Panasonic®
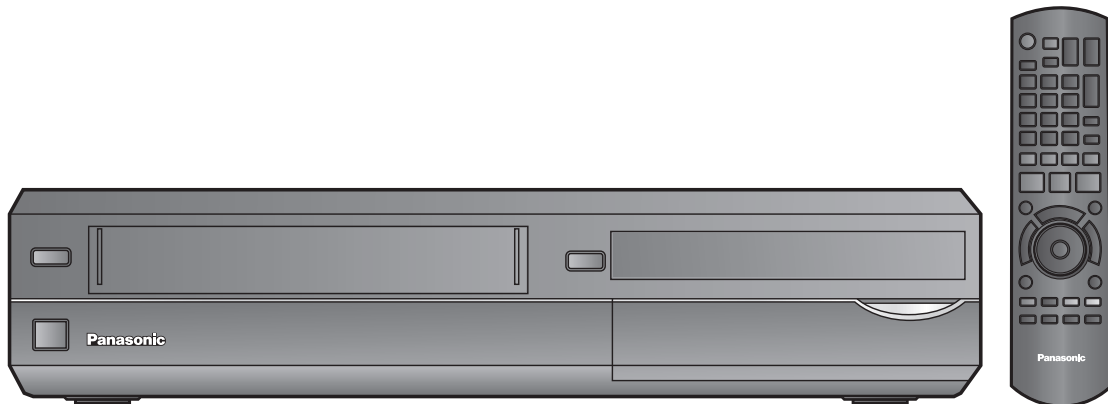
Operating Instructions
Blu-ray Disc Player

Model No. **DMP-BD70V**

Dear customer

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

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

Blu-ray Disc™	BD LIVE™	DVD VIDEO	SDHC™	VIERA CAST™
BD-Video	RAM COMPATIBLE PLAYER	COMPACT DISC DIGITAL AUDIO	VHS	Java POWERED
HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE	VIERA Link™	AVCHD™		

Region management information

BD-Video
This unit plays BD-Video marked with labels containing the region code A.

Example:

DVD-Video
This unit plays DVD-Video marked with labels containing the region number "**1**" or "ALL".

Example:

As an ENERGY STAR® Partner,※ Panasonic has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

※ For Canada only: The word "Participant" is used in place of the word "Partner".

If you have any questions contact
U.S.A. and Puerto Rico:1-800-211-PANA(7262)
Canada:1-800-561-5505

Only for U.S.A. and Puerto Rico:The warranty can be found on page 46.
Canada:The warranty can be found on page 47.

La referencia rápida en español se puede encontrar en la página 49.

P   PC

RQT9412-P

IMPORTANT SAFETY INSTRUCTIONS

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

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

WARNING:
TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE,
- **DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**
- **USE ONLY THE RECOMMENDED ACCESSORIES.**
- **DO NOT REMOVE THE COVER (OR BACK); THERE ARE NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

CAUTION!
DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.

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.**

CAUTION
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

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

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

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

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

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

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

Declaration of Conformity
Trade Name: Panasonic
Model No.: DMP-BD70V

Responsible Party:
Panasonic Corporation of North America
One Panasonic Way
Secaucus, NJ 07094

Support Contact:
Panasonic Consumer Electronics Company
Telephone No.: 1-800-211-PANA (7262)

CAUTION	VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR/Class II (IIa)
CAUTION	CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1, +A2/CLASS 1M
ATTENTION	RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 1M, EN CAS D'OUVERTURE. NE PAS REGARDER DIRECTEMENT À L'AIDE D'INSTRUMENTS D'OPTIQUE.
FORSIGTIG	SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 1M, NÅR LÅGET ER ÅBENT. UNDGÅ AT SE LIGE PÅ MED OPTISKE INSTRUMENTER.
VARO	AVATTAESSA OLET ALTTIINA LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. ÄLÄ KATSO OPTISELLA LAITTEELLA SUORAAN SÄTEESEEN.
VARNING	KLASS 1M SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD, BETRAKTA EJ STRÅLEN DIREKT GENOM OPTISKT INSTRUMENT.
VORSICHT	SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 1M, WENN ABDECKUNG GEÖFFNET, NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
注意	打开时有可见及不可见激光辐射。避免光束照射。
注意	ここを開くと可視及び不可視レーザー光が出ます。 ビームを見たり、触れたりしないでください。 VQL1V70

(Inside of product)

RQT9412

Unit and media care

Media handling

Clean discs

DO   DO NOT
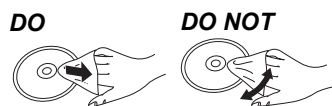
Wipe with a damp cloth and then wipe dry.

Media handling precautions

Disc
- Handle discs by the edges to avoid inadvertent scratches or fingerprints on the disc.
- Do not attach labels or stickers to discs (This may cause disc warping, rendering it unusable).
- 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 use scratch-proof protectors or covers.
- Do not use the following discs:
  – Discs with exposed adhesive from removed stickers or labels (rented discs etc).
  – Discs that are badly warped or cracked.
  – Irregularly shaped discs, such as heart shapes.

Card
- Clean any dust, water, or foreign matter from the terminals on the rear side of the card.

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

Maintenance

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

Observe the following points to ensure continued listening and viewing pleasure.

Disc lens
Dust and dirt may adhere to the unit's lens over time, making it impossible to play discs.
Use the lens cleaner (not included) about once every year, depending on frequency of use and the operating environment. Carefully read the lens cleaner's instructions before use.

Lens cleaner: RP-CL720PP
- This lens cleaner is sold as specific for DIGA, but can be used without problem on this unit as well.

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

Head-cleaning cassette: NV-TCL30PT (Only for U.S.A.)

To dispose or transfer this unit

This unit may record information of your operating procedures. If you discard this unit either by disposal or transfer, then follow the procedures to return all the settings to the factory presets to delete the recorded information. (⇨ 40, "To return to the factory preset")
- When BD-Video is played back, the operation history may be recorded in the memory of this unit. The recorded contents differ depending on the disc.

Table of contents
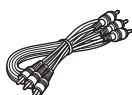
Accessory information

Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts.
(Product numbers correct as of March 2009. These may be subject to change.)

Only for U.S.A. and Puerto Rico: To order accessories, refer to "Accessory Purchases (United States and Puerto Rico)" on page 46.
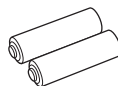**Only for Canada: To order accessories, call the dealer from whom you have made your purchase.**
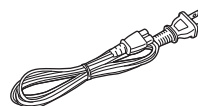
☐ | ☐ | ☐ | ☐

| **1 Remote control** (N2QAYB000382) | **1 Audio/Video cable** (K2KA6BA00004) | **2 Batteries** for remote control | **1 AC power supply cord** (K2CB2CB00022) ● For use with this unit only. Do not use it with other equipment. Also, do not use cords from other equipment with this unit. |

(Only for U.S.A. and Puerto Rico)
Product Registration Card
Please complete and return the included product registration card, or register via the Internet at:
http://www.prodreg.com/panasonic/

(ONLY FOR CANADA)
The enclosed Canadian French label sheet corresponds to the English display on the front and back side of the unit.

Using the remote control

Batteries
Insert so the poles (+ and −) match those in the remote control.
When closing the lid, insert it from the − (minus) side.
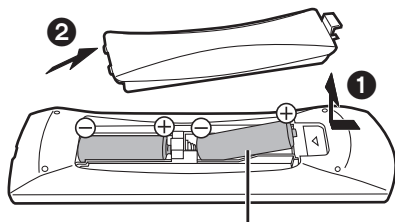
R6/LR6, AA

● Use alkaline or manganese batteries.
● Do not mix old and new batteries.
● Do not use different types at the same time.
● Do not heat or expose to flame.
● Do not leave the battery(ies) in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.
● Do not take apart or short circuit.
● Do not attempt to recharge alkaline or manganese batteries.
● Do not use batteries if the covering has been peeled off.
Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
Remove batteries if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

Use

Remote control signal sensor
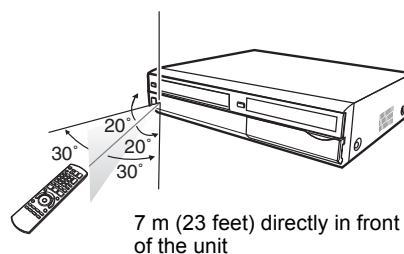
7 m (23 feet) directly in front of the unit

If you cannot operate the unit or other equipment using the remote control after changing the batteries, please re-enter the codes (⇨ 15, 36).

CAUTION
Do not place objects in front of the unit. The disc tray may collide with objects when it is opened, and this may cause injury.

Media (Disc/Card/USB device/Video cassette) information

Commercially sold discs

This chart shows the different type of retail/commercial discs you can use, and also includes the industry-standard logos that should appear on the discs and/or packaging.

Type of media	Logo	Features	Indicated as
BD-Video	*Blu-ray Disc*	This format supports High Definition video and audio content including: ● BD-Live (BD-ROM Profile 2). This format provides interactive features when this player is connected to the Internet via a broadband connection. BD**LIVE**™ ● BONUSVIEW allows picture-in-picture functions to be viewed. BONUS *VIEW*™	`BD-V`
DVD-Video	*DVD VIDEO*	This format supports high quality video and audio playback.	`DVD-V`
CD	*COMPACT disc DIGITAL AUDIO*	Compact Discs (CD's) that contain audio and music ● Operation and sound quality of CDs that do not conform to CD-DA specifications (copy control CDs, etc.) cannot be guaranteed. ● The digital audio content side of a DualDisc does not meet the technical specifications of the Compact Disc Digital Audio (CD-DA) format so play may not be possible.	`CD`

User recorded media

This chart shows the different type of discs recorded with other devices that you can use.

Finalized This mark means you must finalize the disc with the DVD recorder, etc. before playback. For details about finalizing, refer to the operating instructions for your equipment.

Type of media	Logo	Formats	Indicated as
BD-RE	*Blu-ray Disc*	● Version 3 of the BD-RE Recording Format ● JPEG format	`BD-V` `JPEG`
BD-R	*Blu-ray Disc*	● Version 2 of the BD-R Recording Format	`BD-V`
DVD-RAM	*DVD RAM RAM4.7*	● Version 1.1 of the DVD Video Recording Format ● JPEG format ● AVCHD format	`DVD-VR` `JPEG` `AVCHD`
DVD-R/RW **Finalized**	*DVD R R4.7* *DVD RW*	● DVD-Video Format ● Version 1.1 of the DVD Video Recording Format ● AVCHD format ● MP3 format (DVD-RW is not supported) ● JPEG format (DVD-RW is not supported)	`DVD-V` `DVD-VR` `AVCHD` `MP3` `JPEG`
DVD-R DL **Finalized**	*DVD R R DL*	● DVD-Video Format ● Version 1.2 of the DVD Video Recording Format ● AVCHD format ● MP3 format ● JPEG format	`DVD-V` `DVD-VR` `AVCHD` `MP3` `JPEG`
+R/+RW/+R DL **Finalized**	—	● +VR (+R/+RW Video Recording) Format ● AVCHD format	`DVD-V` `AVCHD`
CD-R/RW **Finalized**	—	● CD-DA format ● MP3 format ● JPEG format	`CD` `MP3` `JPEG`

● It may not be possible to play the above discs in some cases due to the type of discs, the condition of the recording, the recording method and how the files were created.
● When a disc recorded in the AVCHD format is being played, the video may be paused for a few seconds at portions spliced, due to deletion or editing.

6

SD cards

This chart shows the different type of cards recorded with other devices that you can use.

Type of media	Logo	Formats	Indicated as
SD Memory Card* (from 8 MB to 2 GB) **SDHC Memory Card (from 4 GB to 32 GB)**	—	●JPEG format ●AVCHD format ●MPEG2 format	JPEG AVCHD MPEG2

* Includes miniSD Card and microSD Card
The card types mentioned above will be referred to as "SD card" in these operating instructions.

●MiniSD Cards and microSD Cards can be used, but must be used with an adaptor card. These are usually supplied with such cards, or otherwise customer provided.
●We recommend using a Panasonic SD card. Please confirm the latest information on the following website:
  http://panasonic.co.jp/pavc/global/cs
  (This site is in English only.)
●This unit is compatible with SD Memory Cards that meet SD Card Specifications FAT12 and FAT16 formats, as well as SDHC Memory Cards in FAT32 format.
●When using cards from 4 GB to 32 GB, only SD cards using the SDHC logo can be used.
●Useable memory is slightly less than the card capacity.
●If the SD card you are attempting to use was formatted on a PC, it is possible that the card may not work properly.
●Keep the Memory Card out of reach of children to prevent swallowing.
●When a card recorded in the AVCHD format is being played, the video may momentarily pause, especially where one recording ends and the next one begins. This is normal and does not indicate a problem.
●To protect the card's contents, move the record prevention tab (on the SD card) to "LOCK".

USB devices

This unit can playback pictures by connecting the USB memory recorded with a PC or similar in following formats, and Panasonic digital cameras connected via USB cable.

Type of media	Logo	Formats	Indicated as
USB devices	—	●MP3 format ●JPEG format	MP3 JPEG

Compatible USB devices
●USB devices which are defined as USB mass storage class.
  – USB devices that support USB 1.0/1.1 and USB 2.0 Full Speed/High Speed.
●USB devices of up to 128 GB can be used.
●USB devices that support bulk only transfer.
  CBI (Control/Bulk/Interrupt) is not supported.
●Digital Cameras which require additional program installation when connected to a PC are not supported.
●MTP (Media Transport Protocol) device is not supported.
●A multi-port USB card reader is not supported.
File system
●FAT12, FAT16 and FAT32 file systems are supported.
●UDF/NTFS/exFAT file system is not supported.
●Depending on the sector size, some files may not work.
●Only the first partition on USB devices with multi-partition is supported.

Despite meeting the conditions mentioned above, there may be USB devices that cannot be used with this unit.
This unit does not support USB device charging.

Video cassettes

●You can use video cassettes with the VHS and S-VHS, but the unit is unable to make full use of the characteristics of S-VHS video cassettes.
The explanations concerning video cassettes are indicated by VHS.

Discs that cannot be played in this unit

●BD-RE discs (with cartridge)
●2.6 GB and 5.2 GB DVD-RAM
●DVD-RAM that cannot be removed from cartridge
●3.95 GB and 4.7 GB DVD-R (Authoring)
●Version 1.0 DVD-RW
●DVD-ROM, CD-ROM, CDV, SACD, Photo CD, MV-Disc and PD
●DVD-Audio
●Video CD and SVCD
●WMA discs
●DivX discs
●PAL Discs
●HD DVD
●BD-Video discs recorded at a rate of 50 fields/sec
●Any other disc that is not specifically supported

Audio and video information

About audio from audio output terminals

Before connecting, read the table below, and confirm the desired audio type and necessary settings ("BD-Video Secondary Audio", "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD"). (⇨ 9)
● The number of channels listed is the maximum possible number of output channels.

HDMI AV OUT/DIGITAL AUDIO OUT

Terminal	HDMI AV OUT				DIGITAL AUDIO OUT	
"Dolby D/Dolby D +/Dolby TrueHD"/ "DTS/DTS-HD"	"Bitstream"*1		"PCM"*3		"Bitstream"	"PCM"
"BD-Video Secondary Audio"	"On"*2	"Off"	"On"	"Off"	"On"/"Off"	"On"/"Off"
Dolby Digital/ Dolby Digital EX*5	Dolby Digital/ Dolby Digital EX*6	Dolby Digital/ Dolby Digital EX	5.1ch PCM		Dolby Digital/ Dolby Digital EX*6	Down-mixed 2ch PCM
Dolby Digital Plus	Dolby Digital	Dolby Digital Plus	5.1ch PCM*2	7.1ch PCM	Dolby Digital	
Dolby TrueHD	Dolby Digital	Dolby TrueHD	5.1ch PCM*2	7.1ch PCM	Dolby Digital	
DTS Digital Surround/ DTS-ES*5	DTS Digital Surround/ DTS-ES*6	DTS Digital Surround/ DTS-ES	DVD-V : 5.1ch PCM / BD-V : 7.1ch PCM*4		DTS Digital Surround/ DTS-ES*6	
DTS-HD High Resolution Audio	DTS Digital Surround	DTS-HD High Resolution Audio	7.1ch PCM*4		DTS Digital Surround	
DTS-HD Master Audio	DTS Digital Surround	DTS-HD Master Audio	7.1ch PCM*4		DTS Digital Surround	
7.1ch LPCM	Down-mixed 5.1ch PCM	7.1ch PCM	Down-mixed 5.1ch PCM*2	7.1ch PCM	Down-mixed 2ch PCM	Down-mixed 2ch PCM

● Also, depending on the specifications or the settings of the amplifier/receiver, the results of the output may vary.
*1 When the connected equipment is not supported with these audio formats, the audio is output as Dolby Digital bitstream, DTS Digital Surround bitstream or down-mixed 2ch PCM (e.g., TV).
*2 **BD-V** : When playing BD-Video without secondary audio or button click sound, the audio is output as the same format as if "BD-Video Secondary Audio" was set to "Off".
*3 When the connected equipment is not supported with multi channel surround, the audio is output as down-mixed 2ch PCM.
*4 **BD-V** : When the connected equipment is supported with 7.1 channel surround, the audio output is amplified from 5.1ch or 6.1ch to 7.1ch depending on the DTS, Inc. specifications.
*5 With PCM output, Dolby Digital EX becomes PCM audio decoded as Dolby Digital, DTS-ES recorded to DVD-Video becomes PCM audio decoded as DTS Digital Surround, and DTS-ES recorded to BD-Video becomes PCM audio decoded as DTS-ES.
*6 **BD-V** : When "BD-Video Secondary Audio" is set to "On", Dolby Digital EX is output as Dolby Digital and DTS-ES is output as DTS Digital Surround, however if playing BD-Video without secondary audio or button click sound, the audio is output as the original format.

Enjoying High Bit rate Audio of BD-Video BD-V

This unit supports high bit rate audio (Dolby Digital Plus, Dolby TrueHD, DTS-HD High Resolution Audio and DTS-HD Master Audio) adopted in BD-Video. In order to enjoy these audio formats, the following conditions are necessary. (Part shown in the shaded area of table given above)

NECESSARY CONNECTIONS
● HDMI AV OUT terminal: (⇨ 12)

NECESSARY SETTINGS (⇨ 9)
● Set "BD-Video Secondary Audio" to "Off".
● HDMI AV OUT terminal: Set "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" to "Bitstream" or "PCM" .

● The button click sound on the menu and audio with secondary video in picture-in-picture mode (⇨ 23) is not output.

Regarding 24p output BD-V

Many BD-Video movie contents are recorded in 24 frames/second in accordance with the film materials. However, they will normally be output in 60 frames/second in accordance with the display format.
These can be output in 24p as the original. Therefore, high-quality video can be enjoyed, such as the improved clarity, enhanced perspective, etc.

NECESSARY CONNECTIONS
● Connect to a TV supporting 1080/24p input via an HDMI cable.

NECESSARY SETTINGS
● "24p Output": "On" (⇨ 34)

Necessary settings for audio output

After connecting to the terminals, perform necessary settings.

> **"BD-Video Secondary Audio"**
>
> **"Dolby D/Dolby D +/ Dolby TrueHD"**
> **"DTS/DTS-HD"**

1) While stopped
   Press [SETUP].
2) Press [▲, ▼] to select "Audio" and press [OK].
3) Press [▲, ▼] to select "Digital Audio Output" and press [OK].
4) Press [▲, ▼] to select "Dolby D/Dolby D +/Dolby TrueHD", "DTS/DTS-HD", or "BD-Video Secondary Audio" and press [◄, ►] to select the option.

Audio	
Dynamic Range Compression	Off
Digital Audio Output	
PCM Down Conversion	Off
Downmix	Stereo

OK
RETURN
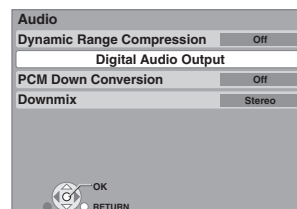
● For more information about settings, refer to page 33, 34.
● When using the different terminal at the same time, the sound may not be output with the desired audio if the setting is incorrect.
  In the following case, set "HDMI Audio Output" to "Off". (⇨ 34)
  – When connecting a compatible amplifier/receiver using DIGITAL AUDIO OUT terminals, and connecting a compatible television using HDMI AV OUT terminal

To return to the previous screen
Press [RETURN].

To exit the screen
Press [SETUP].

Audio output setting for the various equipment

Below is a table of recommended settings to output high quality audio to the connected equipment. When connecting to equipment not listed below, change to your preferred settings as necessary.

			Example of connected equipment			
			TV via HDMI	Receiver via HDMI		Receiver via OPTICAL
				Receiver has **HD audio**[1] decoder & 5.1ch speakers	Receiver doesn't have **HD audio**[1] decoder & 5.1ch speakers	
"Audio" (⇨ 33)	**"Digital Audio Output"**	**"Dolby D/Dolby D +/Dolby TrueHD"**	"PCM"	"Bitstream"	"PCM"	"PCM"
		"DTS/DTS-HD"	"PCM"	"Bitstream"	"PCM"	"PCM"
		"BD-Video Secondary Audio"	"Off"	"Off"	"Off"	"Off"
	"PCM Down Conversion"		—	—	—	[2]
	"Downmix"		"Stereo"	"Surround encoded"	"Surround encoded"	"Surround encoded"

[1] HD audio: Dolby Digital Plus, Dolby TrueHD, DTS-HD High Resolution Audio and DTS-HD Master Audio
[2] "PCM Down Conversion" is in effect only when connected to an OPTICAL terminal. If the receiver supports 96 kHz sampling frequency, set to "Off"; if it does not support it, set to "On".

Connections

About terminal

- This unit offers several different types of audio and video connections.
- Your TV/receiver/amplifier may or may not support all the connections shown.

