Operating Instructions

DVD Player/
Video Cassette Recorder

Model No. NV-VP60 Series

Before attempting to connect, operate or adjust this product, please read these instructions completely. Please keep this manual for future reference.
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Warning and Important Information

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

**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 equipment to rain, moisture, dripping or splashing and ensure that no objects filled with liquids, such as vases, shall be placed on the equipment.

As this equipment gets hot during use, operate it in a well ventilated place;
Do not install this equipment in a confined space such as a book case or similar unit.

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

**CLASS 1 LASER PRODUCT**

**Information on Disposal in other Countries outside the European Union**

If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

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

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

**Cautions before you operate this unit**

Avoid:
- Using a cell phone near the equipment because doing so may cause noise to adversely affect the picture and sound.
- Humidity and dust.
- Covering the ventilation holes with soft materials such as cloth or paper.
- Extreme heat such as direct sunlight.
- Magnets or electromagnetic objects.
- Touching internal parts of the unit.
- Water or some other liquid.
- Lighting (disconnect the aerial plug from the unit during a lightning storm).
- Anything heavy on the unit.
- Connecting or handling the equipment with wet hands.

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

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.

**Note:**
- In any of the above-mentioned conditions, do not operate the unit for at least 1 hour. This unit is not equipped with a dew sensor.

NV-VP60GL: Australia model
NV-VP60GN: New Zealand model

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.
Surge Absorber
For further protection, this product is equipped with new surge absorbing circuits which prevent damage due to power surges caused by lightning.
- This function may not be effective for surges by direct lightning.

Crystal View Control
The crystal view control function ensures the optimum picture quality so that you get the best picture automatically.

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

S-VHS Quasi Playback (SQPB)
It is possible to playback video cassettes 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 this unit.

Dirt on the video heads
If the video heads get dirty, pictures will not be recorded or played back clearly. (See the following conditions.)

Head cleaning by service agents is not covered by warranty.

Heads mainly become dirty because of scratched or dirty video cassettes and operating the unit where the temperature is high or it is humid, dusty, etc. Never use video cassettes that liquids have been spilled on or that are very badly damaged. The heads will become dirty and the unit will malfunction.

Installing the batteries
Insert the batteries with the polarity (+ and –) correctly aligned.

Notes:
The service life of the batteries is approximately 1 year. However, it varies considerably depending on the frequency of use.
- When the batteries are exhausted, remove them immediately and dispose of them correctly.
- Do not mix different battery types, i.e. Alkaline and Manganese.
- Do not use rechargeable batteries.
- Do not heat or short-circuit the batteries.
- When the remote control is not going to be used for a long time, take out the batteries and store them in a cool, dry place.

Accessories
Please check and identify the supplied accessories.

- 1 pc. Remote Control (N2QAYB000006)
- 1 pc. RF Coaxial cable
- 2 pcs. “R6” size batteries
- 1 pc. AC Mains Lead
- 1 pc. Audio/Video cable

Using the remote control (operation range)
- The remote control can be used to operate the unit up to approximately 7 meters in front, up to approx. 30° left or right and up to approx. 20° above or below the remote control signal sensor. (However, this operation range will vary depending on the surrounding brightness.)
- If you place the unit in a rack, the operation range may become shorter depending on the thickness and color of the rack’s glass door.
- Do not place any obstacles between the unit and the remote control.
- If the remote control signal sensor is exposed to direct sunlight or strong light from an inverter fluorescent lamp, you may not be able to use the remote control to operate the unit.

Using the remote control (operation range)
Disc Information

■ Discs that can be played

Recorded Discs (✓: Available, ✗: Not Available)

<table>
<thead>
<tr>
<th>Disc</th>
<th>Recorded on a DVD video recorder, etc.</th>
<th>Recorded on a Personal computer, etc.</th>
<th>Necessary to finalize*1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DVD-VR</td>
<td>DVD-V</td>
<td>DVD+R</td>
</tr>
<tr>
<td>DVD-RAM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DVD-R</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DVD-R DL*3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>DVD-RW</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>+R/+R-RW</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>+R DL</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>CD-R/RW</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Commercial Discs

<table>
<thead>
<tr>
<th>Disc</th>
<th>Logos</th>
<th>Indication</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>DVD-Video</td>
<td>DVD-V</td>
<td></td>
<td>A disc that contains high quality video and audio.</td>
</tr>
<tr>
<td>CD</td>
<td>CD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Video CD</td>
<td>VCD</td>
<td></td>
<td>Including SVCD (Conforming to IEC62107).</td>
</tr>
</tbody>
</table>

*1 A process that allows the disc to be played on compatible equipment. To play a disc that is displayed as “Available” on this unit, the disc must first be finalized on the device it was recorded on.
*2 Discs recorded on DVD video recorders or DVD video cameras using Version 1.1 of the Video Recording Format (a unified video recording standard).
*3 The DVD-R DL (✓ 24) is a new DVD standard approved at the DVD Forum, January 2005. When playing back a title recorded on both layers, the video and the audio may briefly stop when the unit is switching layers.
*4 Discs recorded on DVD video recorders or DVD video cameras using Version 1.2 of the Video Recording Format (a unified video recording standard).
*5 Recorded using a format different from DVD-Video Format, therefore some functions cannot be used.
*6 Closing the session will also work.
*7 This unit can play audio recorded in the CD-DA, SVCD (conforming to IEC62107) format recorded on a CD-R/RW. Finalize*1 the disc after recording.
*8 This unit can play video recorded in the Video CD format recorded on a CD-R/RW. Finalize*1 the disc after recording.

- Use discs with the above logos and that conform to specifications. The unit cannot play other discs correctly. Do not use irregularly shaped discs (e.g. heart-shaped), as these can damage the unit.
- DVD-RAM that can be played on this unit are those recorded with DVD video recorders, DVD video cameras, personal computers, etc. using Version 1.1 of the Video Recording Format (a unified video recording standard).
- Remove the discs from their cartridges before use and return them when finished. Ensure that the labels of the disc and the cartridge face the same way.
- Some parts of the disc, for example where one programme ends and another begins, may not be played smoothly.
- HighMAT™ discs

This unit is compatible with HighMAT™ discs containing WMA, MP3 and/or JPEG files.

Note:
- It may not be possible to play the above discs in all cases due to the type of disc, the condition of the recording, the recording method or how the files were created (✓ 6).
### Disc Information

<table>
<thead>
<tr>
<th>WMA, MP3, JPEG, MPEG4 and DivX files that can be played</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Playable WMA</strong> format</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

| **Playable MP3** format | **Features** | MP3 is an audio compression method that compresses audio to approximately one-tenth of its size without any considerable loss of audio quality. |
| | **Indication** | MP3 |
| | **Extension** | *.MP3* or *.mp3* |
| | **Bit rate** | between 32 kbps and 320 kbps |

| **Compatible compression rate** | **DVD-RA, DVD-R/RW:** Except for 8 kHz, 16 kHz, 32 kHz. **CD-R/RW:** 8 kHz, 11.02 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz and 48 kHz. |
| | **Remarks** | • This unit is not compatible with ID3 Tags. (⇒ 42) |
| | | • See (Notes ⇒ 28) |

| **Playable JPEG** format | **Features** | JPEG is a system used for compressing/decoding color still pictures. The benefit of JPEG is less deterioration in picture quality considering the degree of compression. |
| | **Indication** | JPEG |
| | **Extension** | *.JPG*, *.jpg*, *.JPEG* or *.jpeg* |
| | **Picture Resolution** | between 160 x 120 and 6144 x 4096 pixels (sub sampling is 4:2:0, 4:2:2 or 4:4:4) |
| | **Remarks** | • Recorded using the DCF (Design rule for Camera File system) standard Ver 1.0. |
| | | • See (Notes ⇒ 28) |

| **Playable MPEG4** format | **Features** | MPEG4 is a compression system for use on mobile devices or a network, that allows highly efficient recording at a low bit rate. |
| | **Indication** | MPEG4 |
| | **Extension** | *.ASF* or *.asf* |
| | **Remarks** | • Recorded with the Panasonic SD multi cameras or DVD video recorders (conforming to SD VIDEO specifications (ASF standard)/MPEG4 (Simple Profile) video system/G.726 audio system). |
| | | • See (Notes ⇒ 28) |

| **Playable DivX** format | **Features** | DivX is a codec that compresses video files without any considerable loss of video quality. |
| | **Indication** | DivX |
| | **Extension** | *.DIVX*, *.dvdv*, *.AVI*, or *.avi* |
| | **Remarks** | • Created using DivX ver.3.11, 4.0, 4.01, 4.0x, 4.x, 5.x (DivX video system/MP3 or Dolby Digital audio system). |
| | | • See (Notes ⇒ 28) |

* The total combined maximum number of recognizable audio, picture and video contents and groups: 4000 audio, picture and video contents and 400 groups

### Discs that cannot be played
- DVD-ROM, CD-ROM, CDV, CD-G, Blu-ray, DVD-S, SACD, Photo CD, Version 1.0 of DVD-RW, DVD-RAM that cannot be removed from their cartridge, 2.6 GB and 5.2 GB DVD-DAM, “Chaoji VCD” available on the market including CVD, DVCD and SVCD that do not conform to IEC62107, etc.
- (DVD-Audio/Video disc will play as DVD Video format, depending on disc compatibility.)

### Region number supported by this player
- Region numbers are allocated to DVD players and software according to where they are sold. The region number of the unit is “4”. The unit will play DVD-Video marked with labels containing “4” or “ALL”. Examples: 4, 28, 42, etc.

### Playing DVDs and Video CDs
- The producer of these discs can control how they are played so you may not always be able to control play as described in these operating instructions (for example if the play time is not displayed or if a Video CD has menus). Read the disc’s instructions carefully.

### Video systems
- This unit can play PAL and NTSC, but your TV must match the system used on the disc.
- PAL discs cannot be correctly viewed on an NTSC television.
- This unit can convert NTSC signals to PAL 60 for viewing on a PAL television (Video—NTSC Disc Output ⇒ 37).
- Output is interlace (576i), when playing PAL discs.

### Disc structure
- The disc structure and the labels given to the items on the disc depend on the disc type.
- **Track:** The smallest division on a CD and a Video CD, or a single WMA/MP3 file.
- **Chapter:** The smallest division on DVD-Video.
- **Group:** Equivalent to a folder or an album on a data disc.
- **Title:** The largest division on a DVD-Video, usually an entire movie.
- **Programme:** The division on a DVD-RAM equivalent to a single recording.
- **Picture:** A single JPEG file.
- **Play list:** The largest grouping on a HighMAT disc, or a group of scenes on DVD-RAM.
- **Scene:** DVD-RAM programme sections specified and grouped into a play list on a DVD video recorder.
- **Content:** Covers, tracks and pictures on HighMAT discs.

### To clean discs
- Wipe with a damp cloth and then wipe dry.

### Handling precautions
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not attach labels or stickers to discs (do not use discs with exposed adhesive from tape or left over peeled-off stickers).
- Do not use scratch-proof protectors or covers.
- Do not use discs printed with label printers available on the market.
Control Reference Guide

Operations in these instructions are described mainly for the remote control, but you can do the operations on the main unit if the controls are the same.

Main Unit

Common section
A Power button
- Press [I] to switch this unit from on to standby mode or vice versa. In standby mode, the unit is still connected to the main AC power.
B Infra-red Remote Control Receiver Window
C Display

VHS section
1 Tape Eject button
2 Cassette Compartment
3 AV2 IN (AUDIO/VIDEO) Sockets
4 Recording/One-Touch Recording button
5 Timer Recording button

Channel DownUp buttons
6 Stop button
7 Play button
8 Rewind/Fast-Forward buttons

DVD section
1 Disc Tray
2 Disc Tray Open/Close button
3 DVD-RAM Copying button
4 Stop button
5 Play button
6 AV Enhancer button

The Unit’s Display

Common section
A Counter Display
- Current time/VHS recording and play counter/Disc play counter/Miscellaneous messages, etc.
B Running Indicator
- Lights up when the VHS or DVD section is active.
- Flashes when the cassette is paused or the disc is stopped.
- One bar lights up when the disc is paused.
- The bars flash one at a time when the cassette or disc is playing.
C Play Indicator
- Lights up when playing a cassette or disc.
D Minus Indicator
- Lights up when the VHS tape counter passes the zero mark on the counter display or when the remaining time display is selected on some discs (0:00).

VHS section
1 Operation Status of VHS Section
- Lights up when a cassette is inserted.
- Flashes when recording or timer recording is attempted with no cassette inserted.

Channel DownUp buttons
2 Stop button
3 Play button
4 Rewind/Fast-Forward buttons

DVD section
1 Operation Status of DVD Section
- Lights up when a disc is inserted.
2 DVD Selector Indicator
- Lights up when the DVD section is active.

Note:
- "IR1" or "IR2" indicator lights up all the time if a cassette or CD is inserted.
**Remote Control**

- **VHS/DVD Power button (VHS/DVD).............. (14, 23)**
- **Numeric buttons (0–9, –/–, ±10).............. (16, 24, 26)**
- **Audio button (AUDIO)............................. (22, 30)**
- **Index Search, Skip buttons (INDEX/SKIP)........... (19, 23)**
- **Stop button (STOP).................................... (14, 23)**
- **Timer Programme and Check, Top Menu/Direct Navigator button (PROG/CHECK, TOP MENU/DIRECT NAVIGATOR).................. (18, 28, 29)**
- **Cursor, Enter buttons (CURSOR, ENTER).......... (13, 20, 34, 36)**
- **Jet Rewind, Functions/On-Screen Menu button (JET REW, FUNCTIONS).................. (14, 34)**
- **VHS/DVD Status button (VHS/DVD STATUS)......... (22, 23)**
- **Quick OSD button (QUICK OSD).................. (27)**
- **Timer Recording, DVD Setup menu button (TIMER, SETUP).................. (18, 36)**
- **Recording button (REC)............................. (16)**
- **Recording Mode, Play Mode button (REC MODE, PLAY MODE).................. (16, 27)**
- **DVD-RAM Copying button (DVD-RAM COPYING)............... (38)**
- **Quick Replay button (QUICK REPLAY).............. (26)**
- **Manual Skip button (MANUAL SKIP).................. (27)**
- **Menu, Play List button (MENU/PLAY LIST)........... (13, 20, 28)**
- **Pause/Slow button (PAUSE, SLOW).................. (14, 23)**
- **Play button (PLAY)........................................ (14, 23)**
- **Rewind/Fast-Forward, Slow/Search buttons (REW/FF, SLOW/SEARCH).................. (14, 23)**
- **Input Select/Cancel button (INPUT SEL/CANCEL).................. (34, 38)**
- **TV Operation buttons TV Power button (POWER)... TV Input Mode Selector (AV) TV Channel Up/Down buttons (CH) TV Volume Up/Down buttons (VOLUME)**
- **Infra-red Transmitter**

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**[VHS/DVD SELECT] button**
Press this button to select either VHS or DVD. The selector indicator on the unit’s display lights up to show the selected section. (7)

- **[VHS SELECT]**
  - Switch to VHS mode.

