ONKYO®

BLU-RAY DISC PLAYER

DV-BD606

Instruction Manual

Contents

Thank you for purchasing an Onkyo BLU-RAY DISC PLAYER. Please read this manual thoroughly before making connections and plugging in the unit.

Following the instructions in this manual will enable you to obtain optimum performance and listening enjoyment from your new BLU-RAY DISC PLAYER.

Please retain this manual for future reference.

En

Important Safeguards

1. **READ INSTRUCTIONS** - All the safety and operating instructions should be read before the apparatus is operated.
2. **RETAIN INSTRUCTIONS** - The safety and operating instructions should be retained for future reference.
3. **HEED WARNINGS** - All warnings on the apparatus and in the operating instructions should be adhered to.
4. **FOLLOW INSTRUCTIONS** - All operating and use instructions should be followed.
5. **CLEANING** - Unplug this apparatus from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
   EXCEPTION: An apparatus that is meant for uninterrupted service and, that for some specific reason, such as the possibility of the loss of an authorization code for a CATV converter, is not intended to be unplugged by the user for cleaning or any other purpose, may exclude the reference to unplugging the apparatus in the cleaning description otherwise required in item 5.
6. **ATTACHMENTS** - Do not use attachments not recommended by the apparatus manufacturer as they may cause hazards.
7. **WATER AND MOISTURE** - Do not use this apparatus near water, for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
8. **ACCESSORIES** - Do not place this apparatus on an unstable cart, stand, tripod, bracket, or table. The apparatus may fall, causing serious injury to someone, and serious damage to the apparatus. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the apparatus. Any mounting of the apparatus should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer. An apparatus and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the apparatus and cart combination to overturn.
9. **VENTILATION** - Slots and openings in the cabinet and the back or bottom are provided for ventilation and to ensure reliable operation of the apparatus and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the apparatus on a bed, sofa, carpet, rug, or other similar surface. This apparatus should never be placed near or over a radiator or heat register. This apparatus should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. **POWER SOURCES** - This apparatus should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your apparatus dealer or local power company. For the apparatus's intended to operate from battery power, or other sources, refer to the operating instructions.
11. **GROUNDING OR POLARIZATION** - This apparatus is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
12. **POWER-CORD PROTECTION** - Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the apparatus.
13. **OUTDOOR ANTENNA GROUNDING** - If an outside antenna or cable system is connected to the apparatus, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA No. 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. (Fig. A)

FIGURE A

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE

ANTENNA LEAD WIRE

GROUND CLAMP

ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)

ELECTRIC SERVICE EQUIPMENT

GROUNDING CONDUCTORS (NEC SECTION 810-21)

GROUND CLAMP

NEC – NATIONAL ELECTRICAL CODE

POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)
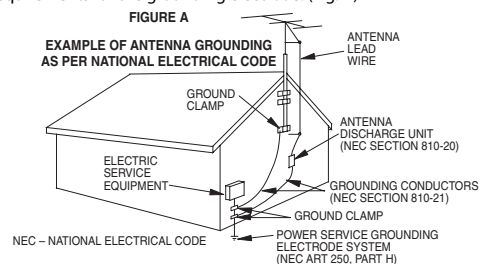
14. **LIGHTNING** - For added protection for this apparatus receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the apparatus due to lightning and power-line surges.
15. **POWER LINES** - An outside antenna system should not be located in the vicinity of overhead power lines or other electric light of power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
16. **OVERLOADING** - Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
17. **OBJECT AND LIQUID ENTRY** - Never push objects of any kind into this apparatus through openings as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the apparatus.
18. **SERVICING** - Do not attempt to service this apparatus yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
19. **DAMAGE REQUIRING SERVICE** - Unplug this apparatus from the wall outlet and refer servicing to qualified service personnel under the following conditions:
   a. When the power supply cord or plug is damaged or frayed.
   b. If liquid has been spilled, or objects have fallen into the apparatus.
   c. If the apparatus has been exposed to rain or water.
   d. If the apparatus does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the apparatus to its normal operation.
   e. If the apparatus has been dropped or damaged in any way.
   f. When the apparatus exhibits a distinct change in performance, this indicates a need for service.
20. **REPLACEMENT PARTS** - When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, injury to persons or other hazards.
21. **SAFETY CHECK** - Upon completion of any service or repairs to this apparatus, ask the service technician to perform routine safety checks to determine that the apparatus is in proper operating condition.
22. **HEAT** - This apparatus should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

PRECAUTIONS

Do not place the unit on the furniture that is capable of being tilted by a child and an adult leaning, pulling, standing or climbing on it. A falling unit can cause serious injury or even death.

1. **Recording Copyright**—Unless it's for personal use only, recording copyrighted material is illegal without the permission of the copyright holder.

2. **AC Fuse**—The AC fuse inside the unit is not user-serviceable. If you cannot turn on the unit, contact your Onkyo dealer.

3. **Care**—Occasionally you should dust the unit all over with a soft cloth. For stubborn stains, use a soft cloth dampened with a weak solution of mild detergent and water. Dry the unit immediately afterwards with a clean cloth. Don't use abrasive cloths, thinners, alcohol, or other chemical solvents, because they may damage the finish or remove the panel lettering.

4. **Power**
   WARNING
   BEFORE PLUGGING IN THE UNIT FOR THE FIRST TIME, READ THE FOLLOWING SECTION CAREFULLY.

   AC outlet voltages vary from country to country. Make sure that the voltage in your area meets the voltage requirements printed on the unit's rear panel (AC 120 V, 60 Hz).

   The power cord plug is used to disconnect this unit from the AC power source. Make sure that the plug is readily operable (easily accessible) at all times.

   Pressing **[⏻ ON / STANDBY]** to select Standby mode does not fully shutdown the unit. If you do not intend to use the unit for an extended period, remove the power cord from the AC outlet.

5. **Preventing Hearing Loss**
   Caution
   Excessive sound pressure from earphones and headphones can cause hearing loss.

6. **Batteries and Heat Exposure**
   Warning
   Batteries (battery pack or batteries installed) shall not be exposed to excessive heat as sunshine, fire or the like.

7. **Never Touch this Unit with Wet Hands**—Never handle this unit or its power cord while your hands are wet or damp. If water or any other liquid gets inside this unit, have it checked by your Onkyo dealer.

8. **Handling Notes**
   - If you need to transport this unit, use the original packaging to pack it how it was when you originally bought it.
   - Do not leave rubber or plastic items on this unit for a long time, because they may leave marks on the case.
   - This unit's top and rear panels may get warm after prolonged use. This is normal.
   - If you do not use this unit for a long time, it may not work properly the next time you turn it on, so be sure to use it occasionally.
   - When you've finished using this unit, remove all discs and turn off the power.

9. **Installing this Unit**
   - Install this unit in a well-ventilated location.
   - Ensure that there's adequate ventilation all around this unit, especially if it's installed in an audio rack. If the ventilation is inadequate, the unit may overheat, leading to malfunction.
   - Do not expose this unit to direct sunlight or heat sources, because its internal temperature may rise, shortening the life of the optical pickup.
   - Avoid damp and dusty places, and places subject to vibrations from loudspeakers.
   - Never put the unit on top of, or directly above a loud-speaker.
   - Install this unit horizontally. Never use it on its side or on a sloping surface, because it may cause a malfunction.
   - If you install this unit near a TV, radio, or VCR, the picture and sound quality may be affected. If this occurs, move this unit away from the TV, radio, or VCR.

10. **To Obtain a Clear Picture**—This unit is a high-tech, precision device. If the lens on the optical pickup, or the disc drive mechanism becomes dirty or worn, the picture quality may be affected. To maintain the best picture quality, we recommend regular inspection and maintenance (cleaning or worn part replacement). Contact your Onkyo dealer.

11. **Moisture Condensation**
    Moisture condensation may damage this unit.
    Read the following carefully:
    Moisture may condense on the lens of the optical pickup, one of the most important parts inside this unit.
    - Moisture condensation can occur in the following situations:
    – The unit is moved from a cold place to a warm place.
    – A heater is turned on, or cold air from an air conditioner is hitting the unit.
    – In the summer, when this unit is moved from an air conditioned room to a hot and humid place.
    – The unit is used in a humid place.

- Do not use this unit when there's the possibility of moisture condensation occurring. Doing so may damage your discs and certain parts inside this unit.
  If condensation does occur, remove all discs and leave this unit turned on for two to three hours. By this time, the unit will have warmed up and any condensation will have evaporated.

12. **Region Codes**—The BD/DVD standard uses region codes to control how discs can be played around the world, the world being divided into three regions (BD) or six regions (DVD). This unit will only play BD/DVD discs that match its region code, which can be found on its rear panel (🔘, 🌐).

13. **About this Manual**—This manual explains how to use all of this unit's functions. Although the BD/DVD standard offers many special features, not all discs use them all, so depending on the disc being played, this unit may not respond to certain functions. See the disc's sleeve notes for supported features.

This unit contains a semiconductor laser system and is classified as a "CLASS 1 LASER PRODUCT". So, to use this model properly, read this Instruction Manual carefully. In case of any trouble, please contact the store where you purchased the unit.

To prevent being exposed to the laser beam, do not try to open the enclosure.

DANGER:

VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. DO NOT STARE INTO BEAM.

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.

The label on the right is applied on the rear panel.

> CLASS 1 LASER
> PRODUCT

1. This unit is a CLASS 1 LASER PRODUCT and employs a laser inside the cabinet.

2. To prevent the laser from being exposed, do not remove the cover. Refer servicing to qualified personnel.

For U.S. Models

FCC Information for User

CAUTION:

The user changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

For Canadian Models

NOTE: THIS CLASS B DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

For models having a power cord with a polarized plug:

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

Modèle pour les Canadien

REMARQUE: CET APPAREIL NUMÉRIQUE DE LA CLASSE B EST CONFORME À LA NORME NMB-003 DU CANADA.
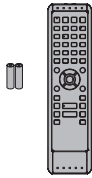
Sur les modèles dont la fiche est polarisée:

ATTENTION: POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.
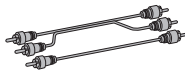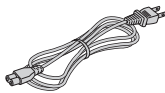
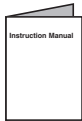## Supplied Accessories

remote control with batteries (AAx2)

RCA audio / video cables

AC cord

instruction manual

Instruction Manual

Note about Recycling

• This unit's packaging materials are recyclable and can be reused. Please dispose of any materials in accordance with your local recycling regulations.

• Batteries should never be thrown away or incinerated but disposed of in accordance with your local regulations concerning chemical wastes.

Maintenance

Servicing

• Please refer to relevant topics on "TROUBLESHOOTING" on page 43 before returning the product.

• If this unit becomes inoperative, do not try to correct the problem by yourself. There are no user-serviceable parts inside. Turn off, unplug the power plug, and please call our toll free customer support line found on the cover of this manual to locate an authorized service center.

Disc handling

• For best results, keep your discs clean. Fingerprints and dust can affect the sound and picture quality and should be removed as follows. Using a clean, soft cloth, wipe from the center outwards, as shown. Never wipe in a circular direction.

• To remove stubborn dust or dirt, wipe the disc with a damp, soft cloth, and then dry it with a dry cloth.

• Never use solvent-based cleaning fluids, such as thinner or benzine, commercially available cleaners, or antistatic sprays intended for vinyl records, because they may damage the disc.

IR signal check

• If the remote control is not working properly, you can use an AM radio or digital camera (including a cellular phone with built-in camera) to see if it is sending out an infrared signal.

• **With an AM radio:**
Tune the AM radio station to a non-broadcasting frequency. Point the remote control towards it, push any button and listen. If the sound from the radio flutters, it is receiving the remote control's infrared signal.

• **With a digital camera (including built-in cell phone cameras):**
Point a digital camera towards the remote control. Push any button on the remote control and look through the digital camera. If the infrared light appears through the camera, the remote control is working.

Copyright

• It is forbidden by law to copy, broadcast, show, broadcast on cable, play in public, or rent copyrighted material without permission. Commercial BD-video/DVD-video discs are copy-protected, and any recordings made from these discs will be distorted. This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Trademark Information

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BONUS *VIEW* ™

"BONUSVIEW" is trademark of Blu-ray Disc Association.

CONTENTS

FEATURES

Features

Full high-definition video playback
Watch movies in the highest picture quality available for your HDTV. This unit offers full high-definition video playback up to 1080p resolution for an amazing viewing experience. A highly detailed picture and increased sharpness delivers a more true-to-life picture.

Upconvert DVD for enhanced picture quality
Your current DVD will look even better than before thanks to video upconversion. Upconversion will increase the resolution of standard definition DVD to high definition up to 1080p over an HDMI connection. The picture will be less jagged and more realistic for a near high-definition experience.

Enjoy your content on different kinds of media
Full backwards compatibility with DVD, CD ensures that you can continue to enjoy your current audio-video collection. Additionally, you can listen to MP3 files.

Listen to the rich multi-channel surround sound
Multi-channel surround sound, which realizes real-to-life sound and makes you feel that you are really there.

Easy and simple connection to your HDTV via HDMI
Connect this unit to your HDTV with one single HDMI (high definition multimedia interface) cable. It is recommended to use High Speed HDMI Cable for better compatibility. The high definition video output signal will be transferred to your HDTV without conversion to analogue signals, so you will get an excellent picture and sound quality, completely free from noise.
Thanks to other multiple outputs, you can also easily connect to your home theater system or amplifier.