Video Connections (TV) (⇨ 11)

Highest Quality ← → **Standard Quality**

HDMI AV OUT
480p, 720p, 1080i, 1080p

COMPONENT VIDEO OUT
BD-Video: 480i, 480p, 720p, 1080i
DVD-Video, VHS: 480i, 480p

VIDEO OUT
480i
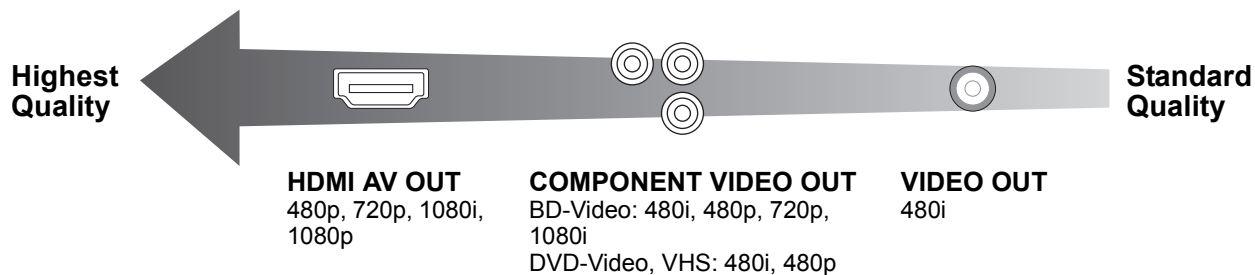
Audio Connections (Receiver/Amplifier) (⇨ 12, 13)

Highest Quality ← → **Standard Quality**

HDMI AV OUT   **DIGITAL AUDIO OUT**   **AUDIO OUT**

- Do not place the unit on amplifiers/receivers or equipment that may become hot. The heat can damage the unit.
- Before making any connections we strongly suggest that all units be temporarily disconnected from AC power.
- Do not connect video signals through a video recorder. Due to copy guard protection the picture may not be displayed properly

---

- **Non-HDMI-compliant cables cannot be utilized.**
- **Please use High Speed HDMI Cables that have the HDMI logo (as shown on the cover). It is recommended that you use Panasonic's HDMI cable. When outputting 1080p signal, please use HDMI cables 5.0 meters (16.4 ft) or less.**
  Recommended part number:
  RP-CDHG10 (1.0 m/3.3 ft.), RP-CDHG15 (1.5 m/4.9 ft.), RP-CDHG20 (2.0 m/6.6 ft.), RP-CDHG30 (3.0 m/9.8 ft.), RP-CDHG50 (5.0 m/16.4 ft.), etc.
- This unit incorporates HDMI (Deep Color, x.v.Color™, High Bit rate Audio) technology. (⇨ 50, 51)

Video Connections (TV)

For audio output, refer to pages 12 and 13.

Ⓐ Connecting to your TV, via HDMI AV OUT

HDMI IN

HDMI cable

Television

AC IN ∼

HDMI AV OUT   LAN   10BASE-T/100BASE-TX

HDMI AV OUT   **Back of the unit**
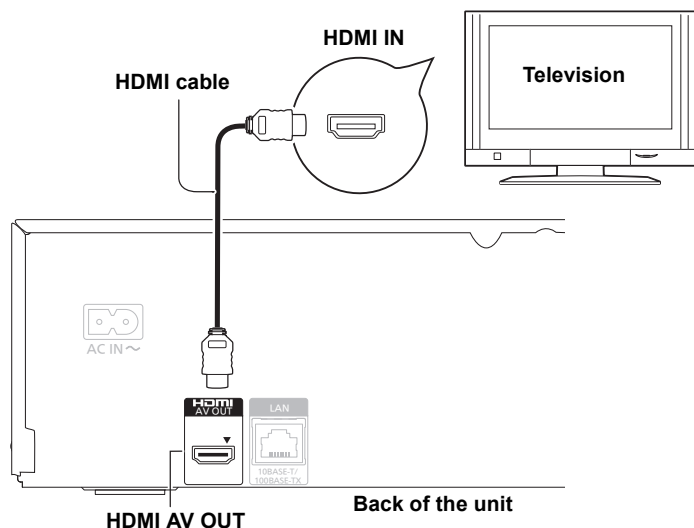
- "HDMI Video Mode" and "HDMI Audio Output" should be set to "On". (⇨ 34)
- The HDMI connection supports VIERA Link "HDAVI Control" (⇨ 28) when used with a compatible Panasonic TV.
- This cable provides both Video and Audio connections.

Ⓑ Connecting to your TV, via COMPONENT VIDEO OUT

Television

COMPONENT VIDEO IN

Back of the unit

Component Video cable

OPTICAL   DIGITAL AUDIO OUT (PCM/BITSTREAM)   COMPONENT VIDEO OUT   AUDIO OUT   VIDEO OUT
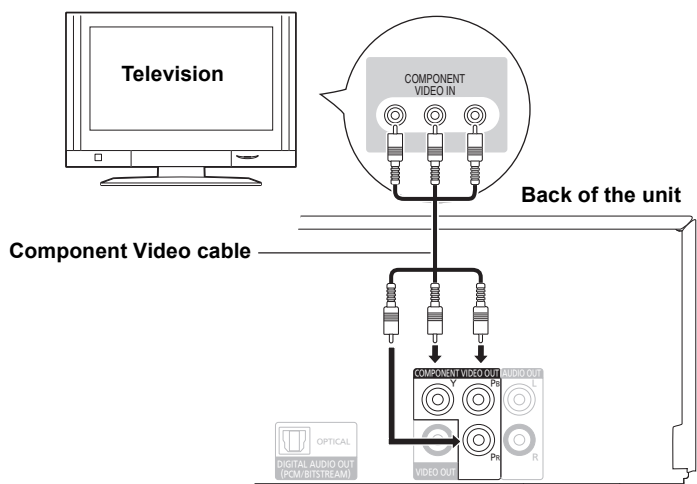
- Connect terminals of the same color.
- Set the "Black Level Control" to "Darker". (⇨ 32)
- Using the COMPONENT VIDEO OUT terminal, while playing DVD-Video or VHS, the video output resolution is limited to "480p".
- Be sure your TV supports at least 480p. Set "Component Video Resolution" to "480p", "720p" or "1080i". (⇨ 34)
- If this unit is connected to an amplifier/receiver, etc. via an HDMI cable with "HDMI Video Mode" set to "On" (⇨ 34), the video will be fixed to 480i.

Ⓒ Connecting to your TV, via VIDEO OUT

Television

AUDIO IN R L VIDEO IN

VIDEO IN

Audio/Video cable (included)

OPTICAL   DIGITAL AUDIO OUT (PCM/BITSTREAM)   VIDEO OUT

VIDEO OUT   **Back of the unit**
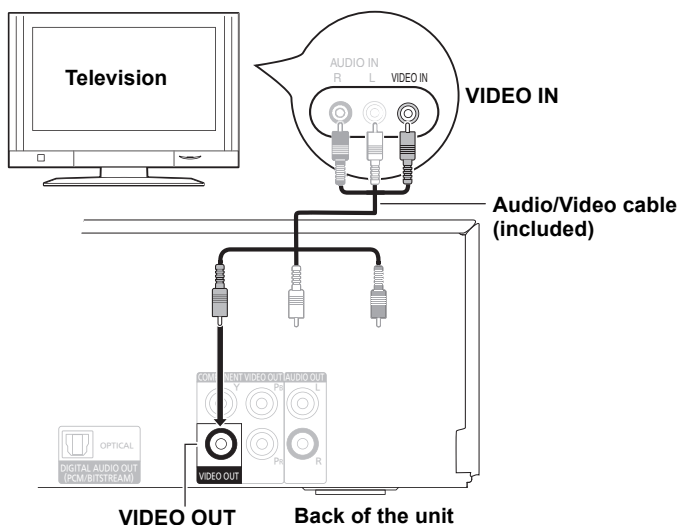
- Connect terminals of the same color.

Connections

Digital Audio Connections

D Connecting to HDMI AV OUT terminal

Television

Multi channel speakers

HDMI OUT

HDMI IN

Amplifier/receiver

HDMI IN

HDMI cable

AC IN~

HDMI AV OUT

LAN

10BASE-T/
100BASE-TX

Back of the unit
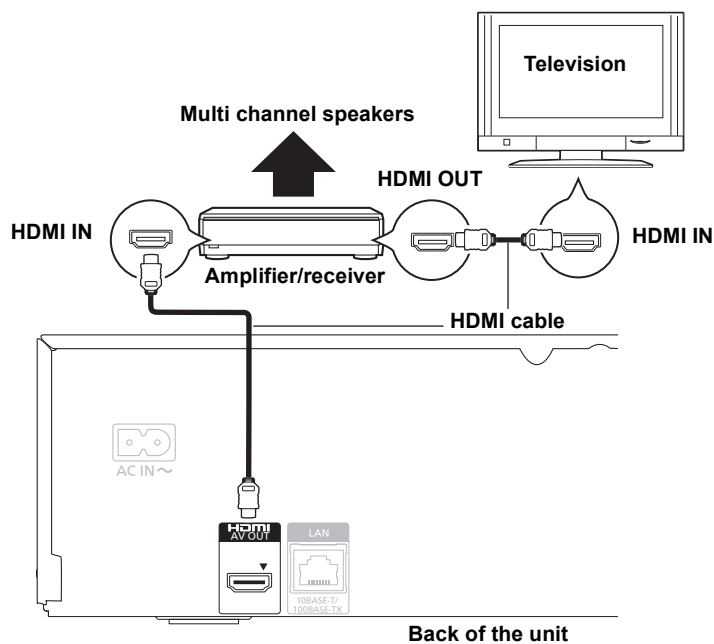
- "HDMI Video Mode" and "HDMI Audio Output" should be set to "On". (⇨ 34)
- "Digital Audio Output" : Depending on the connected amplifier/receiver. (⇨ 33)
- The HDMI connection supports VIERA Link "HDAVI Control" (⇨ 28) when used with a compatible Panasonic TV.
- Enjoying High Bit rate Audio of BD-Video (⇨ 8)

E Connecting to Digital Audio Output terminal

Amplifier/receiver

OPTICAL IN

OPTICAL

COMPONENT VIDEO OUT
Y PB PR

AUDIO OUT
L

DIGITAL AUDIO OUT
(PCM/BITSTREAM)

VIDEO OUT

R

Optical digital audio cable

Back of the unit
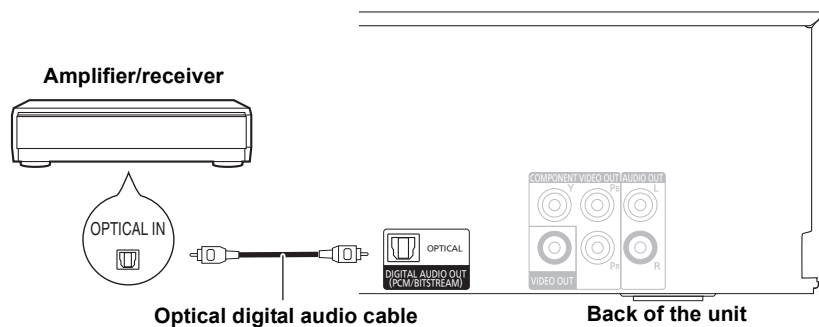
- Please set "Digital Audio Output" to the connection you will use for optical digital. (⇨ 33)
- When connecting a TV (⇨ 11, A) with HDMI AV OUT terminal, set "HDMI Audio Output" to "Off". (⇨ 34)
  (Otherwise, the sound may not be output with the desired audio.)

Analog Audio Connection

Ⓕ Connecting to AUDIO OUT terminal

OR

Television

AUDIO IN
R   L   VIDEO IN

Amplifier/receiver

AUDIO IN

Audio/Video cable (included)

COMPONENT VIDEO OUT   AUDIO OUT
Y   L

OPTICAL

DIGITAL AUDIO OUT
(PCM/BITSTREAM)   VIDEO OUT   R

Back of the unit   **AUDIO OUT**
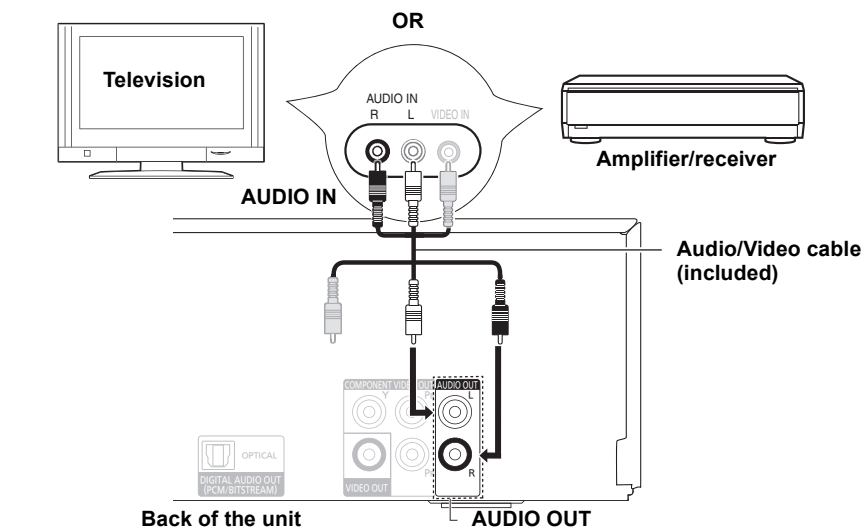
- Using the two analog audio channels this connection provides, you will not be able to use any surround sound audio modes.

AC power connection

Cooling fan

AC IN~

HDMI
AV OUT   LAN

OPTICAL

DIGITAL AUDIO OUT
(PCM/BITSTREAM)   VIDEO OUT

AC power supply cord (included)   **Back of the unit**

To a household AC outlet
(AC 120 V, 60 Hz)
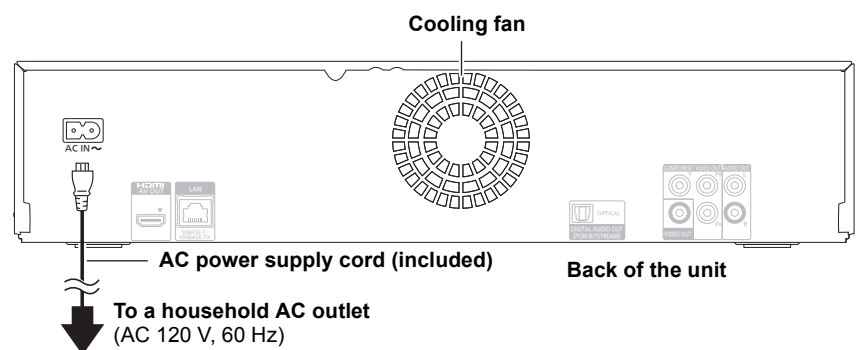
- For best results this unit should be connected directly to an AC outlet.
- This unit consumes a small amount of AC power ("Quick Start": "Off", less than 0.5 W) even when turned off. In the interest of power conservation, if you will not be using this unit for an extended period of time, it can be disconnected.

Remote control and unit reference guide
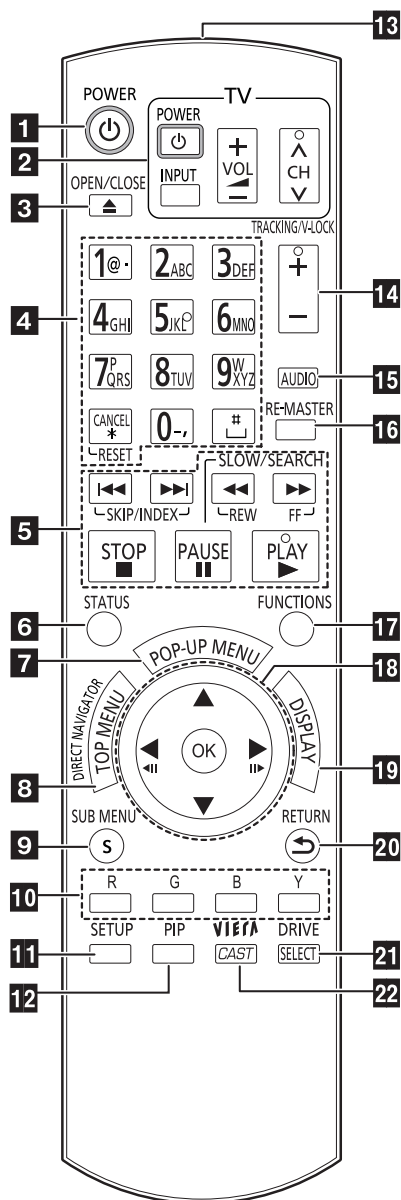
[1] Turn the unit on and off (⇨ 15)

[2] TV operation buttons (⇨ 15)
You can operate the TV through the unit's remote control.
[⏻ TV POWER] : Turn the television on and off
[INPUT] : Input select
[+ − VOL] : Adjust the volume
[∧ ∨ CH] : Channel select

[3] Open or close the disc tray (⇨ 19)

[4] Select title numbers, etc./Enter numbers or characters (⇨ 18, 20)
(The character buttons may be used when operating VIERA CAST contents. ⇨ 27)
[CANCEL] : Cancel/Reset the tape counter (⇨ 17, 26)

[5] Basic playback control buttons (⇨ 20, 21, 26)

[6] Show status messages (⇨ 21, 26)

[7] Show Pop-up menu (⇨ 20)

[8] Show Top menu/Direct Navigator (⇨ 20)

[9] Show sub menu (⇨ 24)

[10] These buttons are used when:
● Operating a BD-Video disc that includes Java™ applications (BD-J). For more information about operating this kind of disc, please read the instructions that came with the disc.
● Displaying "Title View" and "Album View" screens. (Only the [R] and [G] buttons, ⇨ 24)
● Operating contents of VIERA CAST. (⇨ 27)

[11] Show Setup menu (⇨ 32)

[12] Switch on/off Secondary Video (Picture-in-picture) (⇨ 23)

[13] Transmit the remote control signal

[14] TRACKING/V-LOCK (⇨ 26)

[15] Select audio (⇨ 21, 26)

[16] Reproduce more natural audio (⇨ 21)

[17] Show FUNCTIONS menu (⇨ 21)

[18] Selection/OK, Frame-by-frame (⇨ 21)

[19] Show on-screen menu (⇨ 30)

[20] Return to previous screen

[21] Select drive (BD/DVD/CD, SD card, USB device, VHS) (⇨ 20)

[22] Displays the Home screen of the VIERA CAST (⇨ 27)
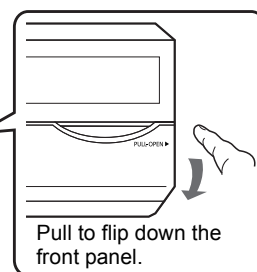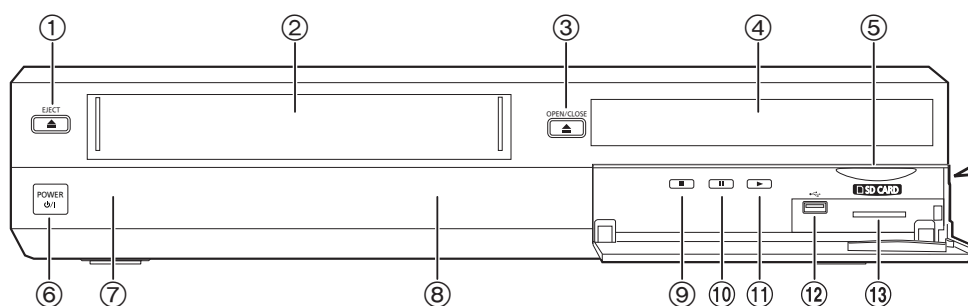
① Cassette eject button (⇨ 19)
② Cassette compartment (⇨ 19)
③ Open or close the disc tray (⇨ 19)
④ Disc tray (⇨ 19)
⑤ SD Card LED
● It is possible to set the LED to turn on/off. (⇨ 33, SD Card LED Control)
⑥ **POWER button (POWER ⏻/I)** (⇨ 15)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
⑦ Remote control signal sensor (⇨ 5)

⑧ Display

| Disc indicator | SD card indicator | Tape indicator | USB access lamp |

The indicator and access lamp blink when reading data from a card, or USB device, or writing data to a card.

⑨ Stop (⇨ 20, 26)
⑩ Pause (⇨ 20, 26)
⑪ Start play (⇨ 20)
⑫ USB port (⇨ 19)
⑬ SD card slot (⇨ 19)

Rear panel terminals (⇨ 10–13, 16)

Pull to flip down the front panel.

Setting

Easy Setting

After connecting your new player and pressing the power button, a screen for the basic settings will appear.

Preparation
Turn on the television and select the appropriate video input on the television.

❶ Press [⏻ POWER].
Setup screen appears.
●If this unit is connected to a Panasonic TV (VIERA) supporting HDAVI Control 2 or later via an HDMI cable, then the "On-screen Language" and "TV Aspect" setting information on the TV are captured from the TV.
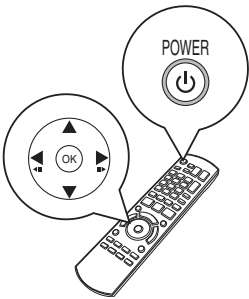
❷ Follow the on-screen instructions and make the settings with [▲, ▼] and [OK].
"On-screen Language", "TV Aspect" and "Quick Start" are set. (⇨ 33, 34, 36)

●You can perform this setup anytime by selecting "Easy Setting" in the Setup menu. (⇨ 36)
●You can also change these settings individually. (⇨ 33, 34, 36)

Reprogramming the remote control for TV control

You can operate the TV using the unit's remote control.
Point the remote control at the television.

❶ Input the 4-digit code with the numbered buttons while pressing [⏻ TV POWER].
e.g., 0001: [0] ⇨ [0] ⇨ [0] ⇨ [1]
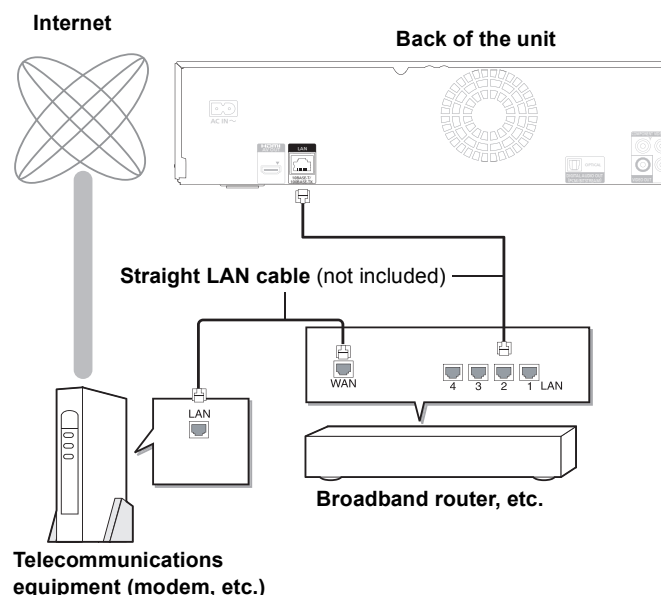
❷ Test by turning on the television.