- **[DVD SELECT]**
  - Switch to DVD mode.
Getting Started

Before Use

Connections

When the unit is turned on after connecting the aerial cable and the mains lead, Plug in Auto Tuning starts automatically. (NV-VP60GN only)

Basic Connections
The following connections are required to record on a video cassette and playback a video cassette/discs through the TV.
- Refer to the TV’s operating instructions.
- Turn the TV off and disconnect its AC mains lead.

Note:
The included AC mains lead are for use with this unit only. Do not use them with other equipment.

Audio/Video Output Sockets
- Set the RF output channel of the unit to “- - -” (RF OFF) (→ 12).
- Connect Audio/Video cables directly to your TV. The video signals on DVDs and video tapes have copyright protection. The video may not be shown correctly if you connect through an A/V selector or other equipment.

For Better Video from DVD

COMPONENT VIDEO terminal (progressive out)
These terminals can be used for either interlace or progressive output and provide a clearer picture than the S-VIDEO terminal. Connection using these terminals outputs the colour difference signals (Ps/Pn) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours.
- The description of the component video input terminals depends on the TV or monitor (e.g. Y/Ps/Pn, Y/B-Y/R-Y, Y/Cb/ Cr). Connect to terminals of the same colour.

Audio cable (Not supplied)
Television

S-VIDEO terminal
The S-VIDEO terminal achieves a more vivid picture than the VIDEO OUT terminal by separating the chrominance (C) and luminance (Y) signals. (Actual results depend on the TV).
- Connect to a different terminal group (e.g. “VIDEO 2”) than that you used for the connection through this unit’s VHS/DVD OUT terminal. Picture from the VHS section will not appear when you use the same group input terminal connections because the S-Video terminal input takes precedence.

Audio/Video cable (Supplied)
Television

Television

Connections

When the unit is turned on after connecting the aerial cable and the mains lead, Plug in Auto Tuning starts automatically. (NV-VP60GN only)

Basic Connections
The following connections are required to record on a video cassette and playback a video cassette/discs through the TV.
- Refer to the TV’s operating instructions.
- Turn the TV off and disconnect its AC mains lead.

Note:
The included AC mains lead are for use with this unit only. Do not use them with other equipment.
Connections

The output terminal common to VHS and DVD and the one exclusively for DVD

For the VHS/DVD OUT terminal, VHS and DVD outputs can be switched or it can be automatically switched on to the output side that has started playing back. The DVD OUT terminal can only output the DVD signal.

Notes:
• When Video is switched to DVD or vice versa, the audio volume may suddenly increase or decrease. This is because when the audio output of this unit is connected to the TV, etc., the audio output of the DVD is generally lower.
• When you increase the volume level to playback DVD audio, reduce it when playback is finished.

To Enjoy Sound through Other Audio Equipment

You can enjoy the powerful movie theater and hall-like sound available with multiple channel audio found on DVDs by connecting an amplifier and speakers.

Digital connection

Connect 3 or more speakers for surround sound.

Coaxial digital cable (Not supplied)

Amplifier (Not supplied)

To enjoy multi-channel surround sound
Connect an amplifier with a built-in decoder or a decoder-amplifier combination.
Change the settings in the Setup menu (33, 37).
You can only use DTS Digital Surround decoders that are compatible with DVD.
• Turn the “Advanced Surround” function “Off” (31).

To enjoy stereo or Dolby Pro Logic
Connect a digital amplifier or system component.
Change the settings in the Setup menu (33, 37).

Analogue connection

Amplifier (Not supplied) or system component (Not supplied)

Audio cable (Not supplied)

To enjoy stereo or Dolby Pro Logic
Connect an analogue amplifier or system component.
Change the settings in the Setup menu (33, 37).
The VHS/DVD OUT audio terminals can also be connected.

Note:
• Before purchasing a coaxial digital cable (not supplied), check the terminal shape of the equipment to be connected.
Operating the TV

**TV Maker Setting**

You can operate the TVs of the manufacturers listed below with the remote control after setting it.

1. Refer to the chart below for the code of your TV.

2. Aim the remote control at the TV.
   While pressing [0], use the numeric buttons to enter the two-digit code.
   Example: "1", [0][1]

3. Check whether the TV can be operated properly.
   - Test by turning on the TV and changing channels. Repeat the procedure until you find the code that allows correct operation.
   - When a manufacturer has multiple codes in the following chart, try entering other codes if the TV operations cannot be performed properly, and then select the optimal code.

**Notes:**
- If you are using a Panasonic TV, this setting has already been made, you do not need to perform the above procedure. However, this remote control may not work on some Panasonic TVs.
- Some TV models cannot be operated by this remote control (including all TVs non-remote compatible).

### TV OPERATION

**Turn on the TV.**

1. TV Power button (Í)
   - Switch the TV from on to standby mode or vice versa. On some TVs, with this button it is only possible to turn it to standby mode (OFF). In this case, try to turn the TV on with the following button: [JICH] (4)

2. TV Input Mode Selector button (AV)
   - To select the desired AV input on the TV.

3. TV Volume Up/Down buttons (SN VOLUME)
   - To adjust the volume of the TV.

4. TV Channel Up/Down buttons (JCH)
   - To select the desired programme position (TV station) on the TV.

### TV OPERATION

**Numeric Buttons**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panasonic/National</td>
<td>01-04</td>
</tr>
<tr>
<td>SONY</td>
<td>05</td>
</tr>
<tr>
<td>TOSHIBA</td>
<td>06</td>
</tr>
<tr>
<td>JVC</td>
<td>07</td>
</tr>
<tr>
<td>HITACHI</td>
<td>08</td>
</tr>
<tr>
<td>MITSUBISHI</td>
<td>09, 10</td>
</tr>
<tr>
<td>SHARP</td>
<td>11</td>
</tr>
<tr>
<td>PHILIPS, SAMSUNG</td>
<td>12</td>
</tr>
<tr>
<td>NEC</td>
<td>13</td>
</tr>
<tr>
<td>SANYO</td>
<td>14</td>
</tr>
<tr>
<td>GOLDSTAR/LG</td>
<td>15, 16</td>
</tr>
<tr>
<td>SAMSUNG</td>
<td>17, 18</td>
</tr>
<tr>
<td>SANYO</td>
<td>19</td>
</tr>
</tbody>
</table>
To set the channels manually (≥)

If Auto Tuning stops halfway by turning the unit off, playback starts or there is a power failure.
- Disconnect the mains lead and then reconnect it.
- Turn on the unit. Plug in Auto Tuning restarts.

To cancel Auto Tuning halfway through

Auto Tuning will stop halfway if the unit is turned off, [MENU] is pressed, playback starts or there is a power failure.
- Disconnect the mains lead and then reconnect it.
- Turn on the unit. Plug in Auto Tuning restarts.

To set the channels manually (≥ 20)

To restart Plug in Auto Tuning
- Turn the unit on.
- Make sure there is no video cassette in the unit.
- Keep both [CH] and [VHS] on the unit pressed simultaneously for 3 seconds or more until the channel on the unit’s display changes to 1.
- Disconnect the mains lead and then reconnect it.
- Turn on the unit. Plug in Auto Tuning restarts.

Pre-programmed TV Channels (for NV-VP60GL/Australia)

The local TV broadcast channels 2, 7, 9, 10 and 28 are factorypreset in the unit.
This means that if you can receive TV broadcasts on VHF channels 2, 7, 9, 10 and UHF channel 28, these are already tuned on the programme positions with the matching numbers.

1 Press [VHS] to turn on this unit.
2 Hold down [MENU] for 5 seconds or more.
3 Set the TV to an unused position for the unit viewing channel.
   - Tune the TV until the display shown on the above appears. Refer also to the TV’s instructions regarding tuning.
4 Press [MENU].

Plug in Auto Tuning (for NV-VP60GN/New Zealand)

When the unit is turned on after connecting the aerial cable and the mains lead for the first time, tuning starts automatically.
- If the unit is turned on with the aerial not connected, all channels are skipped.
1 Press [VHS] to turn on this unit.
2 Set the TV to an unused position for the unit viewing channel.
3 Press [MENU].

You can change the RF output channel, for example, when interference occurs on the picture after tuning.

1 Press [MENU] for 5 seconds or more.
2 Press [CH] or [VHS] to select the channel (AU28—69, NZ21—69).
   - Each time you press [CH] or [VHS], (RF OFF) when you use the audio/video cable for the connection.
   - You can also use the numeric buttons. Example: “28”, [2][8]
3 Retune your TV to the new RF channel for the unit.
4 Press [MENU] to exit the setting mode.

Note:
- Even if the RF output channel has been changed, it is not necessary to perform Auto Tuning.
**Setting Up for VHS and DVD Quick Setup**

Make basic settings for VHS. These settings are retained in the memory until they are changed, even if the unit is turned off.
- Select the unit viewing channel (or the AV input) on the TV.
- Turn on the unit.
- Press [VHS SELECT] (→ 8).

### Common procedures

1. Press [MENU].
2. Press [▲▼] to select the menu.
3. Press [ENTER].

### Clock Set

The clock operates for at least 3 years on its backup system in the event of power failure.

#### [1] Set each item with [▲▼ ▶].
- Press [▲] to return to the previous item.
- At the set time (H:M) point:
  - When [▲▼] is kept pressed, the indication changes in 30 minute steps.
  - There is no need to press [▲▼] continuously.
  - This is a 24-hour clock.

#### [2] Press [MENU] to start the clock and exit the setting screen.

**Time Reset Function**

If the clock is less than 2 minutes early or late, it can easily be reset to the proper time.

Example: Resetting the clock to 12:00
1) Display the “CLOCK SET” screen.
2) When the current clock display on the unit is between 11:58 and 12:01, press [MENU] as soon as it is 12:00. This will reset the time to 12:00.

Make basic settings for DVD. The QUICK SETUP screen assists you to make necessary settings such as Menu Language (→ 37) and TV Aspect (→ 8).
- Select the unit viewing channel (or the AV input) on the TV.
- Turn on the unit.
- Press [DVD SELECT] (→ 8).

#### [1] Press [SETUP].

#### [2] Follow the messages and make the settings using [▲▼◄►] and [ENTER].

- To change these settings later
  1. Select “QUICK SETUP” in the “Others” tab (→ 37).
  2. To return to the previous screen
  3. Press [RETURN].

**Notes:**

- The “QUICK SETUP” screen only appears by pressing [SETUP] when the unit is turned on for the first time. If the settings are not completed in “QUICK SETUP”, the “QUICK SETUP” screen will appear whenever [SETUP] is pressed. To avoid the reappearance of the “QUICK SETUP” screen, or to abort the use of “QUICK SETUP”, select “NO” in the “Would you like to use QUICK SETUP?” screen.
- All settings will return to default by selecting “Re-initialise Setting” in the “Others” tab. To reset the DVD QUICK SETUP, follow the above steps 1 and 2.

### TV Aspect

Select “4:3” (regular) or “16:9” (widescreen) to suit your TV.

- If you have a regular 4:3 TV, you can also select how video on some discs are shown.
  - **4:3 Pan & Scan** (Initial Setting)
    - Widescreen software is expanded to fill the screen of a 4:3 aspect TV (unless prohibited by the producer of the disc).
  - **4:3 Letterbox**
    - Widescreen software is shown in the letterbox style on a 4:3 aspect TV.

If you have a wide-screen TV (16:9), you can select the style with the TV’s screen mode function.

- 4:3 Pan & Scan
- 4:3 Letterbox
# Playback

1. Insert a recorded video cassette.
2. Press [PLAY].
   - Play starts automatically if you insert a tape with the tab removed (Tapes 4).

---

### Play

- If you press and hold [PLAY] for 5 seconds or more, you can playback the recorded part on the tape repeatedly. (See below)
  - The "R" indication appears on the TV screen.
  - Press [STOP] to cancel (it also cancels if you play, pause, cue, or review).

### Pause

- Press this button during playback. Press [PLAY] or [REW] to restart.

### Slow

- Press and hold for 2 seconds or more. Press [PLAY] to restart.

### Rewind/Fast-forward (while stopped)

- Press these buttons in the stop mode. Press [STOP] to cancel.

### Cue/Review (during play)

- During playback, press or press and hold these buttons. If you press and hold these buttons, playback restarts by releasing them.
- During playback, press these buttons twice. You can increase Cue/Review search speed.

### Jet Search

- Press these buttons in the stop mode. Press [STOP] to cancel.
- During playback, press or press and hold these buttons.
- If you press and hold these buttons, playback restarts by releasing them.
- During playback, press these buttons twice. You can increase Cue/Review search speed.

### Eject

- Press this button to eject the video cassette.
- Or, keep pressing [STOP] on the remote control for at least 3 seconds.

### Repeat Playback

- At the end of the programme, the tape rewinds to the beginning of the programme and plays it again (it only works if there is at least 5 seconds blank at the end of the programme). This repeats until you cancel it.

---

**Note:**
- To adjust tracking control manually ([---TRACKING/V-LOCK]) (⇒ 15)
Other convenient functions

- When the unit is off, an inserted video cassette can be played back by pressing [PLAY].
- You can eject a video cassette when the unit is in standby mode. The unit switches back to standby mode after the video cassette is ejected.
- When the end of the video cassette is reached, this unit automatically rewinds it to the beginning.

