- The chapter is moved and inserted before the highlighted chapter.

**Create Chapter**

**RAM**
- Follow steps 1 to 7 of “View Chapters”.

**Select “Create Chapter” with [▲, ▼] and press [ENTER].**

**Press [ENTER] at the point you want to divide.**
- “To show other pages” ➔ 41, “For quicker editing”
- Repeat this step to divide at other points.

**Select “Exit” with [▼] and press [ENTER].**

**For your reference**
- A short portion of the recording just after the creation point may be lost.
- The divided titles retain the name of the original title. They also retain the CPRM property (⇒ 76) of the original.
- It is not possible to carry out “Create” when the resulting part(s) are extremely short.

**Combine Chapters**

**RAM**
- Follow steps 1 to 7 of “View Chapters”.

**Select “Combine Chapters” with [▲, ▼] and press [ENTER].**

**Select “Combine” with [▲, ▼] and press [ENTER].”**
- The selected chapter and next chapter are combined.

**Delete Chapter**

**RAM**
- “Multiple editing” ➔ 41
- Follow steps 1 to 7 of “View Chapters”.
- Once deleted, the recorded contents are lost and cannot be restored. Make sure before proceeding.

**Select “Delete Chapter” with [▲, ▼] and press [ENTER].**

**Select “Delete” with [▼] and press [ENTER].”**
- Even if you delete the chapter, the original title is not deleted.

**View Playlists**

**RAM**
- Follow steps 1 to 7 of “View Chapters”.

**Select “View Playlists” with [▲, ▼] and press [ENTER].”**
- You go back to Playlist View.
Editing still pictures

1. Press [DIRECT NAVIGATOR].
2. Press the [B] button to select “Picture”.
3. Press [Θ, ω, E, 5] to select the album or still picture.
   - To edit still picture:
     - Press [Θ, ω, E, 5] to select album which contains picture you want to edit and press [ENTER].
     - To show other pages ➔ right
     - To select the still pictures in another folder ➔ 35
4. Press [SUB MENU].
   - To edit the album
     - Press [SUB MENU].
   - To edit still picture
     - Press [Θ, ω, E, 5] to select “Set Protection” or “Cancel Protection” ➔ 2

5. Use [Θ, ω] to select “Set Protection” or “Cancel Protection” ➔ 2
   - To select the still pictures in another folder ➔ 35

Various operations
- To show other pages
  - Press [Θ, ω, E, 5] to select “Previous” or “Next” and press [ENTER].
- You can also press [REW, SKIP] or [FF, SKIP] to show other pages.
- Multiple editing
  - Select with [Θ, ω, E, 5] and press [PAUSE]. (Repeat)

Album and picture operations

- Add Picture/Create Album
  - Follow steps 1 to 4 of “Editing still pictures”.
  - Select “Add Picture” or “Create Album” with [Θ, ω] and press [ENTER].
  - Press [Θ] to select “Start” or “Yes” and press [ENTER].
  - Press [Θ, ω, E, 5] to select the album which contains picture you want to add and press [ENTER].
  - To select the still pictures in another folder ➔ 35
  - Press [Θ, ω, E, 5] to select the item and press [ENTER].
  - If “Select pictures to copy” is selected:
    - Select the still picture you want to add and press [ENTER].
    - If “Copy all pictures” is selected:
      - All the still pictures in the album will be copied.
  - Press [Θ] to select “No” and press [ENTER].
  - If you want to continue copying, select “Yes” and go to step 7.
  - Only for “Create Album”
    - Press [Θ, ω] to select “No” and press [ENTER].
    - When you select “Yes”, refer to “Entering text” ➔ 58

- Delete Picture
  - Follow steps 1 to 4 of “Editing still pictures”.
  - Only for “Create Album”
    - Press [Θ, ω] to select “No” and press [ENTER].
    - When you select “Yes”, refer to “Entering text” ➔ 58

- Set Protection/Cancel Protection
  - Follow steps 1 to 4 of “Editing still pictures”.
  - If set, this will protect the still picture from accidental erasure.
  - Select “Set Protection” or “Cancel Protection” with [Θ, ω] and press [ENTER].
  - Press [Θ] to select “Yes” and press [ENTER].
    - The lock symbol appears when the still picture is protected.
Editing still pictures

**Print Order (DPOF)**

(DPOF (Multiple editing is possible. 
Press 
You can select a whole folder or individual pictures for printing and specify the number of prints to be made.

5 Select “Print Order (DPOF)” with [A, V] and press [ENTER].

6 Press [4, 3] to select number of prints (0 to 9) and press [ENTER].

- The DPOF mark appears. 
  (This appears on the still pictures inside a folder when you make the DPOF setting for the folder.)

To cancel the print setting
Set the number of prints to “0”.

For your reference
- Print settings (DPOF) made using this unit may not be viewable on other equipment.
- When this is set by this unit, any settings established by other units will be released.
- Settings cannot be made for folders and files not in accordance with DCF standards or if there is no remaining space on the card.

**Album View**

Follow steps 1 to 4 of “Editing still pictures”.

4 Select “Album View” with [A, V] and press [ENTER].

- You go back to Album View.

**Edit Album**

You can perform various kinds of album editing.

1 Press [DIRECT NAVIGATOR].

2 Press the [B] button to select “Picture”.


4 Press [SUB MENU].

5 Select “Edit Album” with [A, V] and press [ENTER].

6 Use [A, V] to select a desired item and press [ENTER].

- The editing screen for the selected item appears.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [DIRECT NAVIGATOR].

**Album Name**

You can give names to albums.

- Follow steps 1 to 5 of “Edit Album”.

4 Select “Album Name” with [A, V] and press [ENTER].

- Refer to “Entering text”. (page 58)

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

**Delete Album**

Follow steps 1 to 5 of “Edit Album”.

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

6 Select “Delete Album” with [A, V] and press [ENTER].


For your reference
- When deleting a album, the files not containing still pictures will also be deleted if they are inside the album. (This does not apply to folders under the album concerned.)

**Protection Setup/Cancel Protection**

Follow steps 1 to 5 of “Edit Album”.

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

6 Select “Protection Setup” or “Cancel Protection” with [A, V] and press [ENTER].


- The lock symbol appears when the album is protected.

For your reference
- Even if the protection setting is used by this unit to protect album, the album may be deleted by another unit.
Transferring (Copying)

Before transferring (copying)

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

<table>
<thead>
<tr>
<th>Direction</th>
<th>Type of transfer (copying) you want</th>
<th>Suitable methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>From VHS</td>
<td>DVD-RAM, DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW</td>
<td>Easy transferring (copying) with one button</td>
</tr>
<tr>
<td></td>
<td>Transferring (copying) with detailed settings</td>
<td>One Touch Transfer (+ 50)</td>
</tr>
<tr>
<td>To</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From DVD-RAM, +RW or DVD-RW (DVD Video Recording format)</td>
<td>Easy transferring (copying) with one button</td>
<td>One Touch Transfer (+ 52)</td>
</tr>
<tr>
<td></td>
<td>Transferring (copying) with detailed settings</td>
<td>GUI Transfer (+ 51)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL</td>
<td>Easy transferring (copying) with one button</td>
<td>One Touch Transfer (+ 52)</td>
</tr>
<tr>
<td></td>
<td>Transferring (copying) with detailed settings</td>
<td></td>
</tr>
<tr>
<td>From Finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R DL or +R DL on sale that are not copy-protected, etc</td>
<td>Easy transferring (copying) with one button</td>
<td>Cannot transfer</td>
</tr>
<tr>
<td></td>
<td>Transferring (copying) with detailed settings</td>
<td></td>
</tr>
</tbody>
</table>

* Since you cannot create playlists on +RW, you cannot copy those.

<table>
<thead>
<tr>
<th>Caution for transfer (copying) from VHS to DVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Copy-protected video tapes cannot be copied. Most video tapes are copy-protected to prevent illegal copying so they cannot be copied.</td>
</tr>
<tr>
<td>● When a copy-protected tape is inserted, a message appears on the display and the recording stops on the spot.</td>
</tr>
<tr>
<td>● If a part of a tape recorded in VP mode is copied to disc, noise may appear at the beginning of the copied part.</td>
</tr>
<tr>
<td>Only the following operations are allowed while transferring (copying):</td>
</tr>
<tr>
<td>● Stopping transfer (One Touch or GUI Transfer) by pressing and holding [RETURN] for about 3 seconds or more.</td>
</tr>
<tr>
<td>● Stopping transfer (One Touch Transfer) by pressing [- , STOP].</td>
</tr>
<tr>
<td>When transfer (copying) is started, the following operations also start automatically</td>
</tr>
<tr>
<td>● &quot;Status Messages&quot; on Display → &quot;Off&quot; (+ 65) (One Touch or GUI Transfer)</td>
</tr>
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</tr>
<tr>
<td>● Audio output when playing back DVD → Stereo (L R) RAM (One Touch or GUI Transfer)</td>
</tr>
<tr>
<td>When the playback location of the disc is recorded by the Resume Function (+ 32) 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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Editing still pictures RAM SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>● When you want to copy all still pictures on a SD card. (+ 55)</td>
</tr>
<tr>
<td>● When you want to copy multiple still pictures in combination. (+ 55)</td>
</tr>
</tbody>
</table>
Transferring (Copying)

Transfer (Copying) from VHS

You can transfer (copy) programs recorded on a tape onto a disc* with one stroke of the button.

In One Touch Transfer (Copying), programs are automatically transferred (copied) onto the disc from the location of playback at the time when the transfer (copying) of the tape starts.

* Available discs for transfer (copying) from tape are DVD-RAM, non-finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, and +RW.

Preparation

- Select the unit viewing channel (e.g. AV input) on the TV.
- DVD
  - Release protection (disc → 60, cartridge → 60, RAM)
  - Insert a disc and confirm there is sufficient empty space for recording (→ 24, 40).
- Select the recording mode. (→ 28)
- When SAP broadcast program is played back on VHS, select the audio to be recorded on disc in "Multi-channel TV sound (MTS)" in the "Setup" menu. (→ 64)
- VHS
  - Insert the video cassette containing the program to be copied (→ 11, 24).

1 While both DVD and VHS are stopped
   Press and hold [DVD] on the main unit for about 3 seconds or more (until "START" on the unit's display terminates flashing).

[START]

2 And then press [REC] or [PLAY] on the main unit to copy the disc without finalizing.

- If you press [REC] on the main unit, the disc will automatically be finalized after copying completes.
- If you press [PLAY] on the main unit, you can start copying without finalizing.
- If you press [STOP] on the main unit, you can cancel to copy.

Check if transfer (copying) starts properly.
- Copying is automatically completed when the tape reaches its end or the disc becomes full.

To stop transfer (copying) in the middle

- Press [STOP] or press and hold [RETURN] for about 3 seconds or more.
- However, you cannot stop finalizing after it has started.

Notes

- While One Touch Transfer (Copying) is activated, a scheduled recording cannot be started.
- When the transfer (copying) is not started or not executed, the "COPYING" indicator blinks for about 7 seconds. Check if the unit is properly prepared.

■ One Touch Transfer (Copying) (VHS → DVD)

RAM or RDR AMV or RDR VMV

You can transfer (copy) programs recorded on a tape onto a disc* with one stroke of the button.

In One Touch Transfer (Copying), programs are automatically transferred (copied) onto the disc from the location of playback at the time when the transfer (copying) of the tape starts.

* Available discs for transfer (copying) from tape are DVD-RAM, non-finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, and +RW.

Preparation

- Select the unit viewing channel (e.g. AV input) on the TV.
- DVD
  - Release protection (disc → 60, cartridge → 60, RAM)
  - Insert a disc and confirm there is sufficient empty space for recording (→ 24, 40).
  - Select the recording mode. (→ 28)
  - When SAP broadcast program is played back on VHS, select the audio to be recorded on disc in "Multi-channel TV sound (MTS)" in the "Setup" menu. (→ 64)
- VHS
  - Insert the video cassette containing the program to be copied (→ 11, 24).

■ Dividing a title to be copied

In One Touch Transfer (Copying) from VHS to DVD, the title is divided by index signal detected and then recorded. You can search desired titles with Direct Navigator’s Title View (→ 41) after transfer (copy) to DVD.
- Titles recorded within 15 minutes (25 minutes in VP mode) 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.

Notes

- When you want to transfer (copy) without dividing the contents into titles, follow the methods below.
  - Set "Time Limit" to "On" on the GUI transfer (→ 51).
GUI (Graphical User Interface) Transfer (Copying)

You can transfer (copy) programs recorded on a tape 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” and “Time Limit” to “Off”, you can transfer (copy) the whole tape from the beginning to the end. (≤ below)

** Available discs for transfer (copying) from tape are DVD-ROM, non-finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, and +RW.

Preparation

- Select the unit viewing channel (e.g. AV input) on the TV.
- DVD
  - Release protection (disc → 60, cartridge → 60), [RAM]
  - Insert a disc and confirm there is sufficient empty space for recording on it (→ 24, 40).
- When SAP broadcast program is played back on VHS, select the audio to be recorded on discs in “Multi-channel TV sound (MTS)” in the “Setup” menu. (→ 64) or [VHS-Video SP]
- Select “VHS” and press [ENTER].
- VHS
  - Insert the video cassette containing the program to be copied (→ 11, 24).

1. While both DVD and VHS are stopped, press [FUNCTIONS].
2. Select “Copy” with [▲, ▼] and press [ENTER].
3. Set the transfer (copying) direction.
   - Set “Source” to “VHS”.
   - If you are not going to change the copy direction, press [▼], then skip to step 4.
4. To change the setting
   (1) Make sure “Copying Direction” is selected and press [▶].
   (2) Make sure “Source” is selected and press [ENTER].
   (3) Press [▲, ▼] to select “VHS” and press [ENTER].
   - When you set “Source” to “VHS”, DVD is automatically selected on “Destination”.
5. Press [▼].
6. To change the setting
   (1) Make sure “Mode” is selected and press [▶].
   (2) Make sure “Recording Mode” is selected and press [ENTER].
   (3) Select recording mode (XP, SP, LP, EP or FR) with [▲, ▼] and press [ENTER].
   - “About FR mode” (→ right)
   (4) Press [▲].
   (5) Press [▼].
7. Set the recording mode.
   - If you are not going to change the recording mode, press [▼], then skip to step 5.
8. To change the setting
   (1) Make sure “Mode” is selected and press [▶].
   (2) Make sure “Timing” is selected and press [ENTER].
   (3) Select time limit (“On” or “Off”) with [▲, ▼] and press [ENTER].
   - When you select “Off”, proceed to Step (6) below.
   (4) Press [▲, ▼] to select “Set 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 set time with the numeric buttons.
   - Maximum recording time is 8 hours.
9. Press [▼].
10. Press [▲].
11. Press [▼].
12. Press [■].
13. Press [■].