●If your television brand has more than one code listed, select the one that allows correct operation.
●If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television. Use your television's remote control.

Brand	TV Code
Panasonic	0051/0055/0250/0650
ADVENT	0761/0783/0815/0817/0842
AKAI	0030/0098/0672/0702/0812
AMERICA ACTION	0180
AOC	0003/0019/0030/0052/0137/0185
APEX DIGITAL	0748/0765/0767/0879/0890
AUDIOVOX	0003/0092/0180/0451/0623/0802/0875/1937
AXION	1937
BANG & OLUFSEN	0620/1620
BROKSONIC	0003/0236/0463
CASIO	0611/1205
DAEWOO	0019/0039/0066/0067/0091/0092/0451/0623/0661/0672/1661
EMERSON	0019/0038/0039/0154/0158/0171/0177/0178/0179/0180/0181/0182/0183/0185/0236/0270/0280/0282/0463/0623
ENVISION	0030/0813
EPSON	0833/0840
FISHER	0154/0159
FUJITSU	0179/0186/0683/0809/0853
GE	0021/0027/0029/0047/0051/0055/0135/0138/0174/0178/0251/0279/0282/0451/0747/1347/1447
GOLDSTAR	0019/0030/0032/0106/0178/0317/0409/0442/0457/0700/0856/1178/1265
GO VIDEO	0886
HAIER	0768/1034
HANNSPREE	1348/1351/1352
HEWLETT PACKARD	1088/1089/1101/1494/1502
HISENSE	0748

Brand	TV Code
HITACHI	0016/0032/0038/0056/0095/0097/0145/0151/0173/0227/0279/0409/0413/1145
INFOCUS	0736/0738/0741/0752/0781/1164/1516
JVC	0036/0053/0069/0160/0169/0182/0731/1253
KLH	0765/0767
LG	0019/0030/0032/0106/0178/0317/0409/0442/0457/0700/0856/1178/1265
LOEWE	0136
MAGNAVOX	0020/0024/0028/0030/0036/0054/0096/0179/0186/0187/0230/0386/0706/0802/1254/1454
MARANTZ	0030/0054/0444/0704/0854/0855/1154
MEMOREX	0016/0106/0150/0154/0178/0179/0463
MITSUBISHI	0014/0019/0093/0098/0150/0155/0178/0331/0358/0836/0868/1250
NORCENT	0748/0824/1089
OPTOMA	0887
ORION	0179/0236/0463/1463
PHILIPS	0054/0690/1154/1454
PHILIPS MAGNAVOX	0020/0024/0028/0030/0036/0054/0096/0179/0186/0187/0230/0386/0690/0706/0802/1154/1254/1454
PIONEER	0038/0166/0172/0679/0866
POLAROID	0765/0865/1262/1276/1314/1316/1326/1327/1328/1341/1498/1523
PROSCAN	0047/0747/1347/1447
PROVIEW	0835/1401/1498
RCA	0018/0019/0029/0038/0047/0090/0135/0174/0278/0679/0747/1047/1147/1247/1347/1447/1547
RUNCO	0017/0030/0251/0497/0603

Brand	TV Code
SAMPO	0030/0032/0039/0052/0100/0110/1755
SAMSUNG	0019/0030/0032/0056/0060/0178/0329/0408/0427/0587/0702/0766/0812/0814/1060
SANSUI	0463
SANYO	0088/0107/0146/0154/0159/0232/0484/0799/0893
SHARP	0039/0093/0153/0157/0165/0220/0281/0386/0398/0491/0688/0818/0851
SONY	0000/0011/0080/0111/0273/0353/0810/0834/0867/1100
SVA	0587/0748/0768/0865/0870/0871/0872
SYLVANIA	0020/0028/0030/0054/0065/0096/0171/0381
SYMPHONIC	0171/0180
SYNTAX-BRILLIAN	1007/1144/1240/1255/1257/1258/1331
TATUNG	0003/0049/0055/0396/1101/1756
THOMSON	0209/0210/0047
TOSHIBA	0036/0060/0149/0154/0156/0650/0832/0845/1156/1164/1256/1265/1356/1656/1704
ULTRA	0391
VIEWSONIC	0857/0864/0885/1755
WESTINGHOUSE	0885/0889/0890/1282/1577
YAMAHA	0019/0030/0769/0833/0839
ZENITH	0016/0017/0092/0178/0463/1265

Broadband network connection

The following services can be used when this unit is connected to the Internet via a broadband connection.
● Firmware can be updated (⇨ right)
● You can enjoy the BD-Live (⇨ 23)
● You can enjoy the VIERA CAST (⇨ 27)

Internet

Back of the unit

Straight LAN cable (not included)

WAN   4 3 2 1 LAN

Broadband router, etc.

LAN

Telecommunications equipment (modem, etc.)

● Use shielded LAN cables when connecting to peripheral devices.
● With installation where your broadband modem is connected directly to your PC, a router must be installed.
● Use a router that supports 10BASE-T/100BASE-TX.
● In case all available connection on your router is being used, a hub or switch can be installed to provide additional connections.
● When operating the VIERA CAST, use high-speed Internet service no less than 1.5 Mbps for SD (Standard Definition) and 6 Mbps for HD (High Definition) picture quality by your local broadband company.
  – If using slow Internet connection, the video may not be displayed correctly.
● After physically connecting this unit to your broadband connection, some configuration is required. (⇨ 17)
● Inserting any cable other than a LAN cable in the LAN terminal can damage the unit.
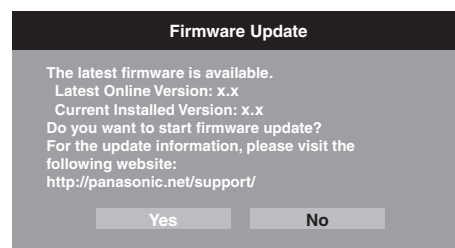
Firmware updates

Occasionally, Panasonic releases firmware updates for this BD Player. Firmware is embedded software that controls this unit's microprocessor. These updates may add or improve a feature of this unit. Firmware updates may also be released to correct operating irregularities that are discovered with certain movies. These updates are available at no charge.

Automatically check the firmware

This unit is capable of auto firmware check if it is connected to the Internet via a broadband connection.
When latest firmware version is available, the following screen is displayed.
Select "Yes" or "No".

Firmware Update

The latest firmware is available.
   Latest Online Version: x.x
   Current Installed Version: x.x
Do you want to start firmware update?
For the update information, please visit the following website:
http://panasonic.net/support/

Yes   **No**

● If "Yes" is selected, then follow the on-screen instructions.
● If "No" is selected, then manually update the firmware later. (⇨ below)
After the latest firmware is downloaded, the system will be restarted and the firmware will be updated.

When the system is restarted, the screen display disappears and "START" is displayed on the unit's display.

After the firmware is updated and the system is restarted, the following screen indicates that the firmware update has been completed.

The firmware was updated. Current Installed Version: x.x OK RETURN
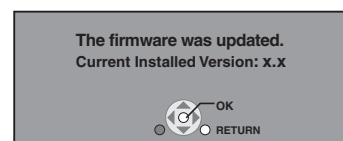
● During the update process, no other operations can be performed. Serious damage may occur if you turn the power off and/or press any buttons.

● Downloading will require several minutes. It may take longer or the Internet may not be connected depending on the connection environment. It is required that you use a broadband connection.
● When the unit is connected to the Internet, communication charges may be generated.
● If you do not want to check for the latest firmware version when the unit is turned on, set "Automatic Update Check" to "Off". (⇨ 36)

Manually updating the firmware

If the firmware update is not carried out when the unit is turned on, a message is displayed when displaying the FUNCTIONS menu.

The latest firmware is available. Please update firmware in Setup.

1) Press [SETUP].
2) Press [▲, ▼] to select "Others" and press [OK].
3) Press [▲, ▼] to select "Firmware Update" and press [OK].
4) Press [▲, ▼] to select "Update Now" and press [OK].
5) Press [◄, ►] to select "Yes" and press [OK].

If downloading on this unit fails or this unit is not connected to the Internet, then you can download the latest firmware from the following website and burn it to a CD-R to update the firmware.
http://panasonic.net/support/
(This site is in English only.)

Network settings

These settings are used if you will connect this unit to the Internet.
- The connection to the Internet may take time or the Internet may not be connected depending on the connection environment. (⇨ 35)
  It is required that you use a broadband connection.

Preparation
- Connect to a broadband network. (⇨ 16)

Testing of "IP Address/DNS Settings"

Always test the connection when a LAN cable is connected.

❶ Press [SETUP].
❷ Press [▲, ▼] to select "Network" and press [OK].
❸ Press [▲, ▼] to select "IP Address/ DNS Settings" and press [OK].
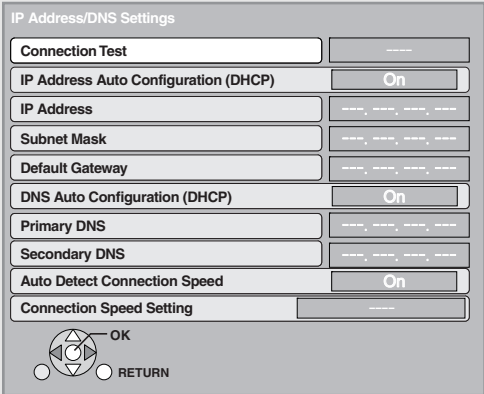**❹ Press [▲, ▼] to select "Connection Test" and press [OK].**

IP Address/DNS Settings	
Connection Test	-----
IP Address Auto Configuration (DHCP)	On
IP Address	---. ---. ---. ---
Subnet Mask	---. ---. ---. ---
Default Gateway	---. ---. ---. ---
DNS Auto Configuration (DHCP)	On
Primary DNS	---. ---. ---. ---
Secondary DNS	---. ---. ---. ---
Auto Detect Connection Speed	On
Connection Speed Setting	-----

OK
RETURN

"Testing": The test is in progress.
"Pass": The connection is completed.
Press [RETURN] to exit.
"Fail": Please check the connection and settings. (⇨ 38)

- Please perform the "Connection Test" when any changes are made to the "IP Address/DNS Settings".

- If the connection test fails, it may be necessary to set the MAC address of this unit at the router side. The MAC address can be displayed by pressing [SETUP] and selecting "Network".

Network
IP Address/DNS Settings
Proxy Server Settings
Network Service

MAC Address: xx-xx-xx-xx-xx-xx

OK
RETURN
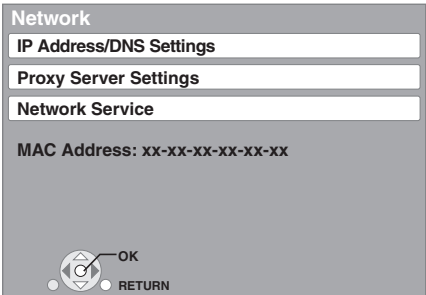
Setting the IP address

In most cases, default settings can normally be used without making any changes.
Set the IP address only when the router has no DHCP server functions or when the router's DHCP server function is disabled.
After performing steps ❶–❸ (⇨ left)

❹ Press [▲, ▼] to select "IP Address Auto Configuration (DHCP)" and press [◄, ►] to select "Off".
❺ Press [▲, ▼] to select "IP Address", "Subnet Mask" or "Default Gateway" and press [OK].
❻ Enter numbers with the numbered buttons and press [OK].
❼ Press [◄, ►] to select "Yes" and press [OK].

- After checking the specifications for your broadband router, enter each number. If the number is unknown, then check the number of other devices such as personal computers connected via a LAN cable. Assign a different number from those of other devices for the "IP Address" and the same number for others.
- If a wrong number is entered, then press [CANCEL].
- The numeric input range is between 0 and 255.

Setting the DNS-IP

In most cases, default settings can normally be used without making any changes.
When setting an assigned DNS server from your Internet service provider, perform the following settings.
After performing steps ❶–❸ (⇨ left)

❹ Press [▲, ▼] to select "DNS Auto Configuration (DHCP)" and press [◄, ►] to select "Off".
❺ Press [▲, ▼] to select "Primary DNS" or "Secondary DNS"and press [OK].
❻ Enter numbers with the numbered buttons and press [OK].

Primary DNS
Please input Primary DNS and press [OK]. Press [CANCEL] to delete the selected character. To clear this setting, delete all characters and press [OK].

192 . 1 . ☐ . ☐
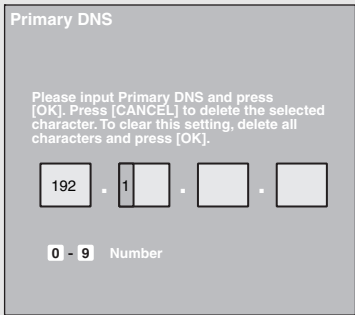
0 - 9 Number

❼ Press [◄, ►] to select "Yes" and press [OK].

- Follow the instructions given by your Internet service provider and enter the numbers. If the number is unknown, then check the number of other devices such as personal computers connected via a LAN cable and assign the same number.
- If a wrong number is entered, then press [CANCEL].
- The numeric input range is between 0 and 255.

Network settings

Setting the connection speed

When the connection test results in "Fail" after the IP and DNS-IP addresses are assigned, perform the following settings.

After performing steps ❶–❸ (⇨ 17)

❹ **Press [▲, ▼] to select "Auto Detect Connection Speed" and press [◄, ►] to select "Off".**

❺ **Press [▲, ▼] to select "Connection Speed Setting" and press [◄, ►] to select a connection speed.**

● Select a connection speed in accordance with the environment of the network connected.
● When the settings are changed, the network connection may be disabled depending on the device.

Testing of "Proxy Server Settings"

Always test the connection when new "Proxy Server Settings" have been made.

❶ **Press [SETUP].**

❷ **Press [▲, ▼] to select "Network" and press [OK].**

❸ **Press [▲, ▼] to select "Proxy Server Settings" and press [OK].**

❹ **Press [▲, ▼] to select "Connection Test" and press [OK].**

"Testing": The test is in progress.
"Pass": The connection is completed.
Press [RETURN] to exit.
"Fail": Please check the connection and settings.

Setting the proxy server

In most cases, default settings can normally be used without making any changes.
Please use this setting when instructed to by your Internet service provider.

After performing steps ❶–❸ (⇨ above)

❹ **Press [▲, ▼] to select "Proxy Address" and press [OK].**

Proxy Server Settings	
Reset to factory preset	
Proxy Address	
Proxy Port Number	0
Connection Test	-----

OK
RETURN

❺ **Press [▲, ▼, ◄, ►] to select a character and press [OK].**

Text field: shows the text you have entered

Proxy Address

1	1	2	3	4	5	6	7	8	9	0
2	A	B	C		a	b	c	+	-	*
3	D	E	F		d	e	f	/	=	%
4	G	H	I		g	h	i	#	$	&
5	J	K	L		j	k	l	<	>	@
6	M	N	O		m	n	o	[	]	_
7	P	Q	R	S	p	q	r	s	(	)
8	T	U	V		t	u	v	{	}	~
9	W	X	Y	Z	w	x	y	z	\		
0	.	,	?	!	'	"	:	;		^

Space

OK ⟳ RETURN [0] -- [9]

Using the numbered buttons to enter characters
e.g., entering the letter "F"
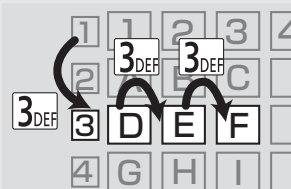
1) Press [3] to move to the 3rd row.
2) Press [3] twice to highlight "F".
3) Press [OK].

Repeat this step to enter other characters.
● Press [❚❚] to delete.

❻ **Press [■] when you complete the entry.**

❼ **Press [▲, ▼] to select "Proxy Port Number" and press [OK].**

❽ **Enter numbers with the numbered buttons and press [OK].**

Proxy Port Number

Please input Proxy Server Port Number and press [OK]. Press [CANCEL] to delete the selected character. The number will be set to "0" if all characters are deleted and [OK] is pressed.

0

[0] - [9] Number

❾ **Press [◄, ►] to select "Yes" and press [OK].**

● The specified ports may be blocked and not be able to be used depending on the network environment.
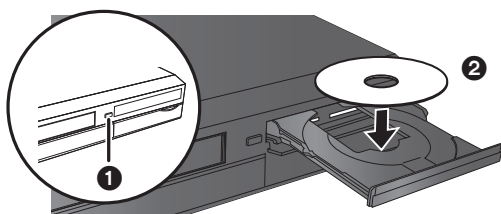
In order to restore the default settings

After performing steps ❶–❸
1) Press [▲, ▼] to select "Reset to factory preset" and press [OK].
2) Press [◄, ►] to select "Yes" and press [OK].

Inserting or removing media

Inserting or removing a disc

❶ Press [⏏ OPEN/CLOSE] to open the disc tray.
❷ Insert or remove the disc

●Press [⏏ OPEN/CLOSE] again to close the disc tray.
●DVD-RAM: Remove discs from their cartridges before use.
●Insert double-sided discs so the label for the side you want to play is facing up.

Inserting or removing an SD card

Inserting an SD card
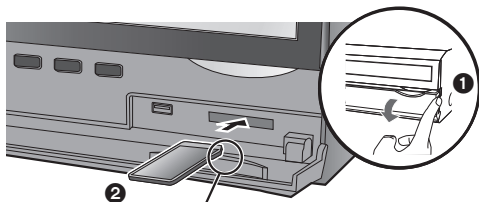
Insert the card's label up, positioning the cut off corner to the right.

❶ Pull to flip down the front panel.
❷ Insert the SD card into the SD card slot.
   ●Press on the center of the card until it clicks into place.

Removing the SD card
Press on the center of the card and pull it straight out.
●When the card indicator ("SD") on the unit's display is flashing, the card is being read from or written to. Do not turn off the unit or remove the card. Such action may result in malfunction or loss of the card's contents.

Inserting or removing a USB device

Inserting a USB device
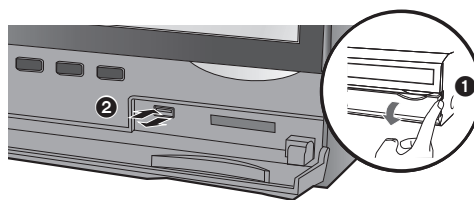
●Before inserting any USB device into this unit, ensure that the data stored therein has been backed up.
●Check the orientation of the USB connector and insert it straight in.
●Some USB devices inserted into this unit may cause this unit to stop operating. Such USB devices cannot be used on this unit.

❶ Pull to flip down the front panel.
❷ Insert the USB device into the USB port.

Removing the USB device
Complete all USB device-related operations and pull the USB device straight out.
●When the USB access lamp is flashing, the USB device is being read from. Do not turn off the unit or remove the USB device. Such action may result in malfunction or loss of the USB device's contents.

Since the physical size of USB devices can vary, please consider its width when connecting any USB device to this unit. It is possible that some devices may accidentally activate the playback button and cause this unit to not operate properly.
– In such cases we recommend using a USB extension cable (not included).

Inserting or ejecting a video cassette

Inserting a video cassette
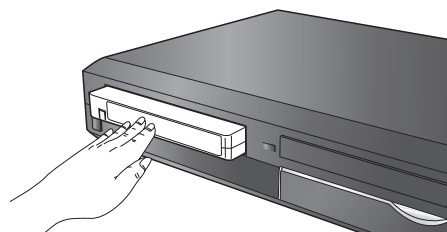
– The unit turns on automatically.

Ejecting the video cassette
From the main unit
●Press [⏏ EJECT] on the main unit.
   – The unit turns on automatically.
From the remote control
●Press [DRIVE SELECT] to select "VHS" and press and hold [■] for 3 or more seconds.

Basic play (Playing video contents)

Instructions for operations are generally described using the remote control in these operating instructions.

Preparation

Turn on the television and select the appropriate video input on the television.

1 **Press [⏻ POWER] to turn on the unit.**
2 **Insert the media (⇨ 19).**

Play starts.

e.g.,

- If play does not start, press [▶] (PLAY).
- If a media with data in different file formats is inserted, the file selection menu is displayed.
  Press [▲, ▼] to select the desired file format and press [OK].
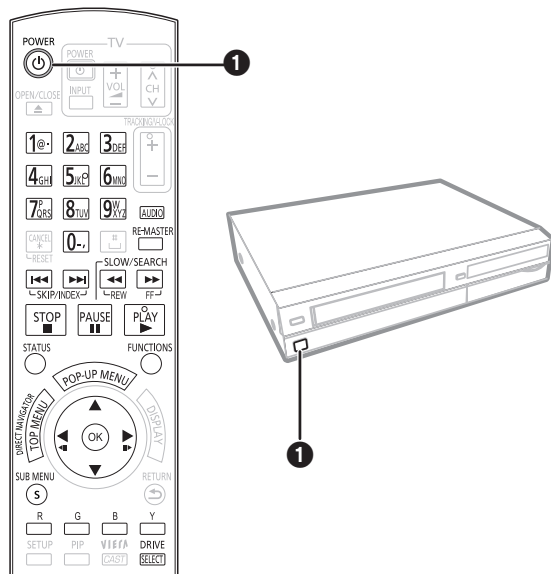- If the menu is displayed, press [▲, ▼, ◀, ▶] to select the item and press [OK].
- If the screen prompting you to use the color buttons appears, continue to operate with the color buttons on the remote control.

- DISCS CONTINUE TO ROTATE WHILE MENUS ARE DISPLAYED. Press [■] when you finish to preserve the unit's motor and your television screen.
- The producers of the disc can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.
- When playing a set of two or more BD-Video discs, the menu screen may continue to display even if the disc has been ejected.

To switch drives

Press [DRIVE SELECT] to select "BD/DVD/CD", "SD card", "USB device" or "VHS".

- If a media is inserted while the unit is stopped, the drive switches automatically depending on the inserted media.

To display menus

BD-V **AVCHD** **DVD-VR** **DVD-V**
Press [TOP MENU/DIRECT NAVIGATOR].

To show Pop-up menu **BD-V**

The Pop-up menu is a special feature available with some BD-Video discs. This menu may vary with discs. For the operating method, refer to the instructions for the disc.