About HDMI CEC (consumer electronics control)
This unit supports HDMI CEC, which allows integrated system control over HDMI and is part of the HDMI standard. Onkyo does not guarantee 100% interoperability with other brands of HDMI CEC compliant devices.

PIP (Picture in Picture) (BONUSVIEW) setting
Some BD-video have the PIP (picture-in-picture) function which enables you to display the secondary video in the primary video. You can call up the secondary video by pressing **[PIP]** whenever the scene contains the secondary video.

Pop-up menu
Some BD-video have pop-up menu which is a navigation menu that can be called up and be operated on the TV screen without interrupting the playback. You can call up the pop-up menu by pressing **[POP UP MENU / MENU]**. Contents in the pop-up menu vary depending on the disc.

HDMI Deep Color
Deep Color reduces the posterization effect of the playback image. Refer to "HDMI Deep Color" in "FUNCTION SETUP" on page 34.

HDMI 1080p / 24 fps output (BD only)
This unit is equipped with the feature which can provide the smooth movement in the playback of film originated material with the frame rate of 24 frames per second with progressive. (Available only when the TV is connected by an HDMI cable and compatible with 1080p24 frame input.)
Refer to "HDMI Video Resolution" in "FUNCTION SETUP" on page 34.

Playing back the contents in SD Memory Card
You can play back MP3 stored in an SD Memory Card.
You can store picture-in-picture commentary, subtitles or other extras for BD-ROM Profile 1 ver.1.1 files in an SD Memory Card and play back with the BD-video.

Symbols Used in this Manual

To specify for which media type each function is, we put the following symbols at the beginning of each item to operate.

Symbol	Description
BD-V	Description refers to BD-video and BD-RE (ver. 3) / BD-R recorded in BDMV format
DVD-V	Description refers to DVD-video
CD	Description refers to audio CD / DTS-CD
MP3	Description refers to DVD, CD-RW/-R and SD Memory Card with MP3 files

If you do not find any of the symbols listed above under the function heading, the operation is applicable to all media.

FUNCTIONAL OVERVIEW

Front Panel
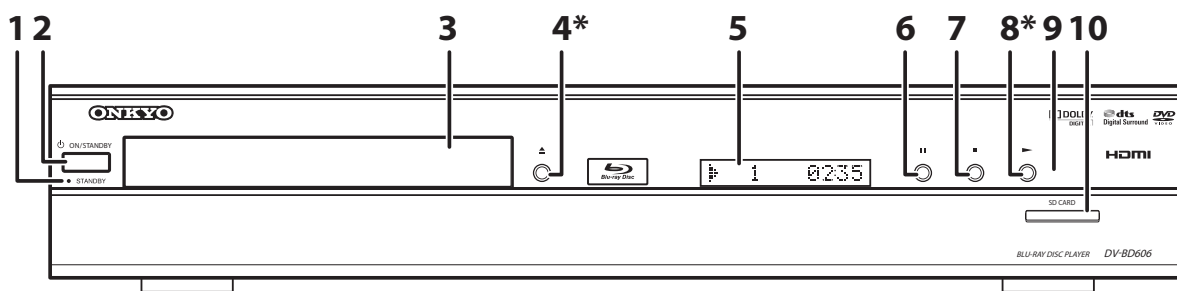
*   The unit can also be turned on by pressing these buttons.

1.   **STANDBY indicator**
     • This indicator lights up in red in standby mode and turns off when the power is on.

2.   ⏻ **ON / STANDBY button**
     • Press to turn the unit on or off.

3.   **Disc tray**
     • Place a disc when opening the disc tray.

4.   ⏏ **(open / close) button***
     • Press to open or close the disc tray.

5.   **Display**
     • Refer to "Front Panel Display" on page 11.

6.   ⏸ **(pause) button**
     • Press to pause playback.

7.   ⏹ **(stop) button**
     • Press to stop playback.

8.   ▶ **(play) button***
     • Press to start or resume playback.

9.   **Infrared sensor window**
     • Receive signals from your remote control so that you can control the unit from a distance.

10. **SD CARD slot**
     • Insert an SD Memory Card, and play back the contents in it.

Rear Panel
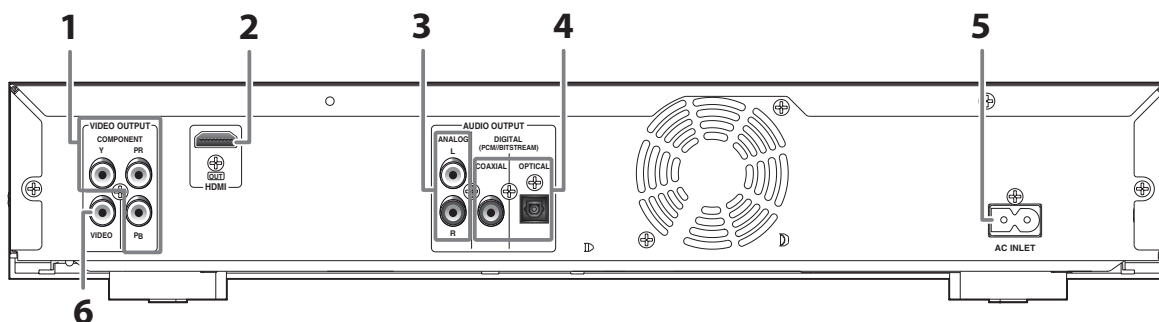
1.   **VIDEO OUTPUT (COMPONENT) jacks**
     • Use to connect a TV with component video inputs with an RCA component video cable.

2.   **HDMI OUT jack**
     • Use to connect a TV with an HDMI compatible port with an HDMI cable.

3.   **AUDIO OUTPUT (ANALOG L / R) jacks**
     • Use to connect a TV, an AV receiver / amplifier or other device with an RCA audio cable.

4.   **AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks**
     • Use to connect an AV receiver / amplifier, Dolby Digital / DTS decoder or other device with a digital audio coaxial / optical input jack with a digital audio coaxial / optical cable.

5.   **AC INLET Terminal**
     • Use to connect the AC outlet with the AC cord.

6.   **VIDEO OUTPUT (VIDEO) jack**
     • Use to connect a TV, an AV receiver or other device with an RCA video cable.

Note
• Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the unit.
• This unit does not have the RF modulator.

FUNCTIONAL OVERVIEW

Remote Control
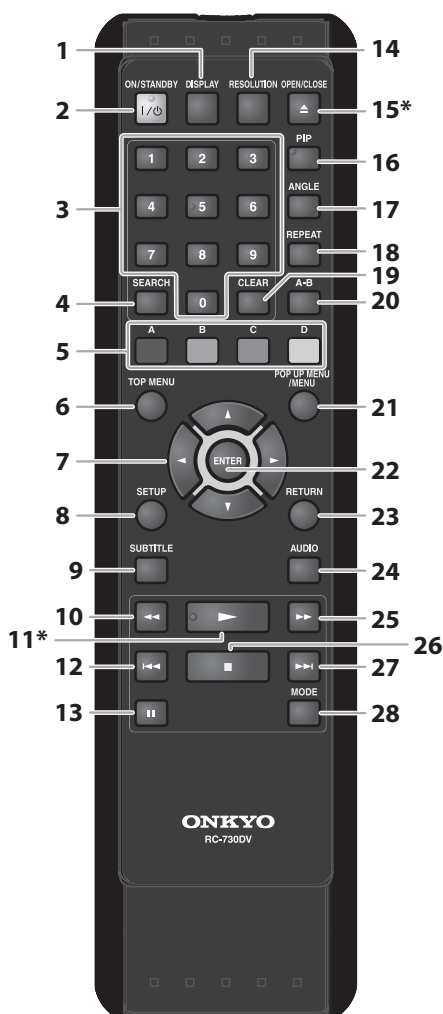
*   The unit can also be turned on by pressing these
    buttons.

1. DISPLAY button
   • Press to display the on-screen display menu.

2. ON/STANDBY I / ⏻ button
   • Press to turn the unit on or off.

3. Number buttons
   • Press to enter the title, chapter, track or file
     number.
   • Press to enter values in the input field.

4. SEARCH button
   • Press to display the search menu.

5. A / B / C / D button
   • Press to select items on some BD menus.

6. TOP MENU button
   • Press to display the top menu.

7. Cursor ▲ / ▼ / ◄ / ► buttons
   • Press to select items or settings.

8. SETUP button
   • Press to display the setup menu.

9. SUBTITLE button
   • Press to display the subtitle menu.

10. REV ◄◄ button
   • During playback, press to fast reverse the playback.

11. PLAY ► button*
   • Press to start playback or resume playback.

12. SKIP |◄◄ button
   • During playback, press once to return to the
     beginning of the current title, chapter, track or file.
   • During playback, press twice to return to the
     previous title, chapter or track or file.

13. PAUSE ❚❚ button
   • Press to pause playback.
   • When playback is in pause mode, press repeatedly
     to forward the playback step by step.

14. RESOLUTION button
   • Press to set the HDMI output mode.

15. OPEN/CLOSE ⏏ button*
   • Press to open or close the disc tray.

16. PIP button
   • Press to switch picture-in-picture feature on or off
     (only applicable to BD-video which supports the
     PIP function).

17. ANGLE button
   • Press to access various camera angles on the disc.

18. REPEAT button
   • Press to toggle between various repeat modes.

19. CLEAR button
   • Press to clear the information once entered, to
     clear the marker settings, or to cancel the
     programming for audio CD, etc.

20. A-B button
   • Press to play back a defined section between point
     A and B repeatedly.

21. POP UP MENU/MENU button
   • Press to display the pop-up menu / disc menu /
     file list.

22. ENTER button
   • Press to confirm or select menu items.

23. RETURN button
   • Press to return to the previously displayed menu
     screen.

24. AUDIO button
   • Press to display the audio menu.

25. FWD ►► button
   • During playback, press to fast forward the
     playback.
   • In pause mode, press to slow forward the playback.

26. STOP ■ button
   • Press to stop playback.

27. SKIP ►►| button
   • During playback, press to skip to the next title,
     chapter, track or file.

28. MODE button
   • During playback, press to display the picture
     adjustment menu.
   • In stop mode with BD inserted, press to display a
     menu for setting the BD audio mode.
   • In stop mode with audio CD, or MP3 files inserted,
     press to display menus for program and random
     playback.

FUNCTIONAL OVERVIEW

Installing the Batteries in the Remote Control

Install the batteries (AAx2) matching the polarity indicated inside battery compartment of the remote control.

1 Open the cover.
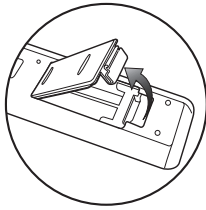
2 Insert batteries.
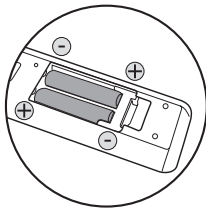
Make sure to match + and - on the batteries to the marks indicated in the battery compartment.

3 Close the cover.

Using a Remote Control

Keep in mind the following when using the remote control:

- Make sure that there are no obstacles between the remote control and the infrared sensor window on the unit.
- Remote operation may become unreliable if strong sunlight or fluorescent light is shining on the infrared sensor window of the unit.
- Remote control for different devices can interfere with each other. Avoid using remote control for other device located close to the unit.
- Replace the batteries when you notice a fall off in the operating range of the remote control.
- The maximum operable ranges from the unit are as follows.
  - **Line of sight**: approx. 23 feet (7m)
  - **Either side of the center:** approx. 16 feet (5m) within 30°
  - **Above:** approx. 16 feet (5m) within 15°
  - **Below:** approx. 10 feet (3m) within 30°

30°   30°

16 feet   23 feet   16 feet
(5m)   (7m)   (5m)

Note

Incorrect use of batteries can result in hazards such as leakage and bursting. Please observe the following:

- Do not mix new and old batteries together.
- Do not use different kinds of batteries together. Although they may look similar, different batteries may have different voltages.
- Make sure that the + and - ends of each battery match the indications in the battery compartment.
- Remove batteries from battery compartment that is not going to be used for a month or more.
- When disposing of used batteries, please comply with governmental regulations or environmental public instruction's rules that apply in your country or area.
- Do not recharge, short-circuit, heat, burn or disassemble batteries.

FUNCTIONAL OVERVIEW

Front Panel Display

• Brightness of the display can be adjusted. Refer to "Panel Display" in "FUNCTION SETUP" on page 41.

1. **Displays playback status icon. Refer to the table below.**
2. **Displays various kinds of information such as title number, elapsed time, repeat mode, etc.**

Playback status icon		Mode
Disc	**SD Memory Card**	
▶	▶	Playback is in progress
■	■	Stop mode
▌▌	▌▌	Pause mode
▶▶	▶▶	Fast forward mode
◀◀	◀◀	Fast reverse mode
▶	—	Slow forward mode
⟳		Appears while repeat function is set

Example of Display Message

▶ 1 01:23	Title is being played back. Indicating the current title number and the elapsed time.	LOAD	Loading a disc.
⟳ CHAPTER	Current chapter is in chapter repeat mode.	▶ Dolby D	Dolby Digital audio is being played back.

CONNECTIONS

Connection to the TV

• Make one of the following connections, depending on the capabilities of your existing device.