Notes:
- Jet Search, cue, review or slow playback are automatically released after 10 minutes and pause is automatically released after 5 minutes.
- The tape counter does not appear during Jet Rewind.
- Depending on the video cassette or the operating conditions, Jet Rewind may not work or the speed may increase only slightly.
- When using a playback function other than normal playback, horizontal noise bars may appear in the picture, the colour of the picture may be unstable or the picture may be otherwise distorted.
- When you playback a video cassette recorded in the LP mode, the picture may become monochrome. (16)
- When you playback a video cassette recorded in the EP mode, the picture and the sound may be unstable. However, these are not malfunctions. (16)
- During timer recording, OTR and fast-forwarding do not work.

Adjusting the Playback Picture

Manual tracking

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

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

Vertical locking adjustment

Adjust the vertical to stop the picture 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 and then adjust the tracking.

Notes:
- This may not work with some TV models and tapes.
- You can also adjust the tracking and vertical with [CH] or [CH] on the unit.

NTSC Playback

Tapes recorded in the NTSC system can be played back via a PAL system TV.
- To record in the NTSC system, set "NTSC INPUT SELECT" (OPTION 21).
- Select "onPALTV" in "NTSC PB SELECT" to view the NTSC recording in colour (OPTION 21).
- On some TVs, the playback picture may roll up or down. If your TV has V-HOLD control or an equivalent function, use it to adjust the picture.

Note for only NTSC Playback on PAL system TV
This function is designed to allow only the playback of tapes recorded by NTSC signals on a PAL system TV. The NTSC signal is not completely converted to a PAL signal. For this reason, images played back with this function cannot be recorded correctly on other VHS.
Recording

- Select the unit viewing channel (or the AV input) on the TV.
- Press [VHS SELECT] (8).
- Check that the clock is set to the correct time. If it has not been set, refer to page 13.

1. Insert a video cassette with an intact erasure prevention tab.

2. Press [CH] or [CH] to select the TV station.
   - If you keep pressing these buttons, the channels change quickly.
   - You can also select the channels with the numeric buttons.

3. Press [REC MODE] to select the recording mode.
   Each time you press the button:
   SP > LP > EP > SP


- To stop recording
  Press [STOP].
- To interrupt recording
  Press [PAUSE] during recording. Press it again to continue recording.

Recording mode

<table>
<thead>
<tr>
<th>SP</th>
<th>Provides standard recording time with optimum picture and sound quality.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LP</td>
<td>Provides double recording time with slightly reduced picture and sound quality.</td>
</tr>
<tr>
<td>EP</td>
<td>Provides triple recording time with slightly reduced picture and sound quality.</td>
</tr>
</tbody>
</table>
- When you playback a video cassette recorded in EP mode, the monaural sound may be unstable.
- When you start the recording in EP mode, the “EP” indication on the unit’s display flashes for about 8 seconds.

Notes:

- Even if the video cassette you use is labeled “S-VHS”, it is not possible to record in the S-VHS with this unit. It records in VHS.
- You cannot change channels while recording. You can change channels while the recording is paused.
- When the recording is paused for more than 5 minutes, the unit returns to stop mode.

Using another device while recording

You can watch another TV programme or play discs while recording. The recording will not be affected.

TV
1. Press [CH] or [CH] to select the desired TV programme.

DVD
1. While recording, press [DVD SELECT].
2. Insert the disc and press [PLAY] to start play. (23)
One-Touch Recording (OTR)

You can start recording quickly and set a duration.

During recording, press [REC/OTR] on the unit repeatedly.

Select the desired recording duration.
- Each time you press the button, the indication on the unit’s display changes as follows:
  - Counter display (normal recording mode) → <30 (min) → <60 (min) → <90 (min) → <120 (min) → <180 (min) → <240 (min) → Current time (normal recording mode)
- The unit will automatically switch off when OTR is completed.

To stop OTR at any time
Press [STOP] or [SH] (DVHS).

Notes:
- The OTR function works during normal recording only.
- When the tape reaches its end during OTR, the unit will turn itself off.

Recording from an External Source

You can record from other video sources (VHS, camera, etc.).
- Connect the other equipment to this unit as shown. If audio output on the other equipment is monaural, use a stereo-monaural conversion cable (not supplied).
- Insert a recorded video cassette with an intact erasure prevention tab.
- Set A1 or A2 with [INPUT SEL] to select the audio/video source required.

1. Press [PLAY]. Find the recording start point.
2. Press [Ⅲ/Ⅳ-PAUSE], then press [REC]. Put the unit in recording standby mode.
3. Start play on the other equipment.

To stop recording
Press [STOP].

Tape Refresh

You can delete all the contents of a video cassette (the picture and sound data).

1. Insert the cassette that you want to refresh and press [MENU].
2. Press [▲ ▼] to select “TAPE REFRESH” and then press [ENTER].
3. Press [ENTER] for 2 seconds or more to start the tape refresh function. The tape refresh function starts.
- The tape is rewound to the beginning and is then erased as it is fast-forwarded.
- When the end of the video cassette is reached, the unit automatically rewinds it to the beginning.

Note:
- When a video cassette with a broken erasure prevention tab is inserted, this function is not activated.
Timer Recording

Up to 16 timer programmes, including weekly and daily programmes, can be recorded for up to one month in advance by setting the timer. 
1. Select the unit viewing channel (or the AV input) on the TV. 
2. Insert a video cassette with an intact erasure prevention tab (→ 4). 
3. Check that the clock is set to the correct time. If it has not been set, refer to page 13. 

4. Press [VHS SELECT] (→ 8).

1. Press [PROG/CHECK].

2. Press [◄ ►] to set the date the TV programme will be broadcast and then press [▼].
   - Current date (e.g.17th)
   - The date before one month later (e.g.16th)
   - Weekly: SU ↔ ... ↔ SA (SU=Sunday, MO=Monday, TU=Tuesday, WE=Wednesday, TH=Thursday, FR=Friday, SA=Saturday)

3. Press [◄ ►] to select the programme position of the desired TV station and then press [▼].
   - Select “A1” or “A2” when recording from an external source (→ 17).
   - You may also use [INPUT SEL] and numeric buttons to select the channel position.

4. Press [◄ ►] to set the starting time and then press [▼].
   - When [◄ ►] is kept pressed, the indication changes in 30-minute steps.

5. Press [◄ ►] to set the ending time and then press [▼].
   - When [◄ ►] is kept pressed, the indication changes in 30-minute steps.

6. Press [◄ ►] to set the desired Rec Mode and then press [▼].

   SP—LP—EP—A*—SP
   * Recording Mode Auto Change function (→ right)
   - You may also use [REC MODE] to set the recording mode.

7. Press [ TIMER] to switch this unit to the timer recording standby mode.

To release the unit from timer recording standby

To Check and Cancel a Timer Programme

   - The Timer Programme List screen appears.

2. Press [ PROG/REC] repeatedly to select the programme.
   - Every time you press [PROG/CHECK], the cursor shifts down.
   - You can also select the programme by pressing [◄ ►].


4. Press [MENU] to exit the on-screen display.

Notes:
- If timer recording is not completed (due to insufficient tape or cancellation by the user), the programmed timer recording data will be cancelled from the memory by 4 A.M. two days later. However, if the timer recording function is activated at that time, the programmed timer recording data will not be cancelled.
- After you cancel the programmed timer recording data, the current recording mode during the stop mode is displayed.
- If you turn off the power during a timer recording, the running indicator lights up.
- During recording, timer recording and copying, the * indicator lights up even while DVD section is activate.
- During timer recording and timer recording standby mode, the “” indicator lights up even while the DVD section is activate.
Search Functions

VHS Index Search System (VISS)

This unit automatically adds special index signals on the tape when recording starts. You can find the desired programme quickly with these signals.

During stop or playback, Press [◄►] (backward) or [►►] (forward).
- Each press increases the number of skips.

◇ To cancel the Index Search or to stop playback
Press [■STOP].

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

◇ Index signals are recorded in the following cases
- When a recording is started by pressing [■REC].
- When [■REC] on the remote control is pressed during recording.
- When timer recording is activated.
Settings Using the On-Screen Display

Change the settings to suit your preferences and the environment in which you are using the unit. These settings are retained in the memory until they are changed, even if the unit is turned off.

- Select the unit viewing channel (or the AV input) on the TV.
- Press [VHS SELECT] (→ 8).

Common procedures

1. Press [MENU].
2. Press [▲ ▼] to select the menu.
3. Press [ENTER].

For “CLOCK SET” (→ 13)

Tuner Preset

The unit tunes automatically when you plug it in and turn it on for the first time (NV-VP60GN only, → 12), but you can start the process again if necessary.

- Select any programme position except “A1”, “A2” or “dc”.

Auto Tuning

Auto tuning searches for TV stations from VHF minimum to UHF maximum and memorizes every tuned programme position. Other programme positions are skipped (Channel plan ≥ again if necessary).

1. Press [▲ ▼] to select “AUTO TUNE”.
2. Press [◄ ►] to start Auto Tuning.
   - It may take up to 5 minutes or more to complete.
   - When Auto Tuning is completed, the on-screen display disappears and programme position 1 is selected.
   - To stop halfway through Press [MENU].

To select a blank programme, select “ON”. If you select “ON”, proceed to step 4.
   - To restore the channel again, select “OFF”.
   - Repeat steps 1 and 2 for another unoccupied programme positions to skip during the selection of the programme positions.

3. Press [▲ ▼] to select “SEARCH” and then press [◄ ►] to start Manual Tuning.
   - If the desired TV station has not been tuned, press [◄ ►] again.
   - Press [MENU] and repeat steps 1-3 for each programme position you want to tune to a station.
   - You can also set the programme position directly by entering the number with the numeric buttons (→ below).

Direct Tuning

After you select “SEARCH”, press the numeric buttons to select the programme position. For the 5A and 9A channels, input the following numbers. 90 for CH-5A, 91 for CH-9A. (Example for NV-VP60GL)
   - Repeat the steps above for other channels that require tuning.

4. Press [MENU] repeatedly until the setting screen disappears.

Fine Tuning

1. Press [▲ ▼] to select “CH” and then press [◄ ►] to select the channel.
2. Press [▲ ▼] to select “FINE” and then press [◄ ►] to obtain the best tuning condition.
   - Press [ENTER] to return the tuning to its former state.
3. Press [MENU] until the setting screen disappears.

Channel plan

<table>
<thead>
<tr>
<th></th>
<th>VHF</th>
<th>UHF</th>
<th>CATV</th>
</tr>
</thead>
<tbody>
<tr>
<td>NV-VP60GL</td>
<td>0-12</td>
<td>28-69</td>
<td>45-470 MHz</td>
</tr>
<tr>
<td>NV-VP60GN</td>
<td>1-11</td>
<td>21-69</td>
<td>44-470 MHz</td>
</tr>
</tbody>
</table>

Manual Tuning

1. Press [▲ ▼] to select “CH” and then press [◄ ►] to select the channel.
2. Press [▲ ▼] to select “CLEAR” and then press [◄ ►] to select “OFF”.
3. Press [▲ ▼] to select “SEARCH” and then press [◄ ►] to start Manual Tuning.
4. Press [MENU] repeatedly until the setting screen disappears.
Settings Using the On-Screen Display

**System**

Set the Colour TV System.

1. Select “AUTO” with [▲ ▼].
   - The VHS automatically distinguishes between PAL and NTSC signals. If the picture lacks colour during AV external recording, playback or recording from DVD to VHS, set to “PAL” or “NTSC”.
   - When you want to record or playback in black and white, set to “B/W”.

2. Press [MENU] repeatedly until the setting screen disappears.

**Option**

Press [▲ ▼] to select the item and then press [◄ ►] to change the setting.

- **TAPE SELECT**
  - Set the length of tape you are using so the unit can show the correct remaining time (122).
  - **AUTO**: E30, E60, E90, E120, E180 and E240 tapes
  - E195: E195 tapes
  - E260: E260 tapes
  - E300: E300 tapes

- **NTSC INPUT SELECT**
  - Select the colour TV system used to record NTSC signals
  - **AUTO**: NTSC [4.43] and [3.58] signals
  - If the tape has not recorded correctly, select 4.43 or 3.58.
  - 4.43: NTSC 4.43 signals
  - 3.58: NTSC 3.58 signals
  - Some programmes on the NTSC 3.58 system cannot be recorded.

- **NTSC PB SELECT**
  - Select the colour TV system of the TV used to playback a tape recording NTSC signals on PAL TV:
    - TVs that can receive PAL signals
  - 4.43: TVs that can receive NTSC 4.43 signals
  - 3.58: TVs that can receive NTSC 3.58 signals

- **OSD (122)**
  - **AUTO**: Messages appear on the TV for about 5 seconds when you press [VHS STATUS] (122).
  - **OFF**: Messages do not appear.

- **COPYING NORMAL AUDIO (138)**
  - Select the audio channel to be recorded on the Normal audio track when copying a bilingual DVD
  - **L**: To record the sound from left channel
  - **R**: To record the sound from right channel

- **MONOURAL**
  - Select the sound mode. (For NV-VP60GN only)
    - **ON**: To record the normal sound during a NICAM broadcast or if the stereo sound is distorted due to inferior reception conditions.
    - **OFF**: Normally set at this position.
To see these displays, set the OSD item in the “OPTION” menu to “AUTO” (21).

Press [VHS STATUS].
The time and operation details appear on the screen for about 5 seconds.

Notes:
• These displays do not appear when paused or during slow play.
• The on-screen display may be distorted depending on the playback tape or the input signal.

Changing Audio
To change the audio, press [AUDIO].
The audio changes as follows:
When playing a tape: LR → L → R → Normal audio track → LR
While watching the TV: LR → L → R → Normal → LR
• You cannot change the audio while you use “dc” channel (38).

To playback tapes with recorded Stereo or Bilingual programmes (NV-VP60GL only)
Select the desired sound mode with [AUDIO] during playback. Recording on the unit is automatically made in the stereo or bilingual mode. This prevents errors in the selection of the copied or the original language.

The NICAM Broadcast System (NV-VP60GN only)
NV-VP60GN is equipped with the NICAM sound system. NICAM is a 2-channel sound broadcast system to provide either a high quality stereo sound track or 2 independent MONO sound tracks, M1 and M2. NICAM programmes are always accompanied by standard sound broadcasts and you can select the desired sound with [AUDIO] during playback.
• The NICAM digital stereo sound can only be recorded on the Hi-Fi audio track.
• To record the normal sound on the FM audio tracks when a NICAM programme is received, set “MONAURAL” to “ON” (OPTION 21).