1) Press [POP-UP MENU].
2) Press [▲, ▼, ◀, ▶] to select the item and press [OK].
- Pop-up menu also appears by pressing [SUB MENU] and selecting "Pop-up Menu".
- Press [POP-UP MENU] to exit the screen.

Other operations during play
(These functions may not work depending on the media.)

About the Video cassette ⇨ 26, "Playing a video cassette **VHS**"

STOP | Stop

The stopped position is memorized.

Resume play function
Press [▶] (PLAY) to restart from this position.
- The position is cleared if the tray is opened or you press [■] several times to display "STOP" on unit's display.
- **BD-V**: On BD-Video discs including BD-J (⇨ 50), the resume play function does not work.
- **CD** **MP3** **MPEG2**: The position is cleared if the unit is turned off.

PAUSE | Pause

- Press [❙❙] again or [▶] (PLAY) to restart play.

SLOW/SEARCH ◀◀ ▶▶ | Search/Slow-motion

The speed increases up to 5 steps.
- Press [▶] (PLAY) to revert to normal playback speed.
- For some discs, the speed may not change.

Search
While playing, press [◀◀] or [▶▶].
- **BD-V** **AVCHD** **DVD-VR** **DVD-V**:
  Audio is heard during first level of forward search.
- **MPEG2**: Audio is not heard during all levels of search.
- **CD** **MP3**: The speed is fixed to a single step.

Slow-motion
While paused, press [◀◀] or [▶▶].
- **BD-V** **AVCHD**: Forward direction [▶▶] only.
- **DVD-VR**: If continued for approx. 5 minutes, slow-motion play pauses automatically.

◀◀ ▶▶ SKIP/INDEX | Skip

Skip to the title, chapter or track you want to play.
- Each press increases the number of skips.

Direct Play

During playback, you can access specific recordings or scenes through direct entry of the numbered buttons.
Play starts from the selected title or chapter.

BD-V **AVCHD**
e.g., 5: [0] ⇨ [0] ⇨ [5]
15: [0] ⇨ [1] ⇨ [5]

DVD-V
e.g., 5: [0] ⇨ [5]
15: [1] ⇨ [5]

- While stopped (the image on the right is displayed on the screen), the title is designated. While playing, the chapter is designated.

Frame-by-frame

While paused, press [◄] (◄❙❙) or [►] (❙❙►).

Each press shows the next frame.
- Press and hold to change in succession forward or backward.
- Press [►] (PLAY) to revert to normal playback speed.
- **BD-V** **AVCHD**: Forward direction [►] (❙❙►) only.

Screen Aspect

When black bars are shown at the top, bottom, left, and right sides of the screen, you can enlarge the image to fill the screen.
① Press [SUB MENU].
② Press [▲, ▼] to select "Screen Aspect" and press [OK].
③ Press [◄, ►] to select "Side cut" or "Zoom".
Normal: Normal output
Side cut: The black bars on the right and left sides of the 16:9 image disappear and the image is enlarged. Please note that the right and left sides of the image are cut off when the black bar is not displayed.
Zoom: The black bars on the top and bottom sides of the 4:3 image disappear and the image is enlarged. Please note that the top and bottom sides of the image are cut off when the black bar is not displayed.
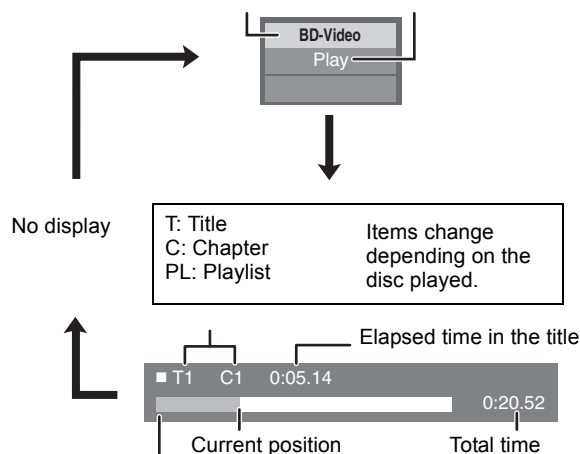- **BD-V** **DVD-V**: "Side cut" does not have any effect.
- When "TV Aspect" (⇨ 34) is set to "4:3 Pan & Scan" or "4:3 Letterbox", the "Zoom" effect is disabled.

STATUS
Status messages

The status messages give you information about what is currently being played. Each time you press [STATUS], the information displayed will change.

e.g. **BD-V**   Type of disc   Play status

No display

| T: Title
C: Chapter
PL: Playlist | Items change depending on the disc played. |

Elapsed time in the title

■ T1   C1   0:05.14
                              0:20.52

Current position   Total time

Depending on the kind of disc or the playback status, this display may not appear.

AUDIO   **Changing audio during play**

BD-V **AVCHD** **DVD-V**

e.g. **DVD-V**

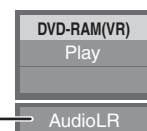| Soundtrack | ▲▼ 1 ENG | ◻◻ Digital 3/2.1ch |

English is selected.
You can change the audio channel number each time you press the button. This allows you to change the soundtrack language (⇨ 30, Soundtrack), etc.

DVD-VR **MPEG2**
AudioLR→AudioL→Audio R

| DVD-RAM(VR) |
| Play |

"AudioLR" is selected
| AudioLR |

RE-MASTER   **Reproducing more natural audio**
                     (Discs recorded at 48 kHz or less)

This feature gives you a more natural sound by adding higher frequency signals not recorded on the track.

Press [RE-MASTER] to select "Re-master 1", "Re-master 2" or "Re-master 3".

Select the one that you like best.

Setting	When playing LPCM sound Type of music	Other types of sound Effect level
Re-master 1	High tempo (e.g., pop and rock)	Light
Re-master 2	Various tempos (e.g., jazz)	Medium
Re-master 3	Low tempo (e.g., classical)	Strong
Off	Off	Off

- This function is effective for audio from the HDMI terminal or the DIGITAL AUDIO OUT terminal only when "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" is set to "PCM". (However, in this case, audio is output as 2ch from the DIGITAL AUDIO OUT terminal.)

Showing FUNCTIONS menu

Some functions of this unit can be operated from the FUNCTIONS menu.

❶ Press [FUNCTIONS].
- Items to be displayed may vary with the media.

❷ Press [▲, ▼] to select the item and press [OK].

e.g.,
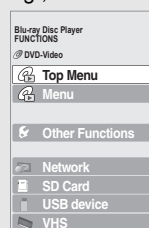
- **Playback**
- **Top Menu**
- **Menu**
- **Viewing Picture**
- **Other Functions**   "Playlists":
                        You can play playlists created on DVD-VR. Press [▲, ▼, ◄, ►] to select the playlist and press [OK].
                        "Setup" (⇨ 32)
                        "Card Management" (⇨ 23)
- **Network**   Displays the Home screen of the VIERA CAST (⇨ 27)
- **BD/DVD/CD**   Switches to the disc drive.
- **SD Card**   Switches to the SD drive.
- **USB device**   Switches to the USB drive.
- **VHS**   Switches to the VHS drive.

Playback

Playing HD Video or SD Video AVCHD MPEG2

It is possible to playback the HD (High Definition) video recorded on the Panasonic High definition Video Camera on the DVD-RAM/R/ RW/R DL/+R/+RW/+R DL or SD card, and SD (Standard Definition) Video recorded on the Panasonic SD Video Camera on the SD card.

❶ Insert a disc or SD card. (⇨ 19)

- "Video (AVCHD)" or "Video (MPEG-2)" screen is displayed.
- If a media containing data in different file formats is inserted, the file selection menu may be displayed.

e.g.,

```
SD
5 0
```

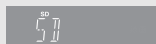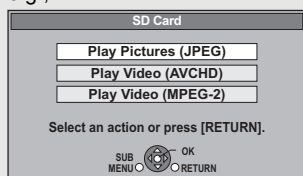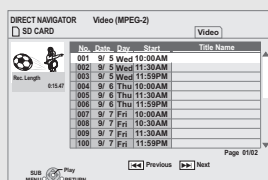Press [▲, ▼] to select "Play Video (AVCHD)" or "Play Video (MPEG-2)" and press [OK].

e.g.,

SD Card
Play Pictures (JPEG)
Play Video (AVCHD)
Play Video (MPEG-2)

Select an action or press [RETURN].

SUB MENU / OK / RETURN

❷ Press [▲, ▼, ◄, ►] to select the title and press [OK].

e.g.,

```
DIRECT NAVIGATOR   Video (MPEG-2)
SD CARD                          Video
        No. Date  Day  Start        Title Name
        001  9/ 5 Wed 10:00AM
        002  9/ 5 Wed 11:30AM
Rec. Length 003  9/ 5 Wed 11:59PM
        004  9/ 6 Thu 10:00AM
        005  9/ 6 Thu 11:30AM
  9:15:47 006  9/ 6 Thu 11:59PM
        007  9/ 7 Fri 10:00AM
        008  9/ 7 Fri 10:30AM
        009  9/ 7 Fri 11:30AM
        100  9/ 7 Fri 11:59PM
                               Page 01/02
SUB  Play
MENU  RETURN      ◄◄ Previous  ►► Next
```

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

To switch from other menus to AVCHD or MPEG2 menu
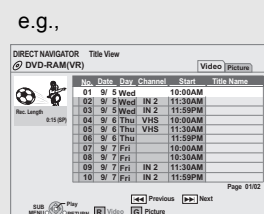(If the media contains data in different file formats)
1) Press [FUNCTIONS].
2) Press [▲, ▼] to select "Menu" and press [OK].
3) Press [▲, ▼] to select "Play Video (AVCHD)" or "Play Video (MPEG-2)" and press [OK].

- It may pause for a few seconds on the break of images when editing such as partial deletion is performed.
- High definition video (transfer rate of 18 Mbps or faster) cannot be played back correctly if it was recorded on a DVD compatible to double speed or slower.
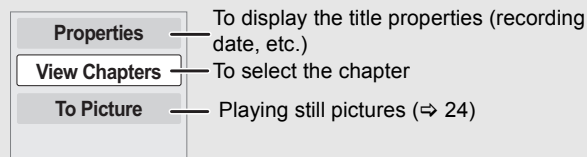
Chapter playback DVD-VR

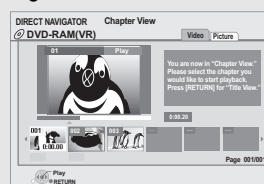## ❶ Insert a disc (⇨ 19).

- "Title View" screen is displayed.

e.g.,

```
DIRECT NAVIGATOR  Title View
DVD-RAM(VR)                      Video Picture
        No. Date  Day Channel  Start    Title Name
        01  9/ 5 Wed         10:00AM
        02  9/ 5 Wed IN 2   11:30AM
Rec. Length 03  9/ 5 Wed IN 2   11:59PM
        04  9/ 6 Thu VHS    10:00AM
 0:15 (SP) 05  9/ 6 Thu VHS    11:30AM
        06  9/ 6 Thu         11:59PM
        07  9/ 7 Fri         10:00AM
        08  9/ 7 Fri         10:30AM
        09  9/ 7 Fri IN 2   11:30AM
        10  9/ 7 Fri IN 2   11:59PM
                               Page 01/02
SUB  Play
MENU  RETURN  R Video  G Picture  ◄◄ Previous  ►► Next
```

e.g.,

```
NAVI
```

❷ Press [▲, ▼] to select the title and press [SUB MENU].

❸ Press [▲, ▼] to select "View Chapters" and press [OK].

Properties	To display the title properties (recording date, etc.)
View Chapters	To select the chapter
To Picture	Playing still pictures (⇨ 24)

❹ Press [◄, ►] to select the chapter and press [OK].

e.g.,

```
DIRECT NAVIGATOR   Chapter View
DVD-RAM(VR)                    Video Picture
    01              Play
                         You are now in "Chapter View."
                         Please select the chapter you
                         would like to start playback.
                         Press [RETURN] for "Title View."
                  0:38:30
  001
  0:00:00
                               Page 001/001
  Play
  RETURN
```

Enjoying BD-Live or BONUSVIEW in BD-Video BD-V

What is BONUSVIEW?
BONUSVIEW allows you to enjoy functions such as picture-in-picture or secondary audio etc., with BD-Video supporting BD-ROM Profile 1 version 1.1/ Final Standard Profile.

What is BD-Live?
In addition to the BONUSVIEW function, BD-Video supporting BD-ROM Profile 2 that has a network extension function allows you to enjoy more functions such as subtitles, exclusive images and online games by connecting this unit to the Internet. In order to use the Internet feature, you must have this unit connected to a broadband network (⇨ 16).

- These discs may not be on sale in certain regions.
- The usable functions and the operating method may vary with each disc, please refer to the instructions on the disc and/or visit their website.

Playing secondary video (picture-in-picture) and secondary audio

To turn on/off secondary video
Press [PIP].

To turn on/off secondary audio
Set "Soundtrack" in "Secondary Video" to "On" or "Off" (⇨ 30, Press [DISPLAY] ⇨ "Disc" ⇨ "Signal Type")
The secondary audio is played.

Secondary video
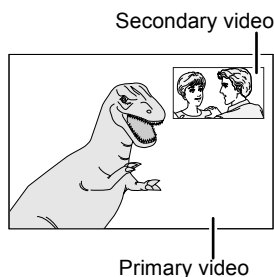
Primary video

- During search/slow-motion or frame-by-frame, only the primary video is displayed.
- When "BD-Video Secondary Audio" in "Digital Audio Output" is set to "Off", secondary audio will not be played even if you set "Soundtrack" in "Secondary Video" to "On". Please check that "BD-Video Secondary Audio" is set to "On" (⇨ 33).

Enjoying BD-Live discs with Internet

Many BD-Live compatible discs require content to be downloaded onto an SD card (⇨ 50, Local storage) in order to access the available BD-Live features.
- An SD card with 1 GB or more of free space (SD Speed Class Rating 2 or higher) needs to be inserted prior to inserting the BD-Live compatible disc.

Some BD-Live content available on the Blu-ray discs may require an Internet account to be created in order to access the BD-Live content. Follow the screen display or instruction manual of the disc for information on acquiring an account.

Preparation
- Connect to the network. (⇨ 16)

❶ **Insert an SD card (⇨ 19).**
- If the SD card menu screen is displayed, press [DRIVE SELECT] on the remote control, select "BD/DVD/CD".
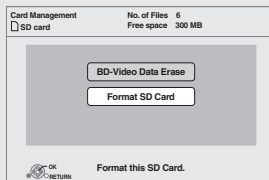
❷ **Insert the disc (⇨ 19).**
- For operation method, refer to the instructions on the disc.

To use the above functions, it is recommended that you format the card on this unit. Format the card using the following procedures.

Formatting SD cards/Deleting data
- If the SD card you use is formatted, all data on the card will be erased. It cannot be recovered.

1) Insert an SD card (⇨ 19).
2) Press [FUNCTIONS].
3) Press [▲, ▼] to select "Other Functions" and press [OK].
4) Press [▲, ▼] to select "Card Management" and press [OK].
5) Press [▲, ▼] to select "BD-Video Data Erase" or "Format SD Card" and press [OK].
6) Press [◄, ►] to select "Yes" and press [OK].
7) Press [◄, ►] to select "Start" and press [OK].

| Card Management | No. of Files 6 |
| SD card | Free space 300 MB |

BD-Video Data Erase
Format SD Card

OK / RETURN   Format this SD Card.

- If you experience any problems, first, try formatting the SD card in this unit.
- A message may be displayed when SD card doesn't have enough storage capacity for BD-Live content. Please make space available on the current SD card, or insert another SD card.
- While using this feature, do not remove the SD card. Doing so will cause playback to stop.
- The unit must be connected to the Internet and set up (⇨ 17) to use the BD-Live functions. "BD-Live Internet Access" may need to be changed for certain discs (⇨ 32).
- When discs supporting BD-Live are played back, the player or disc IDs may be sent to the content provider via the Internet. You can restrict Internet access (⇨ 32).
- The unit is connected to the Internet when BD-Live functions are used, generating communication charges.

Playing still pictures `JPEG`

Playback of the BD-RE, DVD-RAM/R/R DL or CD-R/RW with still pictures recorded. This unit can also play still pictures recorded on the SD card or USB memory. In addition, you can also connect Panasonic digital camera by USB connection.
(About structure of folders ⇨ 37, "Structure of folders that can be played in this unit")

Connecting a USB device

Panasonic digital camera, etc.

Connect to USB terminal

USB connection cable
Specified cable such as accessory of the USB equipment
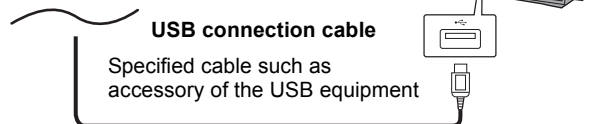
- Setup screen may be displayed on equipment connected with the USB. Set it to the mode for connecting to a PC.
- Also read the operating instructions of the connected equipment for details of connection and setup.
- Do not disconnect the USB connection cable while the device is being identified.

❶ Insert a disc, SD card or USB device. (⇨ 19)

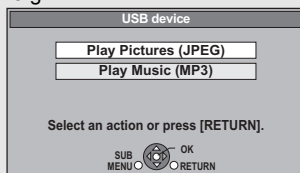**BD-RE, DVD-RAM**
"Album View" screen is displayed.
- When the "Title View" screen is displayed, press the [G] button to switch to the "Album View" screen.
- If the DVD-RAM containing both JPEG and AVCHD format is inserted, the file selection menu may be displayed.

DVD-R/R DL, CD-R/RW, SD card, USB device
- If the media containing data in different file formats is inserted, the file selection menu may be displayed.

  e.g.,

  `USB`

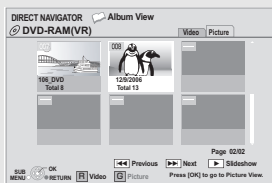 Press [▲, ▼] to select "Play Picture (JPEG)" and press [OK].

  e.g.

USB device
Play Pictures (JPEG)
Play Music (MP3)

  Select an action or press [RETURN].

  SUB MENU   OK RETURN

  "Picture View" screen is displayed.
  ⇨ Go to step ❸

❷ Press [▲, ▼, ◄, ►] to select the album and press [OK].

e.g.,

DIRECT NAVIGATOR Album View
DVD-RAM(VR)   Video Picture
106_DVD   12/8/2006
Total 8   Total 13
                                    Page 02/02
SUB MENU OK RETURN R Video G Picture ◄◄ Previous ►► Next ► Slideshow Press [OK] to go to Picture View.

❸ Press [▲, ▼, ◄, ►] to select the still picture and press [OK].

e.g.,

DIRECT NAVIGATOR Picture View
DVD-RAM(VR)   Video Image
2006 9 12
0001
                                    Page 001/001
SUB MENU Play RETURN
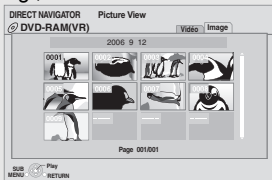
- Press [◄, ►] to display the previous or next still picture.
- Press [|◄◄, ►►|] to show other pages.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [DIRECT NAVIGATOR].

DVD-RAM/R/R DL, CD-R/RW, SD card, USB device
To switch from other menus to JPEG menu
(If the media contains data in different file formats)
1) Press [FUNCTIONS].
2) Press [▲, ▼] to select "Menu" and press [OK].
3) Press [▲, ▼] to select "Play Picture (JPEG)" and press [OK].

Useful functions during still picture play

Start Slideshow

You can display still pictures one by one at a constant interval.
BD-RE, DVD-RAM

❶ **While the "Album View" screen is displayed**
   Press [▲, ▼, ◄, ►] to select the album and press [SUB MENU].
❷ **Press [▲, ▼] to select "Start Slideshow" and press [OK].**

- You can also start slideshow by pressing [►] (PLAY) after selecting the album.

DVD-R/R DL, CD-R/RW, SD card, USB device

❶ **While the "Picture View" screen is displayed**
   Press [SUB MENU].
❷ **Press [▲, ▼] to select "Start Slideshow" and press [OK].**

To stop slideshow
Press [■].

Slideshow settings

In step ❷ in Start Slideshow on page 24,

❶ Press [▲, ▼] to select "Slideshow Settings" and press [OK].

❷ To change the display interval
Press [▲, ▼] to select "Display Interval" and press [◄, ►] to select the interval ("Long", "Normal" or "Short").
● When a still picture with a large number of pixels is played, the display interval may become longer. Even if the setting is changed, the display interval may not become shorter.

To set display method
Press [▲, ▼] to select "Transition Effect" and press [◄, ►] to select "Fade", "Motion" and "Random".
"Fade": Pictures are changed by fading out and fading in.
"Motion": Pictures are changed by fading out and fading in, while it is enlarged, reduced, or moved up or down.
"Random": In addition to the "Motion", pictures are changed by various methods.

To repeat slideshow
Press [▲, ▼] to select "Repeat Play" and press [◄, ►] to select "On" or "Off".

To listen to Background Music
The MP3 that is recorded on the USB device or the music CD can be played back as Background Music during the slideshow.
Press [▲, ▼] to select "Soundtrack" and press [◄, ►] to select "On" or "Off".
● You cannot search or skip the music.
● When the slideshow stops, the playback of the music also stops.
● When both the music CD and the USB device with MP3 recorded is inserted to this unit, the music CD has a priority to be played back as Background Music.

To select a folder
A folder to playback can be selected when a USB device with MP3 recorded is connected to this unit.
Press [▲, ▼] to select "Soundtrack Folder" and press [OK], and press [◄, ►] to select folder.

❸ Press [▲, ▼, ◄, ►] to select "Set" and press [OK].

Rotate

❶ While playing (except for slideshow)
Press [SUB MENU].

❷ Press [▲, ▼] to select "Rotate Right" or "Rotate Left" and press [OK].

● The rotation information will be stored until the unit is turned off or the media is removed.

Zoom out

This function is only available for small-sized still pictures.

❶ While playing (except for slideshow)
Press [SUB MENU].

❷ Press [▲, ▼] to select "Zoom out" and press [OK].

● To cancel "Zoom out", press [▲, ▼] to select "Zoom in" in step ❷ and press [OK].
● The zoom-out information will not be stored.

To select the still pictures in another folder

BD-RE, DVD-RAM
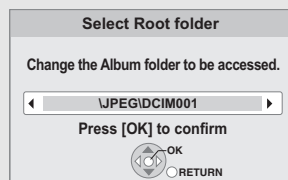**To switch to another higher folder**
(Only if there is a multiple number of recognizable higher folders)

❶ While the "Album View" screen is displayed
Press [SUB MENU].