AUDIO CONNECTION	VIDEO CONNECTION			AUDIO / VIDEO CONNECTION
	Method 1	**Method 2** *1	**Method 3** *1	**Method 4** *1, 2
standard audio	**standard picture**	**better picture**	**best picture**	**best audio / picture**

TV

AUDIO IN
R   L

RCA audio cable   **and**

this unit

AUDIO O
ANALOG
L

R

AUDIO OUTPUT
(ANALOG L/R)

VIDEO IN

RCA video cable

VIDEO

VIDEO OUTPUT
(VIDEO)

COMPONENT VIDEO IN
Y (Green)
PB/CB (Blue)
PR/CR (Red)

RCA component video cable   **or**

(Green)   (Red)

VIDEO OUTPUT
COMPONENT
Y   PB

(Blue)

PB

VIDEO OUTPUT
(COMPONENT)

DVI IN

HDMI-DVI cable   **or**

OUT
HDMI

HDMI OUT

HDMI IN

HDMI cable   **or**

OUT
HDMI

*1 This unit is compatible with the progressive scan system. The feature provides you with the higher quality pictures than traditional output system does. To utilize this feature, a component or an HDMI connection is required. Refer to "HDMI Video Resolution" or "Component Output" setting on page 34 to set the video resolution.

*2 Analog audio connection is not required for this connection.

Supplied cables used in this connection are as follows:
• RCA audio cable (L/R) x 1
• RCA video cable x 1
Please purchase the rest of the necessary cables at your local store.

Note
• Connect this unit directly to the TV. If the RCA audio / video cables are connected to a VCR, pictures may be distorted due to the copy-protection system.
• If the picture is not output properly to the TV because of "HDMI Video Resolution" or "Component Output" setting, press and hold **[▶ (play)]** on the front panel for more than 5 seconds. "HDMI Video Resolution" and "Component Output" setting will be reset to the default automatically. You cannot change the video resolution during Blu-ray Disc playback. To change the resolution, stop playback.
• A simple 1-cable connection with a device having an HDMI (high-definition multimedia interface) jack allows digital transfer of both digital video signals and multi-channel audio signals.

CONNECTIONS

HDMI Output Mode and Actual Output Signals

Press **[RESOLUTION]** to change the resolution of the video signal being output from HDMI OUT jack. The video resolution changes as follows every time **[RESOLUTION]** is pressed.

Front Panel Display	HDMI Video Resolution
480P	**480 Progressive**

Press [RESOLUTION]

720P	**720 Progressive**

Press [RESOLUTION]

1080i	**1080 Interlaced**

Press [RESOLUTION]

1080P	**1080 Progressive**

Press [RESOLUTION]

1080P24	**1080 Progressive 24 frame**

Press [RESOLUTION]
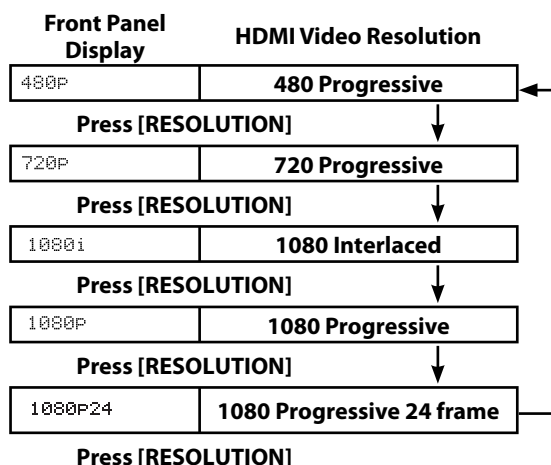
Copyright protection system

To play back the digital video images of a BD / DVD via an HDMI connection, it is necessary that both the unit and the TV (or an AV amplifier) support a copyright protection system called HDCP (high-bandwidth digital content protection system). HDCP is copy protection technology that comprises data encryption and authentication of the connected AV device. This unit supports HDCP. Please read the operating instructions of your TV (or AV amplifier) for more information.

Note

- When using HDCP-incompatible TV, the image will not be viewed properly.
- Among the devices that support HDMI, some devices can control other devices via the HDMI jack, this unit cannot be controlled by another device via the HDMI jack.
- The audio signals from HDMI OUT jack (including the sampling frequency, the number of channels and bit length) maybe limited by the device that is connected.
- Among the devices that support HDMI, some do not support audio output (e.g, projectors). In connections with device such as this unit, audio signals are not output from HDMI OUT jack.
- You cannot select the video resolutions which are not supported by the connected TV, except when this unit's HDMI OUT jack is connected to a DVI compatible display devices with an HDMI-DVI cable.
- For HDMI OUT jack to DVI connection, after you select an HDMI output mode, corresponding HDMI video resolution will be output. The HDMI video resolution you selected will be output even if the connected TV is not compatible with the HDMI video resolution. If there is no image displayed on the connected TV, please select another HDMI video resolution.
- Video and audio signals may be distorted temporarily when switching to / from the HDMI output mode.
- You cannot change the video resolution during Blu-ray Disc playback. To change the resolution, stop playback.
- You can also change the HDMI output mode from "HDMI Video Resolution" setting in "Video" menu. In this menu, you can confirm what HDMI video resolutions are supported by connected TV. Refer to page 34.
- In order to get natural and high quality film reproduction of 24-frame film material, use an HDMI cable (High Speed HDMI Cable is recommended) and select "1080p24" if the connected TV is compatible with 1080p24 frame input.
- Even if you set "HDMI Video Resolution" setting to "1080p24", when the contents of the disc is not compatible for 1080p24 frame, 1080p60 frame will be output.
- There is no output from VIDEO OUTPUT (VIDEO) and VIDEO OUTPUT (COMPONENT) jacks when you play back a BD that recorded 24-frame film material by HDMI output mode of 1080p24.
- It is recommended to use High Speed HDMI Cable (also known as HDMI category 2 cable) for better compatibility.

HDMI Audio Setting

When using HDMI connections make "HDMI Audio Out" setting in "Audio" menu according to the specifications of the device to be connected.

Device to be connected	"HDMI Audio Out" setting	Output HDMI audio signal
Device compatible with Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS or DTS-HD decoding	HDMI Multi (Normal)	Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS, or DTS-HD bitstream are output from HDMI OUT jack. Make the speaker settings on the connected AV amplifier, etc.
Device compatible with 3 or more channels of audio inputs (not Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS or DTS-HD compatible)	HDMI Multi (LPCM)	Multi-channel audio signals are output from HDMI OUT jack. Make the speaker settings with the speaker setting items appear after you select "HDMI Multi(LPCM)". Refer to page 36.
HDMI connection to a TV, and digital audio connection (coaxial/optical) to an AV amplifier.	Audio Mute	HDMI audio will be muted, and Dolby Digital / DTS bitstream or LPCM will be output from AUDIO OUTPUT (DIGITAL COAXIAL/OPTICAL) jacks depending on "Digital Out" setting. Refer to page 37.

■ Audio signals output from HDMI OUT jack

Disc type	Audio recording format	"HDMI Audio Out" setting	
		HDMI Multi(Normal)	HDMI Multi(LPCM)
BD-video	Dolby Digital	Dolby Digital*[1]	Multi LPCM
	Dolby Digital Plus	Dolby Digital Plus*[1]	Multi LPCM*[2]
	Dolby TrueHD	Dolby TrueHD*[1]	Multi LPCM*[3]
	DTS	DTS*[1]	Multi LPCM
	DTS-HD	DTS-HD*[1]	Multi LPCM*[4]
	LPCM	Multi LPCM	Multi LPCM
DVD-video	Dolby Digital	Dolby Digital	Multi LPCM
	DTS	DTS	Multi LPCM
	LPCM	Multi LPCM	Multi LPCM
audio CD/MP3		2ch LPCM	2ch LPCM
DTS-CD		DTS	Multi LPCM

*[1] If "BD Audio Mode" setting is set to "Mix Audio Output", audio will be output as Dolby Digital. Refer to page 36.

*[2] Outputs audio signals decoded from independent substream.

*[3] Outputs audio signals decoded from Dolby Digital stream.

*[4] Outputs audio signals decoded from DTS core stream.

• If the connected device is not compatible with the HDMI BITSTREAM, audio will be output as multi LPCM or 2-channel down-mixed LPCM depending on the capability of the connected device even if you select "HDMI Multi(Normal)" in "HDMI Audio Out" setting. Refer to page 36.

CONNECTIONS

Connection to an Audio System

• When you change the connections, all devices should be turned off.
• Refer to the manual accompanying external devices for more information.

2-Channel Analog Audio Connection
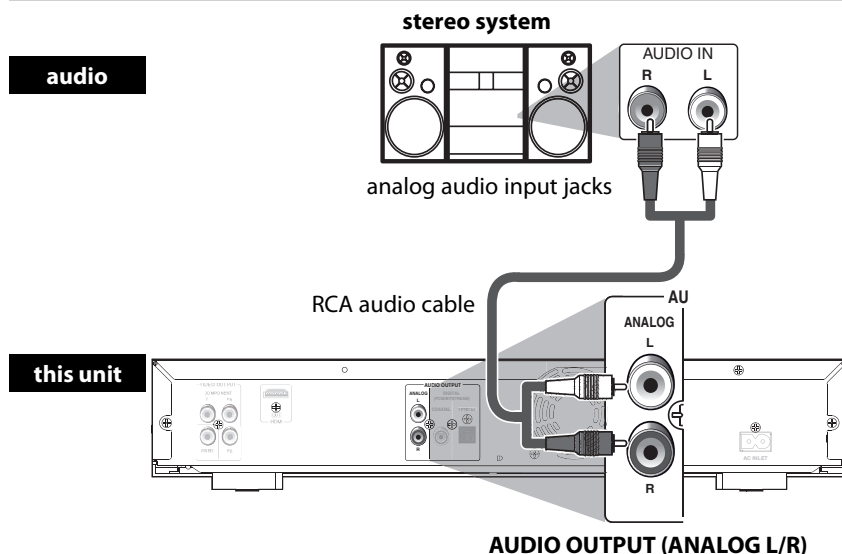
stereo system

audio

AUDIO IN
R   L

analog audio input jacks

RCA audio cable

this unit

AU

ANALOG
L

R

AUDIO OUTPUT (ANALOG L/R)

Digital Audio Connection

AV receiver / amplifier

audio

DIGITAL AUDIO INPUT
COAXIAL

DIGITAL AUDIO INPUT
OPTICAL

digital audio
coaxial input jack

digital audio
optical input jack

digital audio
coaxial cable

or

digital audio
optical cable

UDIO OUTPUT

DIGITAL
(PCM//BITSTREAM)

COAXIAL   OPTICAL

this unit

AUDIO OUTPUT (DIGITAL COAXIAL/OPTICAL)
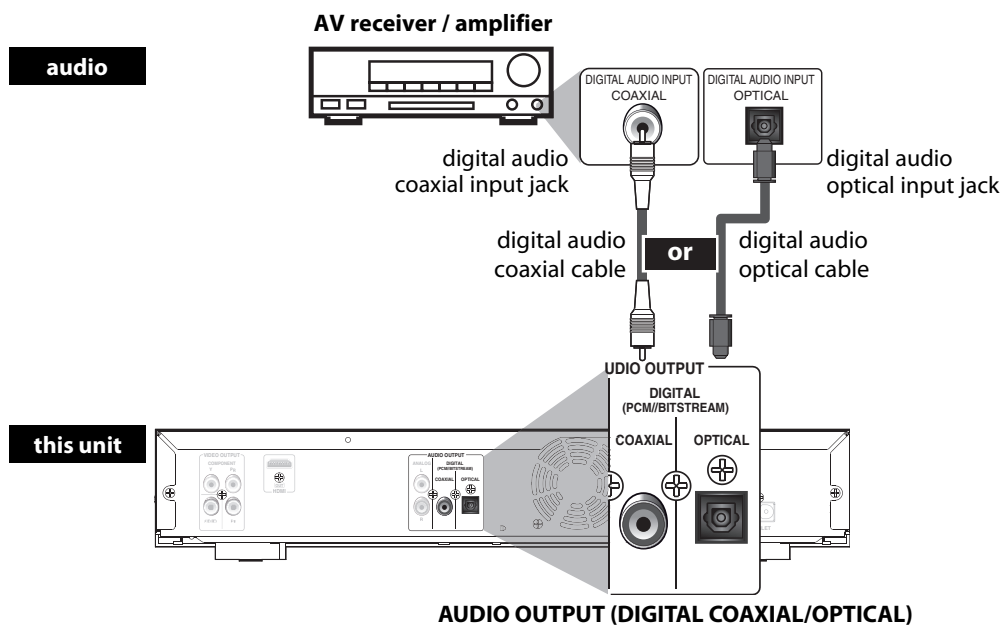
Supplied cables used in this connection are as follows:
• RCA audio cable (L/R) x 1
Please purchase the rest of the necessary cables at your local store.

Note for Digital Audio Optical Cable
• Digital audio optical cable may be damaged when bent at sharp angles. Endure cables are coiled in loops with a diameter of 6 inches (15cm) or more when storing them.
• Use a cable which is 9.8 feet (3m) or shorter.
• Insert cable plugs firmly into the connectors when making connections.
• If a plug has dust or is dirty, clean it with a soft cloth before inserting it into a connector.