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

- The confirmation screen appears.
15. Select “Yes” with [▲, ▼] and press [ENTER].
16. When “Time Limit” is set to “Off” in Step 5 above:
   - Transfer (copying) is started.
   - Transfer (copying) is automatically stopped when the tape reaches the end or the remaining capacity of the disc is filled. (A message appears on the TV screen and then disappears a few seconds later.)
   - If “Copy and finalize” is selected:
     After finalizing, the discs become play-only and you can also play them on other DVD equipment.
   - However, you can no longer record or edit.
   - In case the copying doesn’t complete due to shortage of remaining time of disc or etc., the finalizing doesn’t start.

To stop transfer (copying) in the middle

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

- However, you cannot stop finalizing after it has started.

About FR Mode

When “Time Limit” is set to “Off” in Step 5 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 press [ENTER] to start transfer (copy), 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 (copy). 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 Limit” is set to “On” in Step 5 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.
Transferring (Copying)

You can transfer (copy) titles recorded on a disc onto a tape with one touch of the button.

### One Touch Transfer (Copying) (DVD → VHS)

You can transfer (copy) titles recorded on a disc onto a tape with one touch of the button.

#### Available discs for transfer (copying) onto tape are

- RAM
- +R
- +R DL
- +RW
- -RW
- -R
- -R DL
- -RW
- +R
- +R DL
- +RW
- -RW
- -R
- -R DL
- -RW

#### Preparation

1. Select the unit viewing channel (e.g. AV input) on the TV.
2. Insert the disc containing the program to be copied (⇒ 24).
3. Insert a video cassette with an accidental erasure prevention tab.
   (⇒ 11, 24)
4. Confirm that the remaining tape time is sufficient for recording.
   (⇒ 40)
5. Select the recording mode. (⇒ 26)

- Press and hold [VHS PLAY/Pause] on the main unit for about 3 seconds or more (until “START” on the unit’s display terminates flashing).
- Check if transfer (copying) starts properly.
- Copying is automatically completed when playback of the disc is finished or the tape reaches its end.

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

#### Notes

- While One Touch Transfer (Copying) is activated, a scheduled recording cannot be started.
- When the transfer (copying) is not started or not executed, the “COPYING” indicator blinks for about 7 seconds. Check to make sure the unit is properly prepared.
- If you start transfer (copying) when resume function is activated, the DVD is copied from the beginning of the title which you stopped.

#### About Recording VISS (⇒ 38)

In One Touch Copying from DVD to VHS, the index signal is automatically recorded for each title. You can search desired titles with [■■] or [■■].
Select "Copy"

Register titles and playlists for transfer

Set the recording mode.

While both DVD and VHS are stopped

Press [FUNCTIONS].

Set "Copying Direction".

Select recording mode (SP, EP or VP) with [4].

Select with 

Create List

Mode

Copying Direction

DVD VHS

SP

0

When you set "Source" to "DVD", "VHS" is automatically selected on "Mode".

When you set "Source" to "DVD", "VHS" is selected and press [ENTER].

Press [SUB MENU].

Registered titles

When you finish creating the copying list,

Make sure to select "Start Copying" and press [ENTER].

The confirmation screen appears.

Select "Yes" with [4] and press [ENTER].

Transfer (copying) is started.

To set the registration

1) Make sure "Create List" is selected and press [4].

2) Make sure "New Entry (Total = 0)" is selected and press [ENTER].

3) Press [A] to select "Video" or press [B] to select "Playlists".

4) Press [A] to select "Video" or press [B] to select "Playlists".

5) Press [ENTER] twice.

6) Press [ENTER].

To set for the order of title number.

You can register multiple titles or playlists to the copying list by repeating the above steps 2 to 4.

Transferring (Copying)

Registering titles and playlists

You can transfer (copy) multiple titles or playlists recorded on a disc onto a tape in combination.

Available discs for transfer (copy) onto tape are RAM + RW. +RW.

Since you cannot create playlists on +RW, you cannot copy those.

Preparation

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

Insert the disc containing the program to be copied (RAM)

Various operations

To show other pages

Press [<<], [SKIP] or [>>], [SKIP].

Multiple editing

Select with [4] and press [I, PAUSE]. (Repeat) Press [ENTER] to register to the list.

A check mark appears. Press [I, PAUSE] again to cancel.

When you switch between the "Video" and "Playlists" tab, the check mark is canceled.

Titles or playlists are registered to the copying list in ascending order of title number.

Transfer (copying) list

New Entry (Total = 0)

07 - 07 - 07

To change the setting

1) Make sure "Copying Direction" is selected and press [4].

2) Make sure "Source" is selected and press [ENTER].

3) Press [A, B] to select "DVD" and press [ENTER].

4) Press [A, B] to select "Video" or press [B] to select "Playlists".

5) Press [ENTER] twice.

6) Press [ENTER].

When you are not going to change the copy direction, press [B], then skip to step 4.

When you are not going to change the recording mode, press [B], then skip to step 5.

When you set "Source" to "DVD", "VHS" is selected and press [ENTER].

When you set "Source" to "DVD", "VHS" is automatically selected on "Destination".

Before pressing [4], make sure that the value on "Copying list" is smaller than the value on "Current Remaining".

When you finish creating the copying list,

Make sure to select "Start Copying" and press [ENTER].

The confirmation screen appears.

Select "Yes" with [4] and press [ENTER].

Transfer (copying) is started.
Transferring (Copying)

To edit the transfer (copying) list

1. Select a desired item with [▲, ▼] and press [SUB MENU].

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

Clear All:
Clear all items registered on the transfer (copying) list.
- Press [▲, ▼] to select “Yes” and press [ENTER].
- Add:
Add new items to the transfer (copying) list.
- Press [▲, ▼] to select the titles and playlists to be added and press [ENTER].
- Remove:
Remove the selected item.
- Press [▲, ▼] to select “Yes” and press [ENTER].
- Move:
Move selected items or change the order of items on the transfer (copying) list.
- Press [▲, ▼] to select the destination and press [ENTER].

To cancel all registered transfer (copying) settings and lists
After performing steps 1 to 4 ( p. 53)

1. Press [▲, ▼] to select “Cancel All” and press [ENTER].
2. Press [▲, ▼] to select “Yes” and press [ENTER].
3. The settings and lists may be canceled in the following situations.
   - When a title or a playlist has been recorded or erased at the transfer (copying) source.
   - When steps have been taken, for instance, to turn off the unit or open the tray.

Transfer (Copying) a DVD-Video, finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, or +R DL
You can transfer (copy) the contents of a disc being played onto a tape 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 4 of “GUI (Graphical User Interface) Transfer (Copying)” ( p. 53).

Set “Time Limit”.

- If you are not going to change the setting, press [▼], then skip to step 6.

Setting the unit to transfer (copy) according to the set time
(1) Make sure “Time Limit” is selected and press [▼].
(2) Make sure “Time Limit” 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 [▲].
   - Setting the transfer (copying) time.
(5) Press [▲, ▼] to select “Set time” and press [ENTER].
(6) Press [▲].
   - You can also set the set time with the numeric buttons.
   - Maximum recording time is 8 hours.
(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 “First Title” is selected from the “Playback will start with” menu when finalizing the disc ( p. 61).

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 on the right (screen saver) is displayed when transferring from DVD-Video.
Transfer (Copying) still picture

**Notes**
- When copying the still pictures on a album by folder basis (→ 56, To register on a folder by folder basis) or card by card basis (→ right, Copy All Pictures), files other than the still picture files inside the folder will also be copied. (This does not apply to the lower folders contained inside the folders.)
- If still pictures are already contained inside the copy destination folder, the new still pictures are recorded following the existing still pictures.
- If the space on the destination drive runs out or the number of files/folders to be copied exceeds the maximum, copying will stop partway through.
- When a name has not been input for the copy source folder, it is possible that this folder’s name will not be the same on the copy destination. It is recommended that you input a folder name before copying (→ 48).
- Print number setting (DPOF) is not copied.
- The sequence in which the still pictures are registered on the copy list may not be the same at the copy destination.

**Preparation**
- Select the unit viewing channel (e.g. AV input) on the TV.
- Release protection (disc:→ 60, cartridge:→ 60). [RAM]
- Insert a disc and confirm there is sufficient empty space for recording on it (→ 24, 40).
- Inserting, Removing the SD card. (→ 11)
- Press [DRIVE SELECT] to select the SD drive.

1. While stopped
   Press [FUNCTIONS].
2. Press [▲, ▼] to select “Other Functions” and press [ENTER].
3. Press [▲, ▼] to select “Copy all Pictures” and press [ENTER].

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

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

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

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

**GUI (Graphical User Interface) Transfer (Copying)**

1. While stopped
   Press [FUNCTIONS].
2. Press [▲, ▼] to select “Copy” and press [ENTER].
3. Set “Copying Direction”.
   - If you are not going to change the copy direction, press [▼], then skip to step 4.
4. To change the setting
   (1) Make sure “Copying Direction” is selected and press [►].
   (2) Make sure “Source” is selected and press [ENTER].
   (3) Press [▲, ▼] to select the drive and press [ENTER].
   (4) Press [▲, ▼] to select “Destination” and press [ENTER].
   (5) Press [▲, ▼] to select the drive and press [ENTER].
   - The same drive as the copy source can be selected.
   (6) Press [◄].
   (7) Press [▼].
5. Press [▼] to select “Create List”.
   - “Mode” does not need to be set as “Content Type” and “Recording Mode” are automatically set.
Register still pictures for transfer (copying).
- If you are going to transfer a registered list without making any changes to it, press [YES], then skip to step 6.
- You can register still pictures or still picture folders.
- Still pictures and folders cannot be registered on the same list.

To register individual still pictures
(1) Make sure “Create List” is selected and press [ENTER].
(2) Make sure “New Entry (Total = 0)” is selected and press [ENTER].
- You can register multiple still pictures to the copying list by repeating the above steps 2 to 3.
- (Copying list display and convenient functions: ➔ right)
- “To show other pages” ➔ below
- “Multiple editing” ➔ below
(4) Press [].
(5) Press [YES].

To register on a folder by folder basis
(1) Make sure “Create List” is selected and press [ENTER].
(2) Press [A, Y] to select “Folder” and press [ENTER].
(3) Press [A, Y] to select “Folder” and press [ENTER].
(4) Press [A, Y] to select “New Entry (Total = 0)” and press [ENTER].
(5) Press [A, Y] to select the folder and press [ENTER].
- You can register multiple still folders to the copying list by repeating the above steps 4 – 5.
- (Copying list display and convenient functions: ➔ right)
- “To show other pages” ➔ below
- “Multiple editing” ➔ below
(6) Press [].
(7) Press [YES].

When you finish creating the copying list.
Make sure to select “Start Copying” and press [ENTER].
- For individual still pictures only
- When specifying another folder as the copying destination, select “Folder”.

Select “Yes” with [YES] and press [ENTER].
Transfer (copying) is started.

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

To return to the previous screen
Press [RETURN].

Various operations
To show other pages
Press [4, , SKIP] or [B, SKIP].
- Press [A, Y, 4, ] to select “Previous” or “Next” and press [ENTER] to show other pages.

Multiple editing
- Still picture or folder are registered to the copying list in descending order of number.

To edit the transfer (copying) list
Select the item in step 5–(3) (for a still picture) or 5–(5) (for a folder) ➔ left
Select a desired item with [A, Y] and press [SUB MENU].
Press [A, Y] to select the operation and press [ENTER].
Clear All:
Clear all items registered on the transfer (copying) list.
Press [YES] to select “Yes” and press [ENTER].
Add:
Add new items to the transfer (copying) list.
Press [YES] to select “Folder” and press [ENTER].
- “Multiple editing” ➔ below
Remove:
Remove the selected item.
Press [YES] to select “Yes” and press [ENTER].
- “Multiple editing” ➔ below
To cancel all registered transfer (copying) settings and lists
After performing steps 1 to 2 (➔ 50)
Press [A, Y] to select “Cancel All” and press [ENTER].
Press [YES] to select “Yes” and press [ENTER].
- The settings and lists may be canceled in the following situations.
  - When a title or still picture has been recorded or erased at the transfer (copying) source.
  - When steps have been taken, for instance, to turn off the unit, remove the card, open the tray, change the copy direction, etc.
To select another folder
- If you want to switch to another higher folder ➔ below
Press [A, Y] to select the folder and press [ENTER].
- You can also select folders by entering a 3-digit number with the numeric buttons.
  e.g.: “00” ➔ “00” ➔ [5]
- “Multiple editing” ➔ below
- The still pictures of different folders cannot be registered on the same list.
To switch to another higher folder
- Only when selecting the source folder
  If there is a multiple number of higher folders recognizable,
While the screen on the right appears
Press [SUB MENU].
Press [A, Y] to select “Select Root Folder” and press [ENTER].
Press [A, Y] to select the desired folder and press [ENTER].
Follow the above steps 1 to 2.

- Press [REC MODE] to select the recording mode. (DVD ➔ 26, VHS ➔ 26)
  - DVD: HDD or DVD (RAM), DVD±R/RW (RAM), DVD-RW
  - It is also possible to perform Flexible Recording (FR). (➔ 29)

3. While stopped

- Press [CH, ▼, ▲] or [INPUT SELECT] to select the input channel for the equipment you have connected.
  - Select IN1 or IN2.

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

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

- Press [II, PAUSE], then press [●, REC].
  - Put the unit in recording standby mode.

6. Start play on the external device.

- Press [II, PAUSE] at the point where you want to start recording.

To skip unwanted parts

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

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 camcorder recording**

**Preparation**

- Turn on the main unit and DV equipment.
- Select the type of audio recording from “Select Audio Channel for DV Input” in the Audio menu. (➔ 64)
- When recording from DV equipment (e.g., digital video camcorder), you can record audio/video recordings from DV tape only.
- Pause play on the DV equipment at the point you want recording to start.
- Press [REC MODE] to select the recording mode.

1. While stopped

- Press [FUNCTIONS].

2. Press [▲, ▼] to select “Other Functions” and press [ENTER].


When recording finishes

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

To stop recording

Press [□, STOP]. The confirmation screen appears. Press [ENTER].

Notes

- Only one piece of DV equipment (e.g., digital video camcorder) can be connected to the unit via the DV IN terminal.
- If you use video camcorders from other manufacturer’s these 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 Camcorder 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 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 automatic recording function does not work properly, check the connections and DV equipment settings, and turn the unit off and back on. If that does not work, follow the instructions for Recording from an external device (➔Left).
Entering text

You can give names to recorded titles, etc.

The maximum number of characters:

- RAM: 64
- Title: 44
- Playlist: 64
- Album: 36
- Disc: 64
- VIDEO: 64
- PLAYLIST: 64
- TITLE (Scheduled recording): 44
- Disc (40)
- Album (36)
- Title (44)
- Disc (40)
- Album (36)

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

Preparation:
- Insert a disc or card.
- Release protection (disc → 60, title → 42, album → 48, cartridge → 60, card → 60).
- Press [DRIVE SELECT] to select the drive (DVD or SD).

1. Show Enter Name screen.

Refer to the following pages regarding display of the Enter Name Screen.

- Title (42)
- Title (scheduled recording) (40)
- Playlist (60)
- Album (45)
- Album (48)

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

Repeat this step to enter other characters.
- To erase a character
  Press [▲, ▼, ◀, ▶] to select the character in the name field and press [1].
- To enter space
  Press [▲, ▼, ◀, ▶] to select the character (space) and press [ENTER].
- To erase saved phrases
  Press [▲, ▼, ◀, ▶] to select “Phrase List” and press [ENTER].
- To recall a saved phrases
  Press [▲, ▼, ◀, ▶] to select “Phrase List” and press [ENTER].
- To erase saved phrases
  Press [▲, ▼, ◀, ▶] to select “Phrase List” and press [ENTER].
  You can also press [▲, ▼, ◀, ▶] to select “Phrase Save” and press [ENTER].

3. After you have finished naming

Press [3, STOP].

The title is entered and the screen disappears.

To cancel in the middle
Press [RETURN].

Characters will not be saved.

To save phrases
You can save frequently used phrases and recall them later.
Maximum number of saved phrases: 20
- After entering the phrase (step 1 to 2, “Entering text”)
  Press [▲, ▼, ◀, ▶] to select “Phrase Save” and press [ENTER].
  You can also press [▲, ▼, ◀, ▶] to select “Phrase Save”.
- Press [▲, ▼, ◀, ▶] to select “Save” and press [ENTER].

To recall a saved phrases
Press [▲, ▼, ◀, ▶] to select “Phrase List” and press [ENTER].
  You can also press [▲, ▼, ◀, ▶] to select “Phrase List”.
- Press [▲, ▼, ◀, ▶] to select the phrase to be recalled and press [ENTER].

To erase saved phrases
Press [▲, ▼, ◀, ▶] to select “Phrase List” and press [ENTER].
  You can also press [▲, ▼, ◀, ▶] to select “Phrase List”.
- Press [▲, ▼, ◀, ▶] to select the phrase to be erased.
- Press [SUB MENU] to show “Erase Phrase” and press [ENTER].
- Press [▲, ▼, ◀, ▶] to select “Erase” and press [ENTER].
- Press [RETURN].

For your reference
If you enter a long name, only part of it is shown in the TOP MENU after finalization (41). When entering a title name, the name that will appear in the TOP MENU Preview (Finalized Disc) can be previewed in “Top Menu Preview (Finalized Disc)” window.
Deleting title or pictures

Preparation
- Release protection (disc → 60, cartridge → 60, card → 60).
- Insert a disc or card.
- Press [DRIVE SELECT] to select the drive (DVD or SD).

Selecting recorded titles or pictures to delete – Delete Navigator
- A title cannot be restored once it is deleted. Make certain before proceeding.
- You cannot delete while recording.
- When a recorded title (or a still picture) is deleted the available disc or card space will increase by the amount deleted.
- Available space does not increase after erasing.
- Available recording space increases when the last recorded title is deleted. (The recording space may increase slightly when other titles are deleted.)

1 While stopped
   Press [FUNCTIONS].
   ■ To switch to the other view Press (B) to select Picture View.
   Press [A] to select Title View.
3 Press [A, Y, <, >] to select the title and press [ENTER].
   ■ To show other pages Press [A, Y, <, >] to select “Previous” or “Next” and press [ENTER].
   ■ You can also press [REW, SKIP] or [FF, SKIP] to show other pages.
4 Press [<, >] to select “Delete” and press [ENTER].
   ■ To return to the previous screen Press [RETURN].
   ■ To exit the screen Press [RETURN] several times.

Deleting title or picture during play
- Once title is deleted, it cannot be restored. Make certain before proceeding.
1 During Play Press [DELETE].
2 Press [>] to select “Delete” and press [ENTER].

For your reference
- You cannot delete while recording or transferring (copying).
- When a recorded title (or a still picture) is deleted the available disc or card space will increase by the amount deleted.
- Available space does not increase after erasing.
- Available recording space increases when the last recorded title is deleted. (The recording space may increase slightly when other titles are deleted.)
**DVD and card Management**

![Remote Control Diagram]

1. While stopped, press [FUNCTIONS].
2. Select “Other Functions” with [▲, ▼] and press [ENTER].

   - When SD has been selected, “Format memory card” only is displayed.

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

   - To change various settings.
   - After this operation, follow the desired operation.

**Providing a disc with a name**

- Follow steps 1 to 3 of “DVD and card Management”.
- Select “Disc Name” with [▲, ▼] and press [ENTER].

**Setting the protection**

- Follow steps 1 to 3 of “DVD and card Management”.

**Deleting all titles and playlists**

- **Delete All Titles**

  - Follow steps 1 to 3 of “DVD and card Management”.
  - Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.

  - Select “Delete All Titles” with [▲, ▼] and press [ENTER].
  - Select “Yes” with [▲] and press [ENTER].
  - Select “Start” with [▲] and press [ENTER].
  - A message appears when finished.
  - Press [ENTER].

**Notes**

- Deleting all video titles will result in all playlists also being deleted.
- Deleting does not work if one or more titles are protected.
Deleting all contents of a disc or card

Format

RAM  RWV+  +R  RW+SD  (New disc only)
+R  +R(DL)  (New disc only)

Follow steps 1 to 3 of "DVD and card Management".
Formatting deletes all contents (including computer data), and they cannot be restored. Check carefully before proceeding.

4 Select “Format Disc (DVD)” or “Format memory card” with [▲, ▼] and press [ENTER].
5 Select “Yes” with [▲] and press [ENTER].

Notes

- Formatting starts.
- A message appears when formatting is finished.
- Formatting normally takes a few minutes; however it may take up to a maximum of 70 minutes [RAM].
- Do not disconnect the AC power supply cord while formatting. This can render the disc unusable.

Press [ENTER].

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

Notes
- When a disc or card has been formatted using this unit, it may not be possible to use it on any other equipment.
- DVD-R, DVD-R DL and CD-R/RW cannot be formatted.
- You can format DVD-RW only as DVD-Video format on this unit.
- DVD-R, DVD-R DL and CD-R/RW cannot be formatted.
- The disc cannot be formatted if the write protect tab (+R, -R) is in the locked position. Release the protection to continue.
- The message “Unable to format” appears when trying to format discs the unit cannot use.

Enabling discs to be played on other equipment

Finalize

Select steps 1 to 3 of "DVD and card Management".
Make selection from "Selecting whether to show the Top Menu first—Playback will start with." before finalizing the disc. (▼ lower left)
You can play DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL on compatible DVD players by finalizing it on the unit, effectively making it into DVD-Video that complies with DVD-Video standards.
The menu you create with the unit can also be used on DVD players.
4 Select “Finalize” with [▲, ▼] and press [ENTER].
5 Select “Yes” with [▲] and press [ENTER].

Notes

- Finalizing starts.
- You cannot cancel finalizing.
- A message appears when finalizing is finished.
- Do not disconnect the AC power supply cord while finalizing. This can render the disc unusable.

Press [ENTER].

Notes

- When finalizing a high-speed recording compatible disc, it may take longer than displayed on the confirmation screen (approximately 4 times).
- After finalizing:
  - The disc becomes play-only and you can no longer record or edit it. +R can be reformatted (▼ left) although it becomes play-only after finalizing.
  - You can record and edit the disc after formatting (+R left)
  - DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL finalized on the unit cannot 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 minutes chapters (+R DL 8 minutes)
  * This time varies greatly depending on the condition and mode of recording.

Visit Panasonic’s homepage for more information about DVDs.
http://www.panasonic.com/playDVD-R
DVD and card Management

Creating Top Menu
–Create DVD Top Menu

Follow steps 1 to 3 of “DVD and card Management”.
+RW discs contain no Top Menu data. Top menu is a convenient function. We recommend you to create the menu before playing a +RW disc on other equipment.

2. Press [2, 1] to select “Yes” and press [ENTER].
   Creating Top Menu starts. You cannot cancel creating.
   Creating Top Menu can take a few minutes.
4. Press [ENTER].

Notes
- 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.

Enabling the second layer on DL (dual- or double-layer on single side) discs to be recordable
–Close First Layer

Follow steps 1 to 3 of “DVD and card Management”.
DVD-R DL and +R DL discs have two layer of recording surface on one side. This unit does not offer seamless recording on two layers. Recording stops when 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 (edition is still available. You cannot cancel closing. Make certain before proceeding.

   Closing the layer starts. You cannot cancel closing.
   Closing the layer can take several minutes, up to a maximum of 30 minutes, depending on the remaining space on the first layer.

Note
- Do not disconnect the AC power supply cord while closing the layer. This will render the disc unusable.
4. Press [ENTER].

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 it has no recording.
- By closing the layer, you can record or edit discs that have been recorded on the second layer by other equipment.
Changing the unit’s settings

Common procedures
Use the following procedure to change the settings if necessary.

1. While stopped
   Press [FUNCTIONS].
2. Select “Other Functions” with [▲, ▼] and press [ENTER].
4. Select a menu with [▲, ▼] and press [◄, ►].
5. Select an item to be changed with [▲, ▼] and press [ENTER].
6. Select an option with [▲, ▼] and 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 (children, for example). Play and changes to the settings are not possible unless you enter a password.

Preparation
• Select DVD side with pressing [DRIVE SELECT].

When setting ratings
The password screen is shown when you select levels 0 to 7.
1. Input a 4-digit password with the numeric buttons.
   • If you enter a wrong number, press [◄] to erase it before you press [ENTER].
   • Do not forget your password.
2. Press [ENTER].
3. Press [ENTER].
The password is entered and the unit is locked.

Now, when you insert a DVD-Video that exceeds the ratings limit you set, a message appears on the TV.
Follow the on-screen instructions.

When changing ratings
The password screen is shown when you select “Ratings” (► 64)
1. Input a 4-digit password with the numeric buttons and press [ENTER].
2. Select an item with [▲, ▼] and press [◄, ►].
   Actual screens depend on the operation. 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.
• [OFF] indicates settings effective for both DVD and VHS.
• [ON] indicates settings effective for DVD only.
• [OFF] indicates settings effective for VHS only.

Channel Signal Source (RF IN) (► 19)
Select to suit the type of antenna you are using.
[Antenna] [Cable TV]

Set Channels Automatically (► 20)
Preset Channel Captions (► 20)
Manual Channel Captions (► 20)

Setup DVD/VHS
Off Timer
Select how long the unit remains on when it is not being used.
[2 Hours] [6 Hours] [Off]

Remote Control Code (► 21)
[Set Code 1] [Set Code 2] [Set Code 3]

Clock Settings
Press [ENTER] to show the following settings.

Set Clock Automatically (► 22)
Set Clock Manually (► 19)

Adjust Time Zone (► 22)
This corrects the time set in Auto Clock Setting.
The status is not displayed on the Setup menu when the Auto Clock Setting is not set.

Quick Start
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 [PLAY], [REC] (Quick Start Mode).
Power consumption is also higher when the unit is turned off if this is set to “On”.
[On] [Off]

Restore Default Settings
This returns Setup menus to default settings, except for the clock, channel settings, ratings level, and on-screen language.
[Yes] [No]
Changing the unit's settings

- Underlined items are the factory default settings.

**Disc DVD**

**Settings for Playback**

Press [ENTER] to show the following settings.

- **Ratings** : "Entering a password (Ratings)" → (63)
- **Setting ratings (When level is selected)**
  - [No Limit] : All DVD-Videos can be played.
  - [Level 1] to [Level 7] : Prohibits play of DVD-Videos with corresponding ratings recorded on them.
  - [Lock All] : Prohibits play of all DVD-Videos.
- **Changing settings (When level 0 to 7 is selected)**
  - [Unlock Recorder] → [Change Password] → [Change Level] → [Temporary Unlock]

**Play DVD-Audio in Video Mode**

Select "Video Mode (Video On)" to play DVD-Videos on some DVD-Audios.

- **Video Mode (Video On)** : The setting returns to "Audio Mode (Video Off)" when you change the disc or turn the unit off.

**Audio Language**

- **(English)** [French] [Spanish] [Original] [Other]

**Subtitle Language**

- **(Automatic)** [English] [French] [Spanish] [Other]

**Menu Language**

- **(English)** [French] [Spanish] [Other]

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 numeric buttons.
- *Other "66, "Language code list""

**Automatic**

If the language selected for "Audio Language" 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 (→ 26, "Recording modes and approximate recording times (DVR)").

- [EP-Extended Play (8H)]
- [EP-Extended Play (8H)]

**EP-Extended disc**

You can record for 6 hours on an unused 4.7 GB disc.

**EP-Extended disc**

You can record for 8 hours on an unused 4.7 GB disc.

**Video DVD**

**Still Mode (paused video)**

Select the type of picture shown when you pause play.

- [67, "Frame and field"]
- [Automatic]
- [Field]
- [Frame]

**Black Level Control**

Select "Normal", "Lighter" or "Darker" to adjust the black level control to the desired setting for picture enhancement.

Press [ENTER] to show the following settings.

**Input Level**

Adjusts the black level of the input signal.

- [Lighter]
- [Darker]

**Output Level (Composite/SVideo)**

Adjusts the black level of the output signal from the VIDEO OUT and SVIDEO OUT terminal.

- [Lighter]
- [Darker]

**Output Level (Component)**

Adjusts the black level of the output signal from the COMPONENT VIDEO OUT (Y/Pb/Pb) terminals.

- [Lighter]
- [Normal]
- [Darker]

**Audio DVD**

**Dynamic Range Compression**

- **Dolby Digital only**

Choose whether or not to output the main or secondary audio type (SAP) when recording or transferring (copying) to DVD-R, DVD-RW (DOLBY DIGITAL) or +R. (You cannot select the audio type on the unit when recording to DVD-R, DVD-RW (DOLBY DIGITAL) format or +R from an external device. Select it on the external device.)

- **Main** [Secondary Audio Program (SAP)]

**Dolby Digital**

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

- **Bitstream** [PCM]
- **PCM** [PCM]

**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 (→ 26, "Recording modes and approximate recording times (DVR)").

- [EP-Extended Play (8H)]
- [EP-Extended Play (8H)]

**EP-Extended disc**

You can record for 6 hours on an unused 4.7 GB disc.

**EP-Extended disc**

You can record for 8 hours on an unused 4.7 GB disc.

**Video DVD**

**Still Mode (paused video)**

Select the type of picture shown when you pause play.

- [67, "Frame and field"]
- [Automatic]
- [Field]
- [Frame]

**Black Level Control**

Select "Normal", "Lighter" or "Darker" to adjust the black level control to the desired setting for picture enhancement.

Press [ENTER] to show the following settings.

**Input Level**

Adjusts the black level of the input signal.

- [Lighter]
- [Darker]

**Output Level (Composite/SVideo)**

Adjusts the black level of the output signal from the VIDEO OUT and S VIDEO OUT terminal.

- [Lighter]
- [Darker]

**Output Level (Component)**

Adjusts the black level of the output signal from the COMPONENT VIDEO OUT (Y/Pb/Pb) terminals.

- [Lighter]
- [Normal]
- [Darker]

**Audio DVD**

**Dynamic Range Compression**

- **Dolby Digital only**

Choose whether to output the main or secondary audio type (SAP) when recording or transferring (copying) to DVD-R, DVD-RW (DOLBY DIGITAL) or +R. (You cannot select the audio type on the unit when recording to DVD-R, DVD-RW (DOLBY DIGITAL) format or +R from an external device. Select it on the external device.)

- **Main** [Secondary Audio Program (SAP)]

**Digital Audio Output**

Change the settings when you have connected equipment through the unit's DIGITAL AUDIO OUTPUT terminal (→ 16).

Press [ENTER] to display the menu.

**PCM Down Conversion**

Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz.

- **On** : Signals are converted to 48 kHz or 44.1 kHz despite the above settings if the signals have a sampling frequency of over 96 kHz or 88.2 kHz, or the disc has copy protection.
- **Off** : Signals are output as 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 (2ch)" on the unit before output.

- **Bitstream** [PCM]
- **PCM** [PCM]

**DTES**

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

- **Bitstream** [PCM]
- **PCM** [PCM]

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

**Select Audio Channel for DV Input**

You can select the kind of audio when recording from the unit’s DV terminal. (→ 57)

- **Stereo 1** [Stereo 2] [Mix]

**Stereo 1**

Records added audio such as narration (L2, R2) subsequent to original recording.

**Stereo 2**

Records added audio such as narration (L2, R2) subsequent to original recording.
### HDMI Connection Speakers Setting

You can set the unit to output the best possible sound for your speakers.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto</td>
<td>When using the speaker settings of the connected equipment</td>
</tr>
<tr>
<td>Multi Channel</td>
<td>When using three or more speakers with equipment that cannot set the speaker settings</td>
</tr>
<tr>
<td>2 Channel</td>
<td>When using two speakers</td>
</tr>
</tbody>
</table>

### Multi Channel Setting

Displayed when “Multi Channel” is selected in “HDMI Connection Speakers Setting.”

You can adjust the settings for speaker size, presence and audio delay. (⇒ 66)

- **On**: When “On” is selected, you can operate other “Ctrl with HDMI” compatible devices using the “Ctrl with HDMI.”
- **Off**: When “Off” is selected, no operation is possible.

### 4:3 TV Settings for DVD-Video

You can select how to display the image on the TV when you watch 16:9 images (DVD-Video) on a 4:3 standard aspect TV. (⇒ 76)

- **Pan and Scan (Stretch to fit)**: Video recorded for a widescreen is played with the sides cut off if Pan & Scan was specified. If 16:9 software prohibits Pan & Scan, the image will appear in the letterbox style (with black bands above and below the picture) despite the setting here.
- **Letterbox (Shrink to fit)**: Video recorded for a widescreen is played in the letterbox style.

### 4:3 TV Settings for DVD-RAM

You can select how to display the image on the TV when you watch 16:9 images (DVD-RAM) on a 4:3 standard aspect TV. (⇒ 76)

- **4:3 Aspect**: Titles are played as recorded.
- **Pan and Scan (Stretch to fit)**: Video recorded for a widescreen is played with the sides cut off.
- **Letterbox (Shrink to fit)**: Video recorded for a widescreen is played in the letterbox style.

### VHS

**Select Tape Length**

Set the length of tape you are using so the unit can show the correct remaining time.

- **T120**, **T160**, **T180**: Tapes of different lengths for recording standard definition (SD) and high definition (HD) video.

### Jet Search (⇒ 37)

Set the speed for Jet Search when playing EP and VP tapes.

- **Jet Search**: The search speed of EP and VP tapes can be set.
  - **Select {×27} if the picture is poor at {×35}**.
Changing the unit’s settings

Changing the speaker setting to suit your speakers

Change the speaker setting to suit your speakers

1. Press [3, 4, 2, 1] to select the speaker icon (a) and press [ENTER].
2. Press [3, 4] to select the setting and press [ENTER].

Icon examples:
- Surround speaker (LS)
  - Large: Select when the speaker supports low-frequency (under 100 Hz) reproduction.
  - Small: Select when the speaker does not support low-frequency reproduction.
- Subwoofer
  If the subwoofer is set to “No”, the front speakers will automatically be set to “Large”. (In this case, we recommend connecting a speaker that can reproduce bass below 100 Hz.)

To set the delay time (b)

(Effective only when playing multi-channel audio)
If either distance (c) or (e) is less than (d), find the difference in the relevant table and change to the recommended setting.

1. Press [3, 4, 2, 1] to select an item (b) and press [ENTER].
2. Press [3, 4] to change the content and press [ENTER].
### Messages

#### On the unit's display

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>F74</td>
<td>The HDMI connection could not be authenticated due to a transfer malfunction.</td>
</tr>
<tr>
<td>F75</td>
<td>The HDMI connection could not be authenticated due to a final data malfunction.</td>
</tr>
<tr>
<td>J59</td>
<td>The unit is very warm. The system 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>
</tr>
<tr>
<td>J61</td>
<td>The unit out of recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</td>
</tr>
<tr>
<td>J71</td>
<td>The connected equipment is not HDMI compatible.</td>
</tr>
<tr>
<td>J72</td>
<td>The HDMI connection acts unusually.</td>
</tr>
<tr>
<td>J73</td>
<td>The HDMI cable is damaged.</td>
</tr>
<tr>
<td>J88</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>
</tr>
<tr>
<td>J99</td>
<td>Now press [OFF, POWER] on the main unit to switch the unit to standby.</td>
</tr>
</tbody>
</table>

#### On the TV

<table>
<thead>
<tr>
<th>Message</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot finish recording completely.</td>
<td>The program was copy-protected.</td>
</tr>
<tr>
<td>Cannot record on the disc.</td>
<td>The disc may be dirty or scratched.</td>
</tr>
<tr>
<td>Unable to format.</td>
<td>To check the disc.</td>
</tr>
<tr>
<td>Cannot record. Disc is full.</td>
<td>Create space by erasing any unwanted titles.</td>
</tr>
<tr>
<td>Cannot record. The number of titles has exceeded the maximum limit.</td>
<td>Even if you erase 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 last recorded title is deleted. (The recording space may increase slightly when other titles are deleted.)</td>
</tr>
<tr>
<td>Error has occurred. Please press ENTER.</td>
<td>Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering (&quot;SELF CHECK&quot; appears on the unit's display).</td>
</tr>
<tr>
<td>No disc</td>
<td>No disc, or you have not inserted a disc. Correctly insert a disc that the unit can play.</td>
</tr>
<tr>
<td>No folders.</td>
<td>There is no compatible folder in this unit.</td>
</tr>
<tr>
<td>No SD Card</td>
<td>The card is not inserted. If this message is displayed with a compatible card already inserted, turn off the unit, remove and then re-insert the card.</td>
</tr>
<tr>
<td>No valid SD card.</td>
<td>The card inserted is not compatible or the card format does not match.</td>
</tr>
<tr>
<td>No VHS cassette</td>
<td>A video cassette is not inserted when recording. Insert a video cassette with an accidental erasure prevention tab.</td>
</tr>
<tr>
<td>Now recording on DVD. To watch the VHS playback, connect a TV to DVD/VHS COMMON OUT terminal at the back of the unit, and select the appropriate input on the TV.</td>
<td>The VHS plays back while recording on DVD. You can watch the VHS playback by connect to the DVD/VHS COMMON terminals.</td>
</tr>
<tr>
<td>Please change the disc.</td>
<td>There is a problem with the disc. Press [OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)</td>
</tr>
<tr>
<td>Please set the clock.</td>
<td>The clock is not set when recording programs or setting the scheduled recording. Set the clock.</td>
</tr>
<tr>
<td>The VHS cassette is protected.</td>
<td>A video cassette without the accidental erasure protection tab is inserted when recording. Use a video cassette with an accidental erasure prevention tab.</td>
</tr>
<tr>
<td>This is a non-recordable disc.</td>
<td>Insert a DVD-RAM or unfinalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW.</td>
</tr>
<tr>
<td>This disc is not formatted properly.</td>
<td>You have inserted an unformatted DVD-RAM, DVD-RW, +R, +R DL or +RW. Format the disc with the unit.</td>
</tr>
<tr>
<td>The operation is prohibited by the unit, disc or cassette.</td>
<td></td>
</tr>
</tbody>
</table>
Frequently asked questions

Set up

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What equipment is necessary to play multi-channel surround sound?</td>
<td>You cannot playback multi-channel sound on this unit without other equipment. You must connect this unit with a HDMI cable or an optical digital cable to an amplifier with a built-in (Dolby Digital or DTS) decoder.</td>
</tr>
<tr>
<td></td>
<td>An amplifier supporting CPPM and the HDMI standard version 1.1 must be connected to this unit to play multi-channel audio on a DVD-Audio.</td>
</tr>
<tr>
<td>Can the headphones and speakers be directly connected to the unit?</td>
<td>You cannot directly connect to the unit. Connect through the amplifier etc.</td>
</tr>
<tr>
<td>The television has S VIDEO IN terminal, COMPONENT VIDEO IN terminals and HDMI IN terminal. Which should I connect with?</td>
<td>The output picture quality increases in the following order. - VIDEO IN terminal, S VIDEO IN terminal, COMPONENT VIDEO IN terminals and HDMI IN terminal. However the unit will take longer to startup when it is connected with the HDMI IN terminal.</td>
</tr>
</tbody>
</table>

Disc

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?</td>
<td>You can play them if the video standard is NTSC. However, you cannot play DVD-Video if its region number does not include “1” or “ALL”.</td>
</tr>
<tr>
<td>Can a DVD-Video that does not have a region number be played?</td>
<td>The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.</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>The unit records and plays DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL and +RW, and plays DVD-RW (DVD Video Recording format). The unit also records and plays high speed recording compatible discs. After recording but before finalizing +R, +R DL discs the audio recorded on them is not possible. After finalizing the disc, however, you will be able to play it on any DVD-Video compatible player.</td>
</tr>
<tr>
<td>Please tell me about CD-R and CD-RW compatibility with the unit.</td>
<td>This unit plays CD-R/CD-RW discs which have been recorded in one of the following standards: CD-DA, Video CD, MP3 and still pictures (JPEG/TIFF). Close the session or finalize the disc after recording. This unit can recognize up to 99 folders (groups) and 999 files (tracks) on a disc with MP3 or still pictures (JPEG/TIFF). You cannot write to a CD-R or CD-RW with the unit.</td>
</tr>
</tbody>
</table>

Recording

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can I record from a commercially purchased video cassette or DVD?</td>
<td>Most commercially sold video cassettes and DVD are copy protected, therefore, recording is usually not possible.</td>
</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>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 DVD Top Menu” in the DVD management menu.</td>
</tr>
<tr>
<td>Can I record digital audio signals using the unit?</td>
<td>You cannot record digital signals. The digital audio terminals on the unit are for output only. (The audio recorded from a digital video camcorder using the DV automatic recording function, for example, is recorded digitally.)</td>
</tr>
<tr>
<td>Can a digital audio signal from the unit be recorded to other equipment?</td>
<td>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 “PCM” - DTS “PCM” However, only - 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.</td>
</tr>
</tbody>
</table>

Page
# 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, refer to the "Customer Services Directory" on page 77 if you reside in the U.S.A. In other areas, consult your dealer.

## Power

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power</td>
<td>Insert the AC power supply cord securely into a known active AC outlet.</td>
</tr>
<tr>
<td>The unit switches to the standby mode</td>
<td>This is a power saving feature. Change &quot;Off Timer&quot; in the &quot;Setup&quot; menu, if you would prefer.</td>
</tr>
<tr>
<td>The unit is on but cannot be operated</td>
<td>One of the unit's safety devices is activated. Press [O/I, POWER] on the main unit to turn the unit on.</td>
</tr>
</tbody>
</table>

## Displays

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The display is dim</td>
<td>Change &quot;FL Display&quot; in the Setup menu.</td>
</tr>
<tr>
<td>&quot;12:00A&quot; is flashing on the unit's display</td>
<td>Set the clock.</td>
</tr>
<tr>
<td>The recording time display, the transfer (copying) process display and the recorded recording time of MP3 are different from the actual time</td>
<td>Times shown may disagree with actual times.</td>
</tr>
<tr>
<td>Compared to the actual recorded time, the elapsed time displayed is less</td>
<td>In DVD-R, DVD-R DL, +R or +R DL, the remaining capacity does not increase even if titles are deleted.</td>
</tr>
<tr>
<td>&quot;U88&quot; is displayed and the disc cannot be ejected</td>
<td>Available recording space on a DVD-RW (DVD-Video format) or +RW increases when the last recorded title is deleted. (The recording space may increase slightly when other titles are deleted.)</td>
</tr>
<tr>
<td>The unit is recording/playback but cannot be operated</td>
<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>
</tr>
<tr>
<td>The display recorded 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>
<td>The time during fast forward and rewind, or the process during transfer (copy) may not be displayed accurately.</td>
</tr>
<tr>
<td>The remote control code is wrong. Change to the correct code.</td>
<td>The unit is carrying out the recovery process. Do the following to eject the disc.</td>
</tr>
<tr>
<td>The remote control doesn't work</td>
<td>(1) Press [O/I, POWER] on the main unit to switch to standby.</td>
</tr>
<tr>
<td>The remote control code is wrong. Change to the correct code.</td>
<td>If the unit doesn't switch to standby, press and hold [O/I, POWER] on the main unit for about 10 seconds. The unit is forcibly switched to standby.</td>
</tr>
<tr>
<td>The unit is on</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>The unit is recording</td>
<td>If the unit doesn't switch to standby, press and hold [O/I, POWER] on the main unit for about 10 seconds. The unit is forcibly switched to standby.</td>
</tr>
<tr>
<td>The unit is on but cannot be operated</td>
<td>Alternatively, disconnect the AC power supply cord, wait for about 1 minute, then reconnect it.</td>
</tr>
<tr>
<td>The unit is on but cannot be operated</td>
<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>
</tr>
<tr>
<td>The unit is on</td>
<td>It may be necessary to set the code on the remote control again after changing the batteries.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>It may be necessary to set the code on the remote control again after changing the batteries.</td>
</tr>
</tbody>
</table>

## Operation

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot operate the TV</td>
<td>Change manufacturer code. Some TVs cannot be operated even if you change the code.</td>
</tr>
<tr>
<td>Cannot operate the DVD</td>
<td>Press [TV/VIDEO] to change the input mode to &quot;TV&quot;.</td>
</tr>
<tr>
<td>Cannot operate the VHS</td>
<td>Press [DRIVE SELECT] to select VHS drive when operating VHS.</td>
</tr>
<tr>
<td>The remote control doesn't work</td>
<td>Press [DRIVE SELECT] to select DVD drive when operating DVD.</td>
</tr>
<tr>
<td>The unit is on but cannot be operated</td>
<td>The remote control code is wrong. Change to the correct code.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>The batteries are depleted. Replace them with new ones.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>Point the remote control at the remote control sensor on the main unit.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>Remove obstacles between the remote control and main unit.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>Colored glass may abstrict the signal reception/transmission.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>The unit is forcibly switched to standby.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>Colored glass may abstrict the signal reception/transmission.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>It may be necessary to set the code on the remote control again after changing the batteries.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>It may be necessary to set the code on the remote control again after changing the batteries.</td>
</tr>
<tr>
<td>The unit is on</td>
<td>It may be necessary to set the code on the remote control again after changing the batteries.</td>
</tr>
</tbody>
</table>

## Startup

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Startup is slow</td>
<td>Startup takes time in the following situations.</td>
</tr>
<tr>
<td>Startup is slow</td>
<td>- A disc other than a DVD-RAM is inserted.</td>
</tr>
<tr>
<td>Startup is slow</td>
<td>- The clock is not set.</td>
</tr>
<tr>
<td>Startup is slow</td>
<td>Immediately after a power failure or the AC power supply cord is connected.</td>
</tr>
<tr>
<td>Startup is slow</td>
<td>When the unit is connected with an HDMI cable.</td>
</tr>
<tr>
<td>Takes time to read DVD-RAM</td>
<td>It may take time to read a disc if it is being used for the first time in this unit or it has not been used for a long time.</td>
</tr>
</tbody>
</table>

## Frequently asked questions/Troubleshooting guide
### Troubleshooting guide

#### Picture

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV reception worsens after connecting the unit.</td>
<td>The can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers.</td>
</tr>
</tbody>
</table>
| The images from the unit do not appear on the TV.                     | - Make sure that the TV is connected to the VIDEO OUT terminal, S VIDEO OUT terminal, COMPONENT VIDEO OUT terminals or HDMI AV OUT terminal on the unit.  
| Picture is distorted.                                                 | - Make sure that the TV’s input setting (e.g., VIDEO 1) is correct.        
|                                                                       | - The TV isn’t compatible with progressive signals. Press and hold [■] and [DVD] on the main unit at the same time for about 5 seconds. The setting will change to interlace.  
|                                                                       | - When connecting with a component video cable to a television that is incompatible with progressive video, check if there is also an HDMI cable connected to an amplifier, etc. If so, turn the power off to the device connected with an HDMI cable, and set the “HDMI Video Output” to “Off” in the Setup menu.  
|                                                                       | - To output video from a device connected with an HDMI cable, set “HDMI Video Output” to “On” in the Setup menu.  
|                                                                       | - Picture may not be seen when more than 4 devices are connected with HDMI cables.  
|                                                                       | Reduce the number of connected devices.                                    |
| Status messages do not appear.                                        | - Select “Automatic” in “Status Messages” in the Setup menu.              |
| The blue background does not appear.                                  | - Select “On” in “Blue Background” in the Setup menu.                      |
| The 4:3 aspect ratio picture expands left and right.                  | - Use the TV to change the aspect. If your TV does not have that function, set “Progressive” in the Video menu to “Off”.  
| Screen size is wrong.                                                 | - If you connect an HDMI cable, set “HDMI Output Display Aspect” in the Setup menu to “Normal”.  
|                                                                       | - Check the settings for “TV Type”, “4:3 TV Settings for DVD-Video”, or “4:3 TV Settings for DVD-RAM” in the Setup menu.  
| There is a lot of after-image when playing video.                     | - Set “DNR” in the Video menu to “Off”.                                    |
| When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up. | Set “Progressive” in the Video menu to “Off”. This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.  
|                                                                       | - When you use the HDMI AV OUT terminal for video output, follow the steps below for setting.  
|                                                                       | (1) Connect this unit to the TV with any cable except the HDMI cable  
|                                                                       | (2) Set “HDMI Video Output” in the Setup menu to “Off”                      |
| There is no apparent change in picture quality when adjusted with the Video menu in the on-screen menus. | The effect cannot be seen with certain types of video.                     |

#### Sound

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
</table>
| No sound.                                                               | - Check the connections and “Digital Audio Output” settings. Check the input mode on the amplifier if you have connected one.  
| Low volume.                                                            | - Press [AUDIO] to select the audio.                                      
| Distorted sound.                                                       | - Set “V. Surround Sound” in the Audio menu to “Off” in the following cases.  
| Cannot hear the desired audio type.                                    | - When using discs that do not have surround sound effects such as Karaoke discs.  
|                                                                       | - When playing MT$S$ broadcast titles.                                    
|                                                                       | - This unit cannot playback multi-channel discs that prevent down-mixing unless the unit is connected with a HDMI cable to an amplifier supporting CPPM and the HDMI standard version 1.1. Refer to the disc jacket for more information.  
|                                                                       | - The sound effects will not work when the bitstream signal is output from the HDMI AV OUT terminal or the OPTICAL DIGITAL AUDIO OUT terminal.  
|                                                                       | - Audio may not be heard when more than 4 devices are connected with HDMI cables.  
|                                                                       | - Reduce the number of connected devices.                                
|                                                                       | - When the DIGITAL AUDIO OUT (Optical) terminal is used for audio output and the unit is connected to the television with a HDMI cable, set “HDMI Audio Output” to “Off” in the setup menu.  
| Cannot switch audio.                                                   | - If the sound is distorted when the unit is connected to an amplifier with the HDMI cable, adjust the settings in “HDMI Connection Speakers Setting” in the Setup menu to match the connection.  
|                                                                       | - Depending on the connected equipment, the sound may not be heard if this unit is connected with a HDMI cable.  
|                                                                       | - You cannot change the audio type when a DVD-R, a DVD-R DL, a DVD-RW (DVD-Video format), a +R, a +R DL or a +RW is in the disc tray.  
|                                                                       | - You cannot change the audio type when playing a DVD-R, a DVD-R DL, a DVD-RW (DVD-Video format), a +R, a +R DL or a +RW, (You can select “Main” or “Secondary Audio Program (SAP)” in Multi-channel TV sound (MTS) in the Setup menu before recording.)  
|                                                                       | - You have used a digital connection. Set “Dolby Digital” to “PCM” or connect using audio cables (analog connection).  
|                                                                       | - There are discs whose audio cannot be changed because of how the disc was created.  
|                                                                       | - Reduce the number of connected devices.                                |

<table>
<thead>
<tr>
<th></th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV reception worsens after connecting the unit.</td>
<td>–</td>
</tr>
<tr>
<td>The images from the unit do not appear on the TV.</td>
<td>14–17</td>
</tr>
<tr>
<td>Picture is distorted.</td>
<td>–</td>
</tr>
<tr>
<td>Status messages do not appear.</td>
<td>65</td>
</tr>
<tr>
<td>The blue background does not appear.</td>
<td>65</td>
</tr>
<tr>
<td>The 4:3 aspect ratio picture expands left and right.</td>
<td>40</td>
</tr>
<tr>
<td>Screen size is wrong.</td>
<td>65</td>
</tr>
<tr>
<td>There is a lot of after-image when playing video.</td>
<td>65</td>
</tr>
<tr>
<td>When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.</td>
<td>40</td>
</tr>
<tr>
<td>There is no apparent change in picture quality when adjusted with the Video menu in the on-screen menus.</td>
<td>–</td>
</tr>
<tr>
<td>No sound.</td>
<td>16, 64</td>
</tr>
<tr>
<td>Low volume.</td>
<td>27, 33</td>
</tr>
<tr>
<td>Distorted sound.</td>
<td>40</td>
</tr>
<tr>
<td>Cannot hear the desired audio type.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot switch audio.</td>
<td>–</td>
</tr>
</tbody>
</table>

### RAM

- Make sure that the TV is connected to the VIDEO OUT terminal, S VIDEO OUT terminal, COMPONENT VIDEO OUT terminals or HDMI AV OUT terminal on the unit.

### DNR

- Set “DNR” in the Video menu to “Off”. This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.

### HDMI Audio Output

- Set “HDMI Video Output” in the Setup menu to “Off”.

### TV Type

- Check the settings for “TV Type”, “4:3 TV Settings for DVD-Video”, or “4:3 TV Settings for DVD-RAM” in the Setup menu.

### Progression

- Set “Progressive” in the Video menu to “Off”.

### HDMI Video Output

- Set “HDMI Video Output” in the Setup menu to “Off”.

### DNR

- Set “DNR” in the Video menu to “Off”.

### Blue Background

- Select “On” or “Blue Background” in the Setup menu.

### HDMI Audio Output

- Adjust the audio settings of the connected equipment, if necessary.
<table>
<thead>
<tr>
<th>Problem Description</th>
<th>Possible Reasons</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot record.</td>
<td>You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>The disc is unformatted. Format the disc.</td>
<td>61</td>
</tr>
<tr>
<td></td>
<td>The write-protect tab on the cartridge is set to &quot;PROTECT&quot; or the disc is protected with &quot;DVD Management&quot;.</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Some programs have limitations on the number of times they can be recorded (CPRM).</td>
<td>6, 76</td>
</tr>
<tr>
<td></td>
<td>The disc is full or nearly full. Delete unneeded titles or use another disc.</td>
<td>41, 59</td>
</tr>
<tr>
<td>Scheduled recording does not work properly.</td>
<td>The scheduled recording program is incorrect or different scheduled recording times overlap. Correct the program.</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>The clock is not correct. Set the clock.</td>
<td>19, 22</td>
</tr>
<tr>
<td></td>
<td>Scheduled 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>Scheduled recording does not stop even when STOP is pressed.</td>
<td>If you start recording immediately after turning on the unit while &quot;Quick Start&quot; is set to &quot;On&quot;, you cannot then stop recording for a few seconds.</td>
<td>63</td>
</tr>
<tr>
<td>The scheduled recording program remains even after recording finishes.</td>
<td>If the power shuts down or the plug is disconnected from the household AC outlet while recording or editing, the program may be lost or the disc may become unusable. You cannot offer any guarantee regarding lost titles or discs. You will have to format the disc or use a new disc.</td>
<td>–</td>
</tr>
<tr>
<td>A part or whole of a recorded title has been lost.</td>
<td>The write-protect tab on the cartridge is set to &quot;PROTECT&quot; or the disc is protected with &quot;DVD Management&quot;.</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Some video tapes on the market (including rental videos) are copy-protected to prevent illegal reproductions. Copy-protected video tapes cannot be properly recorded.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot transfer (copy) VHS to DVD.</td>
<td>You cannot use the transfer (copying) function when the FUNCTIONS window, the Scheduled Recording List screen, etc. are displayed.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>A video cassette without the accidental erasure prevention tab is inserted. Use a video cassette with an accidental erasure prevention tab.</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Some video tapes on the market (including rental videos) are copy-protected to prevent illegal reproductions. Copy-protected video tapes cannot be properly recorded.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot transfer (copy) DVD to VHS.</td>
<td>You cannot use the transfer (copying) function when the FUNCTIONS window, the Scheduled Recording List screen, etc. are displayed.</td>
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<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>
<tr>
<td></td>
<td>Some video tapes on the market (including rental videos) are copy-protected to prevent illegal reproductions. Copy-protected video tapes cannot be properly recorded.</td>
<td>–</td>
</tr>
<tr>
<td>The sound level after editing is not equal on DVD and on VHS.</td>
<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 loudly or softly on a video tape.</td>
<td>–</td>
</tr>
<tr>
<td>Stripe-shaped black noise is recorded.</td>
<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>
<td>–</td>
</tr>
<tr>
<td>Cannot record video or sound from the external device.</td>
<td>The external device is not correctly connected.</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>The proper external input channel (IN1, IN2 or DV) is not selected.</td>
<td>57</td>
</tr>
<tr>
<td>The DV automatic recording function does not work.</td>
<td>If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings.</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>You cannot start recording until the images from the DV equipment appear on the television.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Depending on the equipment, the DV automatic recording may not operate properly.</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>You can only record audio/video images on a DV tape.</td>
<td>–</td>
</tr>
</tbody>
</table>
## Troubleshooting guide

### Play

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play fails to start even when [▲, PLAY] is pressed.</td>
<td>• Insert the disc correctly with the label facing up.</td>
<td>24</td>
</tr>
<tr>
<td>Play starts but then stops immediately.</td>
<td>• The disc is dirty.</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>• You tried to play a blank disc or a disc that is unplayable on the unit.</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>• You tried to play a +RW that needs to be finalized on the equipment used for recording.</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>• When recording to DVD-RAM using EP (8H) mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use EP (6H) mode.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• You cannot play discs during DV automatic recording.</td>
<td></td>
</tr>
<tr>
<td>Audio and video momentarily pause.</td>
<td>• This occurs between playlist chapters.</td>
<td>32</td>
</tr>
<tr>
<td>DVD-Video is not played.</td>
<td>• This occurs as scenes change during Quick View.</td>
<td></td>
</tr>
<tr>
<td>Alternative sound track and subtitles cannot be selected.</td>
<td>• Multiple languages are not recorded on the disc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• You may have to use the disc’s own menus to select languages.</td>
<td>32</td>
</tr>
<tr>
<td>No subtitles.</td>
<td>• When progressive output is on, closed captions cannot be displayed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Subtitles are not recorded on the disc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Set “Subtitle” in the Disc menu to “On”.</td>
<td>39</td>
</tr>
<tr>
<td>Angle cannot be changed.</td>
<td>• This function depends on software availability. Angles can only be changed during scenes where different angles are recorded.</td>
<td></td>
</tr>
<tr>
<td>You have forgotten your ratings password.</td>
<td>• With the tray open, keep pressing [▲, REC] and [▲] on the main unit simultaneously for about 5 or more seconds.</td>
<td></td>
</tr>
<tr>
<td>Quick View does not work.</td>
<td>• This does not work when audio is other than Dolby Digital.</td>
<td></td>
</tr>
<tr>
<td>The resume play function does not work.</td>
<td>• This does not work when recording is in XP or FR mode.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Memorized positions are canceled when the unit is turned off or when the tray is opened. The memorized position on the playlist is also canceled when the playlist and title are edited.</td>
<td></td>
</tr>
</tbody>
</table>

### Edit

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot format.</td>
<td>• The disc is dirty. Wipe with a damp cloth and then wipe dry.</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>• You tried formatting a disc that is not compatible with the unit.</td>
<td>7</td>
</tr>
<tr>
<td>Cannot create chapters.</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.</td>
<td></td>
</tr>
<tr>
<td>Cannot mark the start point or the end point during “Shorten Title” operation.</td>
<td>• These operations are not possible with still pictures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 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>43</td>
</tr>
<tr>
<td>The available recording time doesn’t 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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Available recording space on a DVD-RW (DVD-Video format) or +RW increases when the last recorded title is deleted. (The recording space may increase slightly when 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>
</tbody>
</table>
### Still pictures

- **Cannot display Direct Navigator screen.**
  - This screen cannot be displayed during recording or copy. –

- **Cannot edit or format a card.**
  - Release the card’s protection setting. (With some cards, the “Write Protection Off” message sometimes appears on the screen even when protection has been set.)
  - Format using FAT 12 or FAT 16 with other equipment or format the card with this unit.
  - The card contains a folder structure and/or file extensions that are not compatible with this unit.
  - Turn off and then turn on the unit again.
  - SD memory cards from 8 MB to 2 GB can be used with this unit.
  - When there are a lot of folders and files, it may sometimes take a few hours.
  - When repeating copying or deleting, it may sometimes take a long time. Format the disc or card. –

- **The contents of the card cannot be read.**
  - The card format is not compatible with the unit. (The contents on the card may be damaged.)
  - Format using FAT 12 or FAT 16 with other equipment or format the card with this unit.
  - The card contains a folder structure and/or file extensions that are not compatible with this unit.

- **Copying, deleting and setting protection takes a long time.**
  - When there are a lot of folders and files, it may sometimes take a few hours.
  - When repeating copying or deleting, it may sometimes take a long time. Format the disc or card. –

- **Scheduled recording began in the middle of editing a still picture.**
  - If it comes to the time scheduled for recording, the recording may start even though you are editing. –

### VHS Picture

- **OSD messages do not appear.**
  - Go to Setup and select “Automatic” in “Status Messages". Press [STATUS] to show the on-screen messages constantly. –

- **The blue back appears during play.**
  - You are playing a blank or poor quality part of the tape.
  - You can damage the unit if you play dirty or damaged tapes and this can cause the blue back to appear. Consult your dealer. –

### VHS Sound

- **Cannot hear the desired audio type.**
  - Press [AUDIO] to select the audio. –

- **There is noise when playing a video tape.**
  - Adjust the tracking. –

- **The playback screen flickers.**
  - The video head is dirty.
  - The tape is too old or damaged. –

### VHS Play

- **Cannot play.**
  - Tapes recorded under a TV system other than NTSC (PAL, SECAM, etc.) cannot be played.

- **The playback screen flickers.**
  - The video head is dirty.
  - The tape is too old or damaged. –

### VHS Recording, scheduled recording

- **“1” flashes when I try to start recording. Cannot record.**
  - A video cassette is not inserted. Insert a video cassette with an accidental erasure prevention tab.

- **Cannot record TV program.**
  - The desired channel is not selected. Select the desired TV program. –
Product Service

1. **Damage requiring service** — The unit should be serviced by qualified service personnel if:
   (a) The AC power supply cord or AC adaptor has been damaged; or
   (b) Objects or liquids have gotten into the unit; or
   (c) The unit has been exposed to rain; or
   (d) The unit does not operate normally or exhibits a marked change in performance; or
   (e) The unit has been dropped or the cabinet damaged.

2. **Servicing** — Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.

3. **Replacement parts** — When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.

4. **Safety check** — After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

---

**Product information**

For product information or assistance with product operation:
Refer to "Customer Services Directory" on page (77).

---

**User memo:**

The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and keep for future reference.

**MODEL NUMBER**

**SERIAL NUMBER**

---

**Dealer information**

**DATE OF PURCHASE**

**DEALER NAME**

**DEALER ADDRESS**

**TELEPHONE NUMBER**
**Specifications** (common to DMR-ES45V and DMR-ES46V)

<table>
<thead>
<tr>
<th>Power consumption:</th>
<th>AC 120 V, 60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power consumption:</td>
<td>Approx. 29 W</td>
</tr>
<tr>
<td>Standby mode:</td>
<td>(Display ON) Approx. 3.0 W</td>
</tr>
<tr>
<td></td>
<td>(Display OFF) Approx. 3.0 W</td>
</tr>
</tbody>
</table>

### Recordable discs:
- **DVD-RAM:**
  - Ver. 2.0
  - Ver. 2.1/2X-SPEED DVD-RAM Revision 1.0
  - Ver. 2.2/3X-SPEED DVD-RAM Revision 2.0
- **DVD-R:**
  - for General Ver. 2.0
  - for General Ver. 2.0/4X-SPEED DVD-R Revision 1.0
  - for General Ver. 2.0/4X-SPEED DVD-R Revision 0.0
  - for DL Ver. 3.0
  - for DL Ver. 3.0/4X-SPEED DVD-R for DL Revision 0.0
- **DVD-RW:**
  - Ver. 1.1
  - Ver. 1.1/2X-SPEED DVD-RW Revision 1.0
  - Ver. 1.2/4X-SPEED DVD-RW Revision 2.0
  - Ver. 1.3
  - Ver. 1.2 for DL Ver. 1.0
  - Ver. 1.1
  - Ver. 1.0

### Recording system:
- **DVD-RAM:**
  - DVD Video Recording format
- **DVD-R:**
  - DVD-Video format
- **DVD-R DL (Double Layer):**
  - DVD-Video format
- **DVD-RW:**
  - DVD-Video format
  - DVD-Audio, CD-Audio (CD-DA), Video CD
  - DVD-Video, DVD-Audio, CD-Audio (CD-DA), Video CD
  - DVD-Video, DVD-Audio, SD Card Slot 1 pc
  - DVD-VHS Video Cassette System Standard with FM audio
  - DVD-Video, DVD-Audio, SD Card Slot 2 pc
  - DVD-Video, DVD-Audio, SD Card Slot 3 pc
  - DVD-Video, DVD-Audio, SD Card Slot 4 pc

### Optical pick-up:
- System with 1 lens, 2 integration units
- (662 nm wavelength for DVDs, 780 nm wavelength for CDs)
- Laser Power: No hazardous radiation is emitted with the safety protection

### 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:
- NTSC system, 525 lines, 60 fields
- TV Channel:
  - VHF: 2 ch to 13 ch
  - UHF: 14 ch to 69 ch
- CATV Channel:
  - 5A & A-5 ch to EEE ch

### Quick Start for Recording (Quick Start : ON)
1 Sec. Quick Start for Recording on DVD-RAM

### Video system:
- Recording system: (for DVD)
  - Video system: MPEG2 (Hybrid VBR)
  - Input:
    - LINE (pin jack): x2
    - S connector: x2
  - Output: (for DVD PRIORITY)
    - LINE (pin jack): x2
    - S connector: x2
  - Component video output: (for DVD PRIORITY)
    - Y, Pe, Pn: x1
    - (480i/480p)
  - Power consumption: Approx. 29 W
  - Power supply: Approx. 29 W
  - Note
  - System with 1 lens, 2 integration units
  - DVD-Video, DVD-Audio, CD-Audio (CD-DA), Video CD
  - DVD-Video, DVD-Audio, SD Card Slot 1 pc
  - Digital output: HDMI Ver. 1.2a (EDID Ver. 1.3)

### Audio system:
- Recording system: (for DVD)
  - Dolby Digital (2 ch)
  - Linear PCM (XDM mode 2 ch)
- Analog Input:
  - LINE (pin jack): x2
  - Reference input: 309 mVrms
  - FS: 2 Vrms (1 kHz, 0 dB)
  - Input impedance: 22 kΩ
- Analog Output: (for DVD PRIORITY)
  - LINE (pin jack): x2
  - Reference output: 309 mVrms
  - FS: 2 Vrms (1 kHz, 0 dB)
  - Output impedance: 1 kΩ
  - Number of channels: (for DVD)
    - Recording: 2 channels
    - Playback: 2 channels
  - Number of track: (for VHS)
    - +RW: 2 track
    - Normal: 1 track
- Digital Output: (for DVD PRIORITY)
  - Digital audio optical output connector: x1
  - 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
    - 1 Fixed Head for Normal audio
- Tape speed/Recording time:
  - SP: 33.35 mm/s, 120 min (with T-120 cassette)
  - EP: 11.12 mm/s, 360 min (with T-120 cassette)
  - FF/REW time:
    - FF: Approx. 60 s (with T-120 cassette)
    - Rew: Approx. 43 s (with T-120 cassette)

### HDMI Output:
- HDMI Ver. 1.2a (EDID Ver. 1.3)

### SD Card Slot:
- Still picture (JPEG, TIFF)
  - SD Card Memory Card Slot 1 pc
- Compatible media:
  - SD Memory Card, MultiMediaCard
  - *Includes miniSD™ Cards (A miniSD™ adaptor needs to be inserted)
- Format:
  - FAT12, FAT16
- Image File Format:
  - JPEG conformingDCF (Design rule for Camera File system), TIFF (Uncompressed RGB chunky), DPOF Compatible
- Sub sampling: 4:2:2 or 4:2:0
- Number of pixels:
  - 34 x 34 pixels and 6144 x 4096 pixels
- Thawing time:
  - Approx. 3 sec (6M pixels, JPEG)

### Regional Code:
- # 1

### Clock unit:
- Quartz-controlled 12-hour digital display

### Operating temperature range:
- 5°C to 40°C (41°F to 104°F)

### Operating humidity range:
- 10% to 80% RH (no condensation)

### Dimensions:
- Approx. 430 mm (W) x 84 mm (H) x 343 mm (D)
  - [Approx. 16 1/2" (W) x 3 1/8" (H) x 13 1/4" (D)]
- Mass:
  - Approx. 5.4 kg (Approx. 11.9 lbs)

### Note:
- Specifications are subject to change without notice.
- Mass and dimensions shown are approximate.
- *Useable capacity will be less (SD Memory Card).
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.

CPPM (Content Protection for Prerecorded Media)
A copy protection system used for DVD-Audio files. This unit supports CPPM.

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

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

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. Tracks that do not allow down-mixing will not play correctly on this unit except when connecting with an HDMI cable to an amplifier that supports CPRM compatible recorders and discs.

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

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 reduces the gap between the loudest and softest sounds. This means you can hear dialog 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.
- 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.

Folder
This is a place on the memory card where groups of data are stored together. In the case of this unit, it refers to the place where still pictures (JPEG, TIFF) are stored.

Formatting
Formatting is the process of making media such as DVD-RAM recordable on recording equipment.
You can format DVD-RAM and DVD-RW (only as DVD-Video format) or +R and +R DL on the unit. Formatting irrevocably erases all data.

Frame and field
Frame refers to the single images that constitute the video you see on your TV. Each frame consists of 2 fields.

- A frame still shows 2 fields, so there may be some blurring between them, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

HDMI (High-Definition Multimedia Interface)
HDMI is a next-generation digital interface for consumer electronic products. Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable. This unit supports high-definition video output (720p, 1080i) from HDMI AV OUT terminals. To enjoy high-definition video a high definition compatible television is required.

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding color 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)
An audio compression method that compresses audio to approximately one-tenth of its size without any considerable loss of audio quality. You can play MP3s 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 don’t 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
NTSC, the video signal standard, has 480 interlaced (i) scan lines, whereas progressive scanning uses twice the number of scan lines. This is called 480p.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Videos. Your TV must be compatible to enjoy progressive video.

Protection
You can prevent accidental erasure by setting writing protection or erasure protection.

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

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

TIFF (Tag Image File Format)
This is a system used for compressing/decoding color still pictures, a common format for storing high quality images on digital cameras and other devices.
Limited Warranty

Panasonic Consumer Electronics Company,
Division of Panasonic Corporation of North America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina, Puerto Rico 00985

Panasonic DVD Recorder
Limited Warranty

Limited Warranty Coverage
If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Puerto Rico, Inc. (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

<table>
<thead>
<tr>
<th>Product or Part Name</th>
<th>Parts</th>
<th>Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD Recorder</td>
<td>One (1) Year</td>
<td>One (1) Year</td>
</tr>
<tr>
<td>Rechargeable Batteries, DVD-RAM Disc (in exchange for defective item)</td>
<td>Ten (10) Days</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-In or Mail-In Service
For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (7262) or visit Panasonic Web Site: http://www.panasonic.com
For assistance in Puerto Rico call Panasonic Puerto Rico, Inc. (787)-750-4300 or fax (787)-750-3100.

Limited Warranty Limits And Exclusions
This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear or tear and tear or cosmetic damage. The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which result from improper use, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, travel to and from the servicenter, loss of media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.) ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor’s Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

Customer Services Directory

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicenter; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:
http://www.panasonic.com/consumersupport

or, contact us via the web at:
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Service in Puerto Rico

Panasonic Puerto Rico, Inc.
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787)-750-4300, Fax (787)-768-2910
Instalación básica

- Antes de hacer la conexión, apague todos los equipos y lea los manuales de instrucciones apropiados.
- El equipo periférico y los cables opcionales se venden por separado a menos que se indique lo contrario.
- Cuando la unidad no vaya a utilizarse durante mucho tiempo
  Para ahorrar energía, desenchufe la unidad de la toma de CA. Esta unidad consume una pequeña cantidad de energía aunque se encuentre apagada (aproximadamente 8 W).

Las conexiones del equipo descritas son ejemplos.

Cuando la unidad no vaya a utilizarse durante mucho tiempo

Para su referencia

Para su referencia

Conexión con un televisor

**Conexión con cable de audio/vídeo**
Conecte por orden numérico de 1 a 4.

- Después de esta conexión, ajuste el canal de salida RF "OFF" (80), y luego pulse el botón TV/VIDEO del mando a distancia del televisor para seleccionar el modo de entrada AV al terminal del televisor conectado. Puede mirar un vídeo desde esta unidad en su televisor.

**Conexión (sin cable de audio/vídeo)**
No necesita conectar "3". La unidad envía una señal al televisor a través de un cable coaxial de 75 Ω en el canal 3 o 4. Es posible ver una imagen de vídeo en su televisor de la misma manera que la que ve en las emisiones televisivas.

- Después de esta conexión, ajuste el canal de salida RF "CH3" o "CH4" (80).

> 1 terminal S VIDEO OUT
> 2 R-AUDIO-L VIDEO
> 3 S VIDEO
> 4 OPTICAL
> 5 COMPONENT VIDEO OUT
> 6 DIGITAL AUDIO OUT (PCM/BITSTREAM)
> 7 DVD/VHS COMMON OUT
> 8 RF OUT
> 9 VHF/UHF
> 10 RF IN
> 11 AUDIO IN
> 12 VIDEO IN
> 13 A la RF IN
> 14 A la RF OUT
> 15 Panel trasero de esta unidad
> 16 Cable de alimentación de CA (Incluido)
> 17 Cable de audio/vídeo (Incluido)
> 18 A la toma doméstica de CA (AC 120 V, 60 Hz)

Para gozar de una más alta calidad de la imagen

**Conexión al terminal S VIDEO IN**
Terminal S VIDEO OUT
Los terminales S VIDEO OUT logran una imagen más viva que la del terminal VIDEO OUT. (El resultado real depende del televisor.)
Tras terminar "Conexión con un televisor", conecte el cable S VIDEO. De costumbre puede ver una imagen desde el terminal INPUT2. Cuando quiere reproducir un VHS mientras graba en DVD, cambie al terminal INPUT1.

**Conexión a los terminales COMPONENT VIDEO IN**
Terminal COMPONENT VIDEO OUT
Estos terminales pueden usarse para el entrelazado o la salida progresiva y proporcionan una imagen más clara que la del terminal S VIDEO OUT.
Tras terminar "Conexión con un televisor", conecte el cable COMPONENT VIDEO. De costumbre puede ver una imagen desde el terminal COMPONENT VIDEO INPUT. Cuando quiere reproducir un VHS mientras graba en DVD, cambie al terminal INPUT1.
- Conecte a los terminales del mismo color.

La unidad tiene terminales de salida DVD/VHS COMMON y los de salida DVD PRIORITY.

Salida DVD y salida DVD/VHS

DVD/VHS COMMON OUT
- Para los terminales de salida DVD/VHS COMMON, pueden lograrse las señales DVD sea las VHS.
- DVD PRIORITY OUT
- Salvo mientras que graba o va haciendo una grabación programada, con el terminal de salida DVD PRIORITY puede también reproducir una cinta en el DVD.
Instalación básica

Sintonización automática por Plug-in

Preparación
- Encienda el televisor y seleccione la entrada de video apropiada a las conexiones de la unidad (Ejemplo: entrada AV, CH3 o CH4).
- Si conecta la unidad a través de una caja para televisor de cable o un receptor de satélite, sintonice su PBS local para que funcione la unidad.

1. Pulse [orraine, DVD/VHS POWER].
2. Pulse [CH, ], para seleccionar un número de canal de salida RF.
3. Utilice [ ], para seleccionar el idioma y pulse [ENTER].
4. Pulse [ ], para seleccionar “TV de 4:3” o “TV ancho de 16:9” y pulse [ENTER].
5. Pulse [ ], para seleccionar “Encendido” o “Apagado” y pulse [ENTER].

Acerca de la función “Accionamiento rápido”
Si ajusta Accionamiento rápido en activado, puede iniciar a grabar al DVD-ROM alrededor de 1 segundo después de que haya pulsado [orraine, DVD/VHS POWER] para encender la unidad. Cuando haya seleccionado “Encendido”, tiene lugar lo siguiente.
- El consumo de energía en espera aumenta por el hecho de que se suministra energía a los mandos de la unidad.

6. Pulse [ ], para seleccionar “Sintonizador” o “Entrada” y pulse [ENTER].
- Cuando no ajusta los canales en esta unidad, seleccione “Entrada”. La unidad entonces muestra la pantalla “Ajuste manual del reloj”. Ajuste manualmente el reloj.
7. Pulse [ENTER] para iniciar la sintonización automática por Plug-in.
- La unidad procede con el ajuste automático del reloj. La hora aparece cuando esté terminado dicho ajuste.
- Cuando aparece la pantalla “No se ha encontrado ningún canal” o la de “Ajust. automát. del reloj no acabado”
- Después de apagar la unidad, confirme lo siguiente y vuelva a configurar.
- Compruebe si el cable de antena está firmemente conectado al terminal RF IN.
- Si no ajusta los canales en esta unidad, seleccione “Entrada” en el paso 6. Pantalla “Ajustar del huso horario” en el menú CONFIGURACIÓN.

Selecione el tipo de televisor
Usted no tiene que cambiar el ajuste cuando está conectado a un televisor de aspecto estándar de 4:3 que no sea compatible con la salida progresiva.

1. Durante la parada
2. Pulse [FUNCTIONS].
3. Seleccione “Otras funciones” con [ ] y pulse [ENTER].
4. Seleccione “CONFIGURACIÓN” con [ ] y pulse [ENTER].
5. Seleccione “Pantalla TV” con [ ] y pulse [ ].
6. Seleccione “Tipo TV” [ ] y pulse [ENTER].

Para volver a la pantalla anterior
Pulse [RETURN].
Para salir de la pantalla
Pulse [RETURN].
Grabación de programas de televisión

Insertar discos
   • Puede insertar un disco de cartucho o sin cartucho.
   • Si inserta un DVD-RAM con la lengüeta de protección contra la escritura ajustada en "PROTECT", la reproducción inicia automáticamente.

Nota
• Un disco de doble cara tiene que colocarse con la cara que quiere grabar/reproducir mirando hacia abajo.
• No es posible grabar continuamente desde una cara a la otra en un disco de dos caras. Tendrá que expulsar el disco y darlo la vuelta.
• Cuando utilice un DVD-RAM de 8 cm (3") o un DVD-R de 8 cm (3"), quité el disco del cartucho.

Discos sin cartucho Discos en cartucho

Insertar un videocasete
La superficie a través de la que puede ver el rollo de la cinta tiene que estar de cara hacia arriba.

Inserte un videocasete.
• La unidad se enciende automáticamente.

Para expulsar un videocasete
• Puede expulsar el videocasete aun cuando la unidad esté en el modo de espera. Esta devuelve a la espera una vez que lo haya expulsado.

Para la unidad principal
• Pulse [OPEN/EJECT] en la unidad principal.

Para el mando a distancia
Pulse [DRIVE SELECT] para seleccionar el lado VHS y luego pulse y mantenga pulsado [ ] STOP durante 3 segundos o más.

Antes de grabar
• [ ] El menú del título creado se borra cuando graba en el disco. Vuelva a crear el menú del título usando "Crear menú superior DVD" en Gestión del DVD.

Sólo la principal o SAP pueden grabarse para las emisiones MTS, cuando graba al DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW si no conecta una caja de cable
Selección "Main" o "SAP" en "Seleccionar MTS" del menú CONFIGURACIÓN.
Si conecta una caja de cable
Selección "Main" o "SAP" en la caja de cable.

Procedimientos de grabación
RAM RR RL RW VR HR HC RW VHS
• Puede grabar hasta 99 títulos en un disco.
2. Puede grabar hasta 49 títulos en un disco.
3. No es posible grabar emisiones digitales que permiten "Grabación sólo una vez" en el DVD-R, DVD-R DL, DVD-RW, +R, +R DL, +RW o discos DVD-RAM de 8 cm (3"). Utilice un CPRM compatible DVD-RAM
4. La grabación se hará en el espacio vacío del disco. Los datos no se escribirán encima de otros.
5. Si ya no queda espacio en el disco de grabación, será menester borrar los títulos innecesarios o utilizar un nuevo disco.

Cuando graba en un DVD-R, DVD-R DL, DVD-RW (Formato DVD-Vídeo), +R, +R DL o +RW
• Cuando graba emisiones MTS
  - Si no conecta una caja para televisor de cable
    Seleccione "Main" o "SAP" en "Seleccionar MTS" en el menú CONFIGURACIÓN.
  - Si conecta una caja para televisor de cable
    Seleccione "Main" o "SAP" en el TV box de cable.
6. La relación de aspecto de la imagen grabada será 4:3.

Preparación
• Cancele la protección +R.
• Selecciona el modo de audio que quiere grabar. (+ 82)

1. Pulse [ ] , [VHS/VHS POWER] para encender la unidad.
2. Pulse [DRIVE SELECT] para seleccionar la unidad en la que quiere grabar (DVD o VHS).
3. Inserte un disco.
   • Cuando usa un DVD-RAM por la primera vez con esta unidad, permita que se ajuste el formato.
   • Inserte un videocasete que tenga intacta la lengüeta de protección contra el borrado accidental.
   • Para seleccionar con los botones numéricos:
     Modo de antena (Ondas horizontales) Modo televisor de cable (Cable)
     Ej., "5": [0] → [5] Ej., "5": [0] → [5]
     "15": [1] → [5] "15": [0] → [15]
5. Pulse [REC MODE] para seleccionar el modo de grabación.
   • Para grabar con los botones numéricos:
     Modo de antena (Ondas horizontales) Modo televisor de cable (Cable)
     Ej., "5": [0] → [5] Ej., "5": [0] → [5]
     "15": [1] → [5] "15": [0] → [15]
   • Durante la grabación no se puede cambiar el canal ni el modo de grabación. Puede cambiarlos mientras que la grabación está en pausa, pero el material se graba como un título distinto.

Para hacer una pausa en la grabación
Pulse [PAUSE]. Puede hacer una pausa para reiniciar la grabación.
• El título no se divide en títulos distintos.
• También puede pulsar [ , REC] para reiniciar la grabación.

Para detener la grabación
Pulse [ , STOP].
• Grabado como 1 título hasta el punto donde termina.

La unidad tarda unos 30 segundos en completar la información para administrar la grabación después de terminar esta última.
**Modos de grabación (VHS)**

- **Modo de grabación**
  - SP: Puede grabar lo largo mostrado en la cinta.
  - EP: 3 veces lo largo del modo SP.
  - VP: 5 veces lo largo del modo SP.
  - Para lograr una capacidad de grabación más larga, seleccione "EP" o "VP".
  - Si la calidad de la imagen es importante para usted o por si desea almacenar la cinta durante un largo periodo, seleccione "SP".
  - La unidad puede reproducir cintas grabadas en el modo LP en otro equipo ("LP" se enciende en el visualizador de la unidad).

- **Modo VP**
  - Una cinta grabada por la unidad en el modo VP no puede reproducirse por otros videograbadores. Se recomienda que se la distinga entre las demás cintas escribiendo "VP" en su etiqueta, etc.

- **Nota**
  - Cuando reproduce cintas grabadas con el modo VP, necesita más tiempo para que funcione el alineamiento automático y, con unas cintas, podría no funcionar en absoluto. Haga el alineamiento manualmente si fuera éste el caso.

---

**Cuando se visualiza la pantalla de confirmación del formato**

- **Formatear**
  - Cuando inserta un disco nuevo y uno grabado en un ordenador u otro equipo, podría aparecer una pantalla de confirmación del formato. Formatee el disco para usarlo. Sin embargo, todo el contenido grabado se va a borrar.

- **Pulse [◄, ►] para seleccionar “Sí” y pulse [ENTER].**

- **Para formatear un disco**
  - Son necesarios muchos pasos para formatear un disco.

---

**Cuando quita un disco grabado**

- **No puede detener este proceso una vez que lo haya iniciado.**

---

**Para especificar un tiempo para detener la grabación**

- **Grabación de un toque**
  - Mientras graba Pulse [◄, REC] para seleccionar el tiempo de grabación.
  - En la unidad principal, pulse [◄, REC].
  - El visualizador de la unidad muestra el tiempo para que funcione el alineamiento automático y, con unas cintas, podría no funcionar en absoluto. Haga el alineamiento manualmente si fuera éste el caso.

---

**Seleccionar el audio para grabar**

- **RAM**
  - Cuando seleccione el audio para grabar, Pulse [RAM, RR, VR, REC, RW, +R].

- **Selección del audio**
  - Pulse [RAM, RR, VR, REC, RW, +R] en la unidad principal mientras está escribiendo “VP” en su etiqueta, etc.

---

** Dependiendo del contenido que está siendo grabado, los tiempos de grabación pueden ser inferiores a los indicados.**

<table>
<thead>
<tr>
<th>Modos de grabación y tiempos de grabación aproximados (DVD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD-RAM</td>
</tr>
<tr>
<td><strong>Primera capa (L0)</strong></td>
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<tr>
<td><strong>Un solo lado (4,7 GB)</strong></td>
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<tr>
<td><strong>EP (Alta calidad)</strong></td>
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<tr>
<td><strong>SP (Normal)</strong></td>
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<tr>
<td><strong>LP (Duración larga)</strong></td>
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<tr>
<td><strong>EP (Duración extralarga)</strong></td>
</tr>
<tr>
<td><strong>FR (Grabación flexible)</strong></td>
</tr>
</tbody>
</table>

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**Nota**

- Cuando grabe en un DVD-RAM utilizando el modo EP (8H), puede que no sea posible reproducir ese disco en videograbadores DVD compatibles con DVD-RAM. En este caso, utilice el modo EP (6H).

- FR (modo de grabación flexible):
  - Puede ajustar el modo FR cuando transfiere (copia) o programa grabaciones programadas.
Reproducción mientras usted está grabando

Preparación
- Seleccione el lado DVD pulsando [DRIVE SELECT], 
- Los sonidos no se producen durante el avance rápido.

Reproducción desde el comienzo del título mientras está grabando—Reproducción de persecución

Puede iniciar a reproducir desde el comienzo del título mientras que está grabando. 
Mientras hace una grabación normal o una programada 
Pulse [ ], PLAY]. 
La reproducción inicia mientras que procede la grabación.

Para su referencia
- La reproducción no puede tener comienzo hasta que hayan pasado al menos 2 segundos desde el inicio de la grabación.

Reproducción de un título previamente grabado mientras graba—Grabación y reproducción simultáneas

Puede reproducir un título grabado anteriormente mientras que graba otro título.

1. Mientras hace una grabación normal o una programada 
Pulse [DIRECT NAVIGATOR]. 
2. Pulse [ , ], [ , ] para seleccionar un título y pulse [ENTER]. 
   - La reproducción inicia mientras que procede la grabación.

Para salir de la pantalla [DIRECT NAVIGATOR]
Pulse [DIRECT NAVIGATOR].

Reproducción de programas de televisión

Grabación flexible
(Grabación que cabe en el espacio restante del disco)

La utilización de “GRABACIÓN FLEX.” es conveniente en este tipo de situaciones.
- Cuando el espacio libre del disco haga que la selección del modo de grabación apropiado sea más difícil
- Cuando usted quiere grabar un programa largo con la mejor calidad de imagen posible
- Ej., grabación de un programa de 90 minutos en un disco 
  Si selecciona el modo XP, el programa no cabrá en un disco.
  Si selecciona el modo SP, el programa no cabrá en un disco.

Preparación
- Seleccione el lado DVD pulsando [DRIVE SELECT].
- Seleccione el canal para grabar.

1. Durante la parada 
Pulse [F Rec].

- También puede poner el tiempo de grabación con los botones numéricos.
- No puede grabar durante más de 8 horas.

3. Cuando quiere iniciar la grabación 
Pulse [ , ], [ , ] para seleccionar “Empezar” y pulse [ENTER]. 
   - Empezar la grabación.

Para salir de la pantalla sin grabar 
Pulse [RETURN].

Para detener la grabación al rato de empezar 
Pulse [STOP].

Para mostrar el tiempo restante 
Pulse [STATUS].

Para su referencia 
- Durante una grabación flexible, en el visualizador de la unidad se encienden todos los indicadores del modo de grabación.
- No es posible cambiar el canal o el modo de grabación mientras que la grabación flexible está en pausa.
Reproducir discos

Preparación
- Encienda el televisor y seleccione la apropiada entrada de vídeo para adaptar las conexiones a la unidad.
- Seleccione el lado DVD pulsando [DRIVE SELECT].

1 Pulse [DIRECT NAVIGATOR].
2 Utilice [◄, ▼, ◄, ►] para seleccionar el título que quiere ver y pulse [ENTER].
   • Inicia la reproducción.
   • Puede también seleccionar títulos insertando un número de 2 cifras usando los botones numéricos.
   Ej.: “5”: [0]→[5]  
   “15”: [1]→[5]  
   • Si inserta un número más grande que el número total de títulos, se selecciona el último título.

Para detener la reproducción
Pulse [■, STOP].
La posición de detención se memoriza.

Función de reanudación de la reproducción
Pulse [►, PLAY] para reanudar la reproducción desde esta posición.
- VCD Según el disco, puede no ser eficaz la función de reanudación de la reproducción.
- El punto de detención se elimina cuando:
  - Pulsa [■, STOP] muchas veces.
  - Abre la bandeja.
  - DVD-A, VCD, RAM: Apaga la unidad.
- Podrá aparecer el salva-pantalla a la derecha cuando detiene la reproducción. Vuelve a pulsar [■, STOP] y usted puede usar el sintonizador de la unidad para ver el televisor.
- Para volver a la reproducción normal
Pulse [►, PLAY].

Para poner en pausa la reproducción
Pulse [II, PAUSE]. (Pulse de nuevo para reiniciar la reproducción.)

Selectar títulos grabados para reproducir

Para eliminar la lista de títulos
Pulse [RETURN].
Para su referencia
• Iconos de la pantalla Direct Navigator  
  ◀: Título protegido  
  ◊: Protegido contra copia así que él no se pudo grabar.
  ◊: No puede reproducir
  ◊: En grabación  
  ◊: Título con restricción “grabación de una sola vez”

Quick View (Reproducción X1.3)

Puede ser aumentada la velocidad de reproducción sin distorsionar el audio.
Durante la reproducción Mantenga pulsado [►, PLAY].

Avance rápido y rebobinado — BÚSQUEDA

Durante la reproducción Pulse [◄◄, SLOW/SEARCH] o [►►, SLOW/SEARCH].
  • Hay 5 velocidades de búsqueda. Aumenta la velocidad cada vez que se pulse. [◄◄, SLOW/SEARCH] hasta 3 velocidades)
  • Pulse [▲, PLAY] para reiniciar la reproducción.

Para su referencia
• El sonido sólo se produce al primer nivel de avance rápido. En el caso de DVD Audio (salvo las porciones de imágenes en movimiento), CD y MP3, él se produce en todos los niveles.
• Dependiendo del disco puede que la búsqueda resulte imposible.
Saltos

RAM  |  CD  |  RW | VR
Durante la reproducción o mientras está en pausa
Pulse [◄◄, SKIP] o [►►, SKIP].
- Cada pulsación aumenta el número de saltos.

Reproducción de cámara lenta

RAM  |  CD  |  RW | VR
Durante la pausa
Pulse [◄◄, SLOW/SEARCH] o [►►, SLOW/SEARCH].
- Cuando la reproducción de cámara lenta continúa durante 5 minutos, ésta se detiene automáticamente (excluyendo DVD-A)
- Hay 5 velocidades de reproducción. Su velocidad aumenta a medida que se pulse.
- Pulse [◄, PLAY] para reiniciar la reproducción.
- [SEARCH] Dirección de avance ([◄, SLOW/SEARCH]) solamente.

Vista de encuadre en encuadre

RAM  |  CD  |  RW | VR
Durante la pausa
Pulse [◄◄] o [►►].
- A medida que se pulse se visualiza el encuadre siguiente o el anterior.
- Mantenga pulsado para cambiar en orden avance o retroceso.
- Pulse [◄, PLAY] para reiniciar la reproducción.
- [SEARCH] Dirección de avance ([◄, ►]) solamente.

Reproducción directa

RAM  |  CD  |  RW | VR
Puede reproducir desde el título, el capítulo o la pista que selecciona.

Durante la reproducción
Pulse los botones numéricos para seleccionar un elemento.

Ej.:  "9": [0]→[9]  "15": [1]→[5]  "30": [0]→[1]→[5]

DVD-A
Puede especificarse un número de grupo mientras que está visualizado el salva-pantalla (►►). Ej.:  "9": [5]
- Esto sólo funciona durante la parada con algunos discos (el salva-pantalla se visualiza).
- Reproducir grupos adicionales
En unos discos caben grupos adicionales. Si después de seleccionar un grupo aparece una pantalla de contraseña, escriba la contraseña con los botones numéricos y pulse [ENTER]. Por lo que respecta a la contraseña, se remite a la funda del disco, etc.

Salto CM

RAM  |  CD  |  RW | VR
Puede saltar aproximadamente 1 minuto con una presión.
Durante la reproducción
Pulse [CM SKIP].

Crear capítulos

RAM
Durante la reproducción
Pulse [CREATE CHAPTER].
- No puede activar esta función cuando está ejecutando la transferencia (copia).

Salto del tiempo especificado — Time Slip

RAM  |  CD  |  RW | VR
Pulse [TIME SLIP].
2 Pulse [◄, ►] para seleccionar el tiempo y pulse [ENTER].
La reproducción salta al tiempo especificado.
- Cada vez que pulse [◄, ►] el tiempo aumenta [◄] o disminuye [►] en intervalos de 1 minuto. (Mantenga pulsado para cambiar a intervalos de 10 minutos.)

Cambio del audio durante la reproducción

Pulse [AUDIO] para seleccionar el tipo de audio.
- Según es el medio de grabación puede seleccionar el tipo de audio.

RAM  |  CD  |  RW | VR
Estéreo → Mono L → Mono R
- [SAP] Cuando reproduce una emisión SAP grabada en un DVD-PAM, DVD-RW (Formato de grabación de vídeo DVD)
Principal → SAP
- Esto le permite cambiar los elementos como el número de canal de audio y el idioma de la pista de sonido.

Nota
- Si no puede cambiar el tipo de audio cuando para la conexión sólo ha usado un cable óptico digital, ajuste "Dolby Digital" a “PCM”. Alternativamente, puede conectar a un amplificador con un cable de Audio/Video y cambiar la entrada en el amplificador para adaptar la conexión.

Ej.: es el inglés el idioma seleccionado

Reproducir discos
Reproducción de un videocasete

Avance rápido/Rebobinado
Durante la parada
Pulse [◄◄] (atrás)/[►►] (en avance).

Localización progresiva/Revisión
Durante la reproducción
Pulse o mantenga pulsado [◄◄] (atrás)/[►►] (en avance).
• Si mantiene pulsado estos botones, la normal reproducción reinicia saltándolos.
• Pulse [►, PLAY] para reiniciar la normal reproducción.

Búsqueda Jet
Durante la reproducción
Pulse dos veces [◄◄] (atrás)/[►►] (en avance).
Puede aumentar la velocidad de búsqueda de la localización progresiva/revisión.
• Pulse [►, PLAY] para reiniciar la normal reproducción.
• Puede seleccionar la velocidad de búsqueda para ver la imagen grabada.
• La imagen grabada en el modo EP o VP podría resultar distorsionada si se reproduce a una velocidad de 30 veces. Puede tener lugar un desplazamiento vertical. Esto no es un funcionamiento defectuoso, pero si ocurre, cambie a una velocidad de 27 veces.
• La imagen puede no ser de color o resultar distorsionada según sea el televisor.

Lenta
Durante la reproducción
Pulse y mantenga pulsado [II, PAUSE] durante 2 segundos o más.
• Pulse [►, PLAY] para reiniciar la normal reproducción.

Rebobinado Jet
Para rebobinar a una más alta velocidad
Pulse [JET REW◄◄].
En la pantalla del televisor se visualiza la indicación “J. REW” (salvo cuando aparece la del tiempo que queda en la cinta).
• Según sea la cinta o la condición de funcionamiento, la velocidad de rebobinado podría cambiar algún tanto.
• Cuando ésta esté rebobinada a su comienzo, el contador de la cinta se resuelve a “0:00:00”.
• Según sea la cinta, esta función podría no obrar.

Reproducción Cuasi S-VHS (SQPB)
Es posible también reproducir cintas grabadas en el sistema S-VHS.
• Según sea el tipo de cinta usada, podría ocurrir algún ruido de imagen.
• No es posible lograr enteramente la alta resolución de la que sea capaz el S-VHS.
• No es posible grabar en el sistema S-VHS con esta unidad.

Reproducción repetida
Durante la reproducción o la parada
Mantenga pulsado [►, PLAY] durante 5 segundos o más.
• Al terminar el programa, la cinta se rebobina a su comienzo y vuelve a reproducirlo (esto sólo funciona si hay al menos 5 segundos de espacio vacío en el fin del programa). Éste se repite hasta que lo cancele.

Para reiniciar la normal reproducción
Pulse [►, PLAY].

Para detener la reproducción
Pulse [■, STOP].

Ajustar la imagen de reproducción
De costumbre, la unidad hace los ajustes de alineamiento, pero podría necesitar hacerlo manualmente si tiene lugar ruido en una cinta grabada con otro equipo.

Durante la reproducción
Pulse [TRACKING/V-LOCK, +] o [TRACKING/V-LOCK, –].
Repita hasta que desaparezca el ruido.

Para volver al alineamiento automático
Pulse simultáneamente sea [TRACKING/V-LOCK, +] o [TRACKING/V-LOCK, –] en la unidad principal.

Para sacar el ruido de una imagen en pausa
Inicie la reproducción lenta, luego ajuste el alineamiento.

Nota
• Esta función no obra con unos modelos de televisores y cintas.
• Puede ajustar también el alineamiento con [CH, ▼, ▲] en la unidad principal.
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