❷ Press [▲, ▼] to select "Select Root folder" and press [OK].

❸ Press [◄, ►] to select the higher folder and press [OK].

> Select Root folder
> Change the Album folder to be accessed.
> ◄ \JPEG\DCIM001 ►
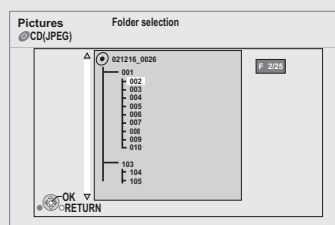> Press [OK] to confirm
> OK
> RETURN

DVD-R/R DL, CD-R/RW

❶ While the "Picture View" screen is displayed
Press [SUB MENU].

❷ Press [▲, ▼] to select "Select Folder" and press [OK].
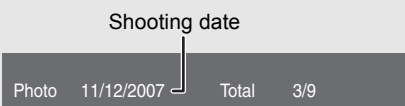
❸ Press [▲, ▼] to select a folder and press [OK].

e.g.,

> Pictures
> CD(JPEG)   Folder selection
>
> △
> 021216_0026   F 2/25
> ├ 001
> ├ 002
> ├ 003
> ├ 004
> ├ 005
> ├ 006
> ├ 007
> ├ 008
> ├ 009
> ├ 010
>
> ├ 103
> ├ 104
> └ 105
> OK ▽
> RETURN

To show the picture properties

While playing
Press [STATUS] twice.

e.g. JPEG on DVD-RAM

Shooting date

| Photo | 11/12/2007 | Total | 3/9 |

To exit, press [STATUS].

Playing a video cassette VHS

Other operations of Video cassette
(These functions may not work depending on the recording conditions.)

About basic play ⇨ 20, "Basic play (Playing video contents)"

STOP Stop

PAUSE Pause or Slow playback

Pause
Press [❚❚] again or [▶] (PLAY) to restart play.
● Pause is automatically canceled after 5 minutes.

Slow playback
Press [❚❚] and hold for about 2 seconds.
● Press [▶] (PLAY) to revert to normal playback speed.
● There will be no audio output.
● Slow playback is automatically canceled after 10 minutes.

SLOW/SEARCH ◀◀ ▶▶ Fast-forward/Rewind or Cue/Review

Fast-forward/Rewind
While stopped, press [◀◀] or [▶▶].

Cue/Review
While playing, press [◀◀] or [▶▶] (or press and hold).
● Each press changes the speed.

Normal mode : Approx. 9 times ←→ Approx. 13 times
3 times, 5 times mode : Approx. 27 times ←→ Approx. 43 times
● Press [▶] (PLAY) to revert to normal playback speed.
● Hold [◀◀] or [▶▶] to start cue/review and release the button to restart normal playback.
● Cue and review are automatically canceled after 10 minutes.

◀◀ ▶▶ —SKIP/INDEX— VHS Index Search System (VISS)

The index search function makes use of the index signals recorded on the cassette to help you find the beginning of a desired program quickly and easily.

While stopped or during normal play, press [◀◀] or [▶▶].
● Each press increases the number of skips.
● Press [■] to cancel the search.
● Up to 20 index signals can be searched in either direction.

Frame-by-frame

While paused, press [▶] (❚❚▶).
Each press shows the next frame.
● Press and hold to change in forward succession.
● Press [▶] (PLAY) to revert to normal playback speed.
● It cannot go in reverse direction.

S-VHS Quasi Playback (SQPB)

This unit can play tapes recorded in S-VHS.
● Some picture noise may occur depending on the type of tape used.
● It is not possible to fully obtain the high resolution S-VHS is capable of.

AUDIO Changing audio during play

You can change the audio type each time you press the button.
Hi-Fi stereo audio   Normal audio

AudioLR→AudioL→Audio R→Audio

Screen Aspect

When black bars are shown at the top, bottom, left, and right sides of the screen, you can enlarge the image to fill the screen. (⇨ 21)
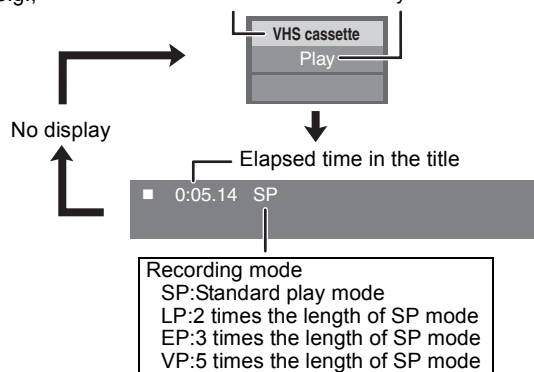
STATUS ◯ Status messages

The status messages give you information about what is currently being played. Each time you press [STATUS], the information displayed will change.

e.g.,   VHS drive indicator   Play status

VHS cassette
Play

No display

Elapsed time in the title

■ 0:05.14 SP

Recording mode
SP:Standard play mode
LP:2 times the length of SP mode
EP:3 times the length of SP mode
VP:5 times the length of SP mode

● Press [CANCEL] to reset the tape counter (elapsed time) to "0:00.00". The tape counter is automatically reset when inserting a video cassette.

Adjusting the playback picture

Manual Tracking
The unit usually makes tracking adjustments automatically, but you may need to do it manually if noise appears.
However, automatic adjustment may take longer, or adjustment may not be possible depending on the cassette.
In such cases, adjust it manually.
While playing, press [TRACKING/V-LOCK +] or [TRACKING/V-LOCK −].
Repeat until the picture noise disappears.
● Press [TRACKING/V-LOCK +, −] at the same time to return to auto tracking.
● Audio may change to normal audio if it is adjusted too much.
● This function may not work with some tapes.
● To eliminate noise for paused images or during slow playback, adjust the tracking while playing back in slow playback.

Vertical Locking Adjustment
Adjust the vertical synchronization to stop the picture from shaking while paused.
While paused, press [TRACKING/V-LOCK +] or [TRACKING/V-LOCK −].
Repeat until the shaking stops.
● Press [TRACKING/V-LOCK +, −] at the same time to return to the standard position.
● This function may not work with some tapes.

● The playback picture may be unstable during special playback (Pause, Slow playback, Cue/Review).
When you play back a tape recorded in other than the SP mode, the picture and the sound may be unstable.
However, these are not a malfunction.
● Tapes are automatically rewound once they reach the end (except during fast forwarding, etc.).
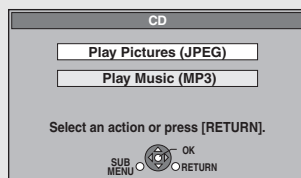
Playing music `CD` `MP3`

You can generally play any available music CD or MP3 files recorded onto a DVD-R/R DL, CD-R/RW and USB device.
(About structure of folders ⇨ 37, "Structure of folders that can be played in this unit")

❶ Insert a disc or USB device. (⇨ 19)

- If the media containing data in different file formats is inserted, the file selection menu may be displayed. Press [▲, ▼] to select "Play Music (MP3)" and press [OK].
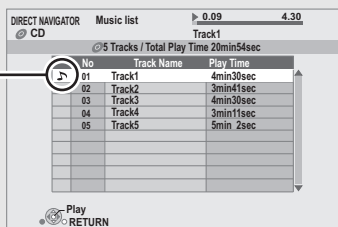
e.g.,

```
              CD

       Play Pictures (JPEG)
        Play Music (MP3)

    Select an action or press [RETURN].

         SUB        OK
         MENU      RETURN
```

❷ Press [▲, ▼] to select the track and press [OK].

Play starts on the selected track.

e.g. `CD`

```
DIRECT NAVIGATOR   Music list        ▶ 0.09        4.30
 CD                               Track1
              5 Tracks / Total Play Time 20min54sec
        No    Track Name          Play Time
   ♪    01    Track1              4min30sec
        02    Track2              3min41sec
        03    Track3              4min30sec
        04    Track4              3min11sec
        05    Track5              5min 2sec

                Play
                RETURN
```

" ♪ " indicates the track currently playing.

To switch from other menus to MP3 menu
(If the media contains data in different file formats)
1) Press [FUNCTIONS].
2) Press [▲, ▼] to select "Menu" and press [OK].
3) Press [▲, ▼] to select "Play Music (MP3)" and press [OK].

- You can use search and skip functions. (⇨ 20)
- The screen switches to Screen Saver mode if there is no operation for 2 minutes after starting playback. (Playback continues.)
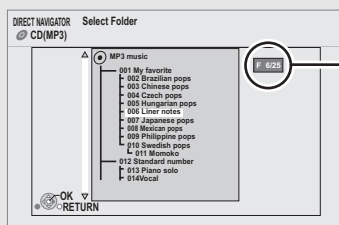
Playing a track in another folder `MP3`

❶ While the "Music list" is displayed
Press [SUB MENU].
❷ **Press [▲, ▼] to select "Select Folder" and press [OK].**
❸ **Press [▲, ▼] to select a folder and press [OK].**

e.g.

```
DIRECT NAVIGATOR  Select Folder
 CD(MP3)
 △  MP3 music                     F 6/25
     001 My favorite
     002 Brazilian pops
     003 Chinese pops
     004 Czech pops
     005 Hungarian pops
     006 Liner notes
     007 Japanese pops
     008 Mexican pops
     009 Philippine pops
     010 Swedish pops
       011 Momoko
     012 Standard number
     013 Piano solo
     014Vocal

        OK
        RETURN
```

Selected folder No. / Total folders
If the folder has no track, "– –" is displayed as folder number.

- You cannot select folders that contain no compatible tracks.

To return to the previous screen
Press [RETURN].

Enjoying VIERA CAST™

You can access a selection of Internet services from the Home screen with VIERA CAST, for example YouTube, Picasa Web Albums. (Current as of March 2009)
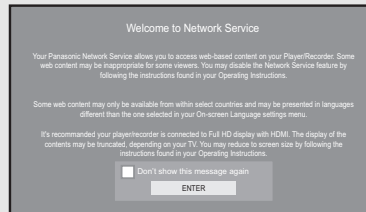- VIERA CAST requires a broadband Internet connection. Dial-up Internet connections cannot be used.

Preparation
- Network connection (⇨ 16)
- Network setting (⇨ 17)

❶ Press [VIERA CAST].

- Message is displayed. Please read these instructions carefully and then press [OK] to start VIERA CAST function.
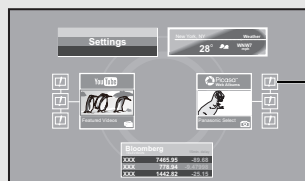
```
        Welcome to Network Service

Your Panasonic Network Service allows you to access web-based content on your Player/Recorder. Some
web content may be inappropriate for some viewers. You may disable the Network Service feature by
following the instructions found in your Operating Instructions.

Some web content may only be available from within select countries and may be presented in languages
different than the one selected in your On-screen Language settings menu.

It's recommended your player/recorder is connected to Full HD display with HDMI. The display of the
contents may be truncated, depending on your TV. You may reduce to screen size by following the
instructions found in your Operating Instructions.

  □ Don't show this message again
              ENTER
```

Images are for illustration purposes, message may change without notice.

❷ Press [▲, ▼, ◄, ►] to select the item and press [OK].

- You can operate VIERA CAST using the following buttons on the unit's remote control.
[▲, ▼, ◄, ►], [OK], [RETURN], [SUB MENU], colored buttons and numbered buttons.
- To access more features on YouTube or Picasa Web Albums site, enter your user ID and password that you have previously set up with these sites through the Internet on your PC. However, not all features may be accessible through VIERA CAST.

VIERA CAST Home screen;

```
  Settings              28°

  You
  Tube                  Picasa

  Bloomberg
  XXX   7465.95   -35.62
  XXX    778.94   +7.00
  XXX   1442.93   -21.43
```

After you access YouTube or Picasa Web Albums from the VIERA CAST Home screen and add your favorite videos or albums to VIERA CAST, you can choose them easily from the Home screen.

Images are for illustration purpose, contents may change without notice.

Regarding "Settings"
Set VIERA CAST Home screen.
- **My Account:** You can remove your account from the unit.
- **Lock:** Password can be used to lock YouTube and Picasa Web Albums.

- **Notices**

- Depending on the usage conditions, it may take a while to load the page.
- The connection to the Internet may take time or the Internet may not be connected depending on the connection environment.
- The unit is connected to the Internet when VIERA CAST is used, generating communication charges where applicable.

To return to VIERA CAST Home screen
Press [VIERA CAST].

To exit from VIERA CAST
Press [FUNCTIONS] or [TOP MENU/DIRECT NAVIGATOR], then press [RETURN] to cancel the menu.

- Set the "Network Lock" to "On" to restrict using VIERA CAST. (⇨ 35)
- If the audio is distorted while using the VIERA CAST feature set the "Audio Auto Gain Control" to "Off" (⇨ 35)
- When the entire picture cannot be displayed on the screen set the "Reduce to Screen Size" to "On" (⇨ 35)
- Set the "On-screen Language", to switch the language for Home screen. (⇨ 33)
- Set the "Time Zone" or "DST" when wrong time is displayed on the screen. (⇨ 35)

- VIERA CAST™ home screen is subject to change without notice.
- The services through VIERA CAST™ are operated by their respective service providers, and service may be discontinued either temporarily or permanently without notice. Therefore, Panasonic will make no warranty for the content or the continuity of the services.
- All features of websites or content of the service may not be available.
- Some content may be inappropriate for some viewers.
- Some content may only be available for specific countries and may be presented in specific languages.

Linked operations with the TV (VIERA Link™ "HDAVI Control™")

What is VIERA Link "HDAVI Control"?

VIERA Link™ is a new name for EZ Sync™.

VIERA Link "HDAVI Control" is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) or amplifier/receiver under "HDAVI Control".

You can use this function by connecting the equipment with an HDMI cable. See the operating instructions for connected equipment for operational details.

- VIERA Link "HDAVI Control", based on the control functions provided by HDMI which is an industry standard known as HDMI CEC (Consumer Electronics Control), is a unique function that we have developed and added. As such, its operation with other manufacturers' equipment that supports HDMI CEC cannot be guaranteed.
- **This unit supports "HDAVI Control 4" function.**
  "HDAVI Control 4" is the newest standard (current as of December, 2008) for Panasonic's HDAVI Control compatible equipment. This standard is compatible with Panasonic's conventional HDAVI equipment.
- Please refer to individual manuals for other manufacturers' equipment supporting VIERA Link function.

Preparation

1) Connect this unit to your TV or amplifier/receiver with an HDMI cable (⇨ 11–12).
2) Set "VIERA Link" to "On" (⇨ 34). (The default setting is "On".)
3) Set the "HDAVI Control" operations on the connected equipment (e.g., TV).
4) Turn on all "HDAVI Control" compatible equipment and select this unit's input channel on the connected TV so that the "HDAVI Control" function works properly.
   Also when the connection or settings are changed, repeat this procedure.

Automatic input switching

When the following operations are performed, the television will automatically switch the input channel and display the corresponding action.
– When play starts on the unit
– When an action that uses the display screen is performed
  (e.g., Direct Navigator screen)

Power on link

When the television is off and the following operations are performed, the television will automatically turn on and display the corresponding action.
– When play starts on the unit
– When an action that uses the display screen is performed (e.g., Direct Navigator screen)

Power off link

All connected equipment compatible with "HDAVI Control", including this unit, automatically turns off when you switch the television off.
- This unit automatically turns off even during playback or any other operation.

Stand-by power save

Auto power stand-by

Stand-by power save and Auto power stand-by responsibly manage your systems power consumption
These functions are available with the TV that supports "HDAVI Control 4".

About the Stand-by power save function
It is possible to minimize the stand-by power of this unit by the Power off link, even if the "Quick Start" of this unit is set to "On" (⇨ 36).
- "Stand-by power save" setting is required to be activated on the TV.
- When turning this unit on or off without using Power off link function, it is impossible to minimize the stand-by power of this unit.

About the Auto power stand-by function
If connected with a TV (VIERA) with the "Auto power stand-by" setting activated on the TV, when switching the TV input, the unit will be automatically turned to standby. For details please read the operating instructions of the TV.

- When [▶] (PLAY) is pressed on this unit for "Automatic input switching" or "Power on link", the playback image is not immediately displayed on the screen and it may not be possible to watch the contents from where playback started.
  In this case, press [◄◄] or [◄◄] to go back to where playback started.

Playing music continuously even after turning off power to the television

When the unit is connected to a Panasonic TV (VIERA) that supports HDAVI Control 2 or later and an amplifier/receiver supports VIERA Link, the unit is turned off if the power to the television is turned off, since "Power off link" (⇨ above) operates.
The following operations make it possible to keep the power of the unit on and to play music continuously.
① While playing music
   Press [SUB MENU].
② Press [▲, ▼] to select "TV Power" and press [OK].

- Sound may be discontinued for several seconds when the power to the television is turned off.
- If the operation mentioned above is executed while audio is output from the television, the sound may not be output from the amplifier/receiver. It is recommended to set the amplifier/receiver beforehand so that audio will be output from the amplifier/receiver.

Easy control only with VIERA remote control

If you connect this unit to the TV that supports "HDAVI Control 2" or later with an HDMI cable, you can enjoy using more convenient functions.
You can operate this unit using buttons on the TV remote control.
The buttons that you can use for this unit vary depending on the TV. For details, refer to the operating instructions of the TV.
Use the remote control supplied with this unit if you cannot operate this unit using buttons on the TV remote control.
● The operation of this unit may be interrupted when you press incompatible buttons on the TV remote control.

Using the FUNCTIONS menu to operate this unit	By using the TV remote control, you can play media using the FUNCTIONS menu. ❶ **Press the button for VIERA Link on the remote control.** ❷ **Select the player.** ● The FUNCTIONS menu is displayed.

e.g.,

Blu-ray Disc Player
FUNCTIONS
DVD-Video
Top Menu
Menu
Other Functions
Network
SD Card
USB device
VHS
OK
RETURN

Using the sub menu to operate this unit	By using the TV remote control, you can play discs using the "Control Panel" and display the Top Menu (for BD-Video and DVD-Video) or Pop-up Menu (for BD-Video). ❶ **Press [SUB MENU].** ● This can also be displayed by using the VIERA menu screen. ● You cannot use the sub menu while the Top Menu for BD-Video or DVD-Video is displayed. ❷ **Select an item, then press [OK].**

e.g.,

Control Panel
Screen Aspect
Top Menu
Pop-up Menu
OK
SUB MENU   RETURN

Control Panel	Control Panel is displayed. Follow the indications on the screen.
Screen Aspect	(⇨ 21)
Top Menu BD-V AVCHD DVD-V	Top menu is displayed.
Menu DVD-V	Menu is displayed.
Pop-up Menu BD-V	Pop-up menu is displayed.
Rotate Right JPEG	Rotate the still picture.
Rotate Left JPEG	
Zoom in JPEG	Enlarge or reduce the still picture.
Zoom out JPEG	

When you want to leave the TV on and set only this unit to standby mode
Press [⏻ POWER] on this unit's remote control and set to standby mode.

When not using "HDAVI Control"
Set "VIERA Link" in the Setup menu to "Off". (⇨ 34)

Changing settings with the on-screen menu (except VHS)

On-screen menu operations

❶ **Press [DISPLAY].**
❷ **Press [▲, ▼] to select the menu and press [▶].**
❸ **Press [▲, ▼] to select the item and press [▶].**
❹ **Press [▲, ▼] to select the setting.**

e.g., BD-Video

Disc	Signal Type			
Play				
Video	Subtitle	Off	PiP	1ENG
Audio	Subtitle Style	-	Angle	-

Menus   Items   Settings

● Depending on the condition of the unit (playing, stopped, etc.) and media contents, there may be some items that you cannot select or change.

● Some items can be changed by pressing [OK].

To exit the on-screen menu
Press [DISPLAY].

What you can change with the on-screen menu

Menus	Items	Settings and details
Disc	**Signal Type**	BD-V ●**Primary Video** Video: The original video recording method appears. (⇨ below, Video attribute) Soundtrack: Select the type of audio or language. (⇨ below, Language, Audio attribute) ●**Secondary Video** Video: Select on/off of images. The original video recording method appears. (⇨ below, Video attribute) Soundtrack: Select on/off of audio and the language. (⇨ below, Language, Audio attribute)
	Video	AVCHD The original video recording method appears. (⇨ below, Video attribute)
	Soundtrack	AVCHD DVD-V Select the type of audio or language. (⇨ below, Language, Audio attribute) DVD-VR MPEG2 ●The audio attributes appear. (⇨ below, Audio attribute)
	Subtitle	BD-V AVCHD DVD-V Turn the subtitle on/off and select the language. (⇨ below, Language) DVD-VR (Only discs that contain subtitle on/off information) ●Turn the subtitle on/off.
	Subtitle Style	BD-V Select the subtitle style.
	Audio channel	DVD-VR MPEG2 (⇨ 21, Changing audio during play)
	Angle	BD-V DVD-V Select the number of the angle.

Some items may be changed only on the disc specific menu. (⇨ 20)

Language

ENG:	English	DAN:	Danish	THA:	Thai
FRA:	French	POR:	Portuguese	POL:	Polish
DEU:	German	RUS:	Russian	CES:	Czech
ITA:	Italian	JPN:	Japanese	SLK:	Slovak
ESP:	Spanish	CHI:	Chinese	HUN:	Hungarian
NLD:	Dutch	KOR:	Korean	FIN:	Finnish
SVE:	Swedish	MAL:	Malay	✱:	Others
NOR:	Norwegian	VIE:	Vietnamese		

Audio attribute

LPCM/⬛Digital/⬛Digital+/⬛TrueHD/ DTS/DTS 96/DTS-HD HI RES/DTS-HD MSTR/MPEG	Signal type
ch (channel)	Number of channels
k (kHz)	Sampling frequency
b (bit)	Number of bits

Video attribute

MPEG-2	This is a standard for compressing and decompressing color motion pictures efficiently. This compression method is used for DVDs, etc.
MPEG-4 AVC VC-1	These are standards for compressing and decompressing color motion pictures more efficiently than MPEG-2 and used for Blu-ray Discs, etc.