CONNECTIONS

■ Audio signals output from AUDIO OUTPUT (DIGITAL COAXIAL/OPTICAL) jacks

The audio signals currently output from HDMI OUT jack will be output from AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks as well, except that Dolby Digital signal will be output instead of Dolby Digital Plus and Dolby TrueHD, and DTS signal will be output instead of DTS-HD.

When "Audio Mute" is selected in "HDMI Audio Out" setting, audio signals output from HDMI OUT jack will be muted and the audio signals output from AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks change depending on "Digital Out" setting.

To set "Digital Out" setting, select "Audio Mute" in "HDMI Audio Out" setting.

Disc type	Audio recording format	"Digital Out" setting	
		Bitstream	LPCM
BD-video	Dolby Digital	Dolby Digital	2ch Downmix LPCM
	Dolby Digital Plus	Dolby Digital	2ch Downmix LPCM
	Dolby TrueHD	Dolby Digital	2ch Downmix LPCM
	DTS	DTS*	2ch Downmix LPCM
	DTS-HD	DTS*	2ch Downmix LPCM
	LPCM	2ch Downmix LPCM*	2ch Downmix LPCM
DVD-video	Dolby Digital	Dolby Digital	2ch Downmix LPCM
	DTS	DTS	2ch Downmix LPCM
	LPCM	2ch Downmix LPCM	2ch Downmix LPCM
audio CD/MP3		2ch LPCM	2ch LPCM
DTS-CD		DTS	2ch Downmix LPCM

* For BD titles with secondary or interactive audio, these audio will be output as Dolby Digital when all the conditions listed below are met:
  • When "BD Audio Mode" setting is set to "Mix Audio Output".
  • When "HDMI Audio Out" setting is set to "Audio Mute".
  • When "Digital Out" setting is set to "Bitstream".
If BD titles do not have secondary or interactive audio, the audio will be output as shown in the table.

• This table applies only when HDMI cable is not connected or "Audio Mute" is selected in "HDMI Audio Out" setting.

Note
• In order to output LPCM signal from AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks while outputting the HDMI audio signal, set "BD Audio Mode" setting to "Mix Audio Output" and set "HDMI Audio Out" setting to "HDMI Multi(LPCM)".

Connecting the AC Cord

After you made all necessary connections, connect the AC cord to the AC INLET. Then connect the AC cord to the AC outlet.
Insert the plugs securely. Incomplete connections will result in the generation of noise.

this unit   AC outlet

AC cord   AC 120V, 60 Hz
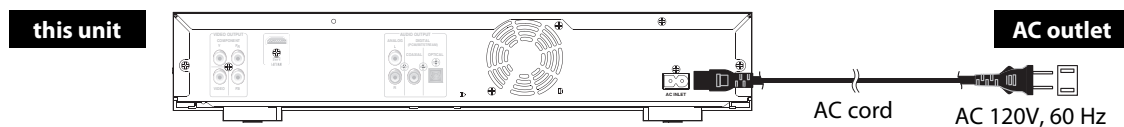
Supplied cables used in this connection are as follows:
• AC cord x 1

INFORMATION ON PLAYBACK

Before you start playing back a disc, read the following information.

Playable Discs and Files

This unit is compatible to play back the following discs / files. To play back a disc / file, make sure that it meets the requirements for region codes and color systems as described below. You can play back discs that have the following logos. Other disc types are not guaranteed to play back.

Playable discs	Logos
Blu-ray Disc - BD-video (single / double layer) - BD-RE* ver. 3 (single / double layer) (Recorded in BDMV format) - BD-R (single / double layer) (Recorded in BDMV format) (Unclosed discs may not be played back.)	Blu-ray Disc
DVD-video	DVD VIDEO
DVD+RW (single layer)	RW DVD+ReWritable
DVD+R (single / double layer) (finalized video mode discs only)	RW DVD+R / RW DVD+R DL
DVD-RW (single layer) (finalized video mode discs only)	DVD RW
DVD-R (single / double layer) (finalized video mode discs only)	DVD R
CD-DA (audio CD)	disc DIGITAL AUDIO
CD-RW	disc DIGITAL AUDIO (ReWritable) / disc (ReWritable)
CD-R	disc DIGITAL AUDIO (Recordable) / disc (Recordable)
DTS-CD	—

* Due to the intentional progression of the Blu-ray Disc format by its standard setting authority, the company cannot guarantee or warrant the playability of future extensions of the Blu-ray Disc format with this product.

Playable files	Media
MP3	DVD, CD-RW/-R, SD Memory Card (including SDHC), miniSD Card, microSD Card

Readable cards	Playable files / data
SD Memory Card (8MB - 2GB)	MP3, picture-in-picture commentary, subtitles or other extras for BD-ROM Profile 1 ver.1.1
SDHC Memory Card (4GB)	
miniSD Card (8MB - 2GB)	
microSD Card (8MB - 2GB)	

Note for SD Memory Cards

- Do not remove the SD Memory Card or turn off the unit while the contents of the card is in playback. It may result in malfunction or loss of the card's data.
- Please keep the SD Memory Cards in their cases when you are not using them.
- Do not try to open or modify the card.
- Do not touch the terminal surface with your fingers or any metals.
- Do not attach additional labels or stickers to cards.
- Do not remove the label of the SD Memory Cards.
- This unit supports SD Memory Card with FAT12/FAT16 file system, and SDHC Memory Card with FAT32 file system.
- This unit may not read the SD Memory Cards formatted on computer. If that is the case, please reformat the SD Memory Cards in this unit and try again.
- This unit does not support miniSDHC and microSDHC Memory Card.
- For miniSD Card and microSD Card, the adapter is necessary.

miniSD Card adapter / miniSD Card / microSD Card adapter / microSD Card
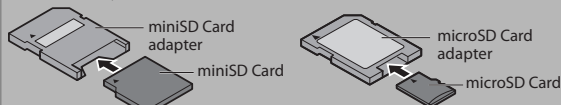
- Portions of this product are protected under copyright law and are provided under license by ARIS / SOLANA / 4C.

Unplayable Discs and Files

The following discs will not be played back in this unit.

- CD-ROM
- CD-I (compact disc-interactive)
- DVD-RAM
- VSD (video single disc)
- DVD-audio
- video CD
- HD DVD
- SVCD
- unfinalized disc
- DVD / CD / SD Memory Card contains JPEG, Windows Media™ Audio files and DivX®
- DVD-RW/-R recorded in VR mode or non compatible recording format.
- super audio CD - Only the sound on the CD layer can be heard. The sound on the high-density super audio CD layer cannot be heard.
- Playability of dual discs are not guaranteed.
- BD-RE / -R recorded in BDAV format or non compatible recording format.

Color Systems

BD-video and DVD-video are recorded in different color systems throughout the world. The most common color system is NTSC (which is used primarily in the United States and Canada).

This unit employs NTSC color system, so the disc you play back must be recorded in the NTSC system. You cannot play back the disc recorded in other color systems.

Region Codes

This unit has been designed to play back BD-video with region "A" and DVD-video with region "1" or "ALL". You cannot play back BD-video or DVD-video that are labeled for other regions. Look for the symbols on the right on your BD-video or DVD-video.

If these region symbols do not appear on your BD-video or DVD-video, you cannot play back the disc in this unit. The letter or number inside the globe refers to region of the world. A BD-video or DVD-video labeled for a specific region can only be played back in the unit with the same region code.

BD-video

DVD-video

Structure of Disc / SD Memory Card Contents

The contents of BD/DVD are generally divided into titles. Titles may be further subdivided into chapters.
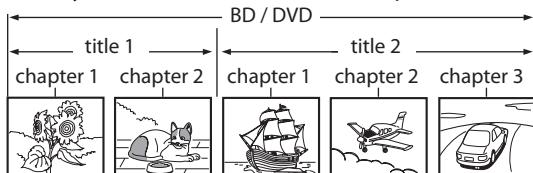
audio CD are divided into tracks.

Data discs or SD Memory Cards containing MP3 are divided into folders, and the folders are subdivided into files.
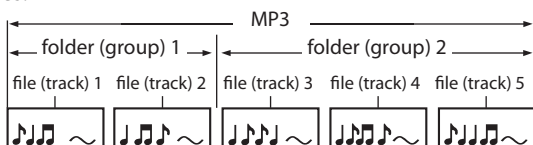
On-Screen Display

You can check information about the current disc by pressing **[DISPLAY]**.

To call the on-screen display menu, press **[DISPLAY]** during playback. Every time you press **[DISPLAY]**, the information changes. Depending on the media, available information varies.

BD-V

off ➜ Title / Chapter information
➜ Title information (elapsed time)
➜ Title information (remaining time)
➜ HDMI information ➜ off

DVD-V

off ➜ Chapter information (elapsed time)
➜ Chapter information (remaining time)
➜ Title information (elapsed time)
➜ Title information (remaining time)
➜ Bit rate information ➜ HDMI information ➜ off

CD

off ➜ Track information (elapsed time)
➜ Track information (remaining time)
➜ Disc information* (elapsed time)
➜ Disc information* (remaining time)
➜ HDMI information ➜ off

(*not available during program / random playback)

MP3

off ➜ File name information
➜ File information (elapsed time)
➜ HDMI information ➜ off

• For audio CD and MP3, during program or random playback, the indication will be displayed after the track / file information.

INFORMATION ON PLAYBACK

■ Chapter information

<Title / Chapter information for BD>

```
[1]        [2]         [3]   [4]  [5]
TITLE  [ 1 ]  CHAPTER [ 1 / 10 ]  [↻]  [🎥]  [▶]
```

<Chapter information for DVD>

```
      [2]       [6]
CHAPTER [ 3 / 5 ]  [ 0 : 01 : 02 ]        🎥  ▶
```

[1] **Current title number**
[2] **Current chapter number / Total number of chapters**
[3] **Current repeat setting (Only when repeat setting is active)**
(C: Chapter repeat, T: Title repeat, AB : A-B repeat)
[4] **Indicates that the multi camera angle images are available on the scene**
[5] **Current playback status**
[6] **Elapsed time / Remaining time of the current chapter**

■ Title information

```
    [1]       [2]
TITLE [ 3 / 5 ]  [ 0 : 01 : 02 ]        🎥  ▶
```

[1] **Current title number / Total number of titles**
[2] **Elapsed time / Remaining time of the current title**

■ Bit rate information

```
       [1]                    [2]
BITRATE [ ▮▮▮▮▮▮ ]          [ L1 ]  🎥  ▶
```

[1] **Bit rate (The amount of video data currently being read)**
[2] **Layer number (Only for 2-layered discs) (L0: Layer 0 is played back. L1: Layer 1 is played back)**

■ Track / File information

```
    [1]        [2]         [3]  [4]
TRACK [ 1 / 14 ]  [ 0 : 00 : 51 ]  [SD]  [↻]      ▶
```

[1] **Current track (file) number / Total number of track (file)**
[2] **Elapsed time / Remaining time of the current track**
[3] **Indication of SD Memory Card playback**
[4] **Current repeat setting**
(Only when repeat setting is active)
(T: Track / File repeat, G: Group repeat, A: All repeat, AB: A-B repeat)

■ Disc information

```
    [1]        [2]
ALL [ 1 / 14 ]  [ 0 : 00 : 51 ]           [↻]      ▶
```

[1] **Current track number / Total number of tracks**
[2] **Elapsed time / Remaining time of the current disc**

■ File name information

```
       [1]
M🎵   File_name_001
```

[1] **Media icon and file name**

   🎵 : MP3 file

■ HDMI information

```
                        [1]      [2]
HDMI  Video Info    :  [YCbCr/] [1080i]
      Audio Info    :  [PCM]
      Max Channel :  [2 ch]
                        [3]  [4]
```
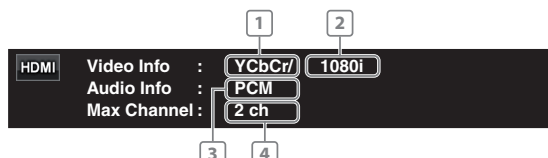
[1] **HDMI video format**
[2] **Resolution of the HDMI output image**
[3] **HDMI audio format**
[4] **Maximum numbers of audio channels that can be accepted by the connected device**

Note
• If the HDMI cable is not connected, "---" will be displayed for HDMI information.

Playback

BD-V   DVD-V
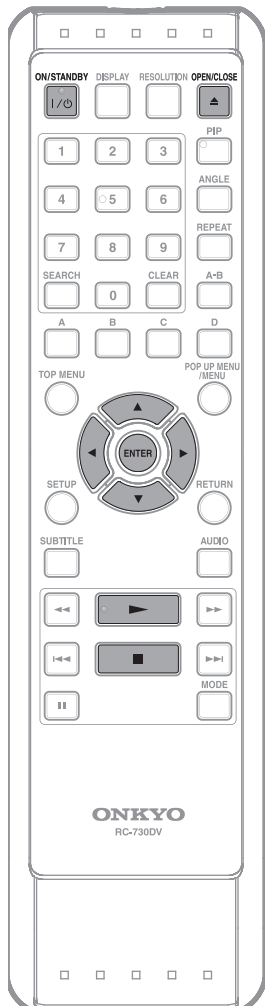
1 Press **[ON /STANDBY I / ⏻]**.