IMPORTANT
When NV-VP60GN is switched on, the tuner will be automatically switched to a NICAM broadcast if NICAM is being transmitted. The NICAM signal is transmitted on stereo channels only at this time since the M1 and M2 formats are not yet available. The stereo indicator appears even if the sound track is MONO.

Various Indications in On-screen Display

1 Channel display
This indication only appears when VHS playback is stopped.

2 STEREO or BILINGUAL indicator (NV-VP60GL)
Indicates when the broadcast programme is in Stereo or Bilingual.

STEREO, M1 and M2 Indicator (NV-VP60GN)
Indicates when the broadcast programme is in Stereo, Bilingual or NICAM.

STEREO: When receiving a Stereo/NICAM stereo broadcast.
M1/M2: When receiving a Bilingual/NICAM dual-sound broadcast.
M1: When receiving a NICAM monaural broadcast.
• To hear stereo sound, connect to a TV or Stereo Amplifier with left and right audio inputs (9, 10).
• This indication only appears when VHS playback is stopped.

3 L and R indicators
The Left (L) and Right (R) indicators show which sound mode is selected as follows:
Stereo: Both the L and R indicators appear.
L: The L indicator appears.
R: The R indicator appears.
Normal: Neither the L nor R indicator appears.

4 Operation status display
Pressing [VHS STATUS] once makes the on-screen display appear. After that, press the button repeatedly to change the display as follows:
Present time → Tape counter → Remaining tape time → Present time
During Index Search: “S 01” to “S 20” is displayed. (19)
During Jet Rewind: “J.REW” is displayed. (14)
• Press [RESET] to reset the tape counter (elapsed time) to “0:00:00”.
The tape counter is automatically reset to “0:00:00” when a video cassette is inserted.
• The remaining time is approximate. It will be incorrect if you set the wrong tape time in “TAPE SELECT” in the “OPTION” menu or if the tape is of poor quality.

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

6 Colour system indicator (21)
Shows selected colour TV system except “AUTO”.

7 Recording mode indicator (16)

Notes:
• These displays do not appear when paused or during slow play.
• The on-screen display may be distorted depending on the playback tape or the input signal.
Playing Discs—basic Play

1. Press [OPEN/CLOSE] to open the disc tray.
2. Place the disc with the label facing upward.
3. Press [PLAY].

DVD Select

Press this button to select DVD. Check if the DVD selector indicator is displayed on the unit's display (→ 7, 8).

Stop

Press this button during play.
- When " II " flashes on the unit's display, the Resume function is active. The unit memorizes the position when you press [STOP].

Resume function
Press [PLAY] once to start from this position.
- Press [STOP] again to clear it.

Skip

Press these buttons to skip chapters, tracks or programmes.
- Each press increases/decreases the number of skips.
- After skipping, the unit returns to the previous state, play or pause.

Search (during play)

Press [PLAY] to start normal play.

Show-motion (during pause)

Press these buttons while paused.

Frame-by-frame (during pause)

Press these buttons while paused.
- Each press shows the next or previous frame.
- Press and hold to change in succession.
- For forward only, pressing [PAUSE] repeatedly also shows frame by frame.

DVD status

Change the unit's display:
- Counter display
- Disc information.

Open/Close

Press this button to open the disc tray.
- You can eject a disc even if the power is turned off.

Still picture (Pause)

Press this button during play.

Search

Press these buttons while paused.
- Each press shows the next or previous frame.
- Press and hold to change in succession.
- For forward only, pressing [PAUSE] repeatedly also shows frame by frame.

To restart play

Press [PLAY].
Playing Discs—basic Play

Notes:
- If “STOP” appears on the TV, the operation is prohibited by the unit or the disc.
- If there is a disc loaded in the unit when it is turned on, the disc may start playing automatically.
- When the whole disc has finished playing, the unit automatically stops. Some discs show a menu screen.
- When “Press PLAY to resume play” is displayed, the play position is memorized even if the unit is turned off. (Power off resume)
- The disc keeps rotating when showing a still picture (pausing).
- Pressing [®®®] may take you to a menu screen depending on the disc or the portion played (e.g. Video CD).
- You cannot move backwards during slow-motion frame-by-frame.
- Each press or hold [®®®] accelerates the search or the slow-motion speed in 5 steps.
- Slow-motion and frame-by-frame only work on moving pictures except [DVD-VR].
- Discs that need to be finalized and are not finalized cannot be played. (+G)
- DVD-R DL (single-sided, dual layer) discs have two writable layers on one side as shown on the illustration below. If there is not enough space on the first layer to record a programme, the balance is recorded on the second layer. (Programme 2 illustration below) When playing a programme recorded on both layers, the unit automatically switches between layers and plays the programme in the same way as a normal programme. However, video and audio may momentarily cut out when the unit is switching layers.
- When a menu screen appears on the TV

For motion pictures except [DVD-VR], [MP3], [WMV], [DWA]
Press the numeric buttons to select the desired item.
Example: “03”; [3]
- You can also use [▲ ▼ ▣ ▤ ▧] to select items. Press [ENTER] to confirm your selection.
- To revert to the menu screen
Press [PLAY LIST].
- To show the top menu
Press [TOP MENU].

Notes:
- Many Video CDs with playback control display a menu on the TV when played back.
- The operation may differ depending on the disc. Read the disc’s instructions for details.
- Discs continue to rotate while menus are displayed.
Press [STOP] when you have finished viewing to preserve the unit’s motor and your TV screen.
DivX VOD Contents

DivX Video-on-Demand (VOD) content is encrypted for copyright protection. In order to play DivX VOD content on this unit, you first need to register the unit (Setup Menu \(\rightarrow 37\)).

Follow the online instructions for purchasing DivX VOD content to enter the unit’s registration code and register the unit. For more information about DivX VOD, visit www.divx.com/vod.

Display the unit’s registration code

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHS/DVD SELECT</td>
<td>Stop play</td>
</tr>
<tr>
<td>SETUP</td>
<td>Display the registration code</td>
</tr>
</tbody>
</table>

- We recommend that you make a note of this code for future reference.
- After playing DivX VOD content for the first time, another registration code is then displayed in “DivX Registration”. Do not use this registration code to purchase DivX VOD content. If you use this code to purchase DivX VOD content, and then play the content on this unit, you will no longer be able to play any content that you purchased using the previous code.
- If you purchase DivX VOD content using a registration code different from this unit’s code, you will not be able to play this content. (“Authorization Error” is displayed.)

Regarding DivX content that can only be played a set number of times

Some DivX VOD content can only be played a set number of times. When you play this content, the remaining number of plays is displayed. You cannot play this content when the number of remaining plays is zero. (“Rental Expired” is displayed.)

When playing this content
- The number of remaining plays is reduced by one if:
  - you press [VHS/DVD SELECT] or [SETUP];
  - you press [STOP], (Press [THUMBS UP/Pause] to stop play.)
  - you press [\&\& ] (SKIP) or [\&\& ] (SEARCH) etc. and arrive at another content or the start of the content being played.
- Resume and Marker functions do not work.
Useful Functions

- Select the unit viewing channel (or the AV input) on the TV.
- Press [DVD SELECT] (e.g. 8).

### Starting Play from a Selected Item

Press the numeric buttons.

Example: “10”, “31” or “0”

Press the numeric buttons and then press [ENTER] or [PLAY).

If the Video CD has playback control
1) Press [STOP] to clear “PBC” (e.g. 42).
2) Press the numeric buttons.

**Notes:**
- To return to the “PBC”, press [STOP] and then press [PLAY LIST].
- This works only when stopped in some discs.
- This may not work depending on the disc or the play status.

### Starting Play from a Selected Group

Except DVD-V/DVD-V

A folder containing WMA/MP3, JPEG, MPEG4 and DivX discs is treated as a group.

1) Press [FUNCTIONS] and then press [▲ ▼] to select “Group”.
2) Press [▲ ▼] (cursor) then press [▲ ▼] to select the item and then press [ENTER].

### Quick Replay

Except MPEG4/DVX and +R/+RW

During play, press [QUICK REPLAY] to skip back a few seconds.

**Note:**
- This may not work on some parts of a disc or some kind of discs.

### Changing Play Speed

For motion pictures except VCD, MPEG4 and DVX

During play,

1) Press [FUNCTIONS] and then press [▲ ▼] to select “Other Settings”.
2) Press [▲ ▼] (cursor) and then press [▲ ▼] to select “Normal” or a speed ratio.
3) Press [ENTER].

**Notes:**
- From x0.6 to x1.4 (in 0.1 units)
- After you change the speed.
  - Digital output switches to PCM-2 ch.
  - Sampling frequency of 96 kHz is converted to 48 kHz
- To return to normal play
  Press [PLAY].

### AV Enhancer

(On the main unit only)

By simply pressing this button the disc type is automatically determined and the best audio and video settings are configured.

Press [AV ENHANCER] to select “On”.

Off: Disables AV Enhancer. The user settings are valid.

**Audio settings:**
- Night Sound Mode (→ 35)
- H.Bass (→ 35)
- Advanced Surround (→ 31)
- Dialogue Enhancer (→ 35)
- Multi Re-master (→ 31)
- Sound Enhancement (→ 35)

**Video settings:**
- Picture Mode (→ below)

On: Effects are automatically applied to audio, video, and photographs according to the disc being played back. The user settings are invalid.

* On the remote control, this setting can be operated by using On-Screen Menus (→ 34).

### Picture Mode

For still and motion pictures except MPEG4, DivX

- This function does not work when AV Enhancer is turned “On”.

1) Press [FUNCTIONS] and then press [▲ ▼] to select “Other Settings”.
2) Press [▲ ▼] (cursor) then press [▲ ▼] to select “Picture Mode” and then press [ENTER].
3) Select “Picture Mode”, press [▲ ▼] (cursor) and then press [▲ ▼] to select desired picture mode.

**Normal:**
- Normal mode (Initial Setting).
- Cinema1: Mellows images and enhances detail in dark scenes.
- Cinema2: Sharpens images and enhances detail in dark scenes.
- Animation: Suits the image quality for animation.
- Dynamic: You can enjoy dynamic images with emphasized contrast.

4) Press [ENTER].

- To exit the menu
  Press [RETURN].

### Rotating Pictures

For still pictures

1) Press [FUNCTIONS] and then press [▲ ▼] to select “Rotate Picture”.
2) Press [▲ ▼] (cursor) and then press [▲ ▼] to select “Right” or “Left”.
3) Press [ENTER].

- To exit the menu
  Press [RETURN].
Manual Skip
For motion pictures except [DVD-V] [MPEG4] [DivX] and +R/+RW
Play starts from approximately 30 seconds later. This is convenient
when you want to skip commercials etc.

During play, press [MANUAL SKIP].
DVD
≥ It is not possible to skip the program if the start of the next program
is within about 30 seconds of the point you skipped from.

Displaying Current Playback Condition
(Quick OSD)
Press [QUICK OSD].
The current playback condition screen is displayed.
Each time you press the button:
Basics -- Details -- Off

Basics
Current playback number Elapsed play time

Details
Changing Soundtrack (e.g. 30)
Changing Subtitles (e.g. 30)
Angles (e.g. 30)
Aspect of current playback title
Total play time of current playback title

To exit the menu
Press [RETURN].
• When playing audio, the Quick OSD screen appears automatically.
• If there is JPEG data on the disc, the Quick OSD screen does not
appear automatically.
• While playing back, video information is not displayed during search.

Advanced Disc Review
For motion pictures except [DVD-V] [MPEG4] [DivX] and +R/+RW
Allows you to browse the disc contents and start playing from the
selected position. You can select either “Intro Mode” or “Interval Mode” (e.g. 37).

1) Press [FUNCTIONS] and then press [▲ ▼] to select “Other Settings”.

2) Press [▲ ▼] (cursor) then [▲ ▼] to select “Play Menu” and then press [ENTER].

3) Press [▲ ▼] to select “Advanced Disc Review” and then press [ENTER].
• Quick OSD screen is displayed.

4) Press [▲ PLAY] when you find a title/program to play.

Program/Random Playback
Common procedures
While stopped, press [PLAY MODE].
Each time you press the button:
Program Playback -- Random Playback -- Off (Normal play)

Program Playback
You can select up to 32 items to play in the order you choose.

1) Press the numeric buttons to select a group, title, chapter or track.

Example: “10”, [2][10][▼][0]

2) Press [ENTER] to register.

1) Press [▲ ▼] to select an item and then press [ENTER].

2) Carry out step 1 to change an item, or press [▲ ▼] to select “Clear” and then press [ENTER] to cancel.

When you use the cursor buttons to select the item
1) Press [ENTER] and then press [▲ ▼] to select an item.
2) Press [ENTER] to register.
• Select “ALL” to enter all the items in the selected disc, title or group.

To change and cancel a programme
1) Press [▲ ▼] to select an item and then press [ENTER].
2) Carry out step 1 to change an item, or press [▲ ▼] to select “Clear” and then press [ENTER] to cancel.

To clear the whole programme
Press [▲ ▼] to select “Clear all” and then press [ENTER].

Random Playback
The unit plays chapters in one DVD title or all tracks in a Video CD
and audio CD at random.

1) Press [▲ ▼] to select a group or a title.

2) Press [▲ PLAY].

To exit the program/random mode
2) Press [PLAY MODE] repeatedly to select the normal mode.

Notes:
• These functions do not work during HighMAT disc play. To disable
“HighMAT” change the setting to “Play as Data Disc” (Other Menu 交替 35).
• [DVD] Some items cannot be selected.
• [DVD] Press [▲ PLAY] to start random playback.
• [DVD] Times are not displayed while programming.
• When program/random play ends, the unit stops and the screen
reverts to the play mode display.
• The programme is cleared when you turn the unit off or open the
disc tray.
Using Navigation Menus

Playing a Data Disc
Except for DVD-VR, DVD-A
You can play a WMA, MP3, CD text, JPEG, MPEG4 or DivX disc by using the menu.
• Select the unit viewing channel (or the AV input) on the TV.
• Press [DVD SELECT] (⇒ 8).

Using Playback Menu (except JPEG files on DVD-RAM)
While the menu screen is displayed
1) Press [A ▼] to select “All”, “Audio”, “Picture” or “Video” and then press [ENTER].
   • To display/exit the screen
   Press [TOP MENU].

Using Navigation Menus
1) Press [PLAY LIST].