Menus	Items	Settings and details
Play	**Repeat Play**	(Only when the elapsed time is being displayed on the unit's display.) Selects the item which you want to repeat. The items displayed differ depending on the type of media. ● All tracks All tracks ● Chapter Chapter ● Playlists Playlist ● Title Title ● One track Track ● Off Select "Off" to cancel.
	Random	CD MP3 While playing, press [▲, ▼] to select "On". Random playback starts from the next track. ● On ● Off
Video	**Picture**	BD-V AVCHD DVD-VR DVD-V MPEG2 Select the picture quality mode during play. ● Normal: Default setting ● Soft: Soft picture with smoother video ● Fine: Details are sharper ● Cinema: Mellows movies, enhances detail in dark scenes. ● User: You can make further adjustments. (⇨ below)
		① Press [▶] to select "Picture Adjustment" and press [OK]. ② Select the item using [▲, ▼] and adjust it with [◄, ▶]. Contrast: Increases the contrast between light and dark parts of the picture (-7 to $+7$). Brightness: Brightens the picture (0 to $+15$). Sharpness: Adjusts the sharpness of the edges of the horizontal lines (-6 to $+6$). Color: Adjusts the saturation of the picture's color (-7 to $+7$). Gamma: Adjusts the brightness of dark portions of the screen (0 to $+5$). 3D NR: Reduces the rough noise in the background to give a greater feeling of depth (0 to $+4$). When "24p Output" is set to "On", this function may not operate. (⇨ 34) Integrated NR: Smooths block noise and reduces the smudging that appears around contrasting sections of the picture (0 to $+3$).
	Progressive	Select the method of conversion for progressive output to suit the type of material being played (⇨ 50, Film and video). ● Auto: Automatically detects the film and video content, and appropriately converts it. ● Video: Select when using "Auto", and the content is distorted.
	24p DVD-V	● On ● Off Only when you have selected "On" in "24p Output" (⇨ 34)
Audio	**Sound Effects**[*1, 2]	● Off
		Re-master (⇨ 21) ● Re-master 1 ● Re-master 2 ● Re-master 3
		V. Surround BD-V AVCHD DVD-VR DVD-V MPEG2 (2 channels or more only) Enjoy a surround-like effect if you are using two front speakers only. – Turn V. Surround off if it causes distortion. – Do not use in combination with surround effects on other equipment. – V. Surround does not work for bilingual recordings. ● V. Surround 1 ● V. Surround 2
		Night Surround To enjoy a movie with powerful sound even when the volume is kept low at night, the audio is set in such a way that it can be heard easily. ● Night Surround
	Dialog Enhancer[*1]	BD-V AVCHD DVD-VR DVD-V MPEG2 (3 channels or more only, including a center channel) The volume of the center channel is raised to make dialog easier to hear. ● On ● Off

*1 This function is effective for audio from the HDMI terminal or the DIGITAL AUDIO OUT terminal only when "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" is set to "PCM". (However, in this case, audio is output as 2ch from the DIGITAL AUDIO OUT terminal.)
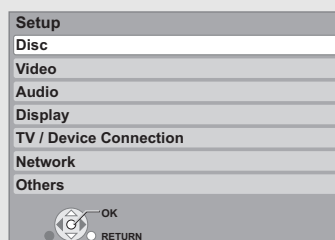*2 Not every function can be set individually.

Settings

Changing the unit's settings

Change the unit's settings if necessary. The settings remain intact even if you switch the unit to standby.

Setup menu operations

❶ **While stopped**
Press [SETUP].
❷ **Press [▲, ▼] to select the menu and press [OK].**
❸ **Press [▲, ▼] to select the item and press [OK].**
If there are any other items, repeat these steps.
❹ **Press [▲, ▼, ◀, ▶] to select the option and press [OK].**

Setup
Disc
Video
Audio
Display
TV / Device Connection
Network
Others

OK
RETURN

● There may be differences in operation methods. If this happens, follow the on-screen instructions for the operation.

To return to the previous screen
Press [RETURN].

To exit the screen
Press [SETUP].

Summary of settings

Underlined items are the factory presets.

"Disc"

DVD-Video Ratings Set a ratings level to limit DVD-Video play.	Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown. It will be the common password for "DVD-Video Ratings", "BD-Video Ratings" and "Network Lock". ● **Do not forget your password.**	● 8 No Limit: All DVD-Video can be played. ● 1 to 7: Prohibits play of DVD-Video with corresponding ratings recorded on them. ● 0 Lock All: Prohibits play of all DVD-Video. Changing settings (When level 0 to 7 is selected) ● Unlock Player ● Change Password ● Change Level ● Temporary Unlock
BD-Video Ratings Set an age limit of BD-Video play.		● No Limit: All BD-Video can be played. ● 0 to 254 year(s): Prohibits play of BD-Video with corresponding ratings recorded on them. Changing settings (When 0 to 254 year(s) is selected) ● Unlock Player ● Change Password ● Change Level ● Temporary Unlock
Audio Language	Choose the language for audio, subtitle and disc menus. **BD-V** **DVD-V**	● English ● French ● Spanish ● Original: The original language of each disc will be selected. ● Other ✳✳✳✳
Subtitle Language	● Some discs start in a certain language despite any changes you make here. ● When the selected language is not available on the disc, the default language is played. There are discs where you can only switch the language from the menu screen. (⇨ 20) ● Enter a code (⇨ 36) with the numbered buttons when you select "Other ✳✳✳✳".	● Automatic: If the language selected for "Audio Language" is not available, subtitles of that language will automatically appear if available on that disc. ● English ● French ● Spanish ● Other ✳✳✳✳
Menu Language		● English ● French ● Spanish ● Other ✳✳✳✳
BD-Live Internet Access **BD-V** (⇨ 23) You can restrict Internet access when BD-Live functions are used.		● Allow (ALL): Internet access is permitted for all BD-Live contents. ● Allow (Limited): Internet access is permitted only for BD-Live contents which have content owner certificates. Internet access is prohibited for all BD-Live contents without a certificate. ● Prohibit: Internet access is prohibited for all BD-Live contents.

"Video"

Still Mode (paused video) **BD-V** **AVCHD** **DVD-V** Select the type of picture shown when you pause playback (⇨ 50, Frames and fields).	● Auto ● Field: Select if jittering occurs when "Auto" is selected. (The picture is coarser.) ● Frame: Select if small text or fine patterns cannot be seen clearly when "Auto" is selected. (The picture is clearer and finer.)
Seamless Play **DVD-VR** Select the play mode between playlist chapter segments and partially deleted titles.	● On: The chapters in playlists are played seamlessly. This does not work while searching or when there are several audio types included on the playlist. Additionally, the positioning of chapter segments may change slightly. ● Off: The points where chapters in playlists change are played accurately, but the picture may freeze for a moment.
Black Level Control Select lighter or darker for adjusting the black level control to the desired setting for picture enhancement.	● Lighter: When video is output from VIDEO OUT terminal. ● Darker: When video is output from COMPONENT VIDEO OUT terminal.

To select these options, perform steps ❶–❹ (⇨ 32)

"Audio"

Dynamic Range Compression BD-V AVCHD DVD-V (Dolby Digital, Dolby Digital Plus and Dolby TrueHD only) Change the dynamic range (⇨ 50) for late night viewing.	● On ● <u>Off</u> ● Auto: Effective only when Dolby TrueHD is played.		

Digital Audio Output (⇨ 8)
● Press [OK] to show the following settings.

Dolby D/Dolby D +/ Dolby TrueHD **DTS/DTS-HD**	Select whether Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS Digital Surround, DTS-HD High Resolution Audio or DTS-HD Master Audio is output in "Bitstream" or "PCM" format. ● Not making the proper settings may result in noise. ● If the unit is connected with the HDMI AV OUT terminal, the specifications of the connected equipment take preference over this unit and audio selected in these items may not be output (e.g., when a television is connected, the HDMI audio output of this unit is limited to down-mixed 2ch.)	● <u>Bitstream</u>: Select "Bitstream" when the connected equipment can decode the respective audio format. – Connect equipment supporting HDMI (High Bit rate Audio) and use a High Speed HDMI Cable in order to output high bit rate audio such as Dolby Digital Plus, Dolby TrueHD, DTS-HD High Resolution Audio or DTS-HD Master Audio. ● PCM: Select "PCM" when the connected equipment cannot decode the respective audio format. Refer to the operating instructions for connected devices to verify whether or not they can decode each of the audio formats.
BD-Video Secondary Audio BD-V Turn on/off the button click sound on the menu and audio with secondary video in picture-in-picture mode. (⇨ 23)		● <u>On</u>: The primary audio and secondary audio are mixed and output. The sampling frequency is converted to 48 kHz. ● Off: The button click sound on the menu and secondary audio are not output.
PCM Down Conversion Select how to output audio with a sampling frequency of 96 kHz. ● Signals are converted to 48 kHz despite the settings across in the following cases: – when the signals have a sampling frequency of 192 kHz – when the disc has copy protection – when "BD-Video Secondary Audio" is set to "On"		● On: Signals are converted to 48 kHz. (Choose when the connected equipment cannot process signals with sampling frequency of 96 kHz.) ● <u>Off</u>: Signals are output as 96 kHz. (Choose when the connected equipment can process signals with sampling frequency of 96 kHz.)
Downmix Switch the downmix system for playing back multi-channel surround sound. ● When "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" is set to "Bitstream", there are no downmix effects for the outputted audio. ● The audio will be outputted in "Stereo" in the following cases: – AVCHD playback – Playback of button click sound on the menu and audio with secondary video in picture-in-picture mode		● <u>Stereo</u>: When connected to equipment (e.g., TV) that does not support the virtual surround function. ● Surround encoded: When connected to equipment that supports the conversion from 2 channels to multi channel surround.

"Display"

Status Messages Choose whether to show status messages automatically.	● <u>Automatic</u> ● Off
On-screen Language Choose the language for these menus and on-screen messages.	● <u>English</u> ● Français ● Español
Screen Saver Function This is to prevent burn-in on the screen. ● Regardless of the setting, the screen switches to Screen Saver mode if there is no operation for 2 minutes after starting the playback of CD or MP3. (Playback continues.).	● On: (Screen Saver Function is enabled after 10 minutes of no activity) – When the movie title being played was created in 4:3 display mode the masked-off area on the screen becomes gray to prevent screen burning. (The screen saver will not be activated if the movie was created in 16:9 display mode.) [When connecting with an HDMI cable, "TV Aspect" (⇨ 34) is set to "16:9" and "HDMI Resolution" (⇨ 34) is set to any mode other than "480p", or when connecting with a component video cable, "TV Aspect" (⇨ 34) is set to "16:9" and "Component Video Resolution" (⇨ 34) is set to "720p" or "1080i".] – When the Direct Navigator or FUNCTIONS menu is displayed, the display returns to the screen saver mode. – When still pictures are shown (except for slideshow), the display returns to the Direct Navigator screen. ● <u>Off</u>
FL Display Changes the brightness of the unit's display.	● <u>Bright</u> ● Dim: The display is dimmed. ● Auto: The display is dimmed during playback and is bright except during playback.
SD Card LED Control Set the lighting method for the lamp on the SD card slot.	● <u>On</u> ● Off ● SD inserted: When this unit is turned on and SD card is inserted, the lamp is lighted.
License	Information about the software used by this unit is displayed.

Settings

Changing the unit's settings

To select these options, perform steps ❶–❹ (⇨ 32)
Underlined items are the factory presets.

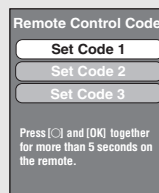## "TV / Device Connection"

TV Aspect Set to match the type of television connected.	When connected to a 4:3 aspect television: ● 4:3 Pan & Scan: Video recorded for a widescreen is played as Pan & Scan (unless prohibited by the producer of the disc). When playing BD-Video, video is output as "4:3 Letterbox". ● 4:3 Letterbox: Video recorded for a widescreen is played in the letterbox style. When connected to a 16:9 widescreen television: ● <u>16:9</u>: Video recorded for 4:3 aspect screen is displayed as a 4:3 ratio image in the center of the screen. ● 16:9 Full: Video recorded for 4:3 aspect screen is displayed as a horizontally stretched 16:9 image.

HDMI Connection
● Press [OK] to show the following settings.

HDMI Video Mode Select "On" when video is output from HDMI AV OUT terminal.	● <u>On</u>: Images are output from the HDMI terminal in the resolution set in "HDMI Resolution". Video from COMPONENT VIDEO OUT terminal is output as "480i". ● Off Images are output in the resolution set in "Component Video Resolution".
HDMI Resolution* The items supported by the connected devices are indicated on the screen as "✳". When any item without "✳" is selected, the images may be distorted.	● <u>Auto</u>: Automatically selects the output resolution best suited to the connected television (1080p, 1080i, 720p or 480p). ● 480p ● 720p ● 1080i ● 1080p – When outputting 1080p signal, we recommend using High Speed HDMI Cables that have the HDMI logo (as shown on the cover) and are less than 5.0 meters to prevent video distortion etc. – When the unit is connected to an amplifier/receiver that does not support the resolution set on the unit, the video cannot be output properly. In this case, use the HDMI cable to connect the unit to the TV and then connect the unit to the amplifier/receiver using a cable other than HDMI. – To enjoy high definition video up-converted to 1080p, you need to connect the unit directly to 1080p compatible HDTV (High Definition Television). If this unit is connected to an HDTV through other equipment, it must also be 1080p compatible.
24p Output `BD-V` `DVD-V` When this unit is connected to a TV supporting 1080/24p output via an HDMI cable, this unit displays each frame at 1/24 second intervals – the same interval originally shot with the film camera. ● When playing DVD-Video, set to "On" and then set "24p" in "Video" (⇨ 31) to "On"	● On: Images in 24p are output in 24p as they are. However, – when video is being output at 24 frames, images from any other terminal than the HDMI terminal may not be output properly. – `BD-V`: when images other than 24p are played, images are output at 60p. ● <u>Off</u>
HDMI RGB Output Range Effective when connected to a device that only supports RGB output.	● <u>Standard</u>: The video is output as it is. ● Enhanced: When the black and white contrast of a video is low, the signal is enhanced to reproduce clear video.
HDMI Audio Output This setting selects whether or not to output audio from HDMI.	● <u>On</u>: ● Off: When the TV is connected to this unit using an HDMI cable, and this unit is also connected to other devices, such as an amplifier/receiver using an optical digital audio cable.
VIERA Link Set to use "HDAVI Control" function when connected with an HDMI cable to a device that supports "HDAVI Control".	● <u>On</u>: ● Off: Select when you do not want to use "HDAVI Control".

Component Video Resolution* This sets the video output resolution when using the component video terminal.	● <u>480i</u> ● 480p ● 720p ● 1080i Even if you select "720p" or "1080i", the video output resolution is restricted to "480p" when images of DVD-Video discs or VHS are output from the COMPONENT VIDEO OUT terminals.

* In this unit, a P4HD (⇨ 51) video processor is used to provide video of optimal resolution to the connected TV.

To select these options, perform steps ❶–❹ (⇨ 32)

"Network"

IP Address/DNS Settings (⇨ 17)		
●Press [OK] to show the following settings.		
Connection Test	— — — —	
IP Address Auto Configuration (DHCP)	●On	●Off
IP Address	— — —. — — —. — — —. — — —	
Subnet Mask	— — —. — — —. — — —. — — —	
Default Gateway	— — —. — — —. — — —. — — —	
DNS Auto Configuration (DHCP)	●On	●Off
Primary DNS	— — —. — — —. — — —. — — —	
Secondary DNS	— — —. — — —. — — —. — — —	
Auto Detect Connection Speed	●On	●Off
Connection Speed Setting This is enabled only when "Auto Detect Connection Speed" is turned "Off".	●10BASE Half Duplex ●10BASE Full Duplex ●100BASE Half Duplex ●100BASE Full Duplex	

Proxy Server Settings (⇨ 18)		
●Press [OK] to show the following settings.		
Reset to factory preset	●Yes ●No	
Proxy Address	(The initial setting is blank.)	
Proxy Port Number	(The initial setting is "0".)	
Connection Test	— — — —	

Network Service (⇨ 27) (VIERA CAST)		
●Press [OK] to show the following settings.		
Network Lock You can restrict using VIERA CAST. ●Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown. It will be the common password for "DVD-Video Ratings", "BD-Video Ratings" and "Network Lock". ●**Do not forget your password.**	●On ●Off Changing settings (When "On" is selected) ●Change Password	
Audio Auto Gain Control Volume that is different depending on the contents is adjusted automatically to the standard volume while using the VIERA CAST. ●Depending on contents, this function effect will not work. ●Select "Off" when the audio is warped.	●On ●Off	
Reduce to Screen Size The screen is displayed reduced so the displayed screen of the content does not get truncated.	●On ●Off	
Time Zone By selecting the time zone, it is possible to set the unit's time to match your location. ●Some VIERA CAST contents require the time zone to be set. Set the time zone if necessary.	●GMT −12 to +12 (The initial setting is "−5".) GMT −5 = EST (Eastern Standard Time), GMT −6 = CST (Central Standard Time) GMT −7 = MST (Mountain Standard Time), GMT −8 = PST (Pacific Standard Time) GMT −9 = AKST (Alaska Standard Time), GMT −10 = HST (Hawaii Standard Time)	
DST Select "On" when using Daylight Saving time.	●On ●Off	

MAC Address (⇨ 17)
Displays the "MAC Address" of this unit.

Settings

RQT9412

Changing the unit's settings

To select these options, perform steps ❶–❹ (⇨ 32)
Underlined items are the factory presets.

"Others"

Off Timer Select how long the unit remains on when it is not being used.	● 2 Hours	● 6 Hours	● Off
Remote Control Code	● Set Code 1	● Set Code 2	● Set Code 3

Quick Start Speed of startup from power off is increased. ● When the setting of "Stand-by power save" is enabled on the TV that supports HDAVI Control 4, it will take longer to startup this unit when the power supply of the TV is on standby mode even if the "Quick Start" is set to "On".	● On: ● Off: Internal control unit will be powered when it is set to "On", so contents of the following will be different from the time it is set to "Off". ● Idle power consumption will increase. (about the power consumption ⇨ 44) ● The cooling fan may turn slowly to prevent overheating of internal parts.

Easy Setting You can execute basic settings ("On-screen Language", "TV Aspect", "Quick Start").	● Yes	● No

Restore Default Settings This returns all values in the Setup menu and the on-screen menu, except for "Remote Control Code", "On-screen Language", "IP Address/DNS Settings", "Proxy Server Settings", "Network Service", "DVD-Video Ratings" and "BD-Video Ratings" to the default settings.	● Yes	● No

Firmware Update (⇨ 16) ● Press [OK] to show the following settings.		
Automatic Update Check When this equipment remains connected to the Internet, it will check for the latest firmware version when it is turned on and you can update it if necessary.	● On	● Off
Update Now You can update the firmware manually.	● Yes	● No

When other Panasonic products respond to this remote control

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

❶ **Press [SETUP].**
❷ **Press [▲, ▼] to select "Others" and press [OK].**
❸ **Press [▲, ▼] to select "Remote Control Code" and press [OK].**
❹ **Press [▲, ▼] to select the code (1, 2, or 3) and press [OK].**
❺ **To change the code on the remote control**
While pressing [OK], press and hold the numbered button ([1], [2] or [3]) for more than 5 seconds.
❻ **Press [OK].**

> Remote Control Code
> Set Code 1
> Set Code 2
> Set Code 3
> Press [○] and [OK] together for more than 5 seconds on the remote.

When the following indicator appears on the unit's display and you are unable to operate the unit

`SET 2`

The unit's remote control code

Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.

Language code list   Enter the code with the numbered buttons.

Abkhazian:	6566	Catalan:	6765	Gujarati:	7185	Lingala:	7678	Rhaeto-Romance:		Tamil:	8465
Afar:	6565	Chinese:	9072	Hausa:	7265	Lithuanian:	7684		8277	Tatar:	8484
Afrikaans:	6570	Corsican:	6779	Hebrew:	7387	Macedonian:	7775	Romanian:	8279	Telugu:	8469
Albanian:	8381	Croatian:	7282	Hindi:	7273	Malagasy:	7771	Russian:	8285	Thai:	8472
Amharic:	6577	Czech:	6783	Hungarian:	7285	Malay:	7783	Samoan:	8377	Tibetan:	6679
Arabic:	6582	Danish:	6865	Icelandic:	7383	Malayalam:	7776	Sanskrit:	8365	Tigrinya:	8473
Armenian:	7289	Dutch:	7876	Indonesian:	7378	Maltese:	7784	Scots Gaelic:	7168	Tonga:	8479
Assamese:	6583	English:	6978	Interlingua:	7365	Maori:	7773	Serbian:	8382	Turkish:	8482
Aymara:	6589	Esperanto:	6979	Irish:	7165	Marathi:	7782	Serbo-Croatian:	8372	Turkmen:	8475
Azerbaijani:	6590	Estonian:	6984	Italian:	7384	Moldavian:	7779	Shona:	8378	Twi:	8487
Bashkir:	6665	Faroese:	7079	Japanese:	7465	Mongolian:	7778	Sindhi:	8368	Ukrainian:	8575
Basque:	6985	Fiji:	7074	Javanese:	7487	Nauru:	7865	Singhalese:	8373	Urdu:	8582
Bengali; Bangla:		Finnish:	7073	Kannada:	7578	Nepali:	7869	Slovak:	8375	Uzbek:	8590
	6678	French:	7082	Kashmiri:	7583	Norwegian:	7879	Slovenian:	8376	Vietnamese:	8673
Bhutani:	6890	Frisian:	7089	Kazakh:	7575	Oriya:	7982	Somali:	8379	Volapük:	8679
Bihari:	6672	Galician:	7176	Kirghiz:	7589	Pashto, Pushto:	8083	Spanish:	6983	Welsh:	6789
Breton:	6682	Georgian:	7565	Korean:	7579	Persian:	7065	Sundanese:	8385	Wolof:	8779
Bulgarian:	6671	German:	6869	Kurdish:	7585	Polish:	8076	Swahili:	8387	Xhosa:	8872
Burmese:	7789	Greek:	6976	Laotian:	7679	Portuguese:	8084	Swedish:	8386	Yiddish:	7473
Byelorussian:	6669	Greenlandic:	7576	Latin:	7665	Punjabi:	8065	Tagalog:	8476	Yoruba:	8979
Cambodian:	7577	Guarani:	7178	Latvian, Lettish:	7686	Quechua:	8185	Tajik:	8471	Zulu:	9085

About MP3/JPEG files

MP3

File format	MP3
Playable media	CD-R*¹, CD-RW*¹, DVD-R*¹, *⁵, DVD-R DL*¹, *⁵, USB device
Extension	Files must have the extension ".mp3" or ".MP3".
Compression rate	32 kbps to 320 kbps
Sampling rate	44.1 kHz/48 kHz
Reference	ID3 tags: version 1, 2.2, 2.3, 2.4 ID3 is a tag embedded in MP3 track to provide information about the track. This unit supports the versions listed above but only titles and the names of artists can be displayed. ●If there is a large amount of still picture data etc. within a MP3 file, play may not be possible.

JPEG

File format	JPEG
Playable media	CD-R*¹, CD-RW*¹, DVD-RAM*², DVD-R*¹, *⁵, DVD-R DL*¹, *⁵, BD-RE*³, SD card, USB device
Extension	Files must have the extension ".jpg" or ".JPG".
Picture resolution	between 34×34 and 8192×8192 pixels (sub sampling is 4:2:2 or 4:2:0)
Reference	JPEG conforming DCF*⁴ is supported. Thawing Time: approx. 2 sec. (7 M pixels) ●MOTION JPEG and Progressive JPEG is not supported

● English alphabet and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.
● The display order on this unit may differ from how the order is displayed on a computer.
● Depending on how you create the media (writing software), files and folders may not play in the order you numbered them.
● This unit is not compatible with packet-write format.
● Depending on the recording conditions, the media may not play.
● Operation may take time to complete when there are many files and/or folders and some files may not display or be playable.

*1 ISO9660 level 1 or 2 (except for extended formats), Joliet
   This unit is compatible with multi-session.
   This unit is not compatible with packet writing.
*2 Discs must conform to UDF 2.0.
*3 Discs must conform to UDF 2.5.
*4 Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).
*5 Discs must conform to UDF bridge (UDF 1.02/ISO9660).
   This unit is not compatible with multi-session.
   The default session only is played.

Structure of folders that can be played in this unit

You can play files on this unit by structure of folders as shown below. However depending on the method of writing data (writing software), play may not be in the order you numbered the folders.

📁 Folder which can be displayed with this unit

✳✳✳: Numbers
XXX: Letters
*1 ✳✳✳: from 001 to 999
*2 ✳✳✳: from 100 to 999   XXX: up to 5 figures
*3 ✳✳✳✳: from 0001 to 9999

Structures of still picture (JPEG) folders

in DVD-R/DVD-R DL/CD-R/CD-RW
Files inside a folder are displayed in the order they were updated or taken.

```
Root                                    e.g.,
  ── P0000001.jpg
  ── P0000002.jpg
  📁 Folder A
      ── P0000003.jpg
      ── P0000004.jpg
      ── P0000005.jpg
      📁 Folder B
          ── P0000006.jpg
          ── P0000007.jpg
          ── P0000008.jpg
          ── P0000009.jpg
  📁 Folder C
      ── P0000010.jpg
      ── P0000011.jpg
      ── P0000012.jpg
```

in BD-RE/DVD-RAM
● Folder structure is not displayed.

```
Root                                    e.g.,
  ── P0000001.jpg
  ── P0000002.jpg
  📁 JPEG
      📁 DCIM✳✳✳ *1
          ── ✳✳✳XXXXX *2
          ── XXXX✳✳✳✳.JPG *3
  📁 DCIM
      ── ✳✳✳XXXXX *2
      ── XXXX✳✳✳✳.JPG *3
```

in SD card/USB device
Displays JPEG files in all folders.
● Folder structure is not displayed.

```
Root                                    e.g.,
  ── P0000001.jpg
  ── P0000002.jpg
  📁 DCIM
      ── ✳✳✳XXXXX *2
      ── XXXX✳✳✳✳.JPG *3
  📁 Folder A
      ── P0000003.jpg
      ── P0000004.jpg
```

Structures of MP3 folders

in DVD-R/DVD-R DL/CD-R/CD-RW/USB device
Prefix the file names with 3-digit numbers in the order you want to play them.

```
Root                                    e.g.,
  ── 001XXXX.mp3
  ── 002XXXX.mp3
  📁 Folder A
      ── 003XXXX.mp3
      ── 004XXXX.mp3
      ── 005XXXX.mp3
      📁 Folder B
          ── 006XXXX.mp3
          ── 007XXXX.mp3
          ── 008XXXX.mp3
          ── 009XXXX.mp3
  📁 Folder C
      ── 010XXXX.mp3
      ── 011XXXX.mp3
      ── 012XXXX.mp3
```

Settings

Reference

Messages

The following messages or service numbers appear on the television or unit's display when something unusual is detected during startup and use.

On the television		Page
Cannot play.	● You inserted an incompatible disc (Discs recorded in PAL video, etc.).	**6, 7**
Cannot display on this unit.	● You tried to play a non-compatible image. ● Confirm "SD" on the unit's display is not blinking and re-insert the card.	**7, 37** —
No disc is inserted.	● The disc may be upside down.	—
⊘ **This operation is not available.**	● Some operations are unsupported by the unit. For example; – **BD-V**: During playback, reverse slow-motion or reverse frame-by-frame is not possible.	**20**
⊘ **This operation is prohibited by this disc.**	● Depending on the disc, you may not be able to perform search or skip when film previews and warning screens are being played back.	**20**
Cannot connect. Please check the connection of the LAN cable.	● When a hub is used but its Link lamp does not light up, check the cable connection, LAN terminal connection, cable itself (a cross over cable may be used by mistake), etc.	**16**
IP address is not set.	● The "IP Address" in "IP Address/DNS Settings" is "---. ---. ---. ---". Set the "IP Address", "Subnet Mask", and "Default Gateway". (Select the automatic address acquisition if necessary.)	**17**

**Cannot obtain IP address using DHCP.
Please check the connection or router settings.**
	● If you use a hub, then check the connection between the hub and the router.
	  –Use the UPLINK port of the hub to connect to a router.
	  –Check whether or not the hub's Link lamp lights up. If it does not light up, then check the cable connection, LAN terminal connection, cable itself (a cross over cable may be used by mistake), etc.
	● If the above conditions are OK, then the router may not operate in DHCP mode. Check the router settings and operation. You may reset the router to restore it to normal.
		16
		
		16

This IP address is already in use. Please check the IP address setting.	● This unit's IP address is used by another device. Check the IP addresses of this unit, personal computers, and routers, etc. If necessary, reconfigure them to avoid IP addresses from being duplicated.	—
Unable to perform Connection Test. Please try again. **IP address not set correctly.**	● Turn the unit off. Remove the power cord and reconnect it and try again. If the same symptom persists, then consult your dealer.	—

**Connection Test was unsuccessful. No reply from host.
Please check the connection or router settings.**
	● If you use a hub, then check the connection between the hub and the router.
	  –Use the UPLINK port of the hub to connect to a router.
	  –If the hub's Link lamp does not light up, then check the cable connection, LAN terminal connection, cable itself (a cross over cable may have been used by mistake), etc.
	● Check the "IP Address", "Subnet Mask", and "Default Gateway" in the "IP Address/DNS Settings".
	● If the MAC address information is required, then press [SETUP] to display the "Network" menu.
		16
		
		17
		
		17, 35

Network connection refused. Please confirm Setup "BD-Live Internet Access."	● When you set "BD-Live Internet Access" to "Allow (Limited)" and play BD-Live contents which do not have a content owner certificate, the Internet access of the content is not allowed. If you allow the content to connect to Internet, set "BD-Live Internet Access" to "Allow (ALL)".	**32**
Unable to check for latest firmware version. Please try again later.	● The firmware download server is currently unavailable. Please try again later.	—

On the unit's display		Page
F99	●The unit fails to operate properly. Press [POWER ☉/I] on the main unit to switch the unit to standby for 3 seconds. Now press [POWER ☉/I] on the main unit again to turn the unit on.	—
HDMI ONLY	●Some BD-Video discs can only be output with HDMI.	—
NET	●Displays while VIERA CAST is starting up.	—
No PLAY	●There is a viewing restriction on a BD-Video or DVD-Video.	32
No READ	●The media is dirty or badly scratched. The unit cannot play.	—
PLEASE WAIT	●The unit is carrying out internal process. This is not a malfunction. You cannot operate the unit while "PLEASE WAIT" is displayed.	—
	●When connected to TV(VIERA) with "HDAVI Control 4", and power supply is turned off by the "Auto power stand-by" function on the TV side.	—
REMOVE	●The USB device is drawing too much power. Remove the USB device.	19
SET □ **(" □ " stands for a number.)**	●The remote control and main unit are using different codes. Change the code on the remote control. [SET 2] Press and hold [OK] and the indicated number button at the same time for more than 5 seconds.	36
UNFORMAT	●You inserted an unformatted DVD-RAM, DVD-RW, +RW, an unused +R, +R DL or DVD-RW (DVD-Video format).	—
UNSUPPORT	●You have inserted a media the unit cannot play. ●You tried to operate with a non-compatible USB device.	6, 7 7
U11	●The video head is dirty. Perform the cleaning.	—
U59	●The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.	—

U72
U73
	●The HDMI connection acts unusually.
	  –The connected equipment is not HDMI compatible.
	  –Please use HDMI cables that have the HDMI logo (as shown on the cover).
	  –The HDMI cable is damaged.
		—

H□□ or F□□	●There is something unusual. (The service number displayed after H and F depends on the unit's condition.) ●Check the unit using the troubleshooting guide. If the service number does not disappear, do the following. 1 Disconnect the plug from the AC outlet, wait a few seconds, then reconnect it. 2 Press [POWER ☉/I] to turn the power on. (The unit may be fixed.) If the service number does not disappear despite doing the above, request service from the dealer. Inform the dealer of the service number when requesting service.	— 40–43
START	●The system is being restarted during the firmware update. Please do not turn off power.	16
UPD□/□	●The firmware is being updated.	16
FINISH	●The firmware update is complete.	16

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the solutions indicated in the chart do not solve the problem, refer to "Customer Services Directory (United States and Puerto Rico)" on page 46 if you reside in the U.S.A.and Puerto Rico, or refer to "Product information" on page 45 if you reside in Canada.

The following do not indicate a problem with this unit:
- Regular disc rotating sounds.
- Image disturbance during search.

To reset this unit

		Page
To restore the unit if it freezes due to one of the safety devices being activated	● Press and hold [POWER ⏻/I] on the main unit for 3 seconds. (The settings remain unchanged.)	—
To return all settings to the factory preset	● Select "Yes" in "Restore Default Settings" in the Setup menu. This returns all values in the Setup menu and the on-screen menu, except for "Remote Control Code", "On-screen Language", "IP Address/DNS Settings", "Proxy Server Settings", "DVD-Video Ratings", "BD-Video Ratings" and "Network Service" to the default settings.	36
To return to the factory preset (No setting)	● Reset the unit as follows: 1 Press [POWER ⏻/I] on the unit to turn off the unit. 2 Press and hold [❙❙], [POWER ⏻/I] and [⏏ OPEN/CLOSE] on the unit at the same time for more than 5 seconds until "HELLO" is displayed on the unit. 3 The power will turn on and then turn off.	—

Power

Power of this unit is turned off when the input for the TV is changed.	● If connected with an "HDAVI Control 4" compatible TV (VIERA) with the "Auto power stand-by" setting activated on the TV, when switching the TV input, the unit will be automatically turned to standby. For details please read the operating instructions of the TV.	—

Operation

Cannot operate the television or amplifier/ receiver. **The remote control doesn't work properly.**	● Change the manufacturer code of the remote control. In some cases, even if you change the code, the remote control may not be operated depending on the type of the televisions or amplifiers/receivers. ● It may be necessary to set the manufacturer code or the remote control code again after changing the batteries for remote control. ● The remote control and main unit are using different codes. Change the code on the remote control. ● The batteries are depleted. Replace them with new ones.	15 5, 15, 36 36 5
The unit is on but cannot be operated.	● Confirm the correct drive is selected. ● One of the unit's safety devices may have been activated. Reset the unit as follows: 1 Press [POWER ⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [POWER ⏻/I] on the main unit for about 3 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC power supply cord, wait one minute, then reconnect it. 2 Press [POWER ⏻/I] on the main unit to switch it on. If the unit still cannot be operated, consult the dealer. ● Condensation has formed. Wait 1 to 2 hours for it to evaporate.	20 — —
Play fails to start even when [▶] (PLAY) is pressed. Play starts but then stops immediately.	● Insert the media correctly with the label facing up. ● The media is dirty. ● You tried to play a blank media or unplayable media on this unit.	19 3 6, 7
Cannot eject disc.	● The unit may have a problem. While the unit is off, press and hold [❙❙] and [⏏ OPEN/CLOSE] on the main unit at the same time for about 5 seconds to force the tray to eject. Remove the disc and consult the dealer.	—
Start up is slow. **It takes time before play starts.**	● Make sure that "Quick Start" is set to "On". If connected with an "HDAVI Control 4" compatible TV (VIERA) with the "Stand-by power save" setting activated on the TV, even with "Quick Start" set to "On", when the TV is in standby mode, the unit may take some time to startup. ● Start up takes time in the following situations. –Immediately after a power failure or the AC power supply cord is connected. –When the unit is connected with an HDMI cable.	36 —
Played back image is distorted or does not playback correctly. (AVCHD)	● High definition video (transfer rate of 18 Mbps or faster) cannot be played back correctly if it was recorded on a DVD compatible to double speed or slower.	—
Cannot set "On" in "24p Output".	● Only when the unit is connected to the HDMI terminal of a TV supporting 24p you can select "On". In some cases where the unit is connected to a TV via an amplifier/receiver through the HDMI terminals, you may not be able to select "On". In this case, connect the unit to a TV through the HDMI terminal and connect it to the amplifier/receiver through any terminal other than HDMI.	34

Displays		Page
The tape counter is not changing.	● The seconds display will display as shown on the right for unrecorded parts of the tape. It will also display like this when the dirty or damaged tape is used or when this unit is malfunctioning. In such cases, contact your dealer.	—

TV screen and video

The images from this unit do not appear on the television. **Picture is distorted.** **Jittering occurs.**	● Make sure that the television is connected to either the VIDEO OUT terminal, COMPONENT VIDEO OUT terminals or HDMI AV OUT terminal on this unit.	11
	● Make sure that the television's input setting (e.g., VIDEO 1) is correct.	—
	● An incorrect resolution is selected in "Component Video Resolution", when the television is connected to COMPONENT VIDEO OUT terminals. While stopped, press and hold [■] and [▶] (PLAY) on the main unit at the same time for more than 5 seconds to cancel this setting. Set the item again.	34
	● If "24p Output" is set to "On" when the unit is connected to a TV through any terminal other than HDMI, images may not display properly. In this case, set "24p Output" to "Off".	34
	● When "24p Output" is set to "On", HDMI authentication takes place where 24p images switch to other images, and a black screen is displayed.	34
	● When "24p Output" is set to "On", jittering may occur while playing DVD-Video other than 24p images. In this case, turn "24p Output" to "Off".	34
	● An incorrect resolution is selected in "HDMI Resolution", when the television is connected to HDMI AV OUT terminals. While stopped, press and hold [■] and [▶] (PLAY) on the main unit at the same time for more than 5 seconds to cancel this setting. Set the item again. However, Dolby Digital Plus, Dolby TrueHD, and DTS-HD audio are not output in bitstream. To output the bitstream, select "Restore Default Settings" to restore the factory presets and make proper settings.	36
	● Picture may not be seen when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.	—
The screen changes automatically.	● When the "Screen Saver Function" in the Setup menu is set to "On", the display may return to the screen saver mode automatically if there is no operation for 10 minutes or more.	33
	● When CD or MP3 is played, the screen switches to Screen Saver mode if there is no operation for 2 minutes after starting playback. (Playback continues.)	—
Video is not output in high definition.	● High definition video cannot be output through the VIDEO OUT terminals.	—
	● Confirm that the "HDMI Video Mode", "HDMI Resolution", and "Component Video Resolution" in the Setup menu are set properly.	34
The 4:3 aspect ratio picture expands left and right. **Screen size is wrong.**	● Use the television to change the aspect. Refer to your television's operating instructions.	—
	● When using a component video cable, set "Progressive" to "Video". If the situation is not restored after that, set "TV Aspect" to "4:3 Pan & Scan".	31, 34
	● When using an HDMI cable, change "TV Aspect" type to "16:9".	34
There is a lot of after-image when playing video.	● Turn "3D NR" or "Integrated NR" off if it is on.	31

When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	● When you use the HDMI AV OUT terminal for video output, follow the steps below for setting:
	  1 Connect this unit to the TV with any cable except the HDMI cable.
	  2 When you connect with the Component Video cable, set "HDMI Video Mode" to "Off" and "Component Video Resolution" to "480i" in the Setup menu.
		34

Still pictures (JPEG) do not play back normally.	● The images that were edited on the PC, such as Progressive JPEG, etc., may not play back.	37

Sound

No sound. **Low volume.** **Distorted sound.** **Cannot hear the desired audio type.**	● Check the connections and the "Digital Audio Output" settings. Check the input mode on the amplifier/receiver if you have connected one.	11–13, 33
	● Press [AUDIO] to select the audio.	21, 26
	● The sound effects (Re-master, V. Surround, etc.) will not work when the bitstream signal is output from the HDMI AV OUT terminal or the DIGITAL AUDIO OUT terminal.	—
	● Audio may not be heard when more than 4 devices are connected with HDMI cables. Reduce the number of connected devices.	—
	● To output audio from a device connected with an HDMI cable, set "HDMI Audio Output" to "On" in the Setup menu.	34
Cannot switch audio.	● There are discs for which audio cannot be changed because of how the disc was created.	—
	● When connecting an amplifier/receiver using an optical digital audio cable or an HDMI cable, you cannot switch the audio if "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" is set to "Bitstream". Set "Dolby D/Dolby D +/Dolby TrueHD" or "DTS/DTS-HD" to "PCM" or connect using AUDIO OUT terminal.	12, 13, 33
Stereo audio is sounding muffled while playing back the VHS	● Tracking is off.	26
	● The tape being played back is damaged.	—

Reference

Troubleshooting guide

Card		Page
The capacity of the SD card decreased.	●When a BD-Video that supports BD-Live is used, and an SD card is in the slot, data may be written to the SD card.	23
Music on an SD card cannot be played.	●Data that can be played from an SD card are AVCHD, MPEG2 and JPEG data.	7
The contents of the card cannot be read.	●The card is not compatible or the contents on the card may be damaged. ●Turn off and then turn on the unit again.	7 —

USB		
The contents of the USB device cannot be read.	●Remove the USB device from the USB port and then insert again. If this does not solve the problem, turn off and turn on the unit again.	—
	●Check that the USB device is inserted correctly.	19
	●The format of the USB device or its contents are not compatible with the unit. (The contents on the USB device may be damaged.)	7
	●The USB device contains a folder structure and/or file extensions that are not compatible with this unit.	37
	●Turn off and then turn on the unit again.	—
	●USB devices connected using a USB extension cable or a USB hub may not be recognized by this unit.	—
	●Some USB devices cannot be used with this unit.	7
	●If inserted during playback the USB device may not be recognized by this unit.	—
USB device cannot be operated.	●Turn the power of this unit off once, and turn it back on.	7

VHS		
On-screen display indicators for video cassette playback do not appear.	●Select "Automatic" in "Status Messages" in the Setup menu. –Press [STATUS] to show the on-screen display indicators for video cassette playback.	33
Cannot play.	●Tapes recorded under a TV system other than NTSC (PAL, SECAM, etc.) cannot be played. ●Beginning and end of S VHS or VHSC cassettes may not playback.	— —
The playback screen flickers.	●The video head is dirty. ●The tape is old or damaged.	3 —
There is noise when playing a video tape.	●Adjust the tracking. ●The video head is dirty. ●The tape is old or damaged. ●There may be some noise on the screen for cassettes that were recorded in other than normal mode. ●You may see a noise around the image when the TV is connected using a HDMI cable. Adjust the screen size on the TV. If you cannot adjust the screen size on the TV, the noise will disappear by setting the "HDMI Resolution" in the Setup menu to "480p". However, please restore the setting to the original when playing back in high definition images other than VHS.	26 3 — — 34

Network		
I can't connect to the network.	●Have you subscribed to high speed internet connection? Check that the LAN cable is properly connected.	16
	●Have you plugged a telephone cord into the LAN terminal on this unit? Connect with a straight LAN cable.	16
	●Confirm the power for the modem or broadband router is turned on.	—
	●Confirm the network settings. Follow any instructions you may have received from your ISP (Internet Service Provider) and make changes to the settings.	—
	●Are the broadband router settings correct? Read the operating instructions for the broadband router.	—
	●Is the broadband router and/or modem connected correctly? Check the operating instructions for each device and connect accordingly.	—
	●Check the "Network" and "BD-Live Internet Access" settings.	32, 35
VIERA CAST does not operate or connect.	●Is the network connection correct? ●Image of the video contents may be incomplete or may not display depending on how busy the environment or the connected line is.	16 —

Other difficulties with playback
Page

Audio and video momentarily pause.	●This occurs between playlist chapters or scenes (**AVCHD**). ●When playing a title recorded on both layers, the unit automatically switches between layers and plays the title in the same way as a normal program. However, video and audio may momentarily cut out when the unit is switching layers.	— —
Picture-in-picture is not played with BD-Video.	●Confirm whether the disc supports picture-in-picture.	—
BD-Live is not played with BD-Video.	●Confirm whether the disc supports BD-Live. ●The inserted SD card does not have sufficient available capacity. ●The SD card is write-protected. ●Sub contents copied to an SD card are provided by the disc producer as a part of the BD-Video content. Even if you record images and audio onto an SD card, it cannot be played as a BD-Live.	23 23 7 23
Alternative soundtrack and subtitles cannot be selected.	●The languages are not recorded on the media. ●You may not be able to use the on-screen menu to change the soundtrack and subtitles on some discs. Use the disc's menus to make changes.	— 20
No subtitles.	●Subtitles are not recorded on the media. ●Turn the subtitles on. Set "Subtitle" on the on-screen menu to "On". ●When progressive output is on, closed captions cannot be displayed.	— 30 —
The subtitles overlap closed captions recorded on discs.	●Turn off the subtitles or turn off the closed caption setting on the TV.	30

The resume play function does not work.	●Memorized positions are canceled when
	  –pressing [■] several times.
	  –opening the disc tray.
	●The resume play function may not work depending on the media.
	● **BD-V** : On BD-Video discs including BD-J, the resume play function does not work.
		—
		
		—
		—

Reference

Specifications

Signal system:

NTSC

Operating temperature range:

+5 °C to +35 °C (+41 °F to +95 °F)

Operating humidity range:

10 % to 80 % RH (no condensation)

Playable disc:
BD-Video
BD-ROM: Version 2
BD-RE: Version 3 (Single Layer, Dual Layer), JPEG*6
BD-R: Version 2 (Single Layer, Dual Layer)
DVD-RAM: DVD Video Recording format, AVCHD format*7, JPEG*4
DVD-R/DVD-R DL:
DVD-Video format*1, DVD Video Recording format*1, AVCHD format*1, 7, JPEG*4, MP3
DVD-RW: DVD-Video format*1, DVD Video Recording format*1, AVCHD format*1, 7
+R/+RW/+R DL:
Video*1, AVCHD format*1, 7
DVD-VIDEO: DVD-Video format
CD-Audio: CD-DA
CD-R/CD-RW: CD-DA, JPEG*5, MP3

SD card:
SD Memory Card*2 formatted FAT12, FAT16, FAT32*3:
JPEG*4, AVCHD format*7, MPEG-2

USB device:
USB Standard:USB 2.0 High Speed   MP3, JPEG*4
Format: FAT12, FAT16, FAT32

VHS:
Playable format:
VHS Video Cassette System Standard NTSC signal recorded
Playable type: VHS
S-VHS(SQPB)

Video output:
Output level: 1.0 Vp-p (75 Ω)
Output connector: Pin jack (1 system)

Component video output: (1080i/720p/480p/480i)
Y output level: 1.0 Vp-p (75 Ω)
P_B output level: 0.7 Vp-p (75 Ω)
P_R output level: 0.7 Vp-p (75 Ω)
Output connector: Pin jack (Y: green, P_B: blue, P_R: red)
(1 system)

Audio output:
Output level: 2 Vrms (1 kHz, 0 dB)
Output connector: Pin jack
Number of connectors : 2 channel:1 system

Audio performance:
Frequency response:
●DVD (linear audio): 4 Hz to 22 kHz (48 kHz sampling)
4 Hz to 44 kHz (96 kHz sampling)
●CD-Audio: 4 Hz to 20 kHz
S/N ratio: 115 dB
Dynamic range: 100 dB
Total harmonic distortion: 0.003 %

Digital audio output:
Optical digital output: Optical terminal
HDMI AV output
Output format:
480p (525p)/1080i (1125i)/720p (750p)/1080p (1125p)
Output Connector: Type A (19 pin)
HDMI™ (Deep Color, x.v.Color™, High Bit rate Audio)
●This unit supports "HDAVI Control 4" function.

SD card slot:
Connector: 1 system
USB slot:
Connector: 1 system
Ethernet:
10BASE-T/100BASE-TX: 1 system
VHS:
Playable Signal format:
VHS Video Cassette System Standard NTSC signal recorded
Heads: 4 Helical Scan Heads for Video
2 Helical Scan Heads for FM audio
1 Fixed Heads for Normal audio
Tape Speed: SP:33.35 mm/s
EP:11.12 mm/s
FF/REW Time:FF/REW: Approx. 60 s(with T-120 cassette)
Optical pick-up: System with 2 lenses
Wave length:
790 nm (CDs)/650 nm (DVDs)/405 nm (BDs)

LASER Specification
Class I LASER Product:
Wave length:
790 nm (CDs)/650 nm (DVDs)/405 nm (BDs)
Laser power:
No hazardous radiation is emitted with the safety protection

Power supply: AC 120 V, 60 Hz
Power consumption: Approx. 28 W
Power consumption in standby mode: less than 0.5 W
Power consumption in quick start standby mode: 6 W
Dimensions (W×D×H)
Excluding the projecting parts:
430 mm×335 mm×94 mm
(Approx. 16 15/16″×13 3/16″×3 11/16″)
Including the projecting parts:
430 mm×345 mm×94 mm
(Approx. 16 15/16″×13 9/16″×3 11/16″)
Mass (Weight): Approx. 5.5 kg (12.1 lbs)

Specifications are subject to change without notice.
*1 Finalizing is necessary.
*2 Includes SDHC card
Includes miniSD Cards (need a miniSD Adaptor)
Includes microSD Cards (need a microSD Adaptor)
*3 Does not support long file name.
*4 The total combined maximum number of recognizable picture contents and folders: 3000 picture contents and 300 folders.
*5 The total combined maximum number of recognizable picture contents and folders: 999 picture contents and 99 folders.
*6 The total combined maximum number of recognizable picture contents and folders: 9999 picture contents and 300 folders.
*7 AVCHD format V1.0

●Useable capacity will be less. (SD Card)

Product Service

1. **Damage requiring service**—The unit should be serviced by qualified service personnel if:
   (a) The AC power supply cord or AC adaptor has been damaged; or
   (b) Objects or liquids have gotten into the unit; or
   (c) The unit has been exposed to rain; or
   (d) The unit does not operate normally or exhibits a marked change in performance; or
   (e) The unit has been dropped or the cabinet damaged.
2. **Servicing**—Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
3. **Replacement parts**—When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.
4. **Safety check**—After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

Product information

For product information or assistance with product operation:

In the U.S.A. and Puerto Rico, refer to "Customer Services Directory (United States and Puerto Rico)" on page 46.
In Canada, contact the Panasonic Canada Inc. Customer Care Centre at 1-800-561-5505, or visit the website (www.panasonic.ca), or an authorized Servicentre closest to you.

The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and keep for future reference.
MODEL NUMBER   DMP-BD70V
SERIAL NUMBER

User memo:

DATE OF PURCHASE
DEALER NAME
DEALER ADDRESS
TELEPHONE NUMBER

RQT9412

Limited Warranty (Only for U.S.A. and Puerto Rico)

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

Panasonic Blu-ray Disc Player Limited Warranty

Limited Warranty Coverage (For U.S.A. and Puerto Rico Only)

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company (referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("Limited Warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product or Part Name	Parts	Labor
Blu-ray Disc Player	One (1) Year	One (1) Year

During the "Labor" Limited Warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. If non-rechargeable batteries are included, they are not warranted. This Limited Warranty only applies to products purchased and serviced in the United States or Puerto Rico. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.

Carry-In or Mail-In Service

For Carry-In or Mail-In Service in the United States and Puerto Rico call 1-800-211-PANA (7262) or visit
Panasonic Web Site: http://www.panasonic.com

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

IF REPAIR IS NEEDED DURING THE LIMITED WARRANTY PERIOD THE PURCHASER WILL BE REQUIRED TO FURNISH A SALES RECEIPT/PROOF OF PURCHASE INDICATING DATE OF PURCHASE, AMOUNT PAID AND PLACE OF PURCHASE. CUSTOMER WILL BE CHARGED FOR THE REPAIR OF ANY UNIT RECEIVED WITHOUT SUCH PROOF OF PURCHASE.

Limited Warranty Limits And Exclusions

This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage. The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as hotel, office, restaurant, or other business), rental use of the product, or service by anyone other than a Factory Service Center or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the servicer, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)
ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied Limited Warranty lasts, so the exclusions may not apply to you.

This Limited Warranty gives you specific legal rights and you may also have other rights which vary from state to state. If a problem with this product develops during or after the Limited Warranty period, you may contact your dealer or Service Center. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY.

Customer Services Directory (United States and Puerto Rico)

Obtain Product Information and Operating Assistance; purchase Parts, Accessories, or obtain Literature by visiting our Web Site at:
http://www.panasonic.com/help
or, contact us via the web at:
http://www.panasonic.com/contactinfo
You may also contact us directly at:
1-800-211-PANA (7262),
Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

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

Accessory Purchases (United States and Puerto Rico)

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:
http://www.pstc.panasonic.com
or, send your request by E-mail to:
npcparts@us.panasonic.com
You may also contact us directly at:
1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only) (Monday – Friday 9 am to 9 pm, EST.)
Panasonic Service and Technology Company
20421 84th Avenue South, Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

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

Product Repairs (United States and Puerto Rico)

MAIL TO:

Centralized Factory Service Center
Panasonic Service and Technology Company
410B Airport Road
Elgin, IL 60123-9333
Attention: BD/DVD Repair

Please carefully pack and ship, prepaid and insured, to the Elgin Centralized Factory Service Center.

Limited Warranty (Only for CANADA)

Panasonic Canada Inc.

PANASONIC PRODUCT—LIMITED WARRANTY

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

Technics Audio Product	**One (1) year, parts and labour**
Panasonic Portable/Clock Radio (without Tape, CD, MD)	**One (1) year, parts and labour**
Panasonic Audio/SD Audio Product	**One (1) year, parts and labour**
Panasonic BD/DVD Product	**One (1) year, parts and labour**
Panasonic Combination DVD Player/VCR	**One (1) year, parts and labour**
Panasonic Combination DVD Recorder/VCR	**One (1) year, parts and labour**
Accessories including rechargeable batteries	**Ninety (90) days**

LIMITATIONS AND EXCLUSIONS

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

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

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

WARRANTY SERVICE
FOR PRODUCT OPERATION ASSISTANCE, please contact:

Our Customer Care Centre:	Telephone #:	(905) 624-5505
	1-800 #:	1-800-561-5505
	Fax #:	(905) 238-2360
	Email link:	"Customer support" on www.panasonic.ca

FOR PRODUCT REPAIRS, please locate your nearest Authorized Servicentre at www.panasonic.ca :

Link : "Servicentres™ locator" under "Customer support"

IF YOU SHIP THE PRODUCT TO A SERVICENTRE
Carefully pack and send prepaid, adequately insured and preferably in the original carton.
Include details of the defect claimed, and proof of date of original purchase.
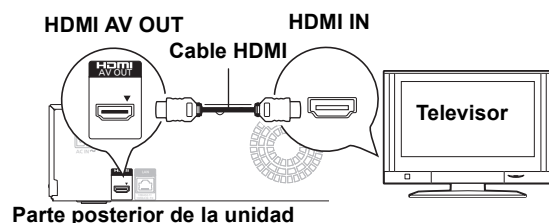
Reference

RQT9412

Licenses

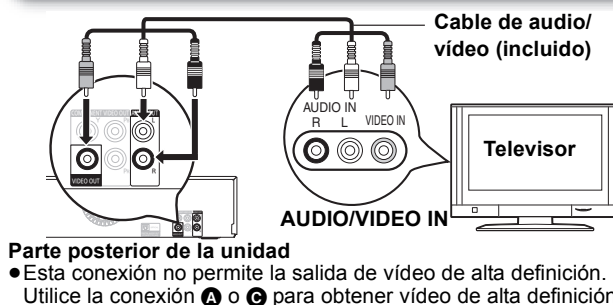| |
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| This product is licensed under the AVC patent portfolio license and VC-1 patent portfolio license for the personal and non-commercial use of a consumer to (i) encode video in compliance with the AVC Standard and VC-1 Standard ("AVC/VC-1 Video") and/or (ii) decode AVC/VC-1 Video that was encoded by a consumer engaged in a personal and non-commercial activity and/or was obtained from a video provider licensed to provide AVC/VC-1 Video. No license is granted or shall be implied for any other use. Additional information may be obtained from MPEG LA, LLC. See http://www.mpegla.com. |
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Referencia rápida en español (Spanish Quick Reference)

Conexiones básicas

Ⓐ Conexión a un televisor compatible con HDMI

HDMI AV OUT HDMI IN
Cable HDMI
Televisor

Parte posterior de la unidad

Ⓑ Conexión a un televisor con un cable para audio/vídeo

Cable de audio/vídeo (incluido)

AUDIO IN R L VIDEO IN

VIDEO OUT

Televisor

AUDIO/VIDEO IN

Parte posterior de la unidad
● Esta conexión no permite la salida de vídeo de alta definición. Utilice la conexión Ⓐ o Ⓒ para obtener vídeo de alta definición.

Ⓒ Conexión a un televisor compatible con HDMI y a un amplificador/receptor compatible con HDMI

HDMI AV OUT HDMI IN Altavoces multicanal HDMI OUT HDMI IN
Cable HDMI Cable HDMI
Televisor

Parte posterior de la unidad

Amplificador/Receptor

Conecte el cable de alimentación de CA por último

A una toma de corriente doméstica

AC IN∼ (CA 120 V, 60 Hz)

Cable de alimentación de CA (incluido)
Conéctelo cuando haya realizado el resto de conexiones.

Ahorro de energía

Esta unidad consume una pequeña cantidad de energía aunque esté ajustada en el modo de espera (Accionamiento rápido : Desactivado, aprox. 0,5 W). Para ahorrar energía cuando no vaya a utilizar la unidad durante mucho tiempo, desenchúfela de la toma de corriente.

Reproducción básica

Preparación
Encienda el televisor y seleccione la entrada de vídeo adecuada en el televisor.

❶ **Pulse [⏻ POWER] para encender la unidad.**
Después de conectar su nuevo reproductor y pulsar el botón de encendido, aparecerá la pantalla de la configuración básica.

❷ **Inserte el medio.**

[PLAY ▶] **Inicia la reproducción**

[STOP ■] **Parada**

La posición de detención se memoriza.
Función de reanudación de la reproducción (excepto : VHS)
Pulse [▶] (PLAY) para reiniciar la reproducción desde esta posición.
● La posición se borra si se abre la bandeja o se pulsa [■] varias veces para visualizar "STOP" en el visor de la unidad.
● **BD-V : En los discos BD-Video incluidos los BD-J, la función de reanudación de la reproducción no funciona.**
● CD MP3 MPEG2 : La posición se borra si apaga la unidad.

[PAUSE ❚❚] **Pausa**

● Pulse [❚❚] otra vez o [▶] (PLAY) para reiniciar la reproducción.

SLOW/SEARCH
[◀◀] [▶▶] **Búsqueda/Cámara lenta**
[Avance rápido / Rebobinado o Localización progresiva / Rebobinado VHS]

La velocidad aumenta hasta 5 pasos.**(excepto : VHS)**
● Pulse [▶] (PLAY) para recuperar la velocidad de reproducción normal.
● Para algunos discos, la velocidad podría no cambiar.

Búsqueda
Durante la reproducción, pulse [◀◀] o [▶▶].
● BD-V AVCHD DVD-VR DVD-V : El audio se oye durante la búsqueda en avance de primer nivel.
● MPEG2 : El sonid no se oye durante todos los niveles de búsqueda.
● CD MP3 : La velocidad está fija en un paso.

Cámara lenta
Durante la pausa, pulse [◀◀] o [▶▶].
● BD-V AVCHD :Sólo dirección en avance [▶▶].
● DVD-VR :Si continua durante aprox. 5 minutos, la reproducción en cámara lenta se para automáticamente.

Avance rápido / Rebobinado
Cuando la unidad esté parada, pulse [◀◀] o [▶▶].
● La función de dirección en avance/retroceso rápido se cancela automáticamente al cabo de 10 minutos.

Localización progresiva / Rebobinado
Durante la reproducción, pulse [◀◀] o [▶▶] (o pulse y mantenga pulsado).
● Cada vez que se pulsa el botón, la velocidad cambia.
● Pulse [▶] (PLAY) para devolver la reproducción a su velocidad normal.
● Mantenga pulsado [◀◀] o [▶▶] para empezar la búsqueda rápida de la imagen y suelte el botón para reiniciar la reproducción a su velocidad normal.
● La búsqueda rápida de la imagen se cancela automáticamente al cabo de 10 minutos.

[◀◀] [▶▶] **Salto**
SKIP/INDEX **[Sistema de Búsqueda de Índice VHS (VISS) VHS]**

Salto (excepto : VHS)
● Salta hasta el título, capítulo o pista que desee reproducir.
● Cada pulsación aumenta el número de saltos.

Sistema de Búsqueda de Índice VHS (VISS)
Cuando la unidad esté parada o durante la reproducción normal, pulse [◀◀] o [▶▶].
● Cada vez que se pulsa el botón aumenta el número de saltos.
● Pulse [■] para cancelar la búsqueda.
● Se pueden buscar hasta 20 señales de índice en ambas direcciones.

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Glossary

AVCHD
AVCHD is a new format (standard) for high definition video cameras that can be used to record and play high-resolution HD images.

BD-J
Some BD-Video discs contain Java applications, and these applications are called BD-J. You can enjoy various interactive features in addition to playing normal video.

BD-Live
This is a BD-Video (BD-ROM Profile 2) that supports the new functions such as Internet connection, etc. in addition to the BONUSVIEW function.

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

BONUSVIEW (Final Standard Profile)
This is a BD-Video (BD-ROM Profile 1 version 1.1) that supports the new functions such as Picture-in-picture, Secondary Audio, etc.

Deep Color
Deep Color is a name for a device that can reproduce greater color gradation (4096 steps) when connected to a TV that supports the Deep Color with HDMI cable. You can enjoy exceptionally rich, natural-looking colors, with smooth, detailed gradation and minimal color banding. [A lower color gradation (256 steps), without Deep Color, will be reproduced if connected to a TV which does not support Deep Color. The unit will automatically set appropriate output to suit the connected TV.]

DNS Server
A server which acts like a telephone directory and translates Internet domain names into IP addresses.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multi-channel audio.

Dolby Digital Plus
Multi-channel audio and higher audio quality is made possible using Dolby Digital Plus. BD-Video supports up to 7.1 channel output.

Dolby TrueHD
Dolby TrueHD is a very high quality audio format that reproduces the studio master audio. BD-Video supports up to 7.1 channel output.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into fewer channels.

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

DTS-HD
DTS-HD is a high-quality, sophisticated audio format used in movie theaters. Previous DTS Digital Surround-compatible equipment can play DTS-HD as DTS Digital Surround audio. BD-Video supports up to 7.1 channel output.

DTS-HD High Resolution Audio
This is a signal format achieved by improving the previous DTS, DTS-ES and DTS96/24 formats. It is compatible with sampling frequency 96 kHz/48 kHz. BD-Video supports up to 7.1 channel output.

DTS-HD Master Audio
This is a lossless audio format and compatible with 96 kHz/7.1ch or less. In addition, faithful reproduction of the master audio is enabled using lossless audio encoding technology. BD-Video supports up to 7.1 channel output.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.
Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialog clearly.

Film and video
DVD-Video 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 24 frames per second. (Recorded at 30 frames per second as well). Generally appropriate for motion picture films.
Video: Recorded at 30 frames/60 fields per second. Generally appropriate for TV drama programs or animation.

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

Frame   Field   Field

- A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

Gateway
IP address of the electronic device providing Internet access. Usually called a router IP address. (e.g., 192.168.0.1)

HDMI (High-Definition Multimedia Interface)
HDMI is a digital interface for consumer electronic products. Unlike conventional connections, it transmits uncompressed digital video and audio signals on a single cable.

Hub
Used for connecting more than one device to the network.

IP address
A set of numbers which distinguish each device on the network when, for example, connected to the Internet. When using a PC in a LAN to access a PC or device that is not included in the LAN, the IP address is called the local IP address. (e.g., 192.168.0.10)

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding color still pictures. If you select JPEG as the storage system on digital cameras, etc., the data will be compressed to 1/10–1/100 of its original size. The benefit of JPEG is less deterioration in picture quality considering the degree of compression.

LAN (Local Area Network)
A group of linked devices in a company, school or home. Indicates the boundaries of a particular network.

Local storage
This storage area is used as a destination for sub contents for playing BD-Live on BD-Video.

LPCM (Linear PCM)
These are a kind of PCM format.
These are uncompressed digital signals, similar to those found on CDs.

MPEG2 (Moving Picture Experts Group)
A standard for efficiently compressing and expanding color video. MPEG2 is a compression standard used for DVD and satellite based digital broadcasting.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any significant loss of audio quality.

P4HD (Pixel Precision Progressive Processing for HD)
This is a processor which makes use of an exclusive Panasonic algorithm. Various processing is supported, including a high-level conversion of the TV scanning format from interlace to progressive and a high-level conversion of standard resolution (480i or 576i) video signal to a 1080 High Definition video signal.
Consequently, this unit is able to provide video of optimal resolution to the connected TV.

Pan&Scan/Letterbox
In general, DVD-Video are produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.

Pan&Scan:The sides are cut off so the picture fills the screen.

Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.

PCM (Pulse Code Modulation)
This is one format for converting analog audio into digital audio, enabling you to enjoy digital audio with no hassle.

Progressive/Interlace
The video signal standard of NTSC has 480 interlaced (i) scan lines, whereas progressive (p) scanning uses twice the number of scan lines, and this is referred to as 480p. Using progressive output, you can enjoy watching high resolution video.

Router
Distinguishes the IP address assigned to each device, such as the PC, and relays the flow of data within the network.

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

SQPB (S-VHS Quasi Playback)
This is a function to playback S VHS cassettes recorded in S-VHS format in a simplified way. It will not reproduce the high definition of the S-VHS format.

Subnet mask
Enables efficient network use. A set of numbers which identify which part of the IP address allocated to every device connected to the router is the network portion.

USB (Universal Serial Bus)
An interface specification to connect peripherals. Playback of MP3 or JPEG recorded to a USB device by PC or other equipment, or JPEG in the Panasonic digital camera or similar connected via USB connection cable is possible with this unit.

VIERA CAST
An information service unique to Panasonic where specific Web sites can be viewed on this unit by connecting to the Internet without using a PC.

x.v.Color™
x.v.Color™ is a name for devices that are compatible with the xvYCC format, an international standard for expanded color in motion pictures, and that follow the rules for signal transmission.
You can enjoy vivid colors of wider color ranges for a more realistic picture when connected to a TV that supports the x.v.Color™ with HDMI cable.

1080i (1125i)
In one high definition image, 1080 (1125) alternating scan lines pass to create an interlaced image. Because 1080 (1125i) more than doubles current television broadcasts of 480i, the detail is much clearer and creates a more realistic and rich image.

1080p (1125p)
In one high definition image, 1080 (1125) scan lines pass at the same time to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

24p
This is a progressive image recorded at a rate of 24 frames per second.

720p (750p)
In one high definition image, 720 (750) scan lines pass at the same time to create a progressive image. Since progressive video does not alternate scan lines like interlace, there is a minimal amount of screen flicker.

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-If you see this symbol-

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact
your local authorities or dealer and ask for the correct
method of disposal.