2 Turn on the TV and select the appropriate input on the TV to which the unit is connected.

3 Press **[OPEN / CLOSE ▲]** to open the disc tray.

4 Place the disc on the disc tray with its label side facing up.

Align the disc to the disc tray guide.
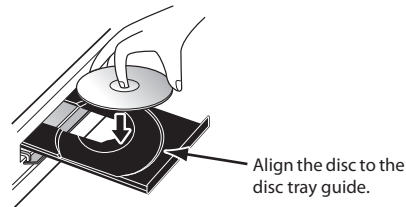
5 Press **[OPEN / CLOSE ▲]** to close the disc tray.

It may take a while to load the disc.

Some discs may start playback automatically.

6 Press **[PLAY ▶]** to start playback.
For many of BD-video and DVD-video, a menu screen may appear.
In this case, use **[▲ / ▼ / ◀ / ▶]** to select the desired item, then press **[ENTER]**.

7 Press **[STOP ■]** once to stop playback temporarily.
Refer to "Resume Playback" on page 21.
To eject the disc:
Press **[OPEN / CLOSE ▲]** to open the disc tray, then remove the disc before turning off the unit.

Note
- ⊘ may appear at the top-right on the TV screen when the operation is prohibited by the disc or this unit.
- During the playback of 2-layered disc, pictures may stop for a moment. This happens when the 1st layer switches to the 2nd layer. This is not a malfunction.
- The operation may vary when you play back BD-video and DVD-video with disc menu. Refer to the manual accompanying the disc for details.

BASIC PLAYBACK

Operations Using Title Menu, Disc Menu, and Pop-up Menu

BD-V   DVD-V

Many of BD-video and DVD-video disc contains title menu (BD-video / DVD-video), disc menu (DVD-video) or pop-up menu (BD-video) which guides you through the available functions in the disc. The contents of the menus may differ depending on the discs.

Title menu (BD-video / DVD-video)
1 Press [TOP MENU].
 • The title menu will appear.

2 Use [▲ / ▼ / ◄ / ►] to select an item, then press [ENTER].

3 Press [TOP MENU] to exit.

Disc menu (DVD-video)
1 Press [POP UP MENU / MENU].
 • The disc menu will appear.

2 Use [▲ / ▼ / ◄ / ►] to select an item, then press [ENTER].

3 Press [POP UP MENU / MENU] to exit.

Pop-up menu (BD-video)
• This is a special feature available for some BD-video. When you press **[POP UP MENU / MENU]**, a menu pops out on the TV screen while the contents still play back.

1 During the playback of BD-video, press [POP UP MENU / MENU].
 • The pop-up menu will appear.

2 Use [▲ / ▼ / ◄ / ►] to select an item, then press [ENTER].

3 Press [POP UP MENU/MENU] to exit.

Note
• Contents of menus and corresponding menu operations may vary among discs. Refer to the manual accompanying the disc for details.

Pause

1 During playback, press [PAUSE❚❚].
 • Playback will be paused.

2 Press [PLAY ►] to return to normal playback.

Note
• For BD and DVD, set "Still Mode" setting to "Field" in "Video" menu if pictures in the pause mode are blurred (refer to page 35).

Resume Playback

1 During playback, press [STOP ■].
 • Resume message will appear on the TV screen.

Resume ON

Press 'PLAY' to play from here. To play the beginning, press 'STOP' first and then 'PLAY'.
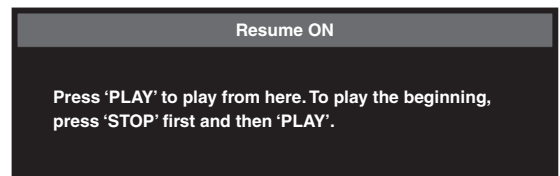
e.g.) BD

2 Press [PLAY ►].
 • In a few seconds, playback will resume from the point at which it stopped last. To cancel the resume playback and start playback the disc from the beginning, press **[STOP ■]** again in stop mode.

Note
• Resume playback may not be available for the BD that supports Java applications (BD-Java).
• The resume information will be saved even when the power is turned off.
• If you open the disc tray or press **[STOP ■]** again in stop mode, the resume information will be cleared.
• If you switch between "Disc" mode and "SD Memory" mode, the resume information will be cleared.
• If you change "BD Rating Level" or "DVD Rating Level" setting in "Parental" menu, the resume information will be cleared.
• For SD Memory Card, if you open the disc tray or turned off the power, resume information will be cleared.

Playing Back an audio CD and a Disc with MP3 Files

CD MP3

1 **Insert an audio CD or a disc with MP3 files.**
  • The file list will appear on the TV screen.
  • If file list does not appear automatically, press **[POP UP MENU / MENU]**.
  • Press **[POP UP MENU / MENU]** to exit and resume the file list.

2 **Use [▲ / ▼] to select a desired folder or file, then press [ENTER].**
Use [◄ / ►] to go back and forward between the hierarchies.
  • If you press **[ENTER]** on the desired file, playback will start.

```
         1        2       3       4    5

  File List
  ┌────────────┐
  │ MP3_DISC   │
  └────────────┘                          ▲

      📁  Folder_1
      📁  Folder_2
      📁  Folder_3
      🎵  MP3_A
      🎵  MP3_B
      🎵  MP3_C
      🎵  MP3_D
                                    2 / 4  ▼

  📁  Folder_1
```
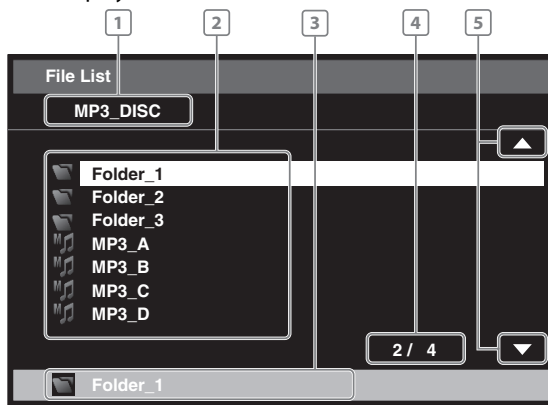
e.g.) MP3

1 **audio CD:** **"CD-DA" will be displayed.**
   MP3:   **Current folder name (Disc or SD Memory Card name will be displayed for the top of the hierarchies.)**
2 **audio CD:** **List of the track number and time.**
   MP3:   **List of the file / folder names in the current folder / disc**
3 **audio CD:** **Selected track number and time.**
   MP3:   **Selected file / folder name**
4 **Current page / Total page number**
5 **Indication of previous / next page**
   • Use **[SKIP |◄◄ / ►►|]** to go back and forward between the pages.
   • Press **[TOP MENU]** to return to the first item.

Icons:

📁 : Folder

🎵 : audio CD track

🎵 : MP3 file

It is recommended that MP3 files to be played back in this unit are recorded under the following specifications:
• Sampling frequency: 32 kHz, 44.1 kHz or 48 kHz.
• Constant bit rate: 112 kbps - 320 kbps

Note
• The system can recognize up to 255 folders / 999 files for CD, 999 folders / 9999 files for DVD and SD Memory Card.
• The name of folder and file can be displayed up to 28 characters. Unrecognizable characters will be replaced with asterisks.
• The 9th and deeper hierarchies cannot be displayed for CD and the 10th and deeper hierarchies cannot be displayed for DVD and SD Memory Card.
• Files whose extension is other than ".mp3 / .MP3" will not be listed.
• Some unplayable folders or files may be listed due to the recording status.
• This unit recognizes up to 8 characters of file name in the SD Memory Card. Characters after 9th will not be displayed.
• For the SD Memory Card playback, refer to "Reading the SD Memory Card" on pages 23-24.

Reading the SD Memory Card

MP3

You can play back the MP3 files in an SD Memory Card. With the SD Memory Card, you can also enjoy the special additional contents for BD-ROM Profile 1 ver.1.1 which can be downloaded from the internet. You can store the contents on an SD Memory Card via computer and play them back with the BD-video. For more information about the special additional contents, please refer to the instruction book that came with the disc.

■ **Setting the media mode**

1 In stop mode, press [SETUP].

2 Use [▲ / ▼] to select 🎛 , then press [ENTER].

Custom

Language
Video
Audio
Parental
Others

3 Use [▲ / ▼] to select 🔲 , then press [ENTER].

Others

Angle Icon   On
Auto Power Off   On
Panel Display   Auto
HDMI CEC   On
Media Select   Disc

4 Use [▲ / ▼] to select "Media Select" setting.

5 Press [ENTER] repeatedly to select "SD Memory".

Others

Angle Icon   On
Auto Power Off   On
Panel Display   Auto
HDMI CEC   On
Media Select   SD Memory

• This will set the unit to "SD Memory" mode. To play back the contents in any discs, exit "SD Memory" mode by selecting "Disc".

6 Press [SETUP] to exit.

Inserting the SD Memory Card and Playback

1 **Insert an SD Memory Card into the SD card slot until it clicks with the label facing up.**

The file list will appear.

2 **Follow the step 2 in "Playing Back an audio CD and a Disc with MP3 Files" on page 22.**

Removing the SD Memory Card

1 **In stop mode, push the SD Memory Card and then slowly remove your finger.**

2 **Grasp the card and pull it out from the SD CARD slot.**

Compatible Cards:
- SD Memory Card (8MB - 2GB)
- SDHC Memory Card (4GB)
- miniSD Card (8MB - 2GB)
- microSD Card (8MB - 2GB)
• For miniSD Card and microSD Card, the adapter will be required.

Note
• Do not remove the card during its playback.
• This unit supports SD Memory Card with FAT12 / FAT16 file system, and SDHC Memory Card with FAT32 file system.
• Do not delete the folders or files in the SD Memory Card with your computer. This unit might not read the SD Memory Card.
• This unit recognizes up to 8 characters of file name in the SD Memory Card. Characters after 9th will not be displayed.

SPECIAL PLAYBACK

Fast Forward / Fast Reverse

BD-V   DVD-V   CD   MP3

1 During playback, press [FWD ▶▶] repeatedly for fast forward.

During playback, press **[REV ◀◀]** repeatedly for fast reverse.

Every time you press **[FWD ▶▶]** or **[REV ◀◀]**, the playback speed will change.

2 Press [PLAY ▶] to return to normal playback.

Note
- For BD and DVD, the approximate speed for the fast forward or reverse playback is 1 (2x), 2(8x), 3 (20x), 4 (50x), and 5 (100x).
- For audio CD, the approximate speed is 1 (2x), 2 (8x), and 3 (30x).
- For audio CD, fast forward / fast reverse search between different tracks are not available during program and random playback.
- For MP3, fast forward / fast reverse search between different files are not available.

Slow Forward Playback

BD-V   DVD-V

1 During playback, press [PAUSE ❙❙], then press [FWD ▶▶].

Every time you press **[FWD ▶▶]**, playback speed will change.

2 Press [PLAY ▶] to return to normal playback.

Note
- The approximate speed for the slow forward playback is 1(1/16x), 2(1/8x), 3(1/2x).
- Only slow forward is available.
- Set "Still Mode" setting to "Field" in "Video" menu if pictures in the slow forward playback mode are blurred (refer to page 35).

Step by Step Playback

BD-V   DVD-V

1 In pause mode, press [PAUSE ❙❙] repeatedly.

Every time you press **[PAUSE ❙❙]**, playback will advance one step at a time.

2 Press [PLAY ▶] to return to normal playback.

Note
- Only step by step forward is available.
- Set "Still Mode" setting to "Field" in "Video" menu if pictures in step by step playback mode are blurred (refer to page 35).

Repeat Playback

Available repeat functions vary depending the discs.

1 During playback, press [REPEAT] repeatedly to select the desired repeat mode.

Repeat mode	Available media
Chapter repeat	
The current chapter will be played back repeatedly.	BD-V DVD-V
Title repeat	
The current title will be played back repeatedly.	BD-V DVD-V
Track repeat	
The current track or file will be played back repeatedly.	CD MP3
Group repeat	
The current folder will be played back repeatedly.	MP3
All repeat	
All tracks in the media will be played back repeatedly.	CD MP3

Note
- The repeat setting will be canceled when you stop playback.
- The chapter, title, track or group repeat will be cleared when moving to other chapter, title, track / file or folder.
- Repeat playback does not function during A-B repeat playback.
- Chapter and title repeat are not available with some scenes.

SPECIAL PLAYBACK

A-B Repeat

BD-V   DVD-V   CD

You can play back the specific part (between point A and point B) repeatedly.

1 **During playback, press [A-B] at the desired starting point A.**

2 **During playback, press [A-B] at the desired ending point B.**

As soon as you set the point B, the part between point A and point B will start playback repeatedly.
• To cancel the A-B repeat, press **[A-B]** again.

Note
• Point B should be set within the same title or track as point A.
• A-B repeat is not available with some scenes.
• To cancel the A point which was set, press **[CLEAR]**.
• A-B repeat does not function during chapter, title, track, group or all repeat playback.

PIP (Picture in Picture) (BONUSVIEW) Setting

BD-V

Some BD-video have the PIP (picture-in-picture) function which enables you to display the secondary video in the primary video. You can call up the secondary video by pressing **[PIP]** whenever the scene contains the secondary video.

primary video
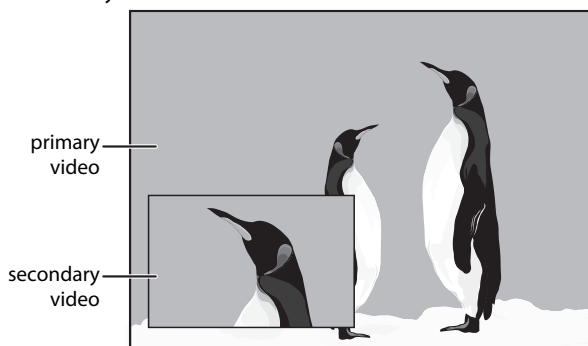
secondary video

1 **During playback, press [PIP].**

PIP information will appear.

2 **Use [▲ / ▼] to select the secondary video you want.**
• The secondary video will be displayed and the secondary audio will be output.

3 **Press [RETURN] or [PIP] to remove the PIP information.**

Note
• The secondary audio will not be output when the secondary audio is set to "Off" or when "BD Audio Mode" is set to "HD Audio Output". Refer to "Switching Audio Soundtrack" on page 29 and "Setting the BD Audio Mode" on page 30.
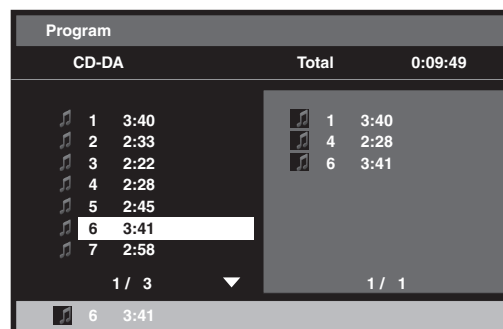
Program Playback

CD   MP3

You can play back the disc in your desired order.

1 **In stop mode, press [MODE].**
• The program screen will appear.

2 **Use [▲ / ▼] to select a track / file, then press [ENTER].**

Program			
CD-DA		Total	0:09:49

♪	1	3:40		♫	1	3:40
♪	2	2:33		♫	4	2:28
♪	3	2:22		♫	6	3:41
♪	4	2:28				
♪	5	2:45				
♪	6	3:41				
♪	7	2:58				
	1 / 3	▼			1 / 1	

♫	6	3:41

e.g.) audio CD

• For MP3 files, use **[▲ / ▼]** to select a folder, then press **[ENTER]** first, and then use **[▲ / ▼]** to select a file, then press **[ENTER]**.
• Press **[CLEAR]** to erase the last file of the program.
• Use **[▲ / ▼]** to select "All Clear" at the bottom of the list to erase all the tracks / files in the program.
• The programmed tracks / files is displayed in the right hand screen.
• If the entire program cannot be displayed on the TV screen, "▼" or "▲" appears.
• Use **[◄ / ►]** to go back forward between the hierarchy of folders.
• If 8 or more tracks / files were set in a program, use **[SKIP |◄◄ / ►►|]** to see all the tracks / files.

3 **Press [PLAY ►] to start program playback.**
• Program playback will start.

Note
• During program playback, press **[STOP ■]** once to set the resume point, and then press **[PLAY ►]** to resume program playback from where **[STOP ■]** was pressed (audio CD) or from beginning of the file where **[STOP ■]** was pressed (MP3).
• During program playback, press **[STOP ■]** twice to display the program screen. To go back to the normal program playback, press **[RETURN]** to exit from the program screen, then press **[PLAY ►]**.
• If you open the disc tray, remove the SD Memory Card or turned off the power, the program will be cleared.
• Up to 99 tracks / files can be entered.
• To repeat the current track / file in the program, press **[REPEAT]** repeatedly until " ⟳ Track" appears during playback. To repeat the entire program, press **[REPEAT]** repeatedly until " ⟳ All" appears during playback.
• Playback from a desired track / file and random playback are not available during program playback.
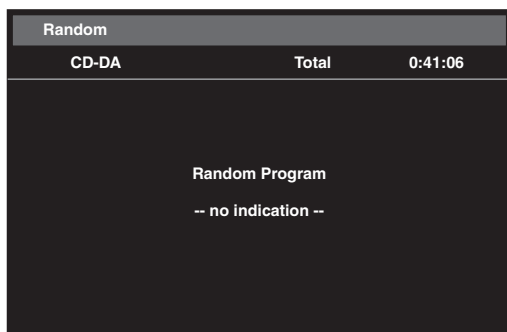
SPECIAL PLAYBACK

Random Playback

CD   MP3

This function shuffles the playback order of tracks / files.

1 In stop mode, press [MODE] twice.
• The random screen will appear.

Random		
CD-DA	Total	0:41:06

Random Program

-- no indication --

e.g.) audio CD

2 Press [PLAY ▶] to start random playback.

Note
• During the random playback, press **[STOP ■]** once to set the resume point, and then press **[PLAY ▶]** to resume random playback from where **[STOP ■]** was pressed (audio CD) or from beginning of the file where **[STOP ■]** was pressed (MP3).
• During random playback, press **[STOP ■]** twice to display the random playback screen. To cancel the random playback, press **[MODE]** when the random playback screen is displayed.
• To repeat the current track / file in the random selection, press **[REPEAT]** repeatedly until "⟳ Track" appears during playback. To repeat the entire random selection press **[REPEAT]** repeatedly until "⟳ All" appears during playback.
• You cannot go back to the previous track / file during random playback.

Camera Angle

BD-V   DVD-V

Some BD-video and DVD-video contain scenes which have been shot simultaneously from various angles. You can change the camera angle when 📹 appears on the TV screen.

1 During playback, press [ANGLE].
• The selected angle will be displayed on the display bar at the top of the TV screen.

2 Use [▲ / ▼] to select your desired angle.

(📹)	1 / 3	⬍

Note
• If "Angle Icon" setting is "Off" in "Others" menu, 📹 will not appear. Refer to page 41.

SEARCH

Using [SKIP |◄◄ / ►►|]

1 During playback, press [SKIP ►►|] to move to the next track. Press it repeatedly to skip to subsequent tracks. Press [SKIP |◄◄] once to go back to the beginning of the current track. Press it repeatedly to go to the previous tracks.

Note
• For BD and DVD, if title contains no chapters, **[SKIP |◄◄ / ►►|]** changes the title.

Using [SEARCH]

By using **[SEARCH]**, you can select following search modes.

Search mode	Available media
CHAPTER / TITLE **Chapter** / **Title** search	BD-V DVD-V
TRACK **Track** search	CD MP3
TIME **Time** search	BD-V DVD-V CD
MARKER **Marker** search	BD-V DVD-V CD

1 During playback, press [SEARCH] repeatedly until your desired search mode appears.

2 Enter the desired chapter, title, track, file number or time to search for using [the Number buttons].
• Chapter, title, track or time search will start.
• Press **[CLEAR]** to erase an incorrect input.

Note
• During program and random playback, search functions are not available except the search using **[SKIP |◄◄ / ►►|]**.
• Time search is available only in the same track, file or title.
• For BD, chapter and time search are available only during playback.

■ Marker search

This feature allows you to assign a specific point on a title or track to be called back later.

1 During playback, press [SEARCH] repeatedly until the marker setting menu appears.

2 Use [◄ / ►] to select a marker number (1-9).

MARKER	1 2 3 4 5 6 7 8 9 AC
TITLE	_ _ _ _ _ : _ _ : _ _
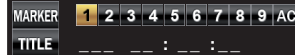
3 When the disc reaches the point at which you want to set a marker, press [ENTER].
• The title or track and elapsed playback time will appear on the TV screen.

4 Press [SEARCH] or [RETURN] to exit.

5 To return to the marker later, call the marker setting by pressing [SEARCH] repeatedly during playback or in stop mode, and use [◄ / ►] to select a desired marker, then press [ENTER].

Note
• Opening the disc tray, turning off the power or selecting " AC " at step 2 and pressing **[ENTER]** will erase all markers.
• To clear a marker, use **[◄ / ►]** to select the marker number to be cleared and press **[CLEAR]**.
• You can mark up to 9 points.
• For BD, marker search between different titles is not available.
• For BD, you can return to the maker only during playback.

SPECIAL SETTINGS

You can select the format of audio and video as you prefer depending on the contents of the disc you are playing back.

Switching Subtitles

Some BD and DVD may have subtitles in 1 or more languages. For commercially available discs, the supported languages can be found on the disc case. Follow the steps below to switch the subtitle languages during playback.

BD-V

1 During playback, press [SUBTITLE] repeatedly to display "Primary", "Secondary" or "Subtitle Style".

"Primary":	Sets the subtitle for the primary video.
"Secondary":	Sets the subtitle for the secondary video.
"Subtitle Style":	Sets style of the subtitle.

2 Use [▲ / ▼] to select your desired subtitle or style.

🖵	Primary	1 JPN / 4 ⬍

• Use **[◄ / ►]** to switch between current subtitle setting and "Off".

3 Press [SUBTITLE] repeatedly to exit.

DVD-V

1 During playback, press [SUBTITLE].

2 Use [▲ / ▼] to select your desired subtitle.

🖵	1 ENG / 4	⬍

• Use **[◄ / ►]** to switch between current subtitle setting and "Off".

3 Press [SUBTITLE] to exit.

Note
• Some discs will only allow you to change the subtitles from the disc menu or pop-up menu. Press **[TOP MENU]** or **[POP UP MENU / MENU]** to display the disc menu or pop-up menu.
• If 4-digit-language code appears in the subtitle menu, refer to "LANGUAGE CODE" on page 45.
• If the disc has no subtitle language or subtitle style, "Not Available" will be displayed on the TV screen.
• During playback of the secondary video, the primary subtitle setting is not available except when there is no subtitle for the secondary video.
• Secondary subtitle setting is only available during playback of the secondary video.
• If you choose a language that has a 3-letter-language code, the code will be displayed every time you change the subtitle language setting. If you choose any other Languages, "---" will be displayed instead (refer to page 45).

Switching Audio Soundtrack

Some BD and DVD contain multiple audio streams. Those are often in different audio languages or audio formats. For BD, available audio varies depending on "BD Audio Mode" setting. Refer to page 36 for more information.

BD-V

1 During playback, press [AUDIO] repeatedly to display "Primary" or "Secondary".

"Primary":	Sets the audio for the primary video.
"Secondary":	Sets the audio for the secondary video.

2 Use [▲ / ▼] to select your desired audio stream channel.

🔊①	Primary	1 JPN Dolby D 2ch / 2 ⬍

• For "Secondary", use **[◄ / ►]** to switch between current audio setting and "Off".

3 Press [AUDIO] repeatedly to exit.

DVD-V *CD*

1 During playback, press [AUDIO].

2 Use [▲ / ▼] to select your desired audio stream channel.

🔊①	1 ENG Dolby D 3/2.1ch 48k / 3 ⬍

e.g.) DVD-video

• For audio CD, you can select following options.

"Stereo":	Both right and left channels are active (stereo).
"L-ch":	Only left channel is active.
"R-ch":	Only right channel is active.

3 Press [AUDIO] to exit.

Note
• The secondary audio will not be output when the secondary video is not displayed or when "BD Audio Mode" is set to "HD Audio Output".(For some BD, secondary audio will be output even when secondary video is off.)
• The sound mode cannot be changed during playback of discs not recorded in multiple audio.
• Some discs allow to change audio language setting on the disc menu. (Operation varies depending on the discs. Refer to the manual accompanying the disc.)
• **[AUDIO]** may not work on some discs with multiple audio streams or channels (e.g. DVD which allow to change audio setting on the disc menu).
• If you select a language that has a 3-letter-language code, the code will be displayed every time you change the audio language setting. If you select any other languages, "---" will be displayed instead (refer to page 45).
• If 4-digit-language code appears in the subtitle menu, refer to "LANGUAGE CODE" on page 45.
• If the disc has no audio language, "Not Available" will be displayed on the TV screen.
• For DTS-CD (5.1 music disc), selecting audio streams or channels is not available.

SPECIAL SETTINGS

Setting the BD Audio Mode

⌒BD-V⌒

There are 2 ways to set "BD Audio Mode" setting; whether to output the secondary and interactive audio accompanied by the primary audio or only the primary audio. Depending on the setting of the mode, Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS, or DTS-HD output changes between multi LPCM and bitstream.

1 In stop mode with BD inserted, press [MODE].

2 Use [▲ / ▼] to select your desired setting.

◀⊙	BD Audio Mode	Mix Audio Output ⬍

"Mix Audio Output":
If it is available, BD-video's secondary and interactive audio will be output with the primary audio.

• The secondary audio is the audio for the secondary video (Director's comment etc.) and the interactive audio is the audio for the interactive application (Button click sounds etc.).

"HD Audio Output":
Only the primary audio will be output. Set this mode in order to output Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS or DTS-HD audio of BD through HDMI connection.

3 Press [RETURN] to exit.
• You can also set "BD Audio Mode" from the setup menu. Refer to page 36.

Note
• In "Mix Audio Output" mode, if there is no secondary and interactive audio, the audio will be output as "HD Audio Output" mode.
• In "Mix Audio Output" mode, even if you set "HDMI Multi(Normal)" in "HDMI Audio Out" setting, multi LPCM will be output from HDMI OUT jack for BD audio. Refer to page 14.
• In "Mix Audio Output" mode with HDMI audio being output, 2-channel down-mixed LPCM will be output from AUDIO OUTPUT (DIGITAL COAXIA / OPTICAL) jacks for BD audio.
• In "Mix Audio Output" mode with "HDMI Audio Out" setting set to "Audio Mute" and "Digital Out"setting set to "Bitstream", DTS, DTS-HD and LPCM will be output as Dolby Digital for BD audio. Refer to pages 14, 16.
• You can also set " BD Audio Mode" setting from the setup menu. Refer to page 36.

Adjusting the Picture

⌒BD-V⌒ ⌒DVD-V⌒

You can adjust the picture quality.

1 During playback, press [MODE].

2 Use [▲ / ▼] to select your desired item, then use [◀ / ▶] to adjust the setting.

🎬 ⬍	Black Level	◀ On ▶
	Noise Reduction	Off

■ Black level
You can adjust the black level setting to make the black parts of the pictures as bright as you prefer. You can select "On" or "Off"

"On": Makes the dark parts brighter.
"Off": Shows the original picture as recorded.

■ Noise reduction
Reduces the noise of the playback picture.
"1": Executes MPEG noise reduction which reduces the block noise and mosquito noise on the subtitle on movie.
"2": Executes 3D noise reduction which detects and deletes the noise by comparing each picture frames.
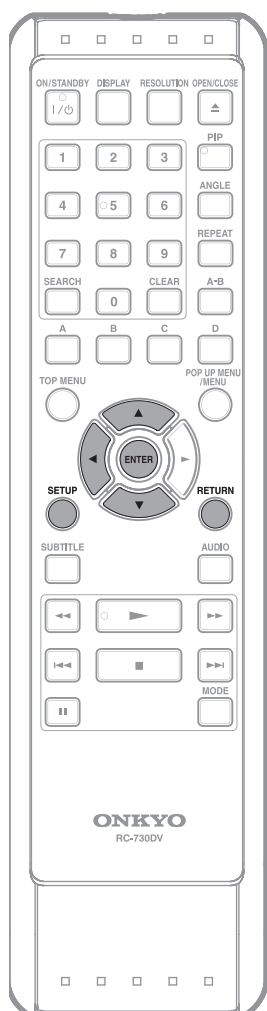**"3"**: Executes both MPEG noise reduction and 3D noise reduction.

3 Press [RETURN] repeatedly to exit.

Note
• The setting remains even you turn off the unit.
• For the picture output from HDMI OUT jack, "Black Level" is not effective.
• For BD, noise reduction is not effective.

30

FUNCTION SETUP

Using the Setup Menu

In the setup menu you can change the setting for audio, video, language, etc. You cannot change the setting during playback.

🔧 Quick

"Quick" menu contains setting items extracted from

"Custom" menu which may be used frequently.

1 **In stop mode, press [SETUP].**

2 **Use [▲ / ▼] to select 🔧 , then press [ENTER].**

3 **Use [▲ / ▼] to select your desired setting items.**

| Quick	
Media Select	Disc
BD Audio Mode	HD Audio Output
HDMI Audio Out	HDMI Multi (Normal)
HDMI Video Resolution	Auto
Component Output	480i
Player Menu	English
TV Aspect	16:9 Wide

4 **Follow the procedure below depending on the setting items.**

   A) **If " ▶ " does not appear on the right side of the setting items when you highlight the items:**
   Press [ENTER] repeatedly to change options.

   B) **If " ▶ " appears on the right side of the setting items when you highlight the items:**
   1) **Press [ENTER].**
   2) **Use [▲ / ▼] to select options, then press [ENTER].**
      • Use **[◄]** or **[RETURN]** to go back to the previous screen.

5 **Press [SETUP] to exit.**
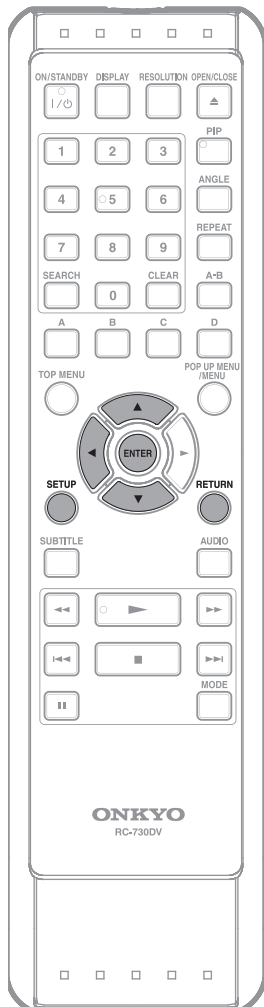
Custom

"Custom" menu contains all the setting items.

1 In stop mode, press [SETUP].

2 Use [▲ / ▼] to select [X] , then press [ENTER].

3 Use [▲ / ▼] to select your desired setting category, then press [ENTER].

[A] : Language

[ ] : Video

[ ] : Audio

[ ] : Parental

[ ] : Others

• For "Parental" menu, follow the procedure on page 40.

4 Use [▲ / ▼] to select your desired setting items.

• The setting items which are not available with current situation of this unit will be displayed in gray and you cannot select them.

5 Follow the procedure below depending on the setting items.

A) **If " ► " does not appear on the right side of the setting items when you highlight the items:**
   Press [ENTER] repeatedly to change options.

B) **If " ► " appears on the right side of the setting items when you highlight the items:**
   1) **Press [ENTER].**
   2) **Use [▲ / ▼] to select options, then press [ENTER].**
      • Use **[◄]** or **[RETURN]** to go back to the previous screen.

6 Press [SETUP] to exit.

■ 🅰 **Language**

• For how to select the setting items and options, refer to "Custom" on page 32.

Setting items	Options
Audio Sets the language for audio.	Original* / English / French / Spanish / German / Italian / Swedish / Dutch / Russian / Chinese / Japanese / Korean / Danish / Finnish / Norwegian / Icelandic / Hungarian / Romanian / Turkish / Greek / Irish / Portuguese / Polish / Czech / Slovak / Bulgarian / Other
Subtitle Sets the language for subtitle.	Off* / English / French / Spanish / German / Italian / Swedish / Dutch / Russian / Chinese / Japanese / Korean / Danish / Finnish / Norwegian / Icelandic / Hungarian / Romanian / Turkish / Greek / Irish / Portuguese / Polish / Czech / Slovak / Bulgarian / Other
Disc Menu Sets the language for disc menu or pop-up menu.	English* / French / Spanish / German / Italian / Swedish / Dutch / Russian / Chinese / Japanese / Korean / Danish / Finnish / Norwegian / Icelandic / Hungarian / Romanian / Turkish / Greek / Irish / Portuguese / Polish / Czech / Slovak / Bulgarian / Other
Player Menu 🔧 Sets the language for OSD (on-screen display).	English* / Français / Español

• Settings with (*) are the default.
• "Quick" menu consists of the setting menus frequently used, and they are accompanied with 🔧 .
• If you select "Other", enter the 4-digit-number code for the desired language (Refer to "LANGUAGE CODE" on page 45). Only the languages supported by the disc can be selected.

■ 🖵 Video

• For how to select the setting items and options, refer to "Custom" on page 32.

Setting items	Options
TV Aspect 🔧 Sets the picture size according to aspect ratio of the connected TV.	16:9 Wide*: Select this when a wide-screen TV is connected. Discs recorded in wide-screen format is played back over the entire TV screen.
	4:3 Pan & Scan: Select this to play back the discs recorded in wide-screen format with 4:3 TV in the pan & scan mode (with the sides of the picture cut off). Discs which are not specified for pan & scan are played back in the letter box mode.
	4:3 Letter Box: Select this to play back the discs recorded in wide-screen format with 4:3 TV in the letter box mode. (with black strips at the top and bottom).
	16:9 Squeeze: When playing back 4:3 images, the picture is displayed in the center of the 16:9 screen with a 4:3 aspect ratio.
HDMI Video Resolution 🔧 Sets the HDMI video resolution.	Auto*: HDMI video resolution will be selected automatically depending on the connected HDMI device.
	480p
	720p
	1080i
	1080p
	1080p24: Gives a natural and high quality film reproduction of 24-frame film material. The connected TV has to be compatible with 1080p24 frame input.
HDMI Deep Color Sets whether to output the picture from HDMI OUT jack with Deep Color or not.	Auto*: The picture from HDMI OUT jack will be output with Deep Color to the connected TV which supports HDMI Deep Color.
	Off: The picture from HDMI OUT jack will be output without Deep Color.
Component Output Sets the video resolution for component output.	480i*
	480p
	720p
	1080i
Progressive Mode Sets the optimum progressive mode for the image material output from HDMI OUT jack and VIDEO OUTPUT (COMPONENT) jacks.	Auto*: The progressive mode will detect 24-frame film material (movies) and automatically select appropriate progressive mode.
	Video: Suited for playing back video material discs (TV shows or animation).

Setting items	Options
Still Mode Adjusts picture resolution and quality in still mode.	Auto*: Automatically selects the best resolution setting ("Frame" or "Field") based on the data characteristics of the pictures.
	Field: Stabilizes the pictures, although the picture quality may become coarse due to the limited amount of data. Select "Field" when the pictures are still unstable even if "Auto" is selected.
	Frame: Displays relatively motionless pictures in higher resolution. "Frame" improves the picture quality, although it may unstabilize the pictures due to alternate output of 2-field data.

- Settings with (*) are the default.
- "Quick" menu consists of the setting menus frequently used, and they are accompanied with ⚒ .
- If you set "HDMI Video Resolution" setting to "1080p24" and the contents of the BD are not compatible for 1080p24 frame, 1080p60 frame will be output.
- An individual picture on the TV screen is called as "Frame" , which consists of two separate images called as "Field". Some pictures may be blurred at the auto setting in "Still Mode" setting due to their data characteristics.
- If the picture is not output properly to the TV because of "HDMI Video Resolution" or "Component Output" setting, press and hold **[► (play)]** on the front panel for more than 5 seconds. Both settings will be reset to the default automatically.
- If an HDMI cable is connected, for video resolution for the component output, you can only select video resolution that currently output from HDMI OUT jack or "480i".
- If the video resolution for the component output and HDMI video resolution do not match, the video resolution for the component output will be switched to "480i". VIDEO OUTPUT (COMPONENT) jacks may not output any signals depending on the disc material.
- If you play back copy-protected DVD-video, 480p signal will be output from VIDEO OUTPUT (COMPONENT) jacks, when "Component Output" setting is set to "720p" or "1080i".

■ 🎵 Audio

• For how to select the setting items and options, refer to "Custom" on page 32.

Setting items	Options
BD Audio Mode 🔧 For BD, selects whether to output the secondary and interactive audio with primary audio if it is available or only the primary audio. Refer to "Setting the BD Audio Mode" on page 30.	HD Audio Output*: Outputs only the primary audio. Set this mode in order to output Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS or DTS-HD audio of BD through HDMI connection.
	Mix Audio Output: Outputs the secondary and interactive audio with primary audio if it is available.
HDMI Audio Out 🔧 Sets the audio format for the audio output from HDMI OUT jack.	HDMI Multi(Normal)*: The multi-channel audio signals are output from HDMI OUT jack with bitstream or LPCM.
	HDMI Multi(LPCM): The multi-channel audio signals are output from HDMI OUT jack with LPCM. • Refer to pages 37-39 for setting options.
	Audio Mute: Mutes the HDMI audio signal, and set the signal format from AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks. • Refer to "Digital out setting" on page 37 for setting options.
Down Sampling Sets the digital audio output when playing back BD or DVD recorded in LPCM.	On*: LPCM signals are converted to 48 kHz for output. • Set to "On" when using digital connections to an AV amplifier that is not compatible with sampling frequencies of 96 kHz.
	Off: For BD and DVD recorded in LPCM without copyright protection, 2-channel audio signals up to 192 kHz are output as LPCM signals with no conversion.
DRC Sets whether to compress the range of sound volume (dynamic range control) when Dolby Digital, Dolby Digital Plus or Dolby TrueHD audio is played back.	Auto*: When the discs recorded in Dolby TrueHD format are in playback, this unit detects DRC setting of the disc and set "DRC" setting to "On" or "Off" automatically.
	Off
	On
Virtual Surround Sets to create a surround effect in a system with 2 speakers connected.	Off*: Virtual surround is set to off.
	1: A natural surround effect in a system with 2 speakers connected.
	2: A stronger surround effect in a system with 2 speakers connected than "1".

• Settings with (*) are the default.
• "Quick" menu consists of the setting menus frequently used, and they are accompanied with 🔧 .
• Under following circumstances, "HDMI Multi(Normal)" and "HDMI Multi(LPCM)" are not available.
  - HDMI cable is not connected to HDMI OUT jack.
  - Connected TV is off.
  - Connected TV is not compatible with audio output.
• Set "Virtual Surround" setting to "Off" or lower the volume if the sound is distorted.
• For the virtual surround, audio signal will always be 2-channel LPCM.

■ Digital out setting

When "Audio Mute" is selected in "HDMI Audio Out" setting, HDMI audio signal will be muted and the audio signals output from AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks change depending on "Digital Out" setting.

Quick ➡ HDMI Audio Out ➡ Audio Mute ➡ Digital Out
Bitstream*: When playing back discs recorded in Dolby Digital, Dolby Digital Plus, Dolby TrueHD, DTS or DTS-HD, the corresponding core stream (Dolby Digital or DTS) are output.
LPCM: LPCM signal will be output from AUDIO OUTPUT (DIGITAL COAXIAL / OPTICAL) jacks.

• This setting is not effective when the HDMI audio signal is output.

■ Speaker setting

This unit allows you to enjoy multi-channel surround sound such as 7.1-channel / 5.1-channel surround.
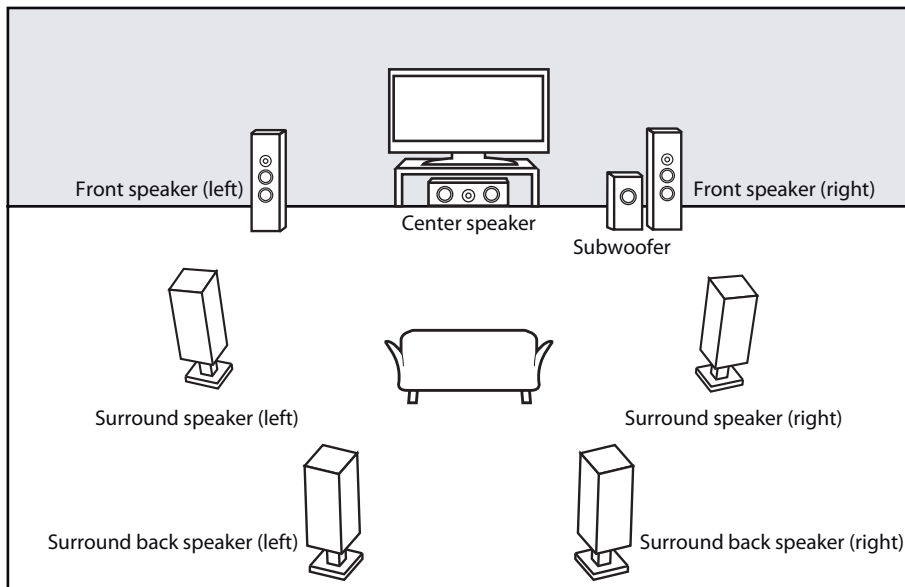
e.g.) basic layout with 7.1-channel surround system

To make the most of its feature, set up your speakers appropriately by referring to the following table.

Speaker setting options are available at the following locations;

<Speaker setting for the audio signal output from HDMI OUT jack>

(Available when you have HDMI cable connected to HDMI OUT jack)

Quick ➡ HDMI Audio Out ➡ HDMI Multi(LPCM)

Custom ➡ Audio ➡ HDMI Audio Out ➡ HDMI Multi(LPCM)

How to navigate through "HDMI Multi(LPCM)".

1 Use [▲ / ▼] to select your desired menu item then press [ENTER].

2 Use [▲ / ▼] to select your setting items.
• Press **[RETURN]** to go back to the previous screen.

3 Use [◄ / ►] to select desired options. (Except for "Test Tone", "Default" and setting options in "Speaker Size" setting.)
For setting options in "Speaker Size" setting:
Press [ENTER] to select desired options.
For "Test Tone":
Use [◄ / ►] to select "Off", "Manual" or "Auto", then press [ENTER].
• The test tone will be output. If you select "Manual", use **[▲ / ▼]** to select desired speaker, then use **[◄ / ►]** to adjust the volume. If you select "Auto", use **[◄ / ►]** to adjust the volume of the speaker that outputs the test tone.
• If you want to stop the test tone, press **[RETURN]**.
For "Default":
Press [ENTER] to reset to the default.

4 Press [SETUP] to exit.

| Menu	Setting items	Options	Descriptions
Speaker Size Selects the desired speaker to set. Then change the setting appropriately by referring to the descriptions.	Front	Large*	Large: For the large speakers with strong low frequency reproduction capabilities. Small: For the small speakers which do not provide strong bass sound. You cannot change the setting of "Subwoofer". If connected device is not compatible with subwoofer, "Subwoofer" will be displayed in gray.
		Small	
	Center	Large*	
		Small	
	Subwoofer	On	
	Surround	Large*	
		Small	
	Surround Back	Large*	
		Small	
	Default		Select "Default", then press **[ENTER]** to reset "Speaker Size" setting to the default.
Channel Level Tests or sets the volume for each speaker.	Test Tone: "Test Tone" is the test tone which can be output from the speakers so that you can adjust the volume for each speaker.	Off*	Select "Off" to deactivate "Test Tone". Select "Manual", then press **[ENTER]** to manually set the volume for the desired speaker. Select "Auto", then press **[ENTER]** to automatically output the test tone from each speaker.
		Manual	
		Auto	
	Front Lch	0 dB to -12 dB (0 dB*)	If you have selected "Manual" in "Test Tone", select the desired speaker to set and adjust the volume for the selected speaker. If you select "Auto" in "Test Tone", test tone will automatically be output in order. Adjust the volume of the speaker that outputs the test tone.
	Center	0 dB to -12 dB (0 dB*)	
	Subwoofer	0 dB to -12 dB (0 dB*)	
	Front Rch	0 dB to -12 dB (0 dB*)	
	Surround Rch	0 dB to -12 dB (0 dB*)	
	Surround Back Rch	0 dB to -12 dB (0 dB*)	
	Surround Back Lch	0 dB to -12 dB (0 dB*)	
	Surround Lch	0 dB to -12 dB (0 dB*)	
	Default		Select "Default", then press **[ENTER]** to reset "Channel Level" setting to the default.

Menu	Setting items	Options	Descriptions
Delay Time This is a parameter for optimizing the timing at which the sound is output from the speakers according to their distance from the listening position.	Distance	Feet*	Set the desired measure system. This measure system will be used for "Delay Time" setting. Press **[ENTER]** to switch the settings.
		Meters	
	Front	0ft to 60ft (12ft*) (0m to 18m (3.6m*))	Select the distance from the listening position to the speaker to get the ideal delay time.
	Center	0ft to 60ft (12ft*) (0m to 18m (3.6m*))	
	Surround	0ft to 60ft (10ft*) (0m to 18m (3.0m*))	
	Surround Back	0ft to 60ft (10ft*) (0m to 18m (3.0m*))	
	Default		Select "Default", then press **[ENTER]** to reset "Delay Time" setting to the default.

- Settings with (*) are the default.
- For "Speaker Size" setting, the settings of each speaker size may be adjusted automatically corresponding to each setting. (e.g. If "Front" is set to "Small", you cannot set "Center", "Surround", and "Surround Back" to "Large".)
- For "Delay Time" setting, the difference among the value of the each speaker cannot exceed 15 ft (4.5m).

■ 🎬 Parental

Ratings control allows you to set a limit, which prevents your children from viewing inappropriate materials. Playback will be stopped if the ratings exceed the levels you set, and it will require you to enter a password before playing back the disc.
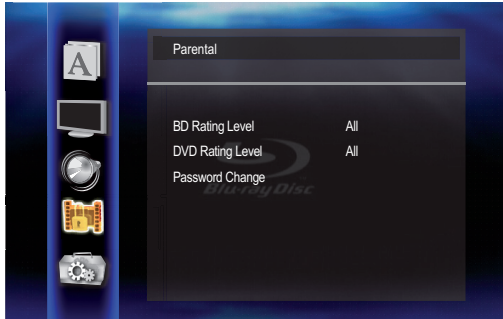
1 **Use [▲ / ▼] to select 🎬 , then press [ENTER].**

2 **Use [the Number buttons] to enter your 4-digit password.**

For the first time use: Use **[the Number buttons]** to enter any 4-digit number (except for 4737), then press **[ENTER]**. That number will be used as the password from the second time. Record your password in case you forget it.
- If you forget the password, enter **[4]**, **[7]**, **[3]**, **[7]**. The password will be cleared and rating level will be set to "All".
- While you input the password, press **[CLEAR]** to clear the number, then re-enter the password.

3 **Proceed to A – C**

A) BD Rating Level
1) **Use [▲ / ▼] to select "BD Rating Level", then press [ENTER].**
2) **Use [▲ / ▼] to select your desired option, then press [ENTER].**
  "All":   To release the limitation.
  "Age Setting": To set the age limitation.
  - After selecting "Age Setting", use **[the Number buttons]** to enter the age from 0 – 254. (e.g. for age 15, press **[0]**,**[1]**,**[5]**)
3) **Press [SETUP] to exit.**

B) DVD Rating Level
1) **Use [▲ / ▼] to select "DVD Rating Level", then press [ENTER].**
2) **Use [▲ / ▼] to select your desired level, then press [ENTER].**
3) **Press [SETUP] to exit.**

RATING EXPLANATIONS

• All	: Parental control is inactive; all discs can be played back.
• 8 **[Adult]**	: DVD software of any grades (adult/general/children) can be played back.
• 7 **[NC-17]**	: No one under 17 admitted.
• 6 **[R]**	: Restricted; under 17 requires accompanying parent or adult guardian.
• 5 **[PGR]**	: Parental guidance recommended.
• 4 **[PG-13]**	: Unsuitable for children under 13.
• 3 **[PG]**	: Parental guidance suggested.
• 2 **[G]**	: General audience.
• 1 **[Kid Safe]**	: Suitable for children.

C) Password Change
1) **Use [▲ / ▼] to select "Password Change", then press [ENTER].**
2) **Enter a new 4-digit password, then press [ENTER].**
3) **Press [SETUP] to exit.**

Note
- The resume information will be cleared if you change the parental level when the resume information is on.

■ 🖳 Others

• For how to select the setting items and options, refer to "Custom" on page 32.

Setting items	Options
Angle Icon	On*: The angle icon appears on the TV screen when playing back the scene with various angle.
	Off: The angle icon disappears on the TV screen.
Auto Power Off	On*: If this unit is left with no activity for more than 30 minutes, this unit turns off automatically.
	Off: Sets off the auto power off.
Panel Display Sets the brightness of the front panel display.	Auto*: Front panel display gets darker during playback.
	Bright: Front panel display gets brighter.
	Dimmer: Front panel display gets darker.
HDMI CEC Sets whether to utilize HDMI CEC function.	On*
	Off
Media Select 🔧 Selects the media to playback.	Disc*: Select this when you play back a disc.
	SD Memory: Select this when you play back an SD Memory Card.

• HDMI CEC allows integrated system control over HDMI and is part of the HDMI standard.
  In addition to Onkyo AV components, it allows interoperability with CEC-compatible AV components and TVs made by other manufacturers.
• When "HDMI CEC" setting is set to "On", functions listed below will be available.

Direct Change
  When this unit is turned on, the TV also is turned on and the appropriate external input channel will be selected automatically. The appropriate external input channel can also be selected on your TV automatically when you press **[PLAY ▶]** when the unit's power is on.

Standby
  When you press and hold **[ON / STANDBY I / ⏻]** for 2 seconds, it turns off the power of the TV first and then turns off the power of this unit also.
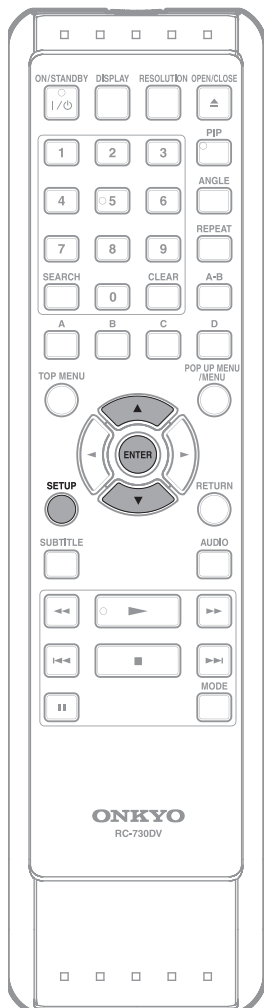
System Information
  Get & Set Menu Language
  The unit recognizes the OSD language set for the TV and automatically sets the same language as the player menu language (OSD menu language) for this unit.

Note
• HDMI CEC is available only when the display device is connected by an HDMI cable, and when it supports HDMI CEC feature.

Initialize

Initialize the setting or SD Memory Card.

1 **In stop mode, press [SETUP].**

2 **Use [▲ / ▼] to select 🔧 , then press [ENTER].**

3 **Use [▲ / ▼] to select a desired option, then press [ENTER].**
   "No": Exits without any initialization.
   "Setup": Resets the setup menu to the default.
   "Memory Device":
      Initializes the SD Memory Card. After confirmation message appears, use **[▲ / ▼]** to select "Yes", then press **[ENTER]**.

Initialize

Initialize?
No
Setup
Memory Device

4 **Press [ENTER]. (For "Setup" and " Memory Device" only)**

5 **Press [SETUP] to exit.**

Note
- The setting for "Parental" will not be reset.
- If SD Memory Card is not inserted, "Memory Device" will be displayed in gray.

TROUBLESHOOTING

If the unit does not perform properly when operated as instructed in this manual, check the unit, consulting the following checklist.

Problem	Solution
No power	- Check if the AC cord is properly connected. - Unplug the AC cord once, and wait for 5-10 seconds and then plug it in again.
No sound or picture	- Check if the connected TV is turned on. - Check if the connections are made securely and correctly. - Check whether the connected TV or other device supports HDCP. (This unit will not output a video signal unless the other device supports HDCP.) - Check whether the output format of this unit (HDMI FORMAT) matches the supported input format of other connected device. - Set "HDMI Video Resolution" setting other than "Auto" or "1080p24".
Distorted picture	- Sometimes a small amount of picture distortion may appear. This is not a malfunction. - Connect this unit directly to the TV. If the RCA audio / video cