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

In the U.S.A.: 1-800-211-PANA (7262)
In Canada: 1-800-561-5505

For U.S.A. only
The warranty can be found on page 69.

For Canada only
The warranty can be found on page 70.

La guía rápida en español se encuentra en la página 71-78.
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.
ENSURE THAT CURTAINS AND ANY OTHER
MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.

CAUTION: TO REDUCE THE RISK OF ELECTRIC
SHOCK, DO NOT REMOVE SCREWS.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.
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.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.
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.

Caution 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</th>
<th>Automatic</th>
<th>Bright</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quick Start</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

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 [ práctica], [ 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.
(Product numbers correct as of January 2006. These may be subject to change.)

Only for U.S.A.: To order accessories, refer to “Accessory Purchases” on page 69.
Only for Canada: To order accessories, call the dealer from whom you have made your purchase.

- AC power supply cord (VFA0461)
- Audio/Video cable (K2K46BA00003)
- 1 DVD-RAM
- Remote control (EUR7659170)
- Batteries for the remote control (R6 size)
Disc information

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 DL*</th>
<th>DVD-RW</th>
<th>+R*</th>
<th>+R DL*</th>
<th>+RW</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4.7 GB (9.4 GB, 12 cm (5&quot;)</td>
<td>4.7 GB, 12 cm (5&quot;)</td>
<td>4.7 GB, 8 cm (3&quot;)</td>
<td>4.7 GB, 12 cm (5&quot;)</td>
<td>4.7 GB, 12 cm (5&quot;)</td>
<td>4.7 GB, 12 cm (5&quot;)</td>
<td></td>
</tr>
</tbody>
</table>

Logo

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

Indicated in these instructions with

- RAM
- Y<br>
- L<br>
- VR<br>
- V<br>
- DVD-Video<br>
- DVD-Video +VR<br>
- DVD-Video +VR +VR<br>

Recording format (below)

- VR<br>
- DVD-Video<br>
- DVD-Video +VR<br>
- DVD-Video +VR +VR<br>

Main use *

- Re-writable discs

Compatibility

- Usable high speed recording disc *^<br>
- Up to 5x<br>
- Up to 16x<br>
- Up to 4x<br>
- Up to 6x<br>
- Up to 16x<br>
- Up to 2.4x<br>
- Up to 4x *^<br>

Play on other player

- Only on DVD-RAM compatible players.<br>
- It is not necessary to finalize the disc. (→ 68)<br>

What you can do on this unit (Possible: Yes, Impossible: No)

Chasing playback

- V
- X
- X
- X
- X
- X
- X

Recording broadcasts that allow one copy

- V
- X
- X
- X
- X
- X
- X

Recording both Main and SAP of MTS broadcast

- X
- (Only one is recorded. → 57, Multi-channel TV sound (MTS))
- X
- (Only one is recorded. → 57, Multi-channel TV sound (MTS))
- X
- (Only one is recorded. → 57, Multi-channel TV sound (MTS))
- X
- (Only one is recorded. → 57, Multi-channel TV sound (MTS))
- X
- (Only one is recorded. → 57, Multi-channel TV sound (MTS))

Recording 16:9 aspect picture

- V<br>
- X (The picture is recorded in 4:3 aspect.)<br>
- X (The picture is recorded in 4:3 aspect.)<br>
- X (The picture is recorded in 4:3 aspect.)<br>
- X (The picture is recorded in 4:3 aspect.)<br>

Entering text

- V<br>
- V<br>
- V<br>
- V<br>
- V<br>

Erasing titles

- V<br>
- V (Available space does not increase after deleting.)<br>
- V (Available space does not increase after deleting.)<br>
- V (Available space does not increase after deleting.)<br>
- V (Available space does not increase after deleting.)<br>

Creating playlists

- V<br>
- X<br>
- X<br>
- X<br>
- X<br>

* You can record onto the second layer of dual- or double-layer disc after closing the first layer (→ 55). You will no longer be able to record to the first layer after you do this (→ 8).

When playing a title recorded on both layers, video and audio may momentarily cut out when the unit is switching layers.

*^ 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.

* The amount of the recordable disc space doesn’t increase even if the program is deleted when you use a one time recording disc.

* You can play 8x recording speed discs recorded on another equipment.

* You may not be able to use CPRM compatible disc. You can record to CPRM compatible DVD-RAM on this unit.

* This unit can use the high-speed recording discs shown in the chart, but using them will not shorten the recording time.

* The amount of the recordable disc space doesn’t increase after deleting.

* The recording space may increase slightly when other titles are deleted.

* The explanations concerning discs are indicated by DVD, and those concerning video are indicated by VHS.

* 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.

* 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.

For the recording time, refer to “Recording modes and approximate recording times (DVD)” on page 24.

DVD Video Recording 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 Recording format.
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.

<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>DVD-RW</td>
<td>CD</td>
<td>DVD</td>
</tr>
<tr>
<td>Instructions</td>
<td>High quality movie and music discs</td>
<td>High fidelity music discs</td>
<td>Played on this unit in 2 channels</td>
<td>DVDs-R recorded on another DVD recorder</td>
<td>Recorded audio and music (including CD-R/RW)</td>
</tr>
<tr>
<td></td>
<td>DVD-R recorded in DVD Video Recording format</td>
<td>DVD-R recorded in DVD Video Recording format</td>
<td>VR MV DVD</td>
<td>DVD-R, DVD-R DL, DVD-RW recorded on another unit and not finalized</td>
<td>CD-R and CD-RW recorded in MP3, JPEG and TIFF</td>
</tr>
<tr>
<td></td>
<td>PAL discs (you can still play the audio on DVD-Audio)</td>
<td>DVD-Video with a region number other than &quot;1&quot; or &quot;ALL&quot;</td>
<td>Blu-ray, DVD-ROM, +R 8cm (3”), CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD, DivX Video Disc, etc.</td>
<td>Recorded music and video (including CD-R/RW)</td>
<td></td>
</tr>
</tbody>
</table>

Regarding DVD-Audio

Some multi-channel DVD-Audio will prevent down-mixing 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

- 2.65/2 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
- 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, CVD, SVCD, SACD, MV-Disc, PD, DivX Video Disc, etc.

Concerning logo marks

- Dolby Digital
- DTS Digital Surround

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 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 information

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.

![Diagram showing how to select Main or SAP for recording]

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

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

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. You must close the first layer to start recording on the second layer. Closing makes the first layer unavailable for recording (editing is still available). You cannot cancel closing. Make certain before proceeding.

![Diagram showing recording and playback directions on DVD-R DL and +R DL discs]
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 (page 19).

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
7 m (23 feet) directly in front of the unit

Notes
- Keep the transmission window and the unit’s sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, inverter fluorescent lamps, and the glass doors on cabinets.

Disc handling

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

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

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

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

Do not place in the following areas:
- In direct sunlight.
- In very dusty or humid areas.
- Near a heater.
- Locations susceptible to significant differences in temperature 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.

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

DVD
Progressive output (→ 15, 18)
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 interlace output type) can present.
Finalize (→ 55)
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 (→ 30)
This function allows you to 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 (→ 30)
This function allows you to watch news, information and other programs in a short time.
Chasing play (→ 26)
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 (→ 23)
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 (→ 26)
With this function, you can play a previously recorded video program while recording another program.
Time Slip (→ 31)
This function enables you to jump to the scene you specify during play.
One touch transfer (copy) (→ 45, 47)
This function can copy video from VHS to DVD and vice versa.
DV input terminal (→ 50)
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 (→ 24)
With this function, you can record approx. 10 hours of video onto a T-120 cassette, for example.
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.

1. Turn the unit on
2. Select drive (DVD or VHS)
3. Select channels and title numbers etc./Enter numbers
4. Cancel/Reset the tape counter
5. Basic operations for recording and play
6. Skip the specified time
7. Direct Navigator
8. Selection/Enter, Frame-by-frame
9. Show sub menu
10. Select audio
11. Show on-screen menu
12. Start recording
13. Change recording mode
14. Transmission window
15. Channel select/
16. Track/V-LOCK
17. Add/delete channel
18. Input select (IN1, IN2, DV)
19. Delete items
20. Skip a minute forward
21. Show scheduled recording list
22. Return to previous screen
23. Select VCR/TV
24. Create chapters
25. Start Flexible Recording
26. Show status messages
27. 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 (19).
Main unit

1. Cassette eject button (A, EJECT)  ➔ 22
2. Disc tray open/close button (A, OPEN/CLOSE)  ➔ 22
3. Stop button (I)  ➔ 30, 34
4. Play/ xt button (p)  ➔ 30, 34
5. Recording button (B, REC)  ➔ 23, 50
6. DVD/VHS POWER on/off button (U, POWER)  ➔ 16
   • To switch the unit from on to standby mode or vice versa. In the standby mode, the unit is still consuming a small amount of power.
7. IN2 input terminals (IN2)  ➔ 50
8. DVD-SEARCH, VHS-REW/FF buttons (F, /W)  ➔ 35
9. Channel up/down buttons (CH, X, W)  ➔ 35
10. DVD/VHS drive indicator
   • Lights when the DVD or VHS drive is selected.
11. DRIVE SELECT button
   • Drive changes each time you press DRIVE SELECT.
12. Connector for a digital video (DV) camcorder  ➔ 50
13. One Touch Transfer (copying) operation button
   • From VHS to DVD  ➔ 45
   • From DVD to VHS  ➔ 47

The unit’s display

Common to DVD/VHS

A. Recording mode indicator
   • XP, SP, LP, EP: (➔ 24)
   • XP SP LP EP (all on): FR mode (➔ 27)
   • VHS: SP, LP, EP, VP: (➔ 24)
   • Playback only
B. TV indicator
   • The indicator lights during the TV mode and it goes out during the VCR mode. You can switch the mode by using VCR/TV. (➔ 21)
C. Main display
   • Current time
   • Disc recording and play counter
   • VHS recording and play counter
   • Transfer (Copying) messages
   • Miscellaneous messages, etc.

VHS

1. Scheduled recording indicator ( ) (➔ 28)
   • On: When a scheduled recording program is registered and recordable tape is inserted.
   • Flashes: The scheduled recording indicator flashes when the unit cannot go to scheduled recording standby (e.g. there is no tape, etc).
2. Tape indicator
3. Tape operation status

DVD

1. Scheduled recording indicator ( ) (➔ 28)
   • On: When a scheduled recording program is registered and a recordable disc is inserted.
   • Flashes: The scheduled recording indicator flashes when the unit cannot go to scheduled recording standby (e.g. there is no disc, etc).
2. Disc operation status
3. Disc indicator
**STEP 1 Connection**

This section includes diagrams of two common methods of connection (A-B, pages 13-14). 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 or satellite 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 14 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).

### 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” (→ 16), 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” (→ 16).

---

**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.

---

**This unit’s rear panel**

- **Audio/Video cable** (Included)
- **To household AC outlet** (AC 120 V, 60 Hz)
- **AC power supply cord** (Included)

Connect only after all other connections are complete.
**STEP 1 Connection**

**B Connection with a television and cable box or satellite receiver**

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.

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. (→ 15)

**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 (Flat) Twin lead 300 Ω cable</td>
<td>■ A twin lead terminal 75–300 Ω transformer 75 Ω coaxial cable VHF or UHF Television</td>
</tr>
<tr>
<td>■ A twin lead and a coaxial cable from the antenna (Flat) Twin lead 300 Ω cable (Round) 75 Ω coaxial cable</td>
<td>■ A twin lead and coaxial plug terminal VHF/UHF band separator VHF UHF Television</td>
</tr>
<tr>
<td>■ Two twin leads from the antenna (Flat) Twin lead 300 Ω cable 300–75 Ω transformer VHF/UHF band mixer To this unit’s RF IN terminal</td>
<td>■ Two twin lead terminals VHF/UHF band separator VHF UHF Television</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. (→ 15)
To enjoy higher picture quality

■ Connecting to the TV S VIDEO OUT terminals

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” (☞ 13) or “Connection with a television and cable box or satellite receiver” (☞ 14), 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

These terminals can be used for either interlace or progressive output (☞ 68) and provide a purer picture than the S VIDEO OUT terminal. After completing “Connection with a television” (☞ 13) or “Connection with a television and cable box or satellite receiver” (☞ 14), 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” (☞ 57).

◆ 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

Insert fully, with this side facing up.

Optical digital audio cable
Do not bend sharply when connecting.

Amplifier’s rear panel

Optical IN

Audio cable

Amplifier’s rear panel

AUDIO IN R L

This unit’s rear panel

Amplifier’s rear panel

This unit’s rear panel

OPTICAL IN

Audio cable
STEP 2 Plug-in Auto Tuning

After plugging the unit into your household AC outlet and pressing [0, 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>Antenna Mode (Airwaves)</th>
<th>Band</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHF</td>
<td>2 to 13</td>
<td></td>
</tr>
<tr>
<td>UHF</td>
<td>14 to 69</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CableTV Mode (Cable)</th>
<th>Band</th>
<th>Channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>CATV LOW BAND</td>
<td>95 to 99</td>
<td></td>
</tr>
<tr>
<td>CATV MID/SUPER BAND</td>
<td>14 to 36</td>
<td></td>
</tr>
<tr>
<td>CATV HYPER BAND</td>
<td>37 to 65</td>
<td></td>
</tr>
<tr>
<td>ULTRA BAND</td>
<td>66 to 94</td>
<td></td>
</tr>
<tr>
<td>SPECIAL CATV CHANNEL</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Regarding DST (Daylight Saving Time) (17)

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, press [CH, ADD/DLT] to select the channel number.

1. Press [0, DVD/VHS POWER].
2. Press [CH, ADD/DLT] to select an RF output channel number.
3. Use [▲, ▼] to select the language and press [ENTER].
4. Press [▲, ▼] to select “4:3 TV” or “16:9 Widescreen TV” and press [ENTER].
5. Press [▲, ▼] to select “On” or “Off” and press [ENTER]. If you activate “Quick Start” function, select “On”.
6. Press [▲, ▼] to select “Internal TV Tuner” or “Input” and press [ENTER].
   - The unit then displays “Set Clock Manually” screen.
   - Set the clock manually. (17)
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.

About “Quick Start” function

If you do not set channels on this unit, select “Input” in step 6. Please check antenna or cable connection, or activate DST. If you activate DST, you can turn the unit on faster, in about 1 second. Please note that Quick Start function is not available in the following cases:
- When the unit is turned on.
- When the unit is connected through a cable box or satellite receiver.
- When you do not set channels on this unit.

If you do not set channels on this unit, select “Input” in step 6.

For other areas: xx hr

GMT

PST (Pacific Standard Time)
PST (Central Standard Time)
MST (Mountain Standard Time)
CST (CST)

About “Quick Start” function

If you turn off the unit, the clock is set automatically. 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. (17)
If the clock is an hour slower or faster than the actual time
Select “−1” or “+1” in “Adjust Time Zone” in the Setup menu (⇒ 56).

Restart Plug-in Auto Tuning
(after relocation, for example)
Signal source, RF output channel, channel caption revert to the default values when you perform the procedure below.
Scheduled recording settings are also cleared.
When the unit is on and stopped
1 Press and hold [CH, ▲] and [CH, ▼] on the main unit for about 5 seconds.
The unit turns off.
2 Press [FUNCTIONS] on the main unit for about 5 seconds.
Plug-in Auto Tuning starts.

Restart Set Channels Automatically
1 While stopped Press [FUNCTIONS].
2 Select “Other Functions” with [▲, ▼] and press [ENTER].
3 Select “Setup” with [▲, ▼] and press [ENTER].
4 Select “Channel” with [▲, ▼] and press [◄, ►].
5 Select “Signal Source (RF IN)” with [▲, ▼] and press [ENTER].
6 Select “Antenna” or “Cable TV” with [▲, ▼] and press [ENTER].
7 Select “Set Channels Automatically” with [▲, ▼] and press [ENTER].
8 Press [ENTER].
9 Press [ENTER].
To return to the previous screen Press [RETURN].

Adding and deleting channels
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., “5”: [0]→[5]
“15”: [1]→[5]
CableTV Mode (Cable)
e.g., “5”: [0]→[0]→[5]
“15”: [0]→[1]→[5]
“115”: [1]→[1]→[5]
When you change the time zone, the recording times for titles recorded before the time zone adjustment also change to correspond to the new time zone.

Set Clock Manually
“Clock Settings” made here are applied to VHS as well.
While stopped
1 Press [FUNCTIONS].
2 Select “Other Functions” with [▲, ▼] and press [ENTER].
3 Select “Setup” with [▲, ▼] and press [ENTER].
4 Select “Clock Settings” with [▲, ▼] and press [ENTER].
5 Select “Set Clock Manually” with [▲, ▼] and press [ENTER].
6 Press [ENTER].

Use [◄, ►] to select the item you want to change, and press [▲, ▼] to change the setting.
• DST (Daylight Saving Time): On or Off
If you select “On”, the clock is advanced one hour starting at 2 a.m. on the first Sunday in April and ending at 2 a.m. on the last Sunday in October.
• Time Zone (⇒ 20)
7 Press [ENTER].

To return to the previous 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 [△, ▼] and press [ENTER].
3 Select “Setup” with [△, ▼] and press [ ENTER].
4 Select “Channel” with [△, ▼] and press [ ENTER].
5 Use [△, ▼] to select the caption and press [ ENTER].
6 Use [△, ▼] to select the channel corresponding to the caption and press [ ENTER].
7 Press [ENTER].

Preset Channel Captions
Follow steps 1 to 4 of “Channel captions”.

1 Select “Preset Channel Captions” with [△, ▼] and press [ENTER].
2 Select “Preset Channel Captions” with [△, ▼] and press [ENTER].
3 Use [△, ▼] to select the caption and press [ ENTER].
4 Use [△, ▼] to select the channel corresponding to the caption and press [ ENTER].
5 Press [ENTER].

Manual Channel Captions
Follow steps 1 to 4 of “Channel captions”.

1 Select “Manual Channel Captions” with [△, ▼] and press [ENTER].
2 Use [△, ▼] to select the channel and press [ ENTER].
3 Use [△, ▼] to select the first character and press [ ENTER].
4 Use [△, ▼] to return to the “Channel Number” column.
5 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. (68)

1 While stopped Press [FUNCTIONS].
2 Select “Other Functions” with [△, ▼] and press [ENTER].
3 Select “Setup” with [△, ▼] and press [ENTER].
4 Select “TV Screen” with [△, ▼] and press [ ENTER].
5 Select “TV Type” with [△, ▼] and press [ENTER].
6 Use [△, ▼] to select the item and press [ENTER].
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 ([], POWER TV), enter the code using the numeric buttons.
  e.g., 0250: press [0] → [2] → [5] → [0].

Manufacturer and Code No.

| Panasonic   | 0051, 0250 |
| National    | QUASAR     |
| PHILIPS (RC-5) | 0054   |
| RCA         | 0047       |
| SAMSUNG     | 0060, 0587, 0792 |
| 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 [▲, ▼] and press [ENTER].
4. Select “Setup” with [▲, ▼] and press [▲, ▼].

6. Use [▲, ▼] 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 (▲ step 7).

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN].
Other settings

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 [◆, ◄].

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.

- 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

- DST, (Daylight Saving Time) shows the summertime setting.

8 Set Clock Automatically is complete.

DST................... On
Time Zone....... CST

- To adjust 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.

6 Select “Adjust Time Zone” with [△, ▽] and press [ENTER].

7 Select “–1” or “+1” with [△, ▽] and press [ENTER].

- 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, W, X] to select a channel number (CH3 or CH4).

- Set the RF output channel of the DVD Video Recorder to “OFF” (RF OFF) when the DVD Video Recorder is connected to the TV via the Audio/Video cable.

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 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” (1), 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.
(3) Insert label-up with the arrow facing in.

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 [△, EJECT] 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

=RW
• 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. (55)

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. (57)
If you connect a cable box
- Select “Main” or “SAP” on the cable box.
Recording procedures

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 (p. 57).
  - 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 (p. 55).
- To enable play on other DVD equipment, please use "Create DVD Top Menu" in DVD Management menu (p. 55).

Preparation
- Release protection (disc ➔ 53, cartridge ➔ 53).
- Select the unit viewing channel (e.g. AV input) on the TV.
- Select an audio type you want to record. (➔ 25)

1. Press [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. (➔ 22)
   - When using a DVD-RAM for the first time with the unit, format it to ensure accurate recording (➔ 54, "Deleting all contents of a disc – Format Disc (DVD)").
   or
   - Insert a video cassette with an intact accidental erasure prevention tab. (➔ 22)
4. Press [CH, , , ] to select the channel.
   - To select with the numeric buttons:

   Antenna Mode (Airwaves)
   e.g., “5”: [0]➔[5]
   “15”: [1]➔[5]

   CableTV Mode (Cable)
   e.g., “5”: [0]➔[0]➔[5]
   “15”: [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

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. (➔)
- 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

Remaining time on the disc
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.

° It is not possible to record or play continuously from one side of a double sided disc to the other.
° When "Recording Time in EP Mode" has been set to "EP (6H)" in the Setup menu. (☞35)
° The sound quality is better when using "EP (6H)" than when using "EP (8H)".
° It is not possible to record continuously from first layer to second layer.

Note
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.

FR (Flexible Recording mode → 27):
• 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 (☞35).

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>Recording mode</th>
<th>DVD-RAM Single-sided (4.7 GB)</th>
<th>DVD-RAM Double-sided*1 (9.4 GB)</th>
<th>DVD-R DVD-RW +R, +RW (4.7 GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XP (High quality)</td>
<td>1 hour</td>
<td>2 hours</td>
<td>1 hour</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>2 hours</td>
<td>4 hours</td>
<td>2 hours</td>
</tr>
<tr>
<td>LP (Long recording)</td>
<td>4 hours</td>
<td>8 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>EP (Extra long recording)</td>
<td>8 hours (6 hours**)</td>
<td>16 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>
<td>8 hours maximum</td>
</tr>
</tbody>
</table>

DVD-R DL, +R DL** (8.5 GB)

<table>
<thead>
<tr>
<th>Recording mode</th>
<th>First layer</th>
<th>Second layer</th>
</tr>
</thead>
<tbody>
<tr>
<td>XP (High quality)</td>
<td>55 minutes</td>
<td>50 minutes</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>1 hour 50 minutes</td>
<td>1 hour 40 minutes</td>
</tr>
<tr>
<td>LP (Long recording)</td>
<td>3 hours 40 minutes</td>
<td>3 hours 20 minutes</td>
</tr>
<tr>
<td>EP (Extra long recording)</td>
<td>7 hours 25 minutes (5 hours 30 minutes***)</td>
<td>6 hours 50 minutes (5 hours 15 minutes***)</td>
</tr>
<tr>
<td>FR (Flexible Recording)</td>
<td>7 hours 25 minutes maximum</td>
<td>6 hours 50 minutes maximum</td>
</tr>
</tbody>
</table>

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

Use a disc with plenty of remaining time to be sure.

*1 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. (☞57)
*3 The sound quality is better when using "EP (6H)" than when using "EP (8H)".
*4 It is not possible to record continuously from first layer to second layer.

Note
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.

FR (Flexible Recording mode → 27):
• You can set FR mode when transferring (copying) or programming scheduled recordings.

Picture quality

Recording time

XP
SP
LP
EP (6H)**
EP (8H)

Note
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.

FR (Flexible Recording mode → 27):
• You can set FR mode when transferring (copying) or programming scheduled recordings.
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. (l56, "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].

Selecting audio to record

When the format confirmation screen is displayed

Select the audio (Main or SAP) in “Multi-channel TV sound (MTS)” in the Setup menu. (l57)

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

Press [REC].

When opening the tray without disc finalization

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

To specify a time to stop 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.

The unit's display

Each time you press the button:

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.
Recording television programs

Playing while you are recording

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

- DVD playback (\(\geq 30\))

For your reference
- You cannot record on discs while VHS recording.

Playing DVD while recording VHS

Playing VHS while recording DVD

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

- VHS playback (\(\geq 34\))

For your reference
- You cannot record on tapes while DVD recording.

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 [\(\uparrow, \text{PLAY}\)].

- 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]. (\(\geq 30\))

- ●: Currently recording

2. Use [\(\uparrow, \downarrow, \leftarrow, \rightarrow\)] 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.

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, \(\uparrow, \downarrow\)] 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 kind 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>Minute Recording</td>
<td>1 Hour 23 Min.</td>
</tr>
<tr>
<td>Maximum recording</td>
<td>2 Hours 23 Min.</td>
</tr>
</tbody>
</table>

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. (→ 37)

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 scheduled recording that is currently being recorded, it may not be possible to operate the VHS during the overlap.

Programming scheduled recordings

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

Preparation
- Release protection (disc ➔ 53, cartridge ➔ 53) RAM.
- Insert a disc (➔ 60) and confirm there is sufficient empty space for recording on it (➔ 37).
- 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.

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 increments if you hold down the button.
- Drive
You can select DVD or VHS drive.
You can also press [DRIVE SELECT] to select the drive.
- Mode (Recording mode)
You can also press [REC MODE] to change the recording mode.
- Title Name
Press [△, □] to select “Title Name” and press [ENTER] (➔ 51).

3 Press [ENTER] when you have finished making changes.
- “!” lights on the unit’s display. (➔ 12)
- “Invalid Entry” is displayed when you enter the wrong item. Reenter the item.

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 or 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 switch the time to “DST” (Daylight Saving Time) to “ON” when manually setting the clock (➔ 17), scheduled recording may not work when summer switches to winter and vice versa.

Notes
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 [SCHEDULE].
   Confirmation screen appears.
2. Press [\[\]] 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 [\[\], \[\]] to select the program and press [SUB MENU].
3. Press [\[\], \[\]] 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.
- 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.)
- It is not possible to automatically activate VP mode.
- The tape length must be set correctly. (\[\])
- 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.
- : The disc was empty. (not enough space)
- : The TV program may not be recorded due to copy-protect. (disc)
- : Recording stopped - Dirty disc or tape, etc.
- : It may not be possible to record because:
  - the disc is write-protected.
  - there is more space left (disc).
  - the number of possible titles has reached its maximum.
  - the tape tab is broken off.
  - there is no tape - the tape is full.
  - the remaining tape time is not calculated.
- : All other cases (tape)

2. Press [\[\], \[\]] to select the program.

3. Press [\[\], \[\], \[\], \[\]] to change and press [ENTER].

4. Press [RETURN].

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</td>
<td>15 min at SP</td>
</tr>
<tr>
<td>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. (\[\])
- 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 (\[\]):
- OK: Recordable (disc)
- (Date): The last day of daily or weekly recording. (disc)
- #: It may not be possible to record because:
  - the disc is write-protected.
  - there is more space left (disc).
  - the number of possible titles has reached its maximum.
  - the tape tab is broken off.
  - there is no tape - the tape is full.
  - the remaining tape time is not calculated.
- : All other cases (tape)

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

- : New Scheduled Recording

- A: Scheduled Recording

- B: Check, change or delete programs

- C: Auto SP/EP mode
Playing discs

1. Press [DIRECT NAVIGATOR].
2. Use [A, V, <, >] to select the title you want to watch and press [ENTER].
3. “To show other pages” (⇒ 38)
Skipping

RAM | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

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

Slow-motion play

RAM | RR | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

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, VOD).
- There are 5 play speeds. Each press increases the play speed.
- Press [►, PLAY] to restart playback.
- [VOD] Forward direction ([►, SLOW/SEARCH]) only.

Frame-by-frame viewing

RAM | RR | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

While paused
Press [◄] ([◄] or [↑] ([↑])].
- Each press shows the next or previous frame.
- Press [►, PLAY] to restart playback.
- [VOD] Forward direction ([◄] ([↑]) only.

Direct play

RAM | RR | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

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] [1] [0] [5]
- “15”: [0] [1] [0] [5]

DVD-A
A group number can be specified while the screen saver (➔ 30) is displayed.
- e.g.: “5”: [5]
- 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 | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

You can skip approximately 1 minute with one press.
During play
Press [CM SKIP].

Create chapters

RAM | RR | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

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 | RR | RL | RW/V | AR | HR | CL | RW | DVD-A | DVD-V | RW/V/R | VOD | CD

During play
Press [TIME SLIP].
Press [▲, ▼] to select the time and press [ENTER].
Play skips 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 | RW/V/R | VOD | DVD-V | DVD-A

Stereo → Mono L → Mono R e.g.: RAM
[RAM] → [DVD-V] → [DVD-A]
[Stereo] is selected. ————- ————- ————-
Stereo

RAM | RW/V/R | VOD | DVD-V | DVD-A

[RAM] → [DVD-V] [VCD] (When playing an SAP broadcast recorded on DVD-RAM, DVD-RW (DVD Video Recording format))
MAIN Audio ——> SAP Audio

VHS:運用
This allows you to change items like the audio channel number and the sound track language. (➔ 36)


- e.g.: English is the selected language. DVD-V

Stereo → Mono L → Mono R → No display (Normal audio track)

Note
- If you cannot change the audio type when you have used only an optical digital cable for connection, set “Dolby Digital” to “PCM” (➔ 57). Alternatively, you may connect to an amplifier with an Audio/Video cable and change the input on the amplifier to suit the connection.

Playing discs
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 [DIRECT NAVIGATOR].
- To play MP3
  Refer to "Playing MP3". (→ 33)
- To play still pictures
  Refer to "To show Pictures Menu". (→ 33)

Playing MP3

CD
The unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ 2). The unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ 2). The unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ 2).

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 [Cursor up/down] to select the track and press [ENTER].

   - Play starts on the selected track.
   - "①" indicates the track currently playing.
   - You can also directly select the track with the numeric buttons.
     e.g.: "⑥": [0]→[0]→[6]  
       "①0": [0]→[1]→[0]

Using the tree screen to find a group (→ 33)

To show other groups
Press [④] (Prev.) or [⑤] (Next) to show other pages.
- After listing all the tracks in one group, the list for the next group appears.

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

- You can play MP3 and still pictures (JPEG/TIFF) on this unit by making folders as shown below. However depending on how you create the disc (writing software), play may not be in the order you numbered the folders.
- English 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.

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

Regarding MP3 and still pictures (JPEG/TIFF)
- Compatible formats: ISO9660 level 1 or 2 (except for extended formats) and Joliet.
- Maximum number of files (tracks) and folders (groups) recognizable: 999 files (tracks) and 99 folders (groups).
- This unit is compatible with multi-session but reading or play of the disc may take time if there are a lot of sessions.
- Operation may take time to complete when there are many files (tracks) and/or folders (groups) and some files (tracks) may not display or be playable.
- The display order on this unit may differ from how the order is displayed on a computer.
- Depending on how you create the disc (writing software), files (tracks) and folders (groups) may not play in the order you numbered them.
- This unit is not compatible with packet-write format.
- Depending on the recording, some items may not be playable.

Regarding MP3
- 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.

Regarding still pictures (JPEG/TIFF)
- File format: JPEG, TIFF (non-compressed RGB chunky format)
  Files must have the extension "jpg", "JPG", "tif" and "TIFF".
- Number of pixels: 34 × 34 to 6144 × 4096
  (Sub sampling is 4:2:2 or 4:2:0)
- Operation may take time to complete when playing TIFF format still pictures.
- Motion JPEG is not supported.
Using the tree screen to find a group

1. While the file list is displayed (→ 32), Press [×] while a track is highlighted to display the tree screen.

   - The file list for the selected group appears.

To return to the file list
Press [RETURN].

To show Pictures Menu

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

1. Press [FUNCTIONS].
2. Select “Menu” with [A, V] and press [ENTER].

CD: [with still pictures (JPEG/TIFF) only]

Press [DIRECT NAVIGATOR].

To show other pages
Press [◄] (Previous) or [►] (Next) to show other pages.
- You can also press [A, V, ◄, ►] to select “Previous” or “Next” and press [ENTER] to show other pages.

To exit the Pictures Menu
Press [DIRECT NAVIGATOR] or [RETURN].

Playing still pictures (JPEG/TIFF)

- Make sure that Pictures Menu screen appears by following the steps “To show Pictures Menu”.

Use [A, V, ◄, ►] to select a still picture you want to watch and press [ENTER].
- You can also select a still picture by entering a 3-digit with the numeric buttons.
  - e.g.: “305” [0]→[0]→[0]
  - “15” [0]→[1]→[0]
- You can watch the still pictures in order by pressing [◄] (previous) or [►] (next).

To rotate a still picture
1. Select “Rotate Right” or “Rotate Left” with [A, V] and press [ENTER].
   - Rotation information will not be stored;
     - When Still pictures
     - When disc is protected
     - When played on other equipment
     - When copying pictures

To zoom in/out
1. Press [SUB MENU].
2. Select “Zoom in” with [A, V] and press [ENTER].

- To return the picture to its original size, repeat step 1 and press [B, A] to select “Zoom out” in step 2 and then press [ENTER].
- When zooming in, the still picture may be cut off.
- The enlargement information will not be stored.
- The “Zoom in/Zoom out” function is only available for still pictures smaller than 640×480 pixels.

To show the picture properties
2. Press [STATUS] again, the properties disappear.

Start Slideshow/Slide Interval

- Make sure that Pictures Menu screen appears by following the steps “To show Pictures Menu”.

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

1. Select “Folder” with [A, V] and press [SUB MENU].

To change the display timing
2. Press [A] to select the desired timing (0 to 30 seconds) and press [ENTER].

To select the still pictures in another folder

- Make sure that Pictures Menu screen appears by following the steps “To show Pictures Menu”.

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

1. Select “Folder” with [A, V] and press [ENTER].
2. Select the folder with [A, V] and press [ENTER].
3. Select folder no./Total folder no.
4. You cannot select folders that contain no compatible files.

Using menus to play MP3 and still pictures (JPEG/TIFF)
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. (22)
5. Press [•, PLAY].
   - Play starts automatically if you insert a video cassette with the tab removed.

■ To pause play
Press [II, 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 (35). In some cases the picture quality may still be inferior. This is due to format constraints.

Fast-forward/Rewind
While stopped
Press [◄◄] (backward)/[►►] (forward).

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

Jet Search
During play
Tap [◄◄] (backward)/[►►] (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. (58)
- 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 [II, PAUSE] for about 2 seconds or more.
- Press [►►, PLAY] to restart normal playback.

Jet Rewind
To perform a Higher Speed Rewind
Press [◄◄, JET REW].
- 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].
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.

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, \(\Lambda\), V] 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 [\(\times\), 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 [\(\rightarrow\) or [\(\rightarrow\)].
- Each press increases the number of skips.

To cancel the index search
Press [\(\times\), 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”. ( 58)

Press [STATUS].

The time and operation details appear on the screen.

1. Current drive
2. 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.
3. Operation status display
   - Shows the tape counter and remaining tape time
   - Press [\(\times\), 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. ( 58)
4. Cassette-in indicator
   - Shows whether you have inserted a video cassette.
5. Recording mode indicator ( 24)
   - The on-screen display may be distorted depending on the playback tape or the input signal.
Using on-screen menus/FUNCTIONS window and Status messages

Using on-screen menus

Common procedures

Press [DISPLAY].

For your reference

To exit the screen

Press [DISPLAY].

Select a menu with [A, V] and press [ENTER].

Select an item with [A, V] and press [ENTER].

Select a setting with [A, V].

Different operations are required depending on settings.

Follow the on-screen instructions.

Disc menu-Setting disc content

Soundtrack

Subtitle

Audio channel

Angles

Still-P (Still picture)

PBC (Playback control)

[A] Soundtrack/Subtitle language

[B] Audio attributes

For your reference

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 (excluding MP3 discs)

Chapter

Group

Playlists

Title

Track

Select “Off” to cancel.
**Video menu-Change picture quality**

**RAM**

<table>
<thead>
<tr>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Picture</strong></td>
<td></td>
<td>To select the picture mode during play</td>
</tr>
<tr>
<td><strong>Normal</strong></td>
<td>Default setting</td>
<td>Soft: Soft picture with fewer video artifacts</td>
</tr>
<tr>
<td><strong>Fine</strong></td>
<td></td>
<td>Details: Details are sharper</td>
</tr>
<tr>
<td><strong>Cinema</strong></td>
<td></td>
<td>Details: Details in dark scenes</td>
</tr>
<tr>
<td><strong>DNR</strong></td>
<td></td>
<td>Reduces noise and picture degradation.</td>
</tr>
<tr>
<td><strong>Progressive</strong></td>
<td>(68)</td>
<td>Select “On” to enable progressive output.</td>
</tr>
<tr>
<td><strong>Line-in NR</strong></td>
<td>Only when IN1, IN2 or DV is selected</td>
<td>Reduces video tape noise during transfer (copy).</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td></td>
<td>Select when the video content is distorted by</td>
</tr>
<tr>
<td><strong>Transfer</strong></td>
<td><strong>(When “Progressive” is set to “On”)</strong></td>
<td>automatically converts it.</td>
</tr>
<tr>
<td><strong>Auto1</strong></td>
<td>(normal)</td>
<td>Detects 24 frame-per-second film content and</td>
</tr>
<tr>
<td><strong>Auto2</strong></td>
<td></td>
<td>appropriately converts it.</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>Select when the video content is distorted by</td>
<td></td>
</tr>
<tr>
<td><strong>Automatic</strong></td>
<td></td>
<td>automatically converts it.</td>
</tr>
<tr>
<td><strong>On</strong></td>
<td></td>
<td>Noise reduction works only on picture input from a</td>
</tr>
<tr>
<td><strong>Off</strong></td>
<td></td>
<td>video tape.</td>
</tr>
</tbody>
</table>

* Only when you have selected “480p” in “TV Type” (18).

**Audio menu-Change sound effect**

**RAM**

<table>
<thead>
<tr>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>V. Surround Sound</strong></td>
<td></td>
<td>Enjoy a surround-sound effect if you are using 2 front speakers (L/R) only.</td>
</tr>
<tr>
<td><strong>Natural</strong></td>
<td></td>
<td>Natural: Emphasis —&gt; Off</td>
</tr>
<tr>
<td><strong>Emphasis</strong></td>
<td></td>
<td>Emphasis: Emphasis —&gt; Off</td>
</tr>
</tbody>
</table>

**Dialog Enhancer**

**RAM**

<table>
<thead>
<tr>
<th>Function</th>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Dolby Digital, 3-channel or over only, including a center channel)</strong></td>
<td>The volume of the center channel is raised to make dialog easier to hear.</td>
<td></td>
</tr>
<tr>
<td><strong>On</strong></td>
<td></td>
<td>On: On</td>
</tr>
<tr>
<td><strong>Off</strong></td>
<td></td>
<td>Off: Off</td>
</tr>
</tbody>
</table>

**Other menu-Change the display position**

**Position**

To change the display position
1 (Standard) — 6
- The higher the setting the lower the screen moves.

**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 [▲, ▼] and press [ENTER].
   - If you select “Other Functions”, press [▲, ▼] to select an item and press [ENTER].

**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,

- **(1) Current medium**
- **(2) Current recording or play status, input channel**
- **(3) Audio type (25, 31)**
- **(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

For your reference
- You cannot edit during recording or transferring (copying), etc.
- You can create a Top Menu using "Create DVD Top Menu" (3). You can edit discs. The available space these discs decreases each time you edit their contents.
- The maximum number of items on a disc:
  - Title: 99 (+R) or 49 titles) + (8 minutes +R) or 174 titles) (Depends on the state of recording.)
  - Chapter: Approximately 1000 (+R) or 1000 chapters) + Approximately 254 (+RDL) (3). 

Title operations

Delete Title

(Multiple editing is possible. 3) Follow steps 1 to 3 of "Editing titles/Chapters and playing chapters". Once title is deleted using this procedure, it cannot be retrieved. Check the title carefully before erasing to ensure it isn’t one you want to keep.

Select "Delete Title" with [△, ▽] and press [ENTER].

Select "Delete" with [△] and press [ENTER].

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

Follow steps 1 to 3 of "Editing titles/Chapters and playing chapters". Title information (e.g., date and time) is shown.

Select "Properties" with [△, ▽] and press [ENTER].

Various operations

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

Multiple editing
Select with [△, ▽, ◀, ▶] and press [(II), PAUSE]. (Repeat) A check mark appears. Press [(II), PAUSE] again to cancel.
Edit Title

You can perform various kinds of title editing.

Preparation
- Release protection (disc → 53, cartridge → 53).
- Select DVD side with pressing [DRIVE SELECT].

1. Press [DIRECT NAVIGATOR] and use [▲, ▼, ←, →] to select a desired title.
   - To show other pages → 38
   - Multiple editing → 38

2. Press [SUB MENU].

3. Select “Edit Title” with [▲, ▼] 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
   RAM 4R 8R 8R-EX 8RW 4R 4R-EX 8RW
   - Follow steps 1 to 3 of “Edit Title.”

   For your reference
   Titles will be erased even if they are protected if you format the disc with DVD Management (p. 53).

4. Press [RETURN].

   ▶ Set Protection/Cancel Protection
   RAM 4R 4R-EX 8RW 4R 4R-EX 8RW
   - Follow steps 1 to 3 of “Edit Title.”

   For your reference
   Titles will be erased even if they are protected if you format the disc with DVD Management (p. 53).

5. Select “Set Protection” or “Cancel Protection” with [▲, ▼] and press [ENTER].

6. Select “Yes” with [◄] and press [ENTER].

   ▶ Shorten Title
   RAM 4R 8R 8R-EX 8RW 4R 4R-EX 8RW
   - Follow steps 1 to 3 of “Edit Title.”

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

7. Select “Shorten Title” with [▲, ▼] and press [ENTER].

   For your reference
   Titles will be erased even if they are protected if you format the disc with DVD Management (p. 53).

8. Press [ENTER] at the start point and end point of the section you want to erase.
   (p. 40, “For quicker editing”)

   ■ 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 5-7.

   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
   RAM 4R 4R-EX 8RW 4R 4R-EX 8RW
   - Follow steps 1 to 3 of “Edit Title.”

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

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

   Press [►, PLAY] to play.

   Press [ENTER] at the point you want to display.
   (p. 40, “For quicker editing”)
   - To change to another point in the same title:
     - Select “Change” with [▲, ▼] and press [►, PLAY] and then repeat step 6.

10. Select “Exit” with [▲, ▼] and press [ENTER].

   - The thumbnail picture will be changed at this point.

   ▶ Divide Title
   RAM 4R 4R-EX 8RW 4R 4R-EX 8RW
   - 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.

11. Select “Divide Title” with [▲, ▼] and press [ENTER].

   Press [ENTER] at the point you want to divide the title.
   (p. 40, “For quicker editing”)
   - To change the point to divide:
     - Select “Divide” with [▲, ▼] and press [►, PLAY], and then repeat steps 5 to 7.

12. Select “Exit” with [▲, ▼] and press [ENTER].

   - The title is divided at that point.

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

   For your reference
   - The divided titles retain the name of the original title. They also retain the CPRM property (p. 68) of the original.
   - Video and audio just before and after the division point will be retained the CPRM property (p. 68) of the original.
   - You may not be able to specify start and end points within 3 seconds of each other.
   - When the total number of titles is more than 99.

   RAM 4R 4R-EX 8RW 4R 4R-EX 8RW
   - Follow steps 1 to 3 of “Edit Title.”

   For your reference
   Titles will be erased even if they are protected if you format the disc with DVD Management (p. 53).
Editing titles/chapters

1. Press [DIRECT NAVIGATOR] and use [▲, ▼, ◄, ►] to select a desired title.
   - To show other pages ⇒ 38
2. Press [SUB MENU].
3. Select “View Chapters” with [▲, ▼] and press [ENTER].
4. Select a desired chapter with [▲, ▼, ◄, ►].
   - To start play ⇒ Press [ENTER].
   - To edit ⇒ Follow the steps below.
5. Press [SUB MENU].
6. Select a desired item with [▲, ▼] and press [ENTER].

➤ Delete Chapter

RAM ("Multiple editing" ⇒ 38)
- Follow steps 1 to 5 of “View Chapters”.
- Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.
7. Select “Delete Chapter” with [▲, ▼] and press [ENTER].

➤ Create Chapter

RAM
- Follow steps 1 to 5 of “View Chapters”.
6. Select “Create Chapter” with [▲, ▼] and press [ENTER].
7. Press [ENTER] at the point you want to divide.
   - For quicker editing
   - Repeat this step to divide at other points.

➤ View Titles

- Follow steps 1 to 5 of “View Chapters”.
6. Select “View Titles” with [▲, ▼] and press [ENTER].
   - You go back to Title View.

For quicker editing
- Use search (⇒ 30), Time Slip (⇒ 31) or slow-motion (⇒ 31) 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 from your recordings. You can also play and edit the created playlist.

### Creating playlists

**Preparation**
- Release protection. (disc ➔ S3, cartridge ➔ S3)
- Select DVD side with pressing [DRIVE SELECT].

1. **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.
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.
8. **Repeat steps 6 to 7 to add other chapters.**
9. **To select other source titles, press [▲] several times to return to step 5.**
10. **Press [RETURN].**

**Playing playlists**

**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. **Use [▲, ▼, ◄, ►] to select a playlist and press [ENTER].**
   ● Chapters are not displayed if you have not yet created a playlist with the disc.
   ● You can also select a playlist from the Playlist View by entering a 2-digit number with the numeric buttons.
   
   e.g.: “5”: [0] ➔ [5]
   “15”: [1] ➔ [5]
   ● If you enter a number larger than the total number of playlists, “Create” is selected.
   ● “To show other pages” ➔ 38
5. **To select other source titles, press [▲] several times to return to step 5.**
6. **Press [RETURN].**
7. **To stop playlist play Press [■, STOP].** (The Playlist View screen appears.)
8. **To return to the previous screen Press [RETURN].**
9. **To exit the screen Press [RETURN].**
10. **To delete a playlist during play**
    1. Press [DELETE].
    2. A confirmation message will be displayed.
    3. Use [◄] to select “Delete” and press [ENTER].

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

Preparation
- Create playlists. (→ 41)
- Release protection (disc: [RAM], cartridge: [RAM]).
- Select DVD side with pressing [DRIVE SELECT].

**Editing playlists/chapters**

RAM (RW/VR) (Properties only)

1. While stopped
   Press [FUNCTIONS].
2. Select “Other Functions” with [△, ▽] and press [ENTER].
3. Select “Playlists” with [△, ▽] and press [ENTER].
   (Chapters are not displayed if you have not yet created a playlist on the disc.)
4. Use [△, ▽, ←, →] to select a playlist.
   (To show other pages) → 38
5. Press [SUB MENU].
6. Use [△, ▽] to select a desired item and press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN].

**Playlist operations**

**Delete Playlist**

RAM (Multiple editing) → 38
- Follow steps 1 to 5 of “Editing playlists/chapters”.
   - The playlist is deleted.
   - Once a playlist has been deleted, it cannot be restored. Check carefully before proceeding.
   - Even if you delete the playlist, the original title is not deleted.

**Properties**

RAM (RW/VR)
- Follow steps 1 to 5 of “Editing playlists/chapters”.
   
   Playlist information (e.g., date and length) is shown.

**Edit**

RAM
You can perform various kinds of playlist editing.

1. While stopped
   Press [FUNCTIONS].
2. Select “Other Functions” with [△, ▽] and press [ENTER].
3. Select “Playlists” with [△, ▽] and press [ENTER].
4. Use [△, ▽, ←, →] to select a playlist.
   (To show other pages) → 38
5. Press [SUB MENU], then select “Edit” with [△, ▽] and press [ENTER].
6. Use [△, ▽] to select a desired item and press [ENTER].

To return to the previous screen
Press [RETURN].

To exit the screen
Press [RETURN].

**Create**

(Multiple editing) → 38
- Follow steps 1 to 5 of “Edit”.
3. Select “Create” with [△, ▽] and press [ENTER].
   Refer to “Creating playlists”, steps 5–8. (→ 41)

**Copy**

(Multiple editing) → 38
- Follow steps 1 to 5 of “Edit”.
3. Select “Copy” with [△, ▽] and press [ENTER].

**Playlist Name**

- Follow steps 1 to 5 of “Edit”.
3. Select “Playlist Name” with [△, ▽] and press [ENTER].
   Refer to “Entering text”. (→ 51)
Chapter operations

View Chapters

RAM (RWV7W) (Play only)
You can play/edit the chapters in a playlist.

1. While stopped
   Press [FUNCTIONS].
2. Select “Other Functions” with [◀, ▶] and press [ENTER].
3. Select “Playlists” with [◀, ▶] and press [ENTER].
4. Use [◀, ▶, ◀, ▶] to select a playlist.
   ● To show other pages: # 38
5. Press [SUB MENU], and select “View Chapters” with [◀, ▶] and press [ENTER].
6. 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.: “5”: [0]→[0]→[0]
   “15”: [0]→[1]→[0]
   ● 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: # 38
7. Press [SUB MENU].
8. Use [◀, ▶] to select a desired item and press [ENTER].

To play a chapter
Press [ENTER] after step 5.
To stop chapter play
Press [■, STOP]: (The Chapter View screen appears.)

Add Chapter

RAM
● Follow steps 1 to 7 of “View Chapters”.
3. Select “Add Chapter” with [◀, ▶] and press [ENTER].
   Refer to “Creating playlists”, steps 5–8. ( # 41)

Move Chapter

RAM
● Follow steps 1 to 7 of “View Chapters”.
3. Select “Move Chapter” with [◀, ▶] and press [ENTER].

Delete Chapter

RAM (Multiple editing) # 38
● Follow steps 1 to 7 of “View Chapters”.
Once deleted, the recorded contents are lost and cannot be restored. Make certain before proceeding.
3. Select “Delete Chapter” with [◀, ▶] and press [ENTER].
4. Select “Delete” with [◀] and press [ENTER].
   ● Even if you delete the chapter, the original title is not deleted.

View Playlists

RAM (RWV7W)
● Follow steps 1 to 7 of “View Chapters”.
   You go back to Playlist View.
**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>Easy transferring (copying) with one button</td>
<td>One Touch Transfer</td>
</tr>
<tr>
<td>DVD-RAM, DVD-R, DVD-R DL, DVD-RW(DVD-Video format), +R, +R DL or +RW</td>
<td>Transferring (copying) with detailed settings</td>
<td>GUI Transfer</td>
</tr>
<tr>
<td>To</td>
<td>When you want to transfer (copy) from the selected start point to the end of the tape</td>
<td></td>
</tr>
<tr>
<td>DVD-RAM, +RW or DVD-RW (DVD Video Recording format)</td>
<td>Easy transferring (copying) with one button</td>
<td>One Touch Transfer</td>
</tr>
<tr>
<td>VHS</td>
<td>Transferring (copying) with detailed settings</td>
<td>GUI Transfer</td>
</tr>
<tr>
<td>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</td>
</tr>
<tr>
<td>VHS</td>
<td>Transferring (copying) with detailed settings</td>
<td>GUI Transfer</td>
</tr>
<tr>
<td>Finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL or DVD-Video on sale that are not copy-protected, etc.</td>
<td>Easy transferring (copying) with one button</td>
<td>Cannot transfer</td>
</tr>
<tr>
<td>VHS</td>
<td>Transferring (copying) with detailed settings</td>
<td>Cannot transfer</td>
</tr>
</tbody>
</table>

*Caution for transfer (copying) from VHS to DVD*
- Copy-protected video tapes cannot be copied. Most video tapes are copy-protected to prevent illegal copying so they cannot be copied.
- When a copy-protected tape is inserted, a message appears on the display and the recording stops on the spot.
- If a part of a tape recorded in VP mode is copied to disc, noise may appear at the beginning of the copied part.
- Only the following operations are allowed while transferring (copying):
  - Stopping transfer (One Touch or GUI Transfer) by pressing and holding [RETURN] for about 3 seconds or more.
  - Stopping transfer (One Touch Transfer) by pressing [ ], STOP.

When transfer (copying) is started, the following operations also start automatically:
- "Status Messages" on Display → "Off" (GUI Transfer)

*Caution for transfer (copying) from DVD to VHS*
- Copy-protected discs cannot be copied. Most discs are copy-protected to prevent illegal copying so they cannot be copied.
- Only the following operations are allowed while transferring (copying):
  - Stopping transfer (One Touch or GUI Transfer) by pressing and holding [RETURN] for about 3 seconds or more.
  - Stopping transfer (One Touch Transfer) by pressing [ ], STOP.

When transfer (copying) is started, the following operations also start automatically:
- "Status Messages" on Display → "Off" (GUI Transfer)
- Audio output when playing back DVD → Stereo (L R) [RAM] (One Touch or GUI Transfer)
Transfer (Copying) from VHS

<table>
<thead>
<tr>
<th>Preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select the unit viewing channel (e.g. AV input) on the TV.</td>
</tr>
<tr>
<td>Select the recording mode. (→ 24)</td>
</tr>
<tr>
<td>When SAP broadcast program is played back on VHS, select the audio to be recorded on disc in &quot;Multi-channel TV sound (MTS)&quot; in the &quot;Setup&quot; menu. (→ 57)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insert the video cassette containing the program to be copied (→ 10, 22).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RAM, +R, +R DL, +RW</th>
</tr>
</thead>
<tbody>
<tr>
<td>You can transfer (copy) programs recorded on a tape onto a disc with one stroke of the button.</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Release protection (disc → 53, cartridge → 53).</td>
</tr>
<tr>
<td>Insert a disc and confirm there is sufficient empty space for recording on it (→ 22, 37).</td>
</tr>
<tr>
<td>Select the recording mode. (→ 24)</td>
</tr>
<tr>
<td>When SAP broadcast program is played back on VHS, select the audio to be recorded on disc in &quot;Multi-channel TV sound (MTS)&quot; in the &quot;Setup&quot; menu. (→ 57)</td>
</tr>
<tr>
<td>Insert the video cassette containing the program to be copied (→ 10, 22).</td>
</tr>
</tbody>
</table>

| Available discs for transfer (copying) from tape are DVD-RAM, the time when the transfer (copying) of the tape starts. |
| Transferred (copied) onto the disc from the location of playback at |
| In One Touch Transfer (Copying) , programs are automatically |
| You can transfer (copy) programs recorded on a tape onto a disc |
| Select the recording mode. (→ the “Setup” menu. |
| Audio to be recorded on disc in "Multi-channel TV sound (MTS)" in |
| When SAP broadcast program is played back on VHS, select the |
| Insert a disc and confirm there is sufficient empty space for |
| Insert the video cassette containing the program to be copied (→ 10, 22). |
| Notes |
| Check if transfer (copying) starts properly. |
| Copying is automatically completed when the tape reaches its |
| If you press [•, REC] on the main unit to finalize; 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. |

<table>
<thead>
<tr>
<th>To stop transfer (copying) in the middle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Press [•, STOP] or press and hold [RETURN] for about 3 seconds or more.</td>
</tr>
<tr>
<td>However, you cannot stop finalizing after it has started.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>While One Touch Transfer (Copying) is activated, a scheduled recording cannot be started.</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dividing a title to be copied</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 (→ 38) after transfer (copy) to DVD.</td>
</tr>
<tr>
<td>Titles recorded within 15 minutes (25 minutes in VP mode) of each other may not be divided properly.</td>
</tr>
<tr>
<td>The recording time may become longer than the original title depending on the number of index signals.</td>
</tr>
<tr>
<td>If you want to transfer (copy) without dividing the contents into titles, follow the methods below.</td>
</tr>
<tr>
<td>Set “Time Limit” to “On” on the GUI transfer (→ 46).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To stop transfer (copying) in the middle</th>
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<tr>
<td>Press [•, STOP] or press and hold [RETURN] for about 3 seconds or more.</td>
</tr>
<tr>
<td>However, you cannot stop finalizing after it has started.</td>
</tr>
</tbody>
</table>

Notes:
- Titles cannot be added to finalized discs.
- The copying does not stop due to shortage of remaining time of disc or etc., the finalizing doesn’t start.
Transferring (Copying)

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

You can transfer (copy) programs recorded on a tape onto a disc. You can also transfer (copy) the whole tape from the beginning to the end.

- 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.
- 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.
- Release protection (disc)).
- Set the recording mode to "FR" and "Time Limit" to "Off".
- 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.
- VHS inserts the video cassette containing the program to be copied.

1. While both DVD and VHS are stopped, press [FUNCTIONS].
2. Select "Copy" with [A, V] and press [ENTER].
3. Set the transfer (copying) direction.
   - Set "Source" to "VHS".
   - If you are not going to change the copy direction, press [V].
   - 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].
   - When you set "Source" to "VHS", "DVD" is automatically selected on "Destination".
6. (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 "Recording Mode" is selected and press [ENTER].
   - (3) Select recording mode (XP, SP, LP, EP or FR) with [A, V] and press [ENTER].
   - "About FR mode" (right)
   - (4) Press [ ].
   - (5) Press [ ].
9. Set the time limit.
   - If you are not going to change the recording time, press [ ].
   - Then skip to step 6.
10. To change the setting
    - (1) Make sure "Time Limit" is selected and press [ ].
    - (2) Make sure "Time Limit" is selected and press [ENTER].
    - (3) Select time limit ("On" or "Off") with [A, V] and press [ENTER].
    - When you select "Off", proceed to step (6) below.
    - You can also set the set time with the numeric buttons.
    - Maximum recording time is 8 hours.
11. Press [ ], [ ], and [ ].

**When you set the recording mode to "FR" and "Time Limit" to "Off"**

- You can transfer (copy) programs recorded on a tape onto a disc.
- 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 you 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.
Transfer (Copying) from DVD

One Touch Transfer (Copying) (DVD → VHS)
You can transfer (copy) titles recorded on a disc onto a tape with one touch of the button.
In One Touch Transfer (copying), all contents on the disc are automatically copied onto the tape.

Preparation
- Select the unit viewing channel (e.g. AV input) on the TV.
- Insert the disc containing the program to be copied (e.g. [22]).
- Insert a video cassette with an accidental erasure prevention tab. (e.g. [10], [22])
- Confirm that the remaining tape time is sufficient for recording. (e.g. [37])
- Select the recording mode. (e.g. [24])

Press and hold [VHS ↓] 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 (e.g. [35])
In One Touch Copying from DVD to VHS, the index signal is automatically recorded for each title. You can search desired titles with [← →] or [↑ ↓].
Transferring (Copying)

GUI (Graphical User Interface) Transfer (Copying)

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

Preparation
- Select the unit viewing channel (e.g. AV input) on the TV.
- Insert a video cassette with an accidental erasure prevention tab.
- Insert the disc containing the program to be copied (→ 22).
- Confirm that the remaining tape time is sufficient for recording. (→ 37)

1. While both DVD and VHS are stopped
   - Press [FUNCTIONS].

2. Select “Copy” with [A, B] and press [ENTER].

3. Set “Copying Direction”.
   - Set “Source” to “DVD”.
   - If you are not going to change the copy direction, press [↓], then skip to step 4.

   To change the setting
   - Make sure “Copying Direction” is selected and press [↓].
   - Make sure “Source” is selected and press [ENTER].
   - Press [A, B] to select “DVD” and press [ENTER].
   - When you set “Source” to “DVD”, “VHS” is automatically selected on “Destination”.
   - Press [A, B].
   - Press [ENTER].

4. Set the recording mode.
   - If you are not going to change the recording mode, press [↓], then skip to step 5.
   - To Change the setting
   - Make sure “Mode” is selected and press [↓].
   - Make sure “Recording Mode” is selected and press [ENTER].
   - Select recording mode (SP, EP or VP) with [A, B] and press [ENTER].

(4)Press [↓].
(5)Press [ENTER].

5. Register titles and playlists for transfer (copying).
   - "If you are going to transfer a registered list without making any changes to it, press [↓], then skip to step 6.

   To set for the registration
   - Make sure “Create List” is selected and press [ENTER].
   - Make sure “New Entry (Total = 0)” is selected and press [ENTER].
   - Press [AUDIO/A] to select “Video” or press [DISPLAY/B] to select “Playlists”.
   - You can also select the view by selecting “Other View” from the SUB MENU.
   - Press [SUB MENU].
   - Make sure “Other View” is selected and press [ENTER] twice.
   - Press [A, B] to select the title or playlist and press [ENTER].
   - You can register multiple titles or playlists to the copying list by repeating the above steps 2 to 4.
   - (“To edit the transfer (copying) list” → 49)
   - (“To show other pages”(→ below)
   - “Multiple editing”(→ below)
   - “Before pressing [↓], make sure that the value on “Copying list” is smaller than the value on “Current Remaining”.

(6)Press [↓].

6. When you finish creating the copying list,
   - Make sure to select “Start Copying” and press [ENTER].
   - The confirmation screen appears.

7. Select “Yes” with [A, B] and press [ENTER].

To stop transfer (copying) in the middle
   - Transfer (copying) is started.

To show other pages
   - Press [PREVIEW, SKIP] or [↓, SKIP], then skip to step 4.

Various operations

To show other pages
   - Press [PREVIEW, SKIP] or [↓, SKIP].
   - Press [A, B, C, D] to select “Previous” or “Next” and press [ENTER] to show other pages.

Multiple editing
   - Select with [A, B, C, D] and press [PAUSE]. (Repeat)
   - Press [ENTER] to register to the list.
   - 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.
To edit the transfer (copying) list
Select the item in step 5 (4).

- Select a desired item with [◄, ▶] and press [ENTER].
- 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].
- Multiple editing is possible. (↔ 48)

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].
- Multiple editing is possible. (↔ 48)

Move:
Move selected items or change the order of items on the transfer (copying) list.
- Press [◄, ▶] to select the destination and press [ENTER].
- The settings and lists may be canceled in the following situations.
  - When a title or a playlist has been recorded or erased at the 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)” (↔ 48),

1. Set “Time Limit”.
   - If you are not going to change the setting, press [◄], then skip to step 6.

2. 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 [◄, ▶] to select the transfer (copying) time
   (5) Press [◄, ▶] to select “Yes” and press [ENTER].
   - You can also set the set time with the numeric buttons.
   (6) Press [◄, ▶].
   (7) Press [◄].

3. Make sure “Start Copying” is selected and press [ENTER].
   - Disc play automatically begins from title 1 when “First Title” is selected from the “Playback will start with.” menu when finalizing the disc (↔ 54).

4. 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 recorded at the beginning.
- If it is recorded as 1 title from the start of transfer (copying) to the end (even if there are multiple programs).
- If play does not begin automatically or if the top menu does not display automatically, press [◄ PLAY] to start.
- REC only appears on the unit’s display when transferring from DVD-Video.
Follow the above steps 1 to 2.

3 Press [再生] (PLAY).

DVD

Follow the above steps 1 to 2.

3 Press [再生] (PLAY).

VHS

Follow the above steps 1 to 2.

4 Press [再生] (PLAY).
**Entering text**

**RAM**

You can give names to recorded titles, etc.

The maximum number of characters:

- **Title** 64
- **Title (scheduled recording)** 44
- **Playlist** 64
- **Disc** 64
- **Title (scheduled recording)** 44
- **Disc** 40

**Note**

- If a name is long, only part of it is displayed on the title list (→ 38) and the playlist screen (→ 42).

**Preparation**

- Insert a recorded disc.
- Release protection (Disc → 53, title → 39, cartridge → 53).
- RAM
- Title Name
- Select DVD side with pressing [DRIVE SELECT].

1. **Show Enter Name screen.**

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

- **Title** (→ 39)
- **Title (scheduled recording)** (→ 28)
- **Disc** (→ 53)
- **Playlist** (→ 42)

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

---

2. **Use [▲, ▼, ←, →] to select the character you want to enter and press [ENTER].**

3. **Repeat this step to enter other characters.**

   - To erase a character
     
     - Press [▲, ▼, ←, →] to select the character in the name field and press [C, PAUSE].
     
     - Using the numeric buttons to enter characters
       
       e.g., entering the letter “R”
       
       1) Press 3 to move to the 7th row.
       
       2) Press 6 twice to highlight “R”.
       
       3) Press [ENTER].

   - To enter space
     
     - Press [C, CANCEL] and press [ENTER].

   - Save/recall phrases (→ below)

4. **After you have finished naming**

   - Press [A, STOP].

   - The title is entered and the screen disappears.

   **To cancel in the middle**

   - Press [RETURN].

   - Characters will not be saved.

5. **To save phrases**

   You can save frequently used phrases and recall them later.

   - Maximum number of saved phrases: 20
   
   - Maximum number of characters per phrase: 20

   - After entering the phrase (step 1 to 2, “Entering text”)

   1. Press [▲, ▼, ←, →] to select “Phrase Save” and press [ENTER].
   
   2. You can also press [FAST, SKIP] to select “Phrase Save”.
   
   3. Press [▲, ▼, ←, →] to select “Save” and press [ENTER].
   

6. **To recall a saved phrases**

   1. Press [▲, ▼, ←, →] to select “Phrase List” and press [ENTER].
   
   2. You can also press [FAST, SKIP] to select “Phrase List”.
   
   3. Press [▲, ▼, ←, →] to select the phrase to be recalled and press [ENTER].

7. **To erase saved phrases**

   1. Press [▲, ▼, ←, →] to select “Phrase List” and press [ENTER].
   
   2. You can also press [FAST, SKIP] to select “Phrase List”.
   
   3. Press [▲, ▼, ←, →] to select the phrase to be erased.
   
   
   5. Press [▲, ▼, ←, →] to select “Erase” and press [ENTER].
   
   6. Press [RETURN].

For your reference

- If you enter a long name, only part of it is shown in the TOP MENU after finalization (→ 55). When entering a title name, the name that will appear in the TOP MENU Preview (Finalized Disc) window.
Deleting title

Selecting recorded titles to delete
–Delete Navigator

2. Insert a disc (⇒ 22).
3. Select DVD side with pressing [DRIVE SELECT].

RAM - R PCL DW - RP C R -RW
• A title cannot be restored once it is deleted. Make certain before proceeding.
• You cannot delete while recording.
• Available space does not increase after deletion.

DVD-RAM
• 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].
2. Press [ , ] to select “Delete” and press [ENTER].
3. Press [ , , ] to select the title and press [ENTER].

≥ To show other pages
   Press [ , , , ] to select “Previous” or “Next” and press [ENTER].
   You can also press [ , SKIP] or [ , SKIP] to show other pages.

≥ Multiple editing
   Select with [ , , , ] and press [ , PAUSE]. (Repeat)
   A check mark appears. Press [ , PAUSE] again to cancel.


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

Deleting title during play

RAM - R PCL DW - RP C R -RW

DVD-RAM
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).
• 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 Management

Preparation
- Release protection (disc right, cartridge right).
- Insert a disc (22).
- Select DVD side with pressing [DRIVE SELECT].

1. While stopped
   Press [FUNCTIONS].

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

3. Select “DVD Management” with [ ] and press [ENTER].

4. Use [ ] to select a desired item and press [ENTER].
   You can change various settings.

To stop to the previous screen
Press [RETURN].

Providing a disc with a name
- Follow steps 1 to 3 of “DVD Management”.
- Select “Disc Name” with [ ] and press [ENTER].
   The disc name is displayed in the DVD Management window.
- With a finalized disc and +RW, the name is displayed on the Top Menu.

Setting the protection
- Follow steps 1 to 3 of “DVD Management”.
- This allows you to protect the whole disc from accidental erasure and release disc protection.

1. Select “Disc Protection” with [ ] and press [ENTER].

2. Select “Yes” with [ ] and press [ENTER].
   - To protect

3. Select “Off” with [ ] and press [ENTER].
   - To release protection

Protection of cartridge disc
- With the write-protect tab in the protect position, you cannot record to, edit, or erase from the disc.

Deleting all titles and playlists
- Delete All Titles

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

2. Select “Delete All Titles” with [ ] and press [ENTER].

3. Select “Yes” with [ ] and press [ENTER].

4. Select “Start” with [ ] and press [ENTER].
   - A message appears when finished.

To stop to the previous screen
Press [RETURN].

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

#### Format Disc (DVD)

[RAM] [RWV] [RW] [RW/VR]

- Follow steps 1 to 3 of "DVD Management".
- Formatting deletes all contents including computer data, and they cannot be restored. Check carefully before proceeding.
- The contents are deleted when you format a disc even if you have set protection.

4. Select "Format Disc (DVD)" with [△, ▼] and press [ENTER].
5. Select "Yes" with [△] and press [ENTER].

6. Select "Start" with [△] and press [ENTER].

- Formatting starts.
- A message appears when formatting is finished.

#### Notes

- 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.

7. 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 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-P/RW cannot be formatted.
- You can format DVD-RW only as DVD-Video format on this unit.
- The disc cannot be formatted if the write protect tab (△ 53) is switched to "PROTECT". Release the protection to continue.
- The message "Unable to format" appears when trying to format discs the unit cannot use.

### Selecting whether to show the Top Menu first

#### Playback will start with:

- Follow steps 1 to 3 of "DVD Management".
- Select whether to show the top menu after finalizing the disc. Do this before finalizing the disc.

4. Select "Playback will start with:" with [△, ▼] and press [ENTER].
5. Use [△, ▼] to select a desired item and press [ENTER].

- DVD’s Top Menu: The top menu appears first.
- First Title on DVD: The disc content is played without displaying the top menu.
Enabling discs to be played on other equipment –Finalize

1. Follow steps 1 to 3 of “DVD Management”.
2. Make selection from “Selecting whether to show the Top Menu first –Playback will start with” before finalizing the disc. (54)

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].


- Finalizing starts.
- You cannot cancel finalizing.
- A message appears when finalizing is finished.

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

7. 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.
  - You can record and edit the disc after formatting (54) although it becomes play-only after finalizing.
  - DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R or +R DL finalized on the unit may not be playable on other players depending on the condition of the recording.
  - There is a pause of several seconds between titles and chapters during play.
  - Titles are divided into about 5-minute chapters*. +R DL [+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.
For Canada:http://www.panasonic.ca

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

1. Follow steps 1 to 3 of “DVD Management”.

DVD-R DL and +R DL discs have two layer of recording surface 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.

7. 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.

Creating Top Menu –Create DVD Top Menu

1. Follow steps 1 to 3 of “DVD 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.

4. Press [△, ▽] to select “Create DVD Top Menu” and press [ENTER].

Creating Top Menu starts. You cannot cancel creating.
Creating Top Menu can take a few minutes.

7. Press [ENTER].

- Recording or editing on the disc may delete the menu. In that case, create the menu again.
- You cannot use the title menu for playing on this unit.

Notes
- Finalizing will also be approximately 4 times.
- Do not disconnect the AC power supply cord while finalizing or proceed.
- Do not disconnect the AC power supply cord while finalizing.
Common procedures

Use the following procedure to change the settings if necessary.

1. While stopped Press [FUNCTIONS].
2. Select “Other Functions” with [Arrows] and press [ENTER].
4. Select a menu with [Arrows] and press [ENTER].
5. Select an item to be changed with [Arrows] and press [ENTER].
6. Select an option with [Arrows] 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 [C] 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
The password is entered and the unit is locked.
Press [ENTER].

When changing ratings
The password screen is shown when you select “Ratings” (right)
1. Input a 4-digit password with the numeric buttons and press [ENTER].
2. Unlock Recorder: To unlock the unit and return the rating to 8
   Change Password: To change your password
   Change Level: To change the rating level
   Temporary Unlock: To temporarily unlock the unit (the unit locks again if you switch it to standby or open the disc tray)
3. Select a desired item with [Arrows] and press [ENTER].
   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. (Point left)
▪ Underlined items are the factory default settings.
  ▪ (DVD-Audio) indicates settings effective for both DVD and VHS
  ▪ (DVD) indicates settings effective for DVD only.
  ▪ (VHS) indicates settings effective for VHS only.

Channel (DVD-Audio)
Signal Source (RF IN) (Point 17)
Select to suit the type of antenna you are using.
[Antenna] [Cable TV]

Set Channels Automatically (Point 18)

Manual Channel Captions (Point 18)

Setup (DVD-Audio)
Off Timer
Select how long the unit remains on when it is not being used.
[2 Hours] [6 Hours] [Off]

Remote Control Code (Point 19)
[Set Code 1] [Set Code 2] [Set Code 3]

Clock Settings
Press [ENTER] to show the following settings.
Set Clock Automatically (Point 20)
Set Clock Manually (Point 17)

Adjust Time Zone (Point 20)
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.
[+1] [+1]

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 [(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]

Disc (DVD-Audio)
Settings for Playback
Press [ENTER] to show the following settings.

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

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

Play DVD-Audio in Video Mode
Select “Video Mode (Video On)” to play DVD-Video content on some DVD-Audio.
[Video Mode (Video On)] [Audio Mode (Video Off)]

Video Mode (Video ON) The setting returns to “Audio Mode (Video Off)” when you change the disc or turn the unit off.
### Audio

**Dynamic Range Compression**

- **DRC** (Dolby Digital only)
  - Change the dynamic range (➔ 68) for easier listening in low volume.
  - [On] [Off]

**Multi-channel TV sound (MTS)**

- Select whether to record the main or secondary audio type (SAP) when recording or transferring (copying) to DVD-R, DVD-RW (DVD-Video format) or +R. (You cannot select the audio type on the unit when recording audio to DVD-R, DVD-RW (DVD-Video 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 OUT terminal (➔ 15).

- 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.

- 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.
- [On] [Off]

### 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 Down Conversion

- Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz or 88.2 kHz.)

### DTS

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]

### Select Audio Channel for DV Input

You can select the kind of audio when recording from the unit’s DV in terminal. (➔ 50)

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

<table>
<thead>
<tr>
<th>Audio</th>
<th>DVD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic Range Compression</td>
<td>DRC (Dolby Digital only)</td>
</tr>
<tr>
<td>Change the dynamic range (➔ 68) for easier listening in low volume.</td>
<td>[On] [Off]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multi-channel TV sound (MTS)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select whether to record the main or secondary audio type (SAP) when recording or transferring (copying) to DVD-R, DVD-RW (DVD-Video format) or +R. (You cannot select the audio type on the unit when recording audio to DVD-R, DVD-RW (DVD-Video format) or +R from an external device. Select it on the external device.)</td>
<td>[Main] [Secondary Audio Program (SAP)]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Digital Audio Output</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change the settings when you have connected equipment through the unit’s DIGITAL AUDIO OUT terminal (➔ 15).</td>
<td>Press [ENTER] to display the menu.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PCM Down Conversion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz.</td>
<td>[On] [Off]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dolby Digital</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>[Bitstream] [PCM]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PCM Down Conversion</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz or 88.2 kHz.)</td>
<td>[On] [Off]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
<td>[Bitstream] [PCM]</td>
</tr>
</tbody>
</table>

* 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 in terminal. (➔ 50)

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

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

- **Display**
  - **Status Messages**
    - Choose whether to show status messages automatically or not.
    - (Automatic) [Off]
  - **On-screen Language**
    - Choose the language for these menus and the on-screen messages.
    - [English] [Español] [Français]
  - **Blue Background**
    - Select whether to show the blue background, normally shown when TV reception is poor.
    - (On) [Off]
  - **FL Display**
    - Changes the brightness of the unit's display.
    - [Bright] [Dim] [Automatic]

**Automatic**
The display turns dark during play, and reappears momentarily if a button is pressed. When the unit is turned off, the unit's display disappears. While using this mode the standby power consumption can be reduced.

### TV Screen

- **TV Type** (+18) [DVD] [DTV]
  - Choose the setting to suit your TV and preference.
  - [Aspect 4:3 & 480i] [Aspect 4:3 & 480p] [Aspect 16:9 & 480i] [Aspect 16:9 & 480p]

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

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. (+18) [Pan and Scan (Stretch to fit) [Letterbox (Shrink to fit)]

#### Pan and Scan (Stretch to fit)

Video recorded for a widescreen is played with the sides cut off if Pan & Scan was specified. This 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 [DVD]

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. (+18) [Pan and Scan (Stretch to fit) [Letterbox (Shrink to fit)]

#### 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 [VHS]

- **Select Tape Length**
  - Set the length of tape you are using so the unit can show the correct remaining time.
  - [T120] [T160] [T180]

<table>
<thead>
<tr>
<th>Tape Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>T120</td>
<td>T30, T60, T90 and T120 tapes</td>
</tr>
<tr>
<td>T160</td>
<td>T140 and T160 tapes</td>
</tr>
<tr>
<td>T180</td>
<td>T180 tapes</td>
</tr>
</tbody>
</table>

### Jet Search (+34)

- Set the speed for Jet Search when playing EP and VP tapes.
  - It is possible to view the picture recorded in EP or VP mode at approx. 27 or 35 times speed.
  - (+27) (+35)
  - Select (+27) if the picture is poor at (+35).

### Language code list

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
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<tbody>
<tr>
<td>Abahian: 6566</td>
<td>Chinese: 9072</td>
<td>Hausa: 7265</td>
<td>Lithuanian: 7784</td>
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<td>Dutch: 7876</td>
<td>Malayalam: 7778</td>
<td>Moldovan: 7779</td>
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<td>English: 6978</td>
<td>Maltese: 7783</td>
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<td>Norwegian: 7869</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Catalan: 6765</td>
<td>Hindi: 7286</td>
<td>Norwegian: 7869</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Croatian: 6779</td>
<td>Hungarian: 7286</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Corsican: 6779</td>
<td>Czech: 6783</td>
<td>Icelandic: 7383</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Catalan: 6765</td>
<td>Danish: 6865</td>
<td>Italian: 7383</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Corsican: 6779</td>
<td>English: 6978</td>
<td>Korean: 7578</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Frisian: 7089</td>
<td>Kazakh: 7575</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Galician: 7176</td>
<td>Kirghiz: 7589</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>German: 6689</td>
<td>Kurish: 7585</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Greek: 6576</td>
<td>Kurish: 7585</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Hungarian: 7286</td>
<td>Latvian: 7786</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Icelandic: 7383</td>
<td>Lithuanian: 7784</td>
<td>Moldovan: 7779</td>
</tr>
<tr>
<td>Chinese: 9072</td>
<td>Italian: 7383</td>
<td>Lithuanian: 7784</td>
<td>Moldovan: 7779</td>
</tr>
</tbody>
</table>
| Chinese: 9072 | Korean: 7578   | Lithuanian: 7784 | Moldova

### DVD Video settings

- **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.

### DVD-RAM settings

- **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.

### Select Tape Length

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

- [T120] [T160] [T180]

### Jet Search (+34)

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

- It is possible to view the picture recorded in EP or VP mode at approx. 27 or 35 times speed.
  - (+27) (+35)
- Select (+27) if the picture is poor at (+35).
### Messages

#### On the unit’s display

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H111, H112</td>
<td>An error has occurred. The number following “H” or “F” depends on the status of the unit. Check the items in the “Error messages” section and the “Troubleshooting guide”.</td>
<td>–</td>
</tr>
<tr>
<td>H113, H114</td>
<td>The remote control and main unit are using different codes. Change the code on the remote control.</td>
<td>19</td>
</tr>
<tr>
<td>H115</td>
<td>If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.</td>
<td>–</td>
</tr>
<tr>
<td>H116</td>
<td>The disc is dirty or badly scratched. The unit cannot record, play, or edit.</td>
<td>6, 9</td>
</tr>
<tr>
<td>M003</td>
<td>Displayed when the unit is started. This is not a malfunction.</td>
<td>–</td>
</tr>
<tr>
<td>M004</td>
<td>The unit is carrying out its recovery process. You cannot operate the unit while “PLEASE WAIT” is displayed.</td>
<td>–</td>
</tr>
<tr>
<td>M005</td>
<td>There are already 16 scheduled recording programs. Delete unnecessary scheduled recording programs.</td>
<td>29</td>
</tr>
<tr>
<td>M006</td>
<td>You have inserted a disc the unit cannot play or record on.</td>
<td>7</td>
</tr>
<tr>
<td>M007</td>
<td>You have inserted a new DVD-RW/R+R DL/RW or a DVD-RAM/DVD-RW (DVD-Video format) recorded on other equipment.</td>
<td>54</td>
</tr>
<tr>
<td>M009</td>
<td>The unit is very warm. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears.</td>
<td>–</td>
</tr>
<tr>
<td>M010</td>
<td>There was a power failure or the AC plug was disconnected while the unit was on. The unit is not broken. Wait until the message disappears.</td>
<td>–</td>
</tr>
<tr>
<td>M011</td>
<td>There was something unusual detected with the disc while recording, playing or transferring (copying), there was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.</td>
<td>61</td>
</tr>
<tr>
<td>M012</td>
<td>The unit fails to operate properly. Press [0/1, POWER] on the main unit to switch the unit to standby. Now press [0/1, POWER] on the main unit again to turn the unit on.</td>
<td>–</td>
</tr>
</tbody>
</table>

#### On the TV

<table>
<thead>
<tr>
<th>Error Code</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot finish recording completely.</td>
<td>The program was copy-protected.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot play.</td>
<td>You inserted an incompatible disc (Discs recorded in PAL video, etc.).</td>
<td>–</td>
</tr>
<tr>
<td>Cannot record on the disc.</td>
<td>The disc may be dirty or scratched.</td>
<td>9</td>
</tr>
<tr>
<td>Unable to format.</td>
<td>The disc may be full.</td>
<td>–</td>
</tr>
<tr>
<td>Please check the disc.</td>
<td>There are already 99 recorded titles (RAM, RW, RWV, RW).</td>
<td>–</td>
</tr>
<tr>
<td>Cannot record. Disc is full.</td>
<td>Create space by erasing any unwanted titles.</td>
<td>38, 52, 53</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>
<td>–</td>
</tr>
<tr>
<td>Error has occurred. Please press ENTER.</td>
<td>Use a new disc.</td>
<td>–</td>
</tr>
<tr>
<td>No disc</td>
<td>Create space by erasing any unwanted titles.</td>
<td>38, 52</td>
</tr>
<tr>
<td>No VHS cassette</td>
<td>A video cassette is not inserted when recording programs. Insert a video cassette with an accidental erasure prevention tab.</td>
<td>10, 22</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>
<td>14</td>
</tr>
<tr>
<td>Please change the disc.</td>
<td>There may be a problem with the disc. Press [OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)</td>
<td>9</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>
<td>17, 20</td>
</tr>
<tr>
<td>The VHS cassette is protected.</td>
<td>A video cassette without the accidental erasure prevention tab is inserted when recording programs. Use a video cassette with an accidental erasure prevention tab.</td>
<td>–</td>
</tr>
<tr>
<td>This is a non-recordable disc.</td>
<td>The unit cannot record on the disc you inserted. Insert a DVD-RAM or unformatted DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or +RW.</td>
<td>–</td>
</tr>
<tr>
<td>This disc is not formatted properly.</td>
<td>You inserted an unformatted DVD-RAM, DVD-RW, +R, +R DL or +RW. Format the disc with the unit.</td>
<td>54</td>
</tr>
</tbody>
</table>

Note: Items in the “Error messages” section and the “Troubleshooting guide” should be followed to check the unit for errors. If the service numbers still do not disappear after the check, follow the Reset procedure described below. (The unit is on but cannot be operated. → 62)

Reset procedure: (The unit is on but cannot be operated.)

1. Turn the main unit on and 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.)
2. Press [OPEN/CLOSE] on the main unit again to turn the unit on.

If the service numbers fail to clear, note the service numbers and contact a qualified service person.

If there is no change after turning the unit on and off, consult the dealer where the unit was purchased. Please change the disc. If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.

To watch the VHS playback, connect a TV to DVD/VHS COMMON terminals. To watch the VHS playback, connect a TV to DVD/VHS COMMON terminals.

Please record the program. If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.

The disc is upside down. If it is a single-sided disc, insert it so the label is facing up.

The disc is dirty or scratched. If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.

This disc is not formatted properly. The disc is dirty or scratched. If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.
### Frequently asked questions

#### Set up

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Page</th>
</tr>
</thead>
</table>
| **What equipment is necessary to play multi channel surround sound?**   | ≥ DVD-Video: You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital and a DTS decoder.  
≥ DVD-Audio: This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound. | 15   |
| **Can the headphones and speakers be directly connected to the unit?**  | ≥ You cannot directly connect to the unit. Connect through the amplifier etc. | 15   |
| **The TV has both S VIDEO IN terminal and COMPONENT VIDEO IN terminals. Which terminal should I connect with?** | ≥ We recommend the COMPONENT VIDEO IN terminal. Component signal outputs the color difference signals (Pr/Pb) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors. If the TV is compatible with progressive output, a high quality picture can be output because the unit’s component video output terminal outputs a progressive output signal. | 15   |
| **Is my TV progressive output compatible?**                             | ≥ All Panasonic TVs that have 480p input terminals are compatible. Consult the manufacturer if you have another brand of TV. | –    |

#### Disc

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Page</th>
</tr>
</thead>
</table>
| **Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?** | ≥ Can you play them if the video standard is NTSC.  
≥ However, you cannot play DVD-Video if its region number does not include “1” or “ALL”. | Cover |
| **Can a DVD-Video that does not have a region number be played?**       | ≥ The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number. | –    |
≥ The unit also records and plays high speed recording compatible discs.  
≥ After recording but before finalizing +R, +R DL discs  
≥ You may not be able to play and record discs on this unit after recording them on other Panasonic products or other manufacturer’s equipment.  
≥ You may not be able to play and record discs on other equipment after recording them on this unit.  
≥ After finalizing the disc, however, you will be able to play it on any DVD-Video compatible player. | 6, 7 |
| **Please tell me about CD-R and CD-RW compatibility with the unit.**     | ≥ This unit plays CD-R/CD-RW discs which have been recorded in one of the following standards: CD-DA, Video CD, MP3 and still pictures (JPEG/TIFF). Close the session or finalize the disc after recording. This unit can recognize up to 99 folders (groups) and 999 files (tracks) on a disc with MP3 or still pictures (JPEG/TIFF).  
≥ You cannot write to a CD-R or CD-RW with the unit. | 7, 32, 33 |

#### Recording

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Can I record from a commercially purchased video cassette or DVD?</strong></td>
<td>≥ Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.</td>
<td>–</td>
</tr>
<tr>
<td><strong>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?</strong></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>
<td>55</td>
</tr>
<tr>
<td><strong>Can I record digital audio signals using the unit?</strong></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>
<td>–</td>
</tr>
</tbody>
</table>
| **Can I record a digital audio signal from the unit be recorded to other equipment?** | ≥ You can record if using the PCM signal. When recording DVD, change the “Digital Audio Output” settings to the following from the Setup menu.  
≥ PCM Down Conversion “On”  
≥ Dolby Digital “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. | 57   |
| **Can I switch to SAP during recording?**                               | ≥ With DVD-RAM, you can, and the audio recorded also changes. Just press [AUDIO].  
### 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 69 if you reside in the U.S.A., or refer to “Product information” on page 66 if you reside in Canada. In other areas, consult your dealer.

The following do not indicate a problem with the unit:
- Regular disc rotating sound.
- Poor reception due to atmospheric condition.
- Image disturbance during search.
- Periodic interruptions to reception due to satellite broadcasting breaks.
- Operations do not work due to a poor-quality disc. (Try again using a Panasonic disc.)
- The unit freezes due to the activation of one of its safety devices. (Press and hold [D, I, POWER] on the main unit for 10 seconds.)

<table>
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<tr>
<th>Power</th>
<th>Page</th>
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<tbody>
<tr>
<td>No power</td>
<td>13</td>
</tr>
<tr>
<td>The unit switches to the standby mode.</td>
<td>56</td>
</tr>
<tr>
<td>Insert the AC power supply cord securely into a known active AC outlet.</td>
<td></td>
</tr>
<tr>
<td>This is a power saving feature. Change “Off Timer” in the “Setup” menu, if you would prefer.</td>
<td></td>
</tr>
<tr>
<td>One of the unit’s safety devices is activated. Press [D, I, POWER] on the main unit to turn the unit on.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Displays</th>
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<tbody>
<tr>
<td>The display is dim.</td>
<td>58</td>
</tr>
<tr>
<td>“12:00A” is flashing on the unit’s display.</td>
<td></td>
</tr>
<tr>
<td>Change “FL Display” in the Setup menu.</td>
<td></td>
</tr>
<tr>
<td>Set the clock.</td>
<td>17, 20</td>
</tr>
<tr>
<td>The recording time display, the transfer (copying) process display and the displayed recording time of MP3 are different from the actual time.</td>
<td></td>
</tr>
<tr>
<td>Times shown may disagree with actual times.</td>
<td></td>
</tr>
<tr>
<td>In DVD-R, DVD-R DL, +R or +R DL, the remaining capacity does not increase even if titles are deleted.</td>
<td></td>
</tr>
<tr>
<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>If you repeat recording or editing about 200 times or more, the remaining capacity of the DVD-R, DVD-R DL, +R or +R DL is reduced and then recording or editing may be disabled. (For the second layer on DVD-R DL and +R DL, this happens after about 60 times.)</td>
<td></td>
</tr>
<tr>
<td>The time during fast forward and rewind, or the process during transfer (copy) may not be displayed accurately.</td>
<td></td>
</tr>
<tr>
<td>Compared to the actual recorded time, the elapsed time displayed is less.</td>
<td></td>
</tr>
<tr>
<td>The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be a slight difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.</td>
<td></td>
</tr>
<tr>
<td>“U88” is displayed and the disc cannot be ejected.</td>
<td></td>
</tr>
<tr>
<td>The unit is carrying out the recovery process. Do the following to eject the disc.</td>
<td></td>
</tr>
<tr>
<td>(1) Press [D, I, POWER] on the main unit to switch to standby.</td>
<td></td>
</tr>
<tr>
<td>If the unit doesn’t switch to standby, press and hold [D, I, POWER] on the main unit for about 10 seconds. The unit is forcibly switched to standby.</td>
<td></td>
</tr>
<tr>
<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>
<td></td>
</tr>
</tbody>
</table>
## Troubleshooting guide

<table>
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<th>Page</th>
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<tbody>
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<td><strong>Cannot operate the TV.</strong></td>
<td>26</td>
</tr>
<tr>
<td>• Change manufacturer code. Some TVs cannot be operated even if you change the code.</td>
<td>19</td>
</tr>
<tr>
<td>• Press [TV/VIDEO] to change the input mode to “TV”.</td>
<td></td>
</tr>
<tr>
<td><strong>Cannot operate the DVD.</strong></td>
<td>11</td>
</tr>
<tr>
<td>• Press [DRIVE SELECT] to select DVD drive when operating DVD.</td>
<td></td>
</tr>
<tr>
<td><strong>Cannot operate the VHS.</strong></td>
<td>11</td>
</tr>
<tr>
<td>• Press [DRIVE SELECT] to select VHS drive when operating VHS.</td>
<td></td>
</tr>
<tr>
<td><strong>The remote control doesn’t work.</strong></td>
<td>19</td>
</tr>
<tr>
<td>• The remote control code is wrong. Change to the correct code.</td>
<td>9</td>
</tr>
<tr>
<td>• The batteries are depleted. Replace them with new ones.</td>
<td>9</td>
</tr>
<tr>
<td>• Point the remote control at the remote control sensor on the main unit.</td>
<td>9</td>
</tr>
<tr>
<td>• Remove obstacles between the remote control and main unit.</td>
<td>–</td>
</tr>
<tr>
<td>• Colored glass may obstruct the signal reception/transmission.</td>
<td>–</td>
</tr>
<tr>
<td>• Don’t place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.</td>
<td>–</td>
</tr>
<tr>
<td>• It may be necessary to set the code on the remote control again after changing the batteries.</td>
<td>9</td>
</tr>
<tr>
<td>• It may be necessary to set the manufacturer code again after changing the batteries.</td>
<td>9</td>
</tr>
<tr>
<td><strong>The unit is on but cannot be operated.</strong></td>
<td>–</td>
</tr>
<tr>
<td>• Some operations are prohibited by the disc.</td>
<td>–</td>
</tr>
<tr>
<td>• The unit is warm (&quot;U59&quot; appears on the unit’s display). Wait until “U59” disappears.</td>
<td>–</td>
</tr>
<tr>
<td>• One of the unit’s safety devices may have been activated.</td>
<td>–</td>
</tr>
<tr>
<td>Reset the unit as follows:</td>
<td>–</td>
</tr>
<tr>
<td>(1) Press [●/●, POWER] on the main unit to switch to standby.</td>
<td>–</td>
</tr>
<tr>
<td>If the unit doesn’t switch to standby, press and hold [●/●, POWER] on the main unit for about 10 seconds. The unit is forcibly switched to standby.</td>
<td>–</td>
</tr>
<tr>
<td>Alternatively, disconnect the AC power supply cord, wait for about 1 minute, then reconnect it.</td>
<td>–</td>
</tr>
<tr>
<td>(2) Press [●/●, POWER] on the main unit to turn the unit on.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Cannot eject a disc.</strong></td>
<td>–</td>
</tr>
<tr>
<td>• The unit is recording</td>
<td>–</td>
</tr>
<tr>
<td>• The unit may have a problem. While the unit is off, hold down [■] and [CH, ●] on the main unit simultaneously for about 5 seconds. Remove the disc and consult the dealer.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Startup is slow</strong></td>
<td>56</td>
</tr>
<tr>
<td>• Make sure that “Quick Start” is set to “On”.</td>
<td>–</td>
</tr>
<tr>
<td>Even if “Quick Start” is set to “On”, startup is slow if the clock is not set, there was a power failure or the AC plug has just been connected.</td>
<td>–</td>
</tr>
<tr>
<td>• A few dozen seconds after turning on the unit, you can play a disc or start recording to discs other than DVD-RAM.</td>
<td>–</td>
</tr>
<tr>
<td><strong>Takes time to read DVD-RAM</strong></td>
<td>–</td>
</tr>
<tr>
<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>
<td>–</td>
</tr>
</tbody>
</table>
### Picture

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV reception worsens after connecting the unit.</td>
<td>This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers.</td>
<td>–</td>
</tr>
</tbody>
</table>
| The images from the unit do not appear on the TV. Picture is distorted.| - Make sure that the TV is connected to the VIDEO OUT terminal, S VIDEO OUT terminal or COMPONENT VIDEO OUT terminals on the unit.  
- 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. | 13–15|
| Status messages do not appear.                                        | Select “Automatic” in “Status Messages” in the Setup menu.                                         | 58   |
| The blue background does not appear.                                  | Select “On” in “Blue Background” in the Setup menu.                                                 | 58   |
| The 4:3 aspect ratio picture expands left and right. Screen size is wrong.| Use the TV to change the aspect. If your TV does not have that function, set “Progressive” in the Video menu to “Off”.  
- 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. | 37   |
| There is a lot of after-image when playing video.                     | Set “DNR” in the Video menu to “Off”.                                                              | 37   |
| 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>
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<th>Solution</th>
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</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.  
- Press [AUDIO] to select the audio.  
- Set “V. Surround Sound” in the Audio menu to “Off” in the following cases.  
  - When using discs that do not have surround sound effects such as Karaoke discs.  
  - When playing MTS broadcast titles. | 15, 57                                                                                           |
| Low volume.                                                           |                                                                                                     | 25, 31|
| Distorted sound.                                                      |                                                                                                     | –    |
| Cannot hear the desired audio type.                                  | 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. | 57   |
| Cannot switch audio.                                                  |                                                                                                     | 15, 57|
## Troubleshooting guide

### Recording, Scheduled recording, Transfer (Copying), External input

<table>
<thead>
<tr>
<th>Issue</th>
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</thead>
<tbody>
<tr>
<td>Cannot record.</td>
<td>6</td>
</tr>
<tr>
<td>- You haven’t inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.</td>
<td></td>
</tr>
<tr>
<td>- The disc is unformatted. Format the disc.</td>
<td>6</td>
</tr>
<tr>
<td>- The write-protect tab on the cartridge is set to “PROTECT” or the disc is protected with “DVD Management”.</td>
<td>6</td>
</tr>
<tr>
<td>- Some programs have limitations on the number of times they can be recorded (CPRM).</td>
<td>38, 52</td>
</tr>
<tr>
<td>- The disc is full or nearly full. Delete unneeded titles or use another disc.</td>
<td>55</td>
</tr>
<tr>
<td>- You cannot record on finalized DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL or DVD-RW (DVD Video Recording format) discs.</td>
<td>55</td>
</tr>
<tr>
<td>- If you repeatedly insert discs or turn the unit on and off about 50 times or more, the recording or editing of DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, +RW may be disabled.</td>
<td>55</td>
</tr>
<tr>
<td>- A DVD-R, DVD-R DL, DVD-RW (DVD-Video format), +R, +R DL, +RW recorded on the unit may not be recordable on other Panasonic DVD recorders.</td>
<td>55</td>
</tr>
<tr>
<td>- The material you are trying to record is copy-protected.</td>
<td></td>
</tr>
<tr>
<td>- Scheduled recording will not be activated when in editing or transfer (copy). Scheduled recording will begin after the editing/transfer (copy) is finished.</td>
<td>55</td>
</tr>
<tr>
<td>Scheduled recording does not work properly.</td>
<td>29</td>
</tr>
<tr>
<td>- The scheduled recording program is incorrect or different scheduled recording times overlap. Correct the program.</td>
<td></td>
</tr>
<tr>
<td>- The clock is not correct. Set the clock.</td>
<td>17, 20</td>
</tr>
<tr>
<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>5</td>
</tr>
<tr>
<td>Scheduled recording does not stop even when STOP is pressed.</td>
<td>56</td>
</tr>
<tr>
<td>- If you start recording immediately after turning on the unit while “Quick Start” is set to “On”, you cannot then stop recording for a few seconds.</td>
<td></td>
</tr>
<tr>
<td>The scheduled recording program remains even after recording finishes.</td>
<td>29</td>
</tr>
<tr>
<td>- The scheduled recording program remains if set to daily or weekly.</td>
<td></td>
</tr>
<tr>
<td>A part or whole of a recorded title has been lost.</td>
<td>53</td>
</tr>
<tr>
<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. We cannot offer any guarantee regarding lost titles or discs. You will have to format the disc.</td>
<td></td>
</tr>
<tr>
<td>Cannot transfer (copy) VHS to DVD.</td>
<td></td>
</tr>
<tr>
<td>- The write-protect tab on the cartridge is set to “PROTECT” or the disc is protected with “DVD Management”.</td>
<td>53</td>
</tr>
<tr>
<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>5</td>
</tr>
<tr>
<td>- You cannot use the transfer (copying) function when the FUNCTIONS window, the Scheduled Recording List screen, etc. are displayed.</td>
<td>5</td>
</tr>
<tr>
<td>Cannot transfer (copy) DVD to VHS.</td>
<td>10</td>
</tr>
<tr>
<td>- A video cassette without the accidental erasure prevention tab is inserted. Use a video cassette with an accidental erasure prevention tab.</td>
<td></td>
</tr>
<tr>
<td>- Some DVDs on the market (including rental DVD) are copy-protected to prevent illegal reproductions. Copy-protected DVDs cannot be properly recorded.</td>
<td>10</td>
</tr>
<tr>
<td>- You cannot use the transfer (copying) function when the FUNCTIONS window, the Scheduled Recording List screen, etc. are displayed.</td>
<td>10</td>
</tr>
<tr>
<td>The sound level after editing is not equal on DVD and on VHS.</td>
<td></td>
</tr>
<tr>
<td>- The sound level on DVD and VHS may not match depending on the disc. When the sound level in a particular part of the sound source is soft or loud, the sound may be recorded loudly or softly on a video tape.</td>
<td>10</td>
</tr>
<tr>
<td>Stripe-shaped black noise is recorded.</td>
<td></td>
</tr>
<tr>
<td>- The device in playback is interfering with the TV because the device is too close to the TV. Move the device away from the TV.</td>
<td>10</td>
</tr>
<tr>
<td>Cannot record video or sound from the external device.</td>
<td>50</td>
</tr>
<tr>
<td>- The external device is not correctly connected.</td>
<td></td>
</tr>
<tr>
<td>- The proper external input channel (IN1, IN2 or DV) is not selected.</td>
<td>50</td>
</tr>
<tr>
<td>The DV automatic recording function does not work.</td>
<td>50</td>
</tr>
<tr>
<td>- If images cannot be recorded or if the recording is aborted, check the connections and DV equipment settings.</td>
<td></td>
</tr>
<tr>
<td>- You cannot start recording until the images from the DV equipment appear on the television.</td>
<td>50</td>
</tr>
<tr>
<td>- Recording may not be performed as desired if the time codes on the tape in the DV equipment are not successive.</td>
<td>50</td>
</tr>
<tr>
<td>- Depending on the equipment, the DV automatic recording may not operate properly.</td>
<td>50</td>
</tr>
<tr>
<td>- You can only record audio/video images on a DV tape.</td>
<td>50</td>
</tr>
</tbody>
</table>
### Play

<table>
<thead>
<tr>
<th>Issue</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>Play fails to start even when [1, PLAY] is pressed.</td>
<td>22</td>
</tr>
<tr>
<td>Play starts but then stops immediately.</td>
<td>9</td>
</tr>
<tr>
<td>Audio and video momentarily pause.</td>
<td>7</td>
</tr>
<tr>
<td>DVD-Video is not played.</td>
<td>57</td>
</tr>
<tr>
<td>Alternative sound track and subtitles cannot be selected.</td>
<td>–</td>
</tr>
<tr>
<td>No subtitles.</td>
<td>–</td>
</tr>
<tr>
<td>Angle cannot be changed.</td>
<td>30</td>
</tr>
<tr>
<td>You have forgotten your ratings password.</td>
<td>–</td>
</tr>
<tr>
<td>Quick View does not work.</td>
<td>–</td>
</tr>
<tr>
<td>The resume play function does not work.</td>
<td>–</td>
</tr>
</tbody>
</table>

### Edit

<table>
<thead>
<tr>
<th>Issue</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannot create format.</td>
<td>9</td>
</tr>
<tr>
<td>Cannot create chapters.</td>
<td>7</td>
</tr>
<tr>
<td>Cannot mark the start point or the end point during “Shorten Title” operation.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot delete chapters.</td>
<td>–</td>
</tr>
<tr>
<td>The available recording time doesn’t increase even after deleting recordings on the disc.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot create a playlist.</td>
<td>–</td>
</tr>
<tr>
<td>OSD messages do not appear</td>
<td>35, 58</td>
</tr>
<tr>
<td>The blue back appears during play.</td>
<td>–</td>
</tr>
<tr>
<td>Cannot hear the desired audio type.</td>
<td>31</td>
</tr>
<tr>
<td>There is noise when playing a video tape.</td>
<td>31</td>
</tr>
<tr>
<td>Flashes when I try to start recording.</td>
<td>22</td>
</tr>
<tr>
<td>Cannot record TV program.</td>
<td>10</td>
</tr>
<tr>
<td>Cannot play.</td>
<td>–</td>
</tr>
<tr>
<td>The playback screen flickers.</td>
<td>–</td>
</tr>
</tbody>
</table>
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:

In the U.S.A., refer to “Customer Services Directory” on page (69).

In Canada, contact the Panasonic Canada Inc. Customer Care Centre at 1-800-561-5505, or visit the website (www.panasonic.ca), or an authorized Servicentre closest to you.

---

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** DMR-ES35V

**SERIAL NUMBER**

---

**User memo:**

**DATE OF PURCHASE**

**DEALER NAME**

**DEALER ADDRESS**

**TELEPHONE NUMBER**
Specifications

Power supply: AC 120 V, 60 Hz
Power consumption: Approx. 29 W
Standby mode: Approx. 3.2 W

Mass and dimensions shown are approximate.

Power supply:
AC 120 V, 60 Hz
Power consumption:
Approx. 29 W
Standby mode: Approx. 3.2 W

Recordable discs:
DVD-RAM: Ver. 2.0, 2.1/3X-SPEED DVD-RAM Revision 2.0
DVD-R DL (Dual Layer): DVD-Video format
DVD-R: DVD-Video format
DVD-RW: Ver. 1.1, 1.2
+R: Ver. 1.1
+RW: Ver. 1.1, 1.2

Recording system:
DVD-RAM: DVD Video Recording format
DVD-R DL (Dual Layer): DVD-Video format
DVD-R: DVD-Video format
DVD-RW: DVD-Video format
+R: DVD-Video format
+RW: DVD-Video format

Recording time:
Max. 8 hours (using 4.7 GB disc)
XP: Approx. 1 hour
SP: Approx. 2 hours
LP: Approx. 4 hours
EP: Approx. 6 or 8 hours

Playable discs:
DVD-RAM: DVD Video Recording format
DVD-R DL (Dual Layer): DVD-Video format
DVD-R: DVD-Video format
DVD-RW: DVD-Video format
+R: DVD-Video format
+RW: DVD-Video format

Audio system:
Recording system:
Dolby Digital (2 ch)
Analog Input:
LINE (pin jack)x2
Reference input: 309 mVrms
FS: 2 Vrms (1 kHz, 0 dB)
Input impedance: 22 kΩ

Video system:
Recording system:
MPEG2 (Hybrid VBR)
Input:
LINE (pin jack)x2
S connectorx2
Component video output:
Y, Pb, Pr x 1
(supporting 480i/480p)

Television system:
NTSC system, 525 lines, 60 fields
Antenna reception input:
TV Channel: VHF: 2 ch to 13 ch
UHF: 14 ch to 69 ch
CATV Channel: A-5 ch to EEE ch

Optical pick-up:
System with 1 lens, 2 integration units

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

Antenna reception input:
TV Channel:
VHF: 2 ch to 13 ch
UHF: 14 ch to 69 ch
CATV Channel:
A-5 & A-6 ch to EEE ch

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

Video system:
Recording system:
MPEG2 (Hybrid VBR)
Input:
LINE (pin jack)x2
S connectorx2

Output:
LINE (pin jack)x2
S connectorx2
Component video output:
Y, Pb, Pr x 1
(supporting 480i/480p)

Audio system:
Recording system:
Dolby Digital (2 ch)
Analog Input:
LINE (pin jack)x2
Reference input: 309 mVrms
FS: 2 Vrms (1 kHz, 0 dB)

Digital Output:
Digital audio output connector x 1
(PCM, Dolby Digital, DTS)

Number of channels:
Recording: 2 channels
Playback: 2 channels

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)

Number of track:
HiFi: 2 track
Normal: 1 track

Digital Output:
Digital audio output connector x 1
(PCM, Dolby Digital, DTS)

VHS
Recording format:
VHS Video Cassette System Standard with FM audio
Heads:
4 Helical Scan Heads for Video
Head: 2 Helical Scan Heads for FM audio
1 Fixed Head for Normal audio

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)×84 mm (H)×343 mm (D)
[Approx. 16 ⅜" (W)×3⅞" (H)×13⅜" (D)]

Mass:
Approx. 5.4 kg (Approx. 11.9 lbs)

Note
Specifications are subject to change without notice.
Mass and dimensions shown are approximate.
**Bitstream**
This is a compressed and converted into digital form. It is converted back to a multi-channel audio signal, e.g., 5.1-channel, by a decoder.

**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.

**Dynamic range**
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs. Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can hear 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: 24 or 30 frames per second, with motion picture film generally being 24 frames per second.
- Video: 60 fields per second (2 fields making up 1 frame).

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

**Formatting**
Formatting is the process of making media such as DVD-RAM recordable on recording equipment. You can format DVD-RAM, DVD-RW (only as DVD-Video format) and +RW on the unit. Formatting irrevocably erases all contents on the disc.

**Frame and field**
Frame refers to the single images that constitute the video you see on your TV. Each frame consists of 2 fields.

- Frame: 24 or 30 frames per second, with motion picture film generally being 24 frames per second.
- Video: 60 fields per second (2 fields making up 1 frame).

**JPEG (Joint Photographic Experts Group)**
This is a system used for compressing decoding color still pictures. It 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-Video 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-Video. 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 (ONLY FOR U.S.A.)

Panasonic Consumer Electronics Company, Division of Panasonic Corporation of North America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic DVD Recorder
Limited Warranty

This warranty only covers failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. This warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accident, 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.

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.

Product or Part Name | Parts | Labor
--- | --- | ---
DVD Recorder | One (1) Year | One (1) Year
Rechargeable Batteries, DVD-RAM Disc (in exchange for defective item) | Ten (10) Days | Not Applicable

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)-768-2910.

Limited Warranty Limits And Exclusions

- 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 servicer, 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, or limitations on how long an implied warranty lasts, 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:
http://www.panasonic.com/contactinfo
You may also contact us directly at: 1-800-211-PANA (7262), Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

For hearing or speech impaired TTY users, TTY : 1-877-833-8855

Accessory Purchases

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:
http://www.pasc.panasonic.com
or, send your request by E-mail to:
npparts@us.panasonic.com
You may also contact us directly at: 1-800-332-5368 (Phone) 1-800-334-3500 (Fax Only) (Monday – Friday 9 am to 8 pm, EST.)
Panasonic Services Company
20421 84th Avenue South, Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY : 1-866-605-1277

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)765-4300, Fax (787)768-2910
Limited Warranty (ONLY FOR CANADA)

Panasonic Canada Inc.

PANASONIC PRODUCT – LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

Panasonic DVD Recorder One (1) year, parts and labour

In-home Service will be carried out only to locations accessible by roads and within 50 km of an authorized Panasonic service facility.

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.

This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

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Carefully pack and send prepaid, adequately insured and preferably in the original carton.
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Instalación básica

Antes de hacer la conexión, apague todos los equipos y lea los manuales de instrucciones apropiados.

Para su referencia
Las conexiones del equipo descritas son ejemplos.

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 (8 W aproximadamente).

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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” (72), 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 video en su televisor de la misma manera que la que ve en las emisiones televisivas.

Salida DVD y salida DVD/VHS
La unidad tiene terminales de salida DVD/VHS COMMON y los de salida DVD PRIORITY.

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.
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 el ajuste automático del reloj.
Si no hay ningún PBS local, ajuste el reloj manualmente.

1. Pulse [O, DVD/VHS POWER].
2. Pulse [CH, , ] para seleccionar un número de canal de salida RF.
3. Utilice [ , ] para seleccionar el idioma y pulse [ENTER].
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 “Ajuste manual del reloj no acabado”
   - Después de apagar la unidad, confírmelo 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 “Ajuste manual del reloj no acabado.”
   - Pulse [ENTER] y ajuste manualmente el reloj.
8. Pulse [ENTER].
   - Si el reloj tiene una hora en adelante o retrasada con respecto a la hora real
   - Selecione “- 1” o “+ 1” en “Ajustar del huso horario” en el menú CONFIGURACIÓN.

Seleccionar 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
   - Pulse [FUNCTIONS].
2. Seleccione “Otras funciones” con [ , ] y pulse [ENTER].
4. Seleccione “Pantalla TV” con [ , ] y pulse [ , ].
5. Seleccione “Tipo TV” [ , ] y pulse [ENTER].
6. Utilice [ , ] para seleccionar el elemento 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

1 Pulsar [OPEN/CLOSE] en la unidad principal para abrir la bandeja.

- Puede insertar un disco de cartucho o sin cartucho.

2 Pulsar [OPEN/CLOSE] en la unidad principal para cerrar la bandeja.

- 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.
- Si se inserta un DVD-RAM de 8 cm (3") o un DVD-R de 8 cm (3") que el disco del 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 vuelta a la espera durante un segundo aparecerá en la pantalla del TV cuando la expulsar.

Para la unidad principal

- Pulsar [OPEN/CLOSE] 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

- [REC] El menú del título creado se borra cuando graba en el disco. Vuelva a crear el menú del título usando "Crear menú superior" en Gestión del DVD.


- Si no conecta una caja de cable Seleccione "Main" o "SAP" en "Seleccionar MTS" del menú CONFIGURACIÓN.
- Si conecta una caja de cable Seleccione "Main" o "SAP" en la caja de cable.

Procedimientos de grabación

RAM | R | R DL | RW | VR | R | R DL | RW | VR

- Puede grabar hasta 99 títulos en un disco.

- Puede grabar hasta 49 títulos en un disco.

- No es posible grabar emisiones digitales que permiten "Grabación a una vez" en el DVD-R, DVD-R DL, DVD-RW, +R, +R DL, o RW o discos DVD-RAM de 8 cm (3"). Utilice un CPRM compatible DVD-RAM.

- La grabación se hará en el espacio vacío del disco. Los datos no se escribirán encima de otros.

- 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

- Selección "Main" o "SAP" en "Seleccionar MTS" en el menú CONFIGURACIÓN.

- Si conecta una caja para televisor de cable

- Selección "Main" o "SAP" en el TV box de cable.

- Si conecta para televisor de cable, selección "Main" o "SAP" en "Seleccionar MTS" del menú CONFIGURACIÓN.

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Preparación

- Cancela la protección. [RAM]

- Seleccione el tipo de audio que quiere grabar. [→74]

- Para encender la unidad.

- Pulse [OPEN/CLOSE] para encender la unidad.

- Pulse [DRIVE SELECT] para seleccionar la unidad en la que quiere grabar (DVD o VHS).

- Inserte un disco.

- Cuando usa un DVD-RAM por la primera vez con esta unidad, formatéelo para garantizar una esmerada grabación.

- Inserte un videocasete que tenga intacta la lengüeta de protección contra el borrado accidental.

- Pulse [CH], [·], [·] para seleccionar el canal.

- Para seleccionar con los botones numéricos:

  Modo de antena (Ondas horizontales) | Modo televisor de cable (Cable)

  Ej., "0": [0] | "5": [0] → [5]
  "15": [1] → [5]
  "115": [1] → [5]

- Pulse [REC MODE] para seleccionar el modo de grabación.

- Pulse [REC] para empezar a grabar.

Para hacer una pausa en la grabación

- Pulse [PAUSE]. (Pulse de nuevo para reiniciar la grabación.)

- El título no se divide en títulos distintos. [DVD]

- También puede pulsar [REC] para reiniciar la grabación.

Para detener la grabación

- Pulse [STOP] cuando finalice la grabación.

- 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.

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Grabación de programas de televisión

■ Modos de grabación y tiempos de grabación aproximados (DVD)

<table>
<thead>
<tr>
<th>Modo de grabación y duración del modo</th>
<th>DVD-R</th>
<th>DVD-RW (+R, +RW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP (Alta calidad)</td>
<td>1 hora</td>
<td>1 hora</td>
</tr>
<tr>
<td>SP (Normal)</td>
<td>2 horas</td>
<td>4 horas</td>
</tr>
<tr>
<td>LP (Larga duración)</td>
<td>4 horas</td>
<td>8 horas</td>
</tr>
<tr>
<td>EP (Duración extra larga)</td>
<td>8 horas</td>
<td>16 horas</td>
</tr>
<tr>
<td>FR (Grabación flexible)</td>
<td>8 horas</td>
<td>8 horas máximo</td>
</tr>
</tbody>
</table>

**Dependiendo del contenido que está siendo grabado, los tiempos de grabación pueden ser inferiores a los indicados.**

- **SP** (Standard Play): Se puede grabar lo largo mostrado en la cinta.
- **EP** (Enhanced Play): Se puede grabar 3 veces lo largo del modo SP.
- **LP** (Long Play): Se puede grabar 5 veces lo largo del modo SP.

• Si la calidad de la imagen es importante para usted o 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).

Nota
- No es posible grabar continuamente de la primera capa a la segunda.

■ 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 si desea almacenar la cinta durante un largo periodo, seleccione “SP”.
- La unidad puede reproducir cintas grabadas en el modo VP en otro equipo (“LP” se enciende en el visualizador de la unidad).

■ Cuando se visualiza la pantalla de confirmación del formato

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 “Si” y pulse [ENTER].

■ Para formatear un disco

Son necesarios muchos pasos para formatear un disco.

■ Cuando quita un disco grabado

Cuando pulsa [OPEN/CLOSE] en la unidad principal mientras que va a parar:
- Aparece la siguiente pantalla cuando no haya procesado el disco para reproducir en otro equipo.

**Cuando finaliza el disco**

Pulse [REC].
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**

Cada vez que pulse el botón:
Contador (canclear) → OFF 0:30 → OFF 1:00 → OFF 1:30 → OFF 4:00 → OFF 3:00 → OFF 2:00 → OFF 1:00 → OFF 0:30

**Seleccionar el audio para grabar**

RAM
Pulse [AUDIO].
- Estéreo → SAP → Mono
Reproducir DVD mientras graba VHS

Puede reproducir discos mientras graba VHS. La grabación no quedará afectada.
* Reproducción DVD (→ 76)

Para su referencia
* No puede grabar en discos mientras graba VHS.

Reproducir VHS mientras graba DVD

Puede reproducir cintas mientras graba DVD. La grabación no quedará afectada.
* Reproducción VHS (→ 78)

Para su referencia
* No puede grabar en cintas mientras graba DVD.

Ver el televisor mientras graba

Preparación
* Conexión (sin cable de audio/vídeo)
  - Asegúrese de que el indicador TV esté encendido en el visualizador de la unidad. Por si no está encendido, pulse [VCR/ TV] para encenderlo.
  - Conexión (con cable de audio/vídeo)
  - Pulse [TV/VIDEO] para cambiar el modo de entrada a “TV”.

Pulse [CH, 4, 3, 2] del televisor para seleccionar el canal TV deseado.

Para su referencia
* Puede también hacerlo si la unidad está realizando una grabación programada.
* La grabación no queda afectada.

Reproducción mientras usted está grabando

Preparación
* Selecione el lado DVD pulsando [DRIVE SELECT].

Consejo
* El sonido no se produce durante el avance rápido.

1 Reproducción desde el comienzo del título mientras está grabando—Reproducción de persecución

Puede iniciar a reproducir desde el comienzo del título mientras que sigue grabándolo.

Mientras hace una grabación normal o una programada
Pulse [4, 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.

2 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 [4, 3, 2, 1] para seleccionar un título y pulse [ENTER].
* La reproducción inicia mientras que procede la grabación.

Para salir de la pantalla DIRECT NAVIGATOR
Pulse [DIRECTNAVIGATOR].

Para su referencia
* Durante la grabación y la reproducción simultáneas, no puede editar ni borrar títulos con el Direct Navigator ni listas de reproducción.
* Aunque inicie a reproducir mientras que la unidad está en espera de la grabación programada, la grabación inicia al llegar la hora establecida.

Grabación flexible

(Grabación que cabe en el espacio restante del disco)

La unidad computa una velocidad de grabación que permite adaptarla a la hora establecida (dentro del tiempo que queda en el disco) con la mejor calidad de la imagen.

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 SP, el programa no cabrá en un disco.

Si selecciona el modo XP, el programa cabrá perfectamente en un disco.

Ejemplo de cálculo de grabación flexible

La unidad seleccionará automáticamente el modo SP o XP en función del espacio libre del disco. Dado que la grabación flexible está en pausa.

Preparación
* Selecione el lado DVD pulsando [DRIVE SELECT].
* Selecione 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 [4, 3, 2, 1] para seleccionar “Empezar” y pulse [ENTER].
* Empieza la grabación.

Para salir de la pantalla sin grabar
Pulse [RETURN].

Para detener la grabación al rato de empezar
Pulse [4, 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].

Reproducir discos

RAM | +R | +RW | +R DL | +R DL(RW) | -R | -R DL | -R DL(RW) | DVD-A | DVD-V
RW | +R | +RW | +R DL | +R DL(RW) | -R | -R DL | -R DL(RW) | DVD-A | DVD-V

1 Pulse [ ] (o, DVD/VHS POWER) para encender la unidad.
2 Inserte un disco. (➔ 73)
3 Pulse [►, PLAY].
   - La bandeja del disco se cierra e inicia la reproducción (La unidad necesita algún tiempo para leer el disco antes de iniciar la reproducción).
   - La reproducción empieza desde el título grabado más recientemente.

■ Para detener la reproducción
Pulse [STOP, Í].
La posición de detención se memoriza.

Función de reanudación de la reproducción
Pulse [►, PLAY] para reiniciar la reproducción desde esta posición.
- [DVD]: Según el disco, puede no ser eficaz la función de reanudación de la reproducción.
- El punto de detención se elimina cuando:
  - Pulse [STOP] muchas veces.
  - Abre la bandeja.
- [DVD-RAM (o, DVD-A, DVD-V)]: Apaga la unidad.
  - Podrá aparecer el salva-pantalla a la derecha cuando detiene la reproducción. Vuelva a pulsar [STOP] y usted puede usar el sintonizador de la unidad para ver el televisor.

■ Para poner en pausa la reproducción
Pulse [II, PAUSE]. (Pulse de nuevo para reiniciar la reproducción.)

■ Cuando aparece una pantalla de menú en el televisor

VCD
Pulse los botones numéricos para seleccionar un elemento.
Ej.: “5”: [0]→[5]
“15”: [1]→[5]

DVD-A | DVD-V
Pulse [◄, ◄, ◄, ►] para seleccionar un elemento y pulse [ENTER].
- Algunas veces puede usar los botones numéricos para seleccionar un elemento.

Otros botones usados para obrar en los menús
Lea las instrucciones del disco para más detalles sobre el funcionamiento.

Nota
- Si aparece “Ê” en el televisor, la unidad o el disco prohíben la operación.

Seleccionar títulos grabados para reproducir

RAM | +R | +RW | +R DL | +R DL(RW) | -R | -R DL | -R DL(RW) | DVD-A | DVD-V
RW | +R | +RW | +R DL | +R DL(RW) | -R | -R DL | -R DL(RW) | DVD-A | DVD-V

1 Pulse [DIRECTNAVIGATOR].
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 eliminar la lista de títulos
Pulse [RETURN].

Para su referencia
- Iconos de la pantalla Direct Navigator
  a: Título protegido
  b: Protegido contra copia así que él no se pudo grabar.
  x: No puede reproducir
  Í: En grabación
  Í: Título con restricción “grabación de una sola vez”

Quick View (Reproducción ×1.3)

RAM
Puede ser aumentada la velocidad de reproducción sin distorsionar el audio.

■ Para volver a la reproducción normal
Pulse [►, PLAY].

Avance rápido y rebobinado — BÚSQUEDA

RAM | +R | +RW | +R DL | +R DL(RW) | -R | -R DL | -R DL(RW) | DVD-A | DVD-V
RW | +R | +RW | +R DL | +R DL(RW) | -R | -R DL | -R DL(RW) | DVD-A | DVD-V

Durante la reproducción
Pulse [◄, SLOW/SEARCH] o [►, SLOW/SEARCH].
Ej.: [RAM]
Hay 5 velocidades de búsqueda. Aumenta la velocidad cada vez que se pulsa. [+R, +RW 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.
Durante la pausa
Pulse [<<, SKIP] o [>>, SKIP].
• Cada pulsación aumenta el número de saltos.

Reproducción de cámara lenta

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, DVD-Video).
• Hay 5 velocidades de reproducción. Su velocidad aumenta a medida que se pulse.
• Pulse [PLAY] para reiniciar la reproducción.

Vista de encuadre en encuadre

Durante la pausa
Pulse [<<, [4]] o [>>, [4]].
• A medida que se pulse se visualiza el encuadre siguiente o el anterior.
• Mantenga pulsado para cambiar en orden avance o retroceso.

Reproducción directa

Puede reproducir desde el título, el capítulo o la pista que selecciona.

Durante la reproducción
Pulse los botones numéricos para seleccionar un elemento.
Ej.: "5": [0] → [0] → [5] "15": [1] → [0] → [1] → [5]

Puede especificarse un número de grupo mientras está visualizado el salva-pantalla (→ 76).
Ej.: "8": [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

Puede saltar aproximadamente 1 minuto con una presión.

Durante la reproducción
Pulse [CM SKIP].

Crear capítulos

Durante la reproducción
Pulse [CREATE CHAPTER].
• Pulse [<<, SKIP] o [>>, SKIP] para saltar al comienzo de un capítulo.
• No puede activar esta función cuando está ejecutando la transferencia (copia).
Reproducción de un videocasete

1. Pulse [orraine, DVD/VHS POWER] para encender la unidad.
2. Seleccione el lado VHS pulsando [DRIVE SELECT].
3. Seleccione la unidad que ve el canal (por ejemplo la entrada AV) en el televisor.
4. Inserte un videograbador. ( 73)
5. Pulse [→, PLAY].
   - La reproducción inicia automáticamente al insertar un videocasete en el que se haya quitado la lengüeta.

- Para hacer una pausa en la reproducción
  Pulse [PAUSE]. (Pulse de nuevo para reiniciar la reproducción.)

- Para detener la reproducción
  Pulse [STOP].

Nota
- Cuando la unidad está en espera, puede reproducirse el videocasete insertado pulsando [→, PLAY].
- Cuando la cinta llegue al fin, la unidad se rebobinará automáticamente hasta el comienzo. Esta función no obra durante la grabación programada, el avance rápido y la grabación con parada especificada.
- La búsqueda Jet, la localización progresiva, la revisión o la reproducción en pausa a los 10 minutos en tanto que se pondrán en pausa a los 5 minutos.
- Cuando ve una imagen fija o durante la reproducción lenta, la imagen que aparece en el modo VP podría resultar distorsionada.
- Cuando reproduce una cinta que fue grabada con otra videograbadora, puede necesitar que se ajuste el alineamiento (debajo). En unos casos la calidad de la imagen podría resultar aún inferior. Eso se debe a las restricciones del formato.

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, cambia a una velocidad de 27 veces.
- La imagen puede no ser de color o resultar distorsionada según sea el telvisor.

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 repone a “0.00.00”.
- Según sea la cinta, esta función podría no obrar.

Reproducción Cuasi S-VHS (SOBP)
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 PARADA O LA REPRODUCCIÓN
Mantenga pulsado [→, PLAY] durante 5 segundos o más.
- Al terminar el programa, la cinta se rebobina a su comienzo y vuelve a reproducirse (esto sólo funciona si hay al menos 5 segundos de espacio vacío en el fin del programa). Éste se repite hasta que lo cancelen.

- 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 [TRACKING/V-LOCK, +] sea [TRACKING/V-LOCK, -].

- 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 televísor y cintas.
- Puede ajustar también el alineamiento con [CH, v, v] en la unidad principal.
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