2) Press [A ▼] to select the group or audio/picture content and then press [ENTER].
   • To listen to WMA/MP3 contents while showing a JPEG image on the screen.
   Select the JPEG file first, and then select the audio contents.
   (The opposite order is not effective.)
   ◆ To exit the menu
   Press [PLAY LIST] or [RETURN].

Using the submenu
1) While the Navigation Menu screen is displayed, press [FUNCTIONS].
2) Press [A ▼] to select the submenu and then press [ENTER].
   ▶ Multi
   • Groups and contents
   ▶ List
   • Contents only
   ▶ Tree
   • Groups only
   ▶ Thumbnail
   • Thumbnail images JPEG
   ▶ Next group
   • To the next group WMA MP3 MPEG4 DivX
   ▶ Previous group
   • To the previous group WMA MP3 MPEG4 DivX
   ▶ All
   • WMA/MP3, JPEG, MPEG4 and DivX video
   ▶ Audio
   • WMA/MP3 only
   ▶ Picture
   • JPEG files only
   ▶ Video
   • MPEG4 and DivX video only
   ▶ Help display
   • To switch between guide messages and the elapsed play time indicator
   ▶ Find
   • To search by content or group title (⇒ below)

Searching by a content or group title
Place the cursor on the group title to search a group, or place the cursor on the content title to search content.

1) Select “Find”, (⇒ above)
2) Press [A ▼] to select a character and then press [ENTER].
   • Repeat to enter another character.
   • Lower case characters are also searched.

Notes:

WMA
• WMA files must have the extension “.WMA” or “.wma”.
• You cannot play WMA files that are copy-protected.

MP3
• This unit is not compatible with ID3 tags (⇒ 42).
• MP3 files must have the extension “.MP3” or “.mp3”.
   If you play MP3 track that includes still picture data, it will take some time before the music starts playing and the elapsed time will not be displayed during this time. Even after the track starts, the correct play time will not be displayed.

JPEG
• JPEG files must have the extension “.JPG”, “.jpg”, “.JPEG”, or “.jpeg”.
• Use a digital camera that meets the DCF (Design rule for Camera File system) standard. Some digital cameras have functions that are not supported by the DCF standard like automatic picture rotation which may make pictures un-viewable.
• Do not alter the files in any way or save them under a different name.
• This unit cannot display moving pictures, MOTION JPEG and other such formats, still pictures other than JPEG (i.e. TIFF) or play the associated sound.

MPEG4
• MPEG4 files must have the extension “.ASF” or “.asf”.
• You can play MPEG4 data (conforming to SD VIDEO specifications [ASF standard]) MPEG4 (Simple Profile) video system/f2.726 audio system) recorded with Panasonic SD multi cameras or DVD video recorders with this unit.
• The recording date may differ from that of the actual date.

DivX
• DivX files must have the extension “.DIVX”, “.divx”, “.AVI”, or “.avi”.
• GMC (Global Motion Compensation) is not supported.
• DivX files greater than 2 GB or have no index may not play properly on this unit.
• This unit supports all resolutions up to maximum of 720 × 480 (NTSC)/ 720 × 576 (PAL).
• You can select up to 8 types of audio and subtitles on this unit.

WMA MP3 JPEG MPEG4 DivX
• Formats that can be used are ISO9660 level 1 and level 2 (except extended format).
• Finalize the disc after recording. A disc that is not finalized may not be played.
• This unit is compatible with multi-session (⇒ 42) but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.

Naming folders and files
At the time of recording, prefix folder and file names with 3-digit numbers in the order you want to play them.
• Depending on how you create files, they may not play in the order you numbered them or may not play at all.
### Using Navigation Menus

**Using the contents screen to find a track (CD text only)**

While the menu screen is displayed
1) Press [▲ ▼] to move through the tracks and then press [ENTER].
2) Press [RETURN] to exit.

**Note:**
- This cannot be used during random playback.

**Playing a HighMAT Disc**

A menu appears when you insert a disc.

While the menu is displayed, select the item following the on-screen instructions.

1) **Menu:** Takes you to the next menu which shows play lists or another menu.
2) **Play list:** Play starts.
   - To change the menu background
     Press [FUNCTIONS]. (The background changes to the one recorded on the disc.)
   - To display the menu
     Press [TOP MENU].
   - To exit the menu
     Press [STOP].

**Selecting from the lists**

1) During play, press [PLAY LIST].
2) Press [▲ ▼] and then [▲ ▼] to switch between the play list, group and content lists.
3) Press [▶] (cursor) then [▲ ▼] to select an item and then press [ENTER].

**Note:**
- To exit the list screen
  Press [PLAY LIST] or [RETURN].

### Playing a DVD Video Recording Format Disc

**Direct Navigator**

You can use the programme list to search for a desired programme to play.

1) Press [DIRECT NAVIGATOR].
2) Press [▲ ▼] to select the programme.
   - The programme selected is played in the background.
   - You can also use the numeric buttons.
     Example: “03”; [3] “10”; [10] [1] [0]
   - Press [▶] (cursor) to show the contents of the programme.

3) Press [ENTER] to start play.

**Notes:**
- The Direct Navigator programme list displays up to 99 programmes.
- Titles appear only if they have been entered.
- You cannot change programme and disc titles.

**Playing a play list**

You can play a play list (→ 6) created on other equipment such as a DVD video recorder.

1) Press [PLAY LIST].
2) Press [▲ ▼] to select the play list.
   - You can also select play lists with the numeric buttons.
     Example: “03”; [3] “10”; [10] [1] [0]
3) Press [ENTER] to start play.

**Notes:**
- The Direct Navigator programme list displays up to 99 programmes.
- Titles appear only if they have been entered.
- You cannot change programme and disc titles.

**To clear the play list screen**

Press [PLAY LIST] or [RETURN].

**Note:**
- Up to 99 play lists can be displayed.
To Enjoy Movies and Music More

Changing Soundtracks, Subtitles and Angles

Some discs have multiple subtitle languages, camera angles etc. which you can change during play.

1) Press [FUNCTIONS] and then select “Subtitle”.

During play, press [AUDIO].

To clear/display the subtitles
1) Press [FUNCTIONS] and then press [A] (cursor) then [A] (cursor) to select “Display Menu” and then press [ENTER].
2) Press [A] (cursor) [A] (cursor) then press [A] (cursor) to select “Subtitle Position” or “Subtitle Brightness” and then press [A] (cursor).
3) Press [ENTER].

Angles

For DVD-V

During play,

1) Press [FUNCTIONS] and then press [A] (cursor) to select “Other Settings”.
2) Press [A] (cursor) then [A] (cursor) to select “Display Menu” and then press [ENTER].
3) Press [A] (cursor) to select “Subtitle Position” or “Subtitle Brightness” and then press [A] (cursor).
4) Press [A] (cursor) to adjust the position or brightness.
   - Adjust position between 0 and 60 in 2 unit steps.
   - For brightness, select “Auto” so the brightness adjusts automatically against the background or select a level between 0 and -7.
5) Press [ENTER].

To exit the menu
Press [RETURN].

---

To Clear/Display the Subtitles

1) Press [FUNCTIONS] and then select “Subtitle”.
2) Press [A] (cursor) then press [A] (cursor) to select “Off” or “On”.
3) Press [ENTER].

---

To Change the Position and Brightness of the Subtitles

During play,

1) Press [FUNCTIONS] and then press [A] (cursor) to select “Other Settings”.
2) Press [A] (cursor) then [A] (cursor) to select “Display Menu” and then press [ENTER].
3) Press [A] (cursor) to select “Subtitle Position” or “Subtitle Brightness” and then press [A] (cursor).
4) Press [A] (cursor) to adjust the position or brightness.
   - Adjust position between 0 and 60 in 2 unit steps.
   - For brightness, select “Auto” so the brightness adjusts automatically against the background or select a level between 0 and -7.
5) Press [ENTER].

To exit the menu
Press [RETURN].

---

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

Press [DVD SELECT] (8).

Soundtracks

For motion pictures except MPEG.

During play, press [AUDIO].

- DVD-V: The number changes each time you press the button.
- VCD: Each time you press the button, the indication changes. LR→L→R→LR.
- DIVX: While the menu is displayed Press [A] then [A] to select “L”, “R” or “LR”.

You can also use this button to turn on and off the vocals on karaoke discs. Read the disc’s instructions for details.

Play restarts from the beginning of the soundtrack when playing karaoke discs. Read the disc’s instructions for details.

You can also use this button to turn on and off the vocals on karaoke discs. Read the disc’s instructions for details.

- DVD-V: You can change the subtitle language and turn the subtitles on and off.
- VCD: You can turn the subtitles on and off.

During play.

1) Press [FUNCTIONS] and then press [A] (cursor) to select “Subtitle”.
2) Press [A] (cursor) to select “On” and then press [ENTER].
3) Press [A] (cursor) to select the desired language and then press [ENTER].

To clear the subtitles
1) Press [FUNCTIONS] and then select “Subtitle”.
2) Press [A] (cursor) then press [A] (cursor) and then select “Off” by pressing [A] (cursor).
3) Press [ENTER].

Subtitles

For motion pictures except MPEG.

During play,

1) Press [FUNCTIONS] and then press [A] (cursor) to select “Subtitle”.
2) Press [A] (cursor) to select “Off” or “On”.
3) Press [ENTER].

To exit the menu
Press [RETURN].

---

For DVD-V

During play,

1) Press [FUNCTIONS] and then press [A] (cursor) to select “Other Settings”.
2) Press [A] (cursor) then [A] (cursor) to select “Display Menu” and then press [ENTER].
3) Press [A] (cursor) to select “Subtitle Position” or “Subtitle Brightness” and then press [A] (cursor).
4) Press [A] (cursor) to adjust the position or brightness.
   - Adjust position between 0 and 60 in 2 unit steps.
   - For brightness, select “Auto” so the brightness adjusts automatically against the background or select a level between 0 and -7.
5) Press [ENTER].

To exit the menu
Press [RETURN].

---

Changing Soundtracks, Subtitles and Angles

Some discs have multiple subtitle languages, camera angles etc. which you can change during play.

1) Press [FUNCTIONS] and then select “Subtitle”.

During play, press [AUDIO].

To clear the subtitles
1) Press [FUNCTIONS] and then select “Subtitle”.
2) Press [A] (cursor) then press [A] (cursor) and then select “Off” by pressing [A] (cursor).
3) Press [ENTER].
Advanced Surround

You can enjoy a surround-like effect if you are using 2 front speakers (SP) or headphones (HP). The effect broadens when playing discs with surround effects and sound seems to come from speakers either side of you.

1. To enjoy HP-mode, connect the unit to equipment that has a headphone socket.
2. This function does not work when AV Enhancer is turned “On”.

During play,
1. Press [FUNCTIONS] and then press [ ] to select “Other Settings”.
2. Press [ ] (cursor) then [ ] to select “Advanced Surround” and then press [ ] (cursor).
3. Press [ ] to select “Advanced Surround” and then press [ ] (cursor).
4. Press [ ] to select the desired effect.
5. Press [ENTER].

Off: Cancel (Initial Setting)
HP 2: Enhanced effect
SP 1: Natural effect
HP 1: Natural effect
SP 2: Enhanced effect

Effective listening using the front speakers only
• If “SP 1” or “SP 2” is selected, sound is only output from the front speakers.
• To activate, then turn off the surround effects on other equipment.
• This function will not work or the effect will be less with some discs.
• Turn this function off if it causes distortion.

Repeat Play

For motion pictures and audio: When the elapsed play time/remaining play time is displayed.
For still pictures: Works with all JPEG content although the elapsed play time/remaining play time cannot be displayed.

During play,
1. Press [FUNCTIONS] and then press [ ] to select “Other Settings”.
2. Press [ ] (cursor) then [ ] to select “Repeat” and then press [ ] (cursor).
3. Press [ ] to select “Repeat”, press [ ] (cursor) then press [ ] to select desired effect.

DVD-VR
Off ↔ Program ↔ All

Notes:
• You can also repeat play of content and group on HighMAT discs.
• This may not work on some discs.
• If a DVD has 2 or more titles, it is not allowed to repeat the whole disc.
• This does not work during menu play of a Video CD with playback control.

Multi Re-master

For motion pictures and audio

1. Press [FUNCTIONS] and then press [ ] to select “Other Settings”.
2. Press [ ] (cursor) then [ ] to select “Multi Re-master”, press [ ] (cursor) then press [ ] to select “Off”, “1”, “2” or “3”.

Setting

<table>
<thead>
<tr>
<th>DVD-VCD</th>
<th>DVD-VCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPCM</td>
<td>PPCM</td>
</tr>
</tbody>
</table>

Other discs

<table>
<thead>
<tr>
<th>Type of music</th>
<th>Effect level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Off</td>
</tr>
<tr>
<td>1 High tempo (e.g., pop and rock)</td>
<td>Light</td>
</tr>
<tr>
<td>2 Various tempos (e.g., jazz)</td>
<td>Medium</td>
</tr>
<tr>
<td>3 Low tempo (e.g., classical)</td>
<td>Strong</td>
</tr>
</tbody>
</table>

Notes:
• This function does not work when AV Enhancer is turned “On”.
• This feature may not work when connected with DIGITAL AUDIO OUT terminals.
• This may not work depending on the disc’s recording.
• This does not work when Night Sound Mode, H.Bass or Advanced Surround is on (e.g., Left, 35).
To Enjoy Movies and Music More

**Variable Zoom Function**

For motion pictures: Change the zoom ratio so the pictures expand to suit the screen.

- Change the setting “TV Aspect” to suit your TV. (➔ 37)

**Just Fit Zoom**  
During play.

[1] Press [FUNCTIONS] and then press [▲ ▼] to select “Other Settings”.

[2] Press [ ▶ ] (cursor) then [▲ ▼] to select “Display Menu” and then press [ENTER].

[3] Press [▲ ▼] to select “Just Fit Zoom” and then press [ ▶ ] (cursor).

[4] Press [▲ ▼] to select the present aspect ratio and then press [ENTER].

**Progressive Out (Component)**

You can enjoy higher image quality than that output from the conventional video out terminal or S-Video terminal (Interlace and progressive output ➔ 42).

- Connect to the component video input on a progressive compatible TV (➔ 49). Video will not be displayed correctly if connected to an incompatible TV.

[1] Press [FUNCTIONS] and then press [▲ ▼] to select “Other Settings”.

[2] Press [ ▶ ] (cursor) then [▲ ▼] to select “Display Menu” and then press [ENTER].


[4] Press [▲ ▼] to select “p” (progressive) (➔ 34) and then press [ENTER].

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


○ To exit the menu  
Press [RETURN].

**Notes:**

- All Panasonic TVs that have progressive input are compatible. Consult the manufacturer if you have another brand of TV.
- The VHS video can not be progressive-output.
- The TV will be disrupted for a moment but this is normal.
- Output from this unit is interlaced scanning if you have connected to the TV through VIDEO OUT or S-VIDEO OUT terminals, regardless of the settings.
- When progressive output is on, closed captions will not be displayed.

**Manual Zoom**  
During play.

[1] Press [FUNCTIONS] and then press [▲ ▼] to select “Other Settings”.

[2] Press [ ▶ ] (cursor) then [▲ ▼] to select “Display Menu” and then press [ENTER].


**Notes:**

- The ratio automatically will return to ×1.00 when you open the disc tray, change the source or turn off the unit.
- Refer to the disc’s instructions and “Variety of screen sizes” (➔ above) for the aspect ratio of the picture.
- It may not be possible to zoom up to ×4.00 depending upon the connected television and its settings.

**Examples:**

- DVD-V: 1.00 to 4.00 (in 0.05 units).
- MPEG-4: 1.00 to 2.00 (in 0.02 units).
- DivX: 1.00 to 4.00 (in 0.01 units).
- VCD: 1.00 to 1.60 (in 0.02 units).

**Variety of screen sizes**

- American Vista (1.85:1)  
- European Vista (1.66:1)  
- 4:3 Standard (1.00)  
- Cinemascope1 (1.00)  
- Cinemascope1 (1.33:1)  
- Cinemascope2 (1.46:1)  
- Cinemascope2 (2.35:1)  
- Cinemascope2 (2.55:1)
To Enjoy Movies and Music More

Digital Output

For DVD-V
When you have connected equipment through this unit’s COAXIAL DIGITAL AUDIO terminal (→ 10), change the settings for “PCM Digital Output”, “Dolby Digital”, “DTS Digital Surround” and “MPEG” (→ 37). You can enjoy powerful movie theater and hall-like sound.

[1] Press [SETUP].


[3] Press [►] (cursor) then [▲ ▼] to select the item (→ below), and then press [ENTER].

[4] Press [▲ ▼] to select the item and then press [ENTER].


PCM Digital Output

Check the digital input limitations of the equipment you have connected using COAXIAL terminal and select the maximum sampling rate of the PCM digital output.

Up to 48 kHz (Initial setting): When connected to equipment compatible with 44.1 kHz or 48 kHz

Up to 96 kHz: When connected to equipment compatible with 88.2 kHz or 96 kHz

Notes:

≥ Signals from copy-protected discs are converted to 48 kHz or 44.1 kHz.
≥ Some equipment cannot handle sampling rate of 88.2 kHz even if they can handle 96 kHz. Read your equipment’s operating instructions for details.

Dolby Digital, DTS Digital Surround and MPEG

Bitstream (Initial setting for Dolby Digital and DTS Digital Surround): Select if the equipment you connected can decode the signal.

PCM (Initial setting for MPEG): Select if the equipment you connected cannot decode the signal.

IMPORTANT
Select “Bitstream” when the equipment can decode the bitstream (digital form of multi-channel data). Otherwise, select “PCM”.

Notes:

≥ Signals from copy-protected discs are converted to 48 kHz or 44.1 kHz.
≥ Some equipment cannot handle sampling rate of 88.2 kHz even if they can handle 96 kHz. Read your equipment’s operating instructions for details.
### Using On-Screen Menus

On-Screen Menus are menus that contain information about the disc or unit. These menus allow you to operate the unit by changing this information:

- Select the unit viewing channel (or the AV input) on the TV.
- Press [DVD SELECT] (→ 8).

#### Common procedures


2. Select the menu.
   - Select
   - Go to the next menu
   - Register
   - Return to the previous menu

3. Make the settings.
   - Select
   - Register


To cancel the menus
Press [FUNCTIONS] or [RETURN].

### Main Menu

<table>
<thead>
<tr>
<th>Program</th>
<th>Group</th>
<th>Title</th>
<th>Track</th>
<th>Playlist Content</th>
<th>Time</th>
<th>Video</th>
<th>Audio</th>
<th>Thumbnail</th>
<th>Subtitle</th>
<th>Marker (VR)</th>
<th>Angle</th>
<th>Rotate</th>
<th>Picture</th>
<th>Slideshow</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To start from a specific item.</td>
<td>1 Except +/RW</td>
<td>To display the pixel number</td>
<td>To display the current bit rate or sampling rate</td>
<td>To show thumbnail images</td>
<td><em>On +/RW, a subtitle number may be shown for subtitles that are not displayed.</em></td>
<td>To recall a marker recorded on DVD-Video recorders</td>
<td>[CANCEL]</td>
<td>[26]</td>
<td>[26]</td>
<td>[0–30 sec]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>To skip forwards or backwards (Time Slip for play only)</td>
<td>2</td>
<td>[DVR/PROGRESSIVE]</td>
<td>[INTERLACE]</td>
<td>[30]</td>
<td>[30]</td>
<td>[30]</td>
<td>[26]</td>
<td>[26]</td>
<td>[0–30 sec]</td>
<td></td>
</tr>
</tbody>
</table>

#### Other Settings

<table>
<thead>
<tr>
<th>Play Speed (→ 26)</th>
<th>AV Enhancer (→ 26)</th>
</tr>
</thead>
</table>

#### Play Menu

<table>
<thead>
<tr>
<th>Repeat (→ 31)</th>
<th>Marker (→ below)</th>
<th>Marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-B Repeat (Exceed: [DIVX] MODE)</td>
<td>Exceed [DIVX]: 5 positions</td>
<td>To mark up to 5 positions to play again</td>
</tr>
<tr>
<td>[ENTER] (start point) → [ENTER] (end point) → [ENTER] (cancel)</td>
<td>Marker (→ below)</td>
<td>[ENTER] (all the desired point)</td>
</tr>
<tr>
<td>Press and hold [4] to change faster.</td>
<td></td>
<td>To mark a position: [◄] → [ENTER]</td>
</tr>
<tr>
<td>Repeat a section between points A and B within an item.</td>
<td>To recall a marker: [◄] → [ENTER]</td>
<td>To erase a marker: [◄] → [CANCEL]</td>
</tr>
<tr>
<td>If the end of an item is reached before pressing [ENTER] for the second time it becomes point B.</td>
<td>Marker (→ below)</td>
<td>Marker</td>
</tr>
<tr>
<td>Some subtitles recorded around point A or B may not appear.</td>
<td>[ENTER] (all the desired point)</td>
<td>Marker (→ below)</td>
</tr>
<tr>
<td>If places have been marked (e.g. with a DVD video recorder), they are displayed.</td>
<td>To mark multiple points: [◄] → [ENTER]</td>
<td>Marker (→ below)</td>
</tr>
<tr>
<td>This feature doesn’t work during program and random play.</td>
<td>To recall a marker: [◄] → [ENTER]</td>
<td>Marker (→ below)</td>
</tr>
<tr>
<td>Markers added with this unit clear when you turn the unit off, change the source or open the disc tray.</td>
<td>To erase a marker: [◄] → [CANCEL]</td>
<td>Marker (→ below)</td>
</tr>
</tbody>
</table>

#### Notes:

- If places have been marked (e.g. with a DVD video recorder), they are displayed.
- This feature doesn’t work during program and random play.
- Markers added with this unit clear when you turn the unit off, change the source or open the disc tray.

#### Picture Menu

<table>
<thead>
<tr>
<th>Picture Mode (→ 26)</th>
<th>Video Output Mode (→ 26)</th>
<th>Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>(normal) Auto1:</td>
<td>Interlace video 480p/576p: Progressive video</td>
<td></td>
</tr>
<tr>
<td>Transfer Mode</td>
<td>When the tray is opened, the setting will return to Auto or Auto1.</td>
<td></td>
</tr>
<tr>
<td>Auto:</td>
<td>When playing PAL discs</td>
<td></td>
</tr>
<tr>
<td>Cinema:</td>
<td>Autodetects the film and video content and then appropriately converts it.</td>
<td></td>
</tr>
<tr>
<td>Video:</td>
<td>Select if the content is distorted when Auto is selected.</td>
<td></td>
</tr>
<tr>
<td>Auto1 (normal):</td>
<td>Autodetects the film and video content, and appropriately converts it.</td>
<td></td>
</tr>
<tr>
<td>Auto2:</td>
<td>In addition to Auto1, autodetects film contents with different frame rates and appropriately converts it.</td>
<td></td>
</tr>
<tr>
<td>Video:</td>
<td>Select if the content is distorted when Auto1 or Auto2 is selected.</td>
<td></td>
</tr>
</tbody>
</table>
### Audio Menu

**Night Sound Mode**
- You can enjoy clear sound without setting the volume at a high level.
- This may not work depending on the discs recording.
- You can enjoy better sound through PCM-2 ch by connecting to a receiver amplifier.

**H.Bass**
- On: Off
- This does not work when Night Sound Mode (above) is on.
- This may not work depending on the discs recording.
- If the sound is distorted or there is noise, set to "Off".
- You can enjoy better sound through PCM-2 ch by connecting to a receiver amplifier.

**Advanced Surround**
- Dialogue Enhancer
  - [DVD-V] (Dolby Digital, DTS, 3-channel or more, with the dialogue recorded in the center channel)
  - [DVD-VR] (Dolby Digital, 3-channel or over, with the dialogue recorded in the center channel)
- This makes the dialogue in movies easier to hear.
- [DVD-V]: On
- [DVD-VR]: Off

**Multi Re-master**
- [DVD-V]: On
- [DVD-VR]: Off

**Sound Enhancement**
- [DVD-V]: On
- [DVD-VR]: Off

**Information**
- [JPEG]: Off, Date, Details

**Subtitle Position/Brightness**
- [DVD-V]: On

**4:3 Aspect**
- Normal: Fill to the width of the television screen.
- Auto: The setting is automatically set to "Shrink" if the disc is recorded in 4:3 Aspect and automatically set to "Zoom" if the disc is recorded in 16:9 (wide screen).
- Shrink: The 4:3 Aspect picture is shown in the centre of the television screen.
- Zoom: Enlarge using 4:3 Aspect and trim the picture on the edges.

**Just Fit Zoom**
- [DVD-V]: On

**Manual Zoom**
- [DVD-V]: On

**Bit Rate Display**
- [DVD-V]: On

**GUI See-through**
- On—Auto—Off

**GUI Brightness**
- [DVD-V]: On—Auto—Off

### Other Menu

**Setup**
- [DVD-V]: On

**Play as DVD-VR**
- While stopped, select “Play as Data Disc” to play JPEG files on DVD-RAM.

**Play as HighMAT**
- Play a HighMAT disc without using the HighMAT function.

**Audio attributes**
- [DVD-V]: On

**Audio/Subtitle language**
- ENG: English
- FRA: French
- DEU: German
- ITA: Italian
- ESP: Spanish
- NLD: Dutch
- SVE: Swedish
- NOR: Norwegian
- DAN: Danish
- POR: Portuguese
- RUS: Russian
- JPN: Japanese
- CHI: Chinese
- KOR: Korean
- MAL: Malay
- VIE: Vietnamese
- THA: Thai
- : Others

**Bit Rate Display**
- Current: 3.973 Mbps
- Average: 2.336 Mbps
- 5.0 Mbps

---

**Quick OSD**
- Basics—Details—Off
Changing Settings

Change the settings to suit your preferences and the environment in which you are using the unit. These settings are retained in the memory until they are changed, even if the unit is turned off. See the next page for menu and option details.

- Select the unit viewing channel (or the AV input) on the TV.
- Press [DVD SELECT] (⇒ 8).

Common procedures

1 Press [SETUP].

During the Setup, the DVD playback will be stopped.

2 Press [▲ ▼] to select the menu's tab.

The screen changes to display the menu.

Disc ↔ Video ↔ Audio ↔ Display ↔ Others

3 Press [▲] (cursor) then [▲ ▼] to select the item and then press [ENTER].

4 Press [▲ ▼] to select the option and then press [ENTER].

The screen now shows the menu again.

To return to the previous screen
Press [RETURN].

To exit the Setup menu
Press [SETUP].

Note:
- Screens other than those described here may appear. In this case, follow the instructions shown on the screen.

Entering a Password (Ratings)

For DVD-

The password screen is shown when you select levels 0 to 7 (⇒ 37).

1) Input a 4-digit password with the numeric buttons.
- If you enter a wrong number, press [CANCEL] to erase it.
2) Press [ENTER].
- The lock symbol is closed to show the rating is locked.
- "The Player is locked. Remember the passwords." is displayed on TV screen.
3) Press [ENTER] after confirming the 4 digits.

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

Language code list

<table>
<thead>
<tr>
<th>Language</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afar</td>
<td>Afar</td>
</tr>
<tr>
<td>Afrikaans</td>
<td>Afrik</td>
</tr>
<tr>
<td>Albanian</td>
<td>Alba</td>
</tr>
<tr>
<td>Amharic</td>
<td>Amhar</td>
</tr>
<tr>
<td>Arabic</td>
<td>Arab</td>
</tr>
<tr>
<td>Armenian</td>
<td>Arme</td>
</tr>
<tr>
<td>Assamese</td>
<td>Assam</td>
</tr>
<tr>
<td>Aymara</td>
<td>Aymar</td>
</tr>
<tr>
<td>Azerbaijani</td>
<td>Azarb</td>
</tr>
<tr>
<td>Bashkir</td>
<td>Bashk</td>
</tr>
<tr>
<td>Basque</td>
<td>Bask</td>
</tr>
<tr>
<td>Bengali, Bangla</td>
<td>Bangl</td>
</tr>
<tr>
<td>Bengali, Bangla</td>
<td>Bangla</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Butan</td>
</tr>
<tr>
<td>Bihari</td>
<td>Bihai</td>
</tr>
<tr>
<td>Breton</td>
<td>Breto</td>
</tr>
<tr>
<td>Bulgarian</td>
<td>Bulga</td>
</tr>
<tr>
<td>Byelorussian</td>
<td>Byelor</td>
</tr>
<tr>
<td>Cambodian</td>
<td>Cambi</td>
</tr>
<tr>
<td>Catalan</td>
<td>Catla</td>
</tr>
</tbody>
</table>

If the selected language is not recorded on the disc or a language has been predetermined on the disc, the language most prioritized on the disc is used for play.
## Setup Menu

<table>
<thead>
<tr>
<th>Disc Audio</th>
<th>English</th>
<th>Original: The original language of each disc will be selected.</th>
<th>Other: Input a code number with the numeric buttons (⇒ 36).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtitle</td>
<td>Automatic: If the language selected for “Audio” is not available, subtitles of that language will automatically appear if available on that disc.</td>
<td>English</td>
<td>Language options (⇒ 5) below</td>
</tr>
<tr>
<td></td>
<td>Other: Input a code number with the numeric buttons (⇒ 36).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Menus</td>
<td>English</td>
<td>Language options (⇒ 5) below</td>
<td>Other: Input a code number with the numeric buttons (⇒ 36).</td>
</tr>
</tbody>
</table>

### Language options
- French
- German
- Italian
- Spanish
- Portuguese
- Russian
- Dutch

<table>
<thead>
<tr>
<th>Advanced Disc Review (⇒ 27)</th>
<th>Intro Mode: Reviews each title/program.</th>
<th>Interval Mode: Reviews each title/program and also each 10 minute interval within a title/program.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratings (⇒ 36)</td>
<td>Setting ratings (When level 8 is selected)</td>
<td>8 No Limit: All DVD-Video can be played.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 to 7: Prohibits play of DVD-Video with corresponding ratings recorded on them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0 Lock All: Prohibits play of all DVD-Video.</td>
</tr>
<tr>
<td></td>
<td>Changing ratings (When level 0–7 is selected)</td>
<td>Unlock Player</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change Level</td>
</tr>
</tbody>
</table>

### Video

<table>
<thead>
<tr>
<th>TV Aspect (⇒ 13)</th>
<th>4:3 Pan&amp;Scan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Delay</td>
<td>20ms 40ms 60ms 80ms 100ms</td>
</tr>
<tr>
<td>Still Mode</td>
<td>Automatic: Still picture is displayed without being blurred or at high quality.</td>
</tr>
<tr>
<td></td>
<td>Field: The picture is not blurred but picture quality is lower.</td>
</tr>
<tr>
<td></td>
<td>Frame: The overall quality is high but the picture may appear blurred.</td>
</tr>
<tr>
<td>NTSC Disc Output</td>
<td>PAL60: When connected to a PAL television.</td>
</tr>
<tr>
<td></td>
<td>NTSC: When connected to an NTSC television.</td>
</tr>
<tr>
<td>Picture/Video Output</td>
<td>Automatic PAL NTSC/PAL60</td>
</tr>
</tbody>
</table>

### Audio

<table>
<thead>
<tr>
<th>PCM Digital Output (⇒ 33)</th>
<th>Up to 48 kHz Up to 96 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolby Digital (⇒ 33)</td>
<td>Bitstream PCM</td>
</tr>
<tr>
<td>DTS Digital Surround (⇒ 33)</td>
<td>Bitstream PCM</td>
</tr>
<tr>
<td>MPEG (⇒ 33)</td>
<td>PCM Bitstream</td>
</tr>
<tr>
<td>Dynamic Range Compression (Dolby Digital only)</td>
<td>Off</td>
</tr>
</tbody>
</table>

### Display

<table>
<thead>
<tr>
<th>Menu Language</th>
<th>English Français Deutsch Italiano</th>
</tr>
</thead>
<tbody>
<tr>
<td>Español</td>
<td>Português Русский Nederlands</td>
</tr>
<tr>
<td>On-Screen Messages</td>
<td>On Off</td>
</tr>
<tr>
<td>Background during Play</td>
<td>Background during JPEG and MPEG4 playback.</td>
</tr>
</tbody>
</table>

### Others

<table>
<thead>
<tr>
<th>DivX Registration</th>
<th>Displays the unit’s registration code.</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUICK SETUP (⇒13)</td>
<td>Answers questions for making basic settings.</td>
</tr>
<tr>
<td>Re-initialise Setting</td>
<td>Yes No</td>
</tr>
</tbody>
</table>
Recording from DVD to VHS

You can record the contents of a disc onto a video cassette.

- Select the unit viewing channel (or the AV input) on the TV.
- Insert a video cassette with an intact erasure prevention tab.
- Press [DVD SELECT] (→ 8).
- Select the desired recording mode (→ 16).

Manual Copying

Only discs that are not copy protected can be used.
- Press [DVD SELECT] (→ 8).
- Set "On-Screen Messages" to "Off" (Setup menu → 37).
- Insert the disc to be recorded (→ 23). When you copy NTSC discs, select "NTSC" in "NTSC Disc Output" (Setup menu → 37).

Select "dc" channel.
Recording is allowed only when the VHS input channel is set to "dc" (→ below).

Start playing the disc and find the playing start point.


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

[5] Press [I/PAUSE] and then press [REC].
Put the unit in the recording standby mode.

VHS recording and disc play start at the same time.

To stop recording
1) Press [STOP]. Recording will stop.
2) Press [DVD SELECT] and then press [STOP]. Disc play will stop.

Notes:
- You can select the audio channel to be recorded on the Normal audio track when copying a bilingual DVD (→ 21).
- Recording cannot be done if using a copy protected disc. By pressing [REC] at "dc" channel during DVD playback, the message "COPYING OF THIS MATERIAL IS NOT ALLOWED." appears on the TV screen.

DVD-RAM Copying

You can copy programmes on a DVD-RAM disc to a video cassette with One-touch operation.
- This function allows DVD-RAM discs recorded by Panasonic DV recorders to be copied.
- Insert the disc containing the programme to be copied (→ 23).
- This function allows you to record the whole content on a disc automatically. Confirm that the remaining tape time is sufficient for recording.

While stopped, press and hold [DVD-RAM COPYING] for 5 seconds or more.
When the disc is played all of the content or the tape reaches its end, this unit automatically stops copying.
- The message is displayed on TV screen for a few seconds when DVD-RAM copying is completed.

To stop recording
Press [STOP].
When " " and " " is flashing
Check the settings again.

Notes:
- In this function, the index signal is automatically added on the tape for each of the programmes. You can find the desired programme with these index signals (→ 19).
- This function does not work during timer recording standby mode.
- When the copying starts, "On-Screen Messages" in the Setup menu is automatically set to "Off". The "dc" channel is automatically selected (→ below).
- If you press [DVD-RAM COPYING] again, the copying starts at the stop position memorized (Resume function → 23). " " in the unit’s display flashes.

"dc" channel
- When the disc is played with the "dc" channel set, the TV screen displays the disc video.
## Before Requesting Service

Before requesting service, check the following points once again.

### General

<table>
<thead>
<tr>
<th>Issue</th>
<th>Suggested Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No power.</td>
<td>Connect the AC mains lead securely to mains supply.</td>
</tr>
<tr>
<td>No response when buttons are pressed.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Some operations may be prohibited by the disc.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> The unit may not be operating properly due to lightning, static electricity or some other external factor.</td>
</tr>
<tr>
<td>Reset procedure:</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Press [VHS/DVD] to switch the unit to the standby mode and then back to ON. Alternatively, press [VHS/DVD] to switch the unit to the standby mode, disconnect the AC mains lead and then wait for 1 minute. Reconnect the AC mains lead.</td>
</tr>
<tr>
<td>No operations can be performed with the remote control.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check the batteries are inserted correctly.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> The batteries are depleted. Replace them with new ones.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Point the remote control at the remote control sensor and operate.</td>
</tr>
<tr>
<td>Cannot select alternative languages.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> This function depends on software availability.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Try selecting from the disc’s menu if one is available.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Cancel all program and random play.</td>
</tr>
<tr>
<td>Cannot operate the unit.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Press [VHS/DVD SELECT] properly.</td>
</tr>
<tr>
<td>Cannot operate the TV.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> The unit is in timer recording standby (“ ” is On on the unit’s display).</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check the TV maker setting.</td>
</tr>
<tr>
<td>The TV reception got worse after connecting this unit.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> This can occur because the signals are being divided between the unit and the TV. It can be solved by using a signal booster, available from audio-visual suppliers. Consult your dealer if reception does not improve.</td>
</tr>
<tr>
<td>The tape counter isn’t changing.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> The tape counter does not change while playing unrecorded parts.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> The tape is dirty or damaged. Consult your dealer if this is the case.</td>
</tr>
<tr>
<td>No on-screen display.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Go to “OPTION” in the VHS menu and select “AUTO” for “OSD”.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Go to “Display” in the Setup menu and select “On” for “On-Screen Messages”.</td>
</tr>
<tr>
<td>The menu is displayed in a different language.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Go to “Disc” in the Setup menu and select the preferred language for “Menus”.</td>
</tr>
</tbody>
</table>

### Sound

<table>
<thead>
<tr>
<th>Issue</th>
<th>Suggested Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No sound.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check the connections.</td>
</tr>
<tr>
<td>Distorted sound.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check the volume on the equipment you have connected.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Ensure that the input settings on the other equipment are correct.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Output from this unit will be in stereo (2 channels) when “Advanced Surround” is on. Turn “Advanced Surround” off if you are using three or more speakers.</td>
</tr>
<tr>
<td>Piercing noise comes from the speakers.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Press [PLAY] to restore normal play after changing the speed.</td>
</tr>
<tr>
<td>There is noise when playing a video tape.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Adjust the tracking.</td>
</tr>
<tr>
<td>Effects do not work.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> “Dialogue Enhancer” and “Advanced Surround” do not work when the unit is outputting bitstream signals.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> “Advanced Surround” does not work if you have changed the play speed.</td>
</tr>
</tbody>
</table>

### Recording

<table>
<thead>
<tr>
<th>Issue</th>
<th>Suggested Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The picture is recorded with noise or a blank screen.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check the antenna connection to the unit.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check your normal TV picture. If there is no picture, check your antenna.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> The unit is not correctly tuned. Return the unit.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> A1 or A2 has been selected. Select the required TV programme.</td>
</tr>
<tr>
<td>Timer recording doesn’t record a programme correctly.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Check the clock and calendar.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Set the channel and start/end times correctly.</td>
</tr>
<tr>
<td></td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> Be sure to press [TIMER] after programming to put the unit in timer recording standby.</td>
</tr>
<tr>
<td>“**” flashes when I try to start recording. Cannot record.</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /> If the erasure prevention tab has been removed, cover the hole with adhesive tape.</td>
</tr>
</tbody>
</table>

---

*Note: Numbers in brackets ([ ] or [ ] ) refer to page numbers in the original document.*
### Before Requesting Service

#### Disc play

<table>
<thead>
<tr>
<th>Issue</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Play doesn’t start (or stops immediately) when you press [PLAY].</td>
<td>- Condensation has formed: Wait 1 to 2 hours for it to evaporate.</td>
</tr>
<tr>
<td></td>
<td>- This unit cannot play DVD-Video with a region number other than “4”, “ALL” or multiple</td>
</tr>
<tr>
<td></td>
<td>region numbers including “4”.</td>
</tr>
<tr>
<td></td>
<td>- The disc may be dirty and may require cleaning.</td>
</tr>
<tr>
<td></td>
<td>- Ensure that the disc is installed with the label of the side to be played facing upwards.</td>
</tr>
<tr>
<td></td>
<td>- Check that the DVD-RAM has something recorded on it.</td>
</tr>
<tr>
<td></td>
<td>- DivX: If playing DivX VOD content, refer to the website where you purchased it. (Example:</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.divx.com/vod">www.divx.com/vod</a>)</td>
</tr>
<tr>
<td>No menu play.</td>
<td>- This function depends on software availability.</td>
</tr>
<tr>
<td>No subtitles.</td>
<td>- This function depends on software availability.</td>
</tr>
<tr>
<td></td>
<td>- Subtitles are cleared from the TV. Display the subtitles.</td>
</tr>
<tr>
<td></td>
<td>- Subtitle’s position is wrong. Adjust the position.</td>
</tr>
<tr>
<td>Soundtrack and/or subtitle language is not the one selected with</td>
<td>- This function depends on software availability.</td>
</tr>
<tr>
<td>the Setup menu.</td>
<td></td>
</tr>
<tr>
<td>Cannot change angle.</td>
<td>- This function depends on software availability. Even if a disc has a number of angles</td>
</tr>
<tr>
<td></td>
<td>recorded, these angles may be recorded for specific scenes only.</td>
</tr>
<tr>
<td>Folders deeper than the eighth layer on a data CD are not</td>
<td>- Folders deeper than the eighth layer are displayed as if there were in the eighth layer.</td>
</tr>
<tr>
<td>displayed correctly.</td>
<td></td>
</tr>
<tr>
<td>You have forgotten your ratings password.</td>
<td>- While stopped and “DVD” is the source, press and hold [REW] (VHS), [PLAY] (DVD) and</td>
</tr>
<tr>
<td>Reset all the settings to Factory Preset.</td>
<td>[OPEN/CLOSE] on the unit for about 3 seconds until “Initialised” disappears from the TV.</td>
</tr>
<tr>
<td></td>
<td>Turn the unit off and on again. All settings will return to the default values.</td>
</tr>
<tr>
<td>Picture</td>
<td></td>
</tr>
<tr>
<td>No picture.</td>
<td>- Check the connection.</td>
</tr>
<tr>
<td></td>
<td>- Make sure the TV is on.</td>
</tr>
<tr>
<td></td>
<td>- Ensure the video exclusive channel (or AV input) is selected.</td>
</tr>
<tr>
<td></td>
<td>- Also adjust the channel on the TV. (Also refer to the operating instructions for the TV.)</td>
</tr>
<tr>
<td>The picture on the TV is not normal.</td>
<td>- Go to “Video” in the Setup menu and change “TV Aspect” to suit your TV.</td>
</tr>
<tr>
<td>(The sides of the picture are cut off, the picture is stretched</td>
<td>- Turn off the zooming feature of your TV if you are using Variable Zoom.</td>
</tr>
<tr>
<td>horizontally or black bands appear at the top and bottom of</td>
<td>- Ensure that the unit is connected directly to the TV and is not connected through an AV</td>
</tr>
<tr>
<td>the screen.)</td>
<td>selector or other equipment.</td>
</tr>
<tr>
<td></td>
<td>- Connect to the component video input terminals on a 480p compatible TV (Video will not</td>
</tr>
<tr>
<td></td>
<td>be displayed correctly if connected to an incompatible TV).</td>
</tr>
<tr>
<td>The picture on the TV disappears or stripes appear on the screen.</td>
<td>- Mobile telephone chargers can cause some disturbance.</td>
</tr>
<tr>
<td></td>
<td>- The TV antenna cable is too close to the unit. Separate the antenna cable of the TV from</td>
</tr>
<tr>
<td></td>
<td>the unit.</td>
</tr>
<tr>
<td>The setup menu and other screens shown on the TV are displayed</td>
<td>- The unit and TV are using different video systems.</td>
</tr>
<tr>
<td>incorrectly.</td>
<td>Use a multi-system or PAL TV.</td>
</tr>
<tr>
<td>Colours appear faded.</td>
<td>- Set “Transfer Mode” in “Picture Menu” to “Auto”.</td>
</tr>
<tr>
<td>When playing PAL disc, picture distorted.</td>
<td>- Adjust the tracking.</td>
</tr>
<tr>
<td>VHS picture</td>
<td>- The TV has not been tuned to the unit. Tune the TV to the unit.</td>
</tr>
<tr>
<td>The picture is noisy or is in black and white.</td>
<td>- Make sure the TV’s input setting is correct.</td>
</tr>
<tr>
<td>Horizontal bars or lines run down the screen.</td>
<td>- The video heads are dirty: clean them with a head-cleaning cassette.</td>
</tr>
<tr>
<td></td>
<td>- The video heads are worn: consult your dealer (for NV-VP60GL only, consult Panasonic</td>
</tr>
<tr>
<td></td>
<td>Customer Care Centre for advice on 132600).</td>
</tr>
<tr>
<td></td>
<td>- The tape is old or damaged.</td>
</tr>
<tr>
<td></td>
<td>- You cannot correctly play tapes recorded with other systems.</td>
</tr>
<tr>
<td></td>
<td>- Go to “OPTION” and change “NTSC PB SELECT” to suit the recording.</td>
</tr>
<tr>
<td>The blue back appears during play.</td>
<td>- You are playing a blank or poor quality part of the tape.</td>
</tr>
<tr>
<td></td>
<td>- You can damage the unit if you play dirty or damaged tapes and this can cause the blue</td>
</tr>
<tr>
<td></td>
<td>back to appear. Consult your dealer.</td>
</tr>
<tr>
<td>The picture jiggles.</td>
<td>- Adjust the vertical hold.</td>
</tr>
<tr>
<td></td>
<td>- Adjust the TV’s vertical hold. Refer to your TV’s operating instructions.</td>
</tr>
</tbody>
</table>
## Before Requesting Service

### Disc picture

<table>
<thead>
<tr>
<th>Condition</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>The picture is distorted.</td>
<td>Some distortion is normal during search.</td>
<td>—</td>
</tr>
<tr>
<td>The picture quality is poor.</td>
<td>Check the settings in the On-Screen Menu “Picture Menu”.</td>
<td>34</td>
</tr>
<tr>
<td>Menus not displayed correctly.</td>
<td>Change the zoom ratio to “1:1.00”. Set the subtitle position to 0. Go to “Video” in the Setup menu, and change “TV Aspect” to suit your TV.</td>
<td>32 30 37</td>
</tr>
</tbody>
</table>

### Editing

<table>
<thead>
<tr>
<th>Condition</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black bands appear in the recording.</td>
<td>Move the other equipment away from the TV as it may be picking up interference.</td>
<td>—</td>
</tr>
<tr>
<td>Recording video or audio from external equipment is not possible.</td>
<td>The connections were done incorrectly. Check the connections to the other equipment. The external input channel “A1” or “A2”, to which the player is connected is not selected. Press [INPUT SEL] to select “A1” or “A2”.</td>
<td>17 17</td>
</tr>
<tr>
<td>A video was copied, but it is distorted or the colours are abnormal.</td>
<td>Copy-protected material was copied. Most commercially available videotapes and DVD discs (including rental soft tapes/DVDs) are copy-protected so that illegal copying is impossible.</td>
<td>—</td>
</tr>
<tr>
<td>The audio level on the DVD section does not correspond to that on the VHS section after editing.</td>
<td>Some discs may reproduce different audio levels. If the audio in particular parts, such as speech, is set to a low or high level, it may be recorded on the video cassette at a low or high level.</td>
<td>—</td>
</tr>
</tbody>
</table>

### Error Messages

#### On-screen display

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLEASE PUT IN A VIDEO CASSETTE.</td>
<td>Press [REC] or [TIMER] has been pressed without a video cassette inserted. Insert a video cassette with an intact erasure prevention tab.</td>
<td>16, 18</td>
</tr>
<tr>
<td>PLEASE STOP THE TAPE.</td>
<td>TUNER PRESET has been selected during playback. Stop the tape.</td>
<td>20</td>
</tr>
<tr>
<td>PLEASE USE A CASSETTE WITH TAB.</td>
<td>Press [REC] or [TIMER] has been pressed without a video cassette with an intact erasure prevention tab. Use a video cassette with an intact erasure prevention tab.</td>
<td>4</td>
</tr>
<tr>
<td>NO TIMER RECORDING HAS BEEN SET.</td>
<td>[TIMER] had been pressed with no timer programmes. Set timer recording.</td>
<td>18</td>
</tr>
<tr>
<td>VHS IS IN THE TIMER STANDBY MODE.</td>
<td>[TIMER] had been pressed when VHS is in the timer standby mode. Cancel Timer Programme before switching the unit to standby mode.</td>
<td>18</td>
</tr>
<tr>
<td>Cannot display group xx, content xx</td>
<td>You are trying to display incompatible pictures.</td>
<td>—</td>
</tr>
<tr>
<td>Authorization Error</td>
<td>[DivX] You are trying to play the DivX VOD content that was purchased with a different registration code. You cannot play the content on this unit.</td>
<td>25</td>
</tr>
<tr>
<td>Rental Expired</td>
<td>[DivX] The DivX VOD content has zero remaining plays. You cannot play it.</td>
<td>25</td>
</tr>
</tbody>
</table>

#### Self-diagnostic indications on the unit’s display

<table>
<thead>
<tr>
<th>Message</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>H∑∑, F∑∑</td>
<td>An error has occurred. The number following “H” or “F” depends on the status of the unit. Reset procedure: Press [PLAY] to switch the unit to the standby mode and then back to ON. Alternatively, press [PLAY] to switch the unit to the standby mode, disconnect the AC mains lead, and then reconnect it.</td>
<td>—</td>
</tr>
<tr>
<td>nodISC</td>
<td>You haven't inserted a disc; insert one. You haven’t inserted the disc correctly; insert it correctly.</td>
<td>23</td>
</tr>
<tr>
<td>noPLAY</td>
<td>You inserted a disc; the unit cannot play. Disc is dirty. Wipe it clean. You inserted a DVD-R which is not finalized. You inserted a blank DVD-RAM. A disc whose playback is restricted in the Setup menu is inserted. Change the “Ratings” setting.</td>
<td>5 6 5 37</td>
</tr>
</tbody>
</table>
Glossary

Audio channel for DVD (ch)
Sound is divided into channels based on the sound’s role.
Example: 5.1 channel
- Front speakers—1 left channel and 1 right channel
- Center speaker—1 channel
- Surround speakers—1 left channel and 1 right channel
- Subwoofer—1 channel × 0.1 (the ratio of bass to the total amount of sound output)
The following are indicated on the On-Screen Menu Icons.
Example:

```
3/2.1 ch
(1) .1: Subwoofer signal
(2) 0: No surround
1: Mono surround
2: Stereo surround (left/right)
(3) 1: Center
2: Front left+Front right
3: Front left+Front right+Center
```

Bitstream
Digitized and compressed audio signal. It is decoded by decoders into multi-channel audio signals, such as 5.1 channels.

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

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

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals are also compatible with 5.1-channel audio. A large amount of audio information can be recorded on one disc using this method.

Dolby Pro Logic
A surround system where a 4-channel audio track is recorded as 2 channels and then is restored to 4 channels for play.

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

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

Film:
- Recorded at 25 frames per second (PAL discs) or 24 frames per second (NTSC discs). (NTSC discs recorded at 30 frames per second as well). Generally appropriate for motion picture films.

Video:
- Recorded at 25 frames/50 fields per second (PAL discs) or 30 frames/60 fields per second (NTSC discs). Generally appropriate for TV drama programs or animation.

Frame and field
Frames are the still pictures that go together to make a moving picture. A frame is made up of 2 fields.

- A frame still is made up of two alternating fields so the picture may appear blurred but the overall quality is high.
- A field still is not blur, but it has only half the information of a frame still so picture quality is lower.

ID3 tag
MP3 file that has an area in which the character-based information referred to as ID3 tag, is stored. The information of the track, such as the title, artist name, etc, can be stored here. The information can be displayed on players supporting the ID3 tag when a track is played back. However, this unit cannot because it does not support the ID3 tag.

Interlace and progressive output
The NTSC video signal standard has 480 interlaced (i) scan lines, whereas progressive scanning uses twice the number of scan lines. This is called 480p.

I/P/B
The DVD recording system shares the data commonly used by screens and uses screen-independent data individually for each screen to store the data on the disc efficiently.

- I-picture (Intra coded picture): A frame recorded independently as reference for commonly used data.
- P-picture (Predictive coded picture): This picture is calculated based on past I- or P-pictures.
- B-picture (Bidirectionally-predictive coded picture): This picture is calculated by comparing past and future I- and P-pictures so it has the lowest volume of information.

I-picture has the best quality and is the best to use when adjusting the picture.

Linear PCM (Pulse Code Modulation)
These are uncompressed digital signals, similar to those found on CDs.

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.

MPEG4
A compression system for use on mobile devices or a network, that allows highly efficient recording at a low bit rate. Recorded with the Panasonic SD multi cameras or DVD recorders and plays.

Multi-session
- This means recording data onto a CD-R/RW disc several times. “Read-in/Programme area/Read-out” of the data on a disc makes one session.
- If data, such as music, is added onto a pre-recorded CD-R/RW disc, a new session will be added. Such a disc is referred to as a multisession disc.
- Normal audio CD players can playback only the first session. On the other hand, this unit can playback 2 or more sessions.

Playback control (PBC)
- If a Video CD has playback control, you can select scenes and information with menus.
- In this manual, playing back of the contents of a Video CD using the menu screen is referred to as “Menu play” for Video CD.

Sampling frequencies
Sampling is the process of converting the heights of sound wave (analogue 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.

WMA (Windows Media Audio Picture)
WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.
### Specifications

**NV-VP60GL**

**NV-VP60GN**

<table>
<thead>
<tr>
<th>Power Supply:</th>
<th>AC 220 V to 240 V 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Consumption:</td>
<td>22 W</td>
</tr>
</tbody>
</table>

#### VHS SECTION

- **Video Recording System:** 2 rotary heads, helical scanning system
- **Video Heads:** 4 heads
- **Audio Heads:** 2 heads (Hi-Fi)
- **Tape Speed:**
  - PAL SP: 23.39 mm/s LP; 11.7 mm/s EP; 7.8 mm/s NTSC SP; 33.3 mm/s EP; 11.1 mm/s
- **Tape Format:** VHS cassette
- **Recording/Playback Time:**
  - PAL SP: 240 min with NV-E240
  - PAL LP: 480 min with NV-E240
  - PAL EP: 720 min with NV-E240
- **FF/REW Time:**
  - Approx. 60 s with NV-E180 (FF/REW)
  - Approx. 43 s with NV-E180 (JET REW)

#### VIDEO

- **Television System:**
  - CCIR; 625 lines, 50 fields, PAL colour signal
  - EIA; 525 lines, 60 fields, NTSC colour signal
- **Modulate System:**
  - Luminance; FM azimuth recording
  - Colour signal; converted subcarrier phase shift recording
- **Input Level:**
  - VIDEO IN (PHONO): 1.0 Vp-p, 75
  - AUDIO IN (PHONO): –6 dBV, more than 47 kΩ
- **Output Level:**
  - VIDEO OUT (PHONO): 1.0 Vp-p, 75
  - AUDIO OUT (PHONO): –6 dBV, less than 1 kΩ
- **Video Horizontal Resolution:**
  - Colour; more than 240 lines/SP
  - Signal-to-Noise Ratio:
    - Video; more than 43 dB/SP
    - Audio; more than 65 dB/Hi-Fi
- **Dynamic Range:**
  - Audio; more than 90 dB/Hi-Fi audio track
- **Audio Frequency Response:**
  - 20 Hz to 20 kHz/Hi-Fi
- **Wow and Flutter:**
  - 0.005% Wrms/Hi-Fi

#### DISC SECTION

- **Playable Discs [8 cm or 12 cm]:**
  - DVD (DVD-Video, DivX®)
  - DVD-RAW (DVD-VR, MPEG-4, JPEG-2000, DivX®)
  - DVD-R DL (DVD-VR, DVD-Video)
  - CD, CD-R/RW (CD-DA, Video CD, SVCD, MP3, WMA, JPEG, MPEGL-2, DivX®, HighMAT Level 2 [Audio and Imago])

#### GENERAL

- **Power Supply:** AC 220 V to 240 V 50/60 Hz
- **Power Consumption:** 22 W
- **Discs:**
  - DVD (DVD-Video, DivX®)
  - DVD-RAW (DVD-VR, MPEG-4, JPEG-2000, DivX®)
  - DVD-R DL (DVD-VR, DVD-Video)
  - CD, CD-R/RW (CD-DA, Video CD, SVCD, MP3, WMA, JPEG, MPEGL-2, DivX®, HighMAT Level 2 [Audio and Imago])
- **Transmission of Picture Data:**
  - NTSC; 480p/480i, PAL; 576p/576i
  - S-VIDEO: Y output level; 1.0 Vp-p, 75
  - C output level; PAL 0.300 Vp-p, 75
  - C output level; NTSC 0.286 Vp-p, 75
- **COMPONENT VIDEO**
  - (NTSC, 480p/480i, PAL; 576p/576i):
    - Y output level; 1.0 Vp-p, 75
    - Cb/Cr output level; 0.7 Vp-p, 75
    - Cc output level; 0.7 Vp-p, 75

**Note:**

- Mass and dimensions shown are approximate.
- Specifications are subject to change without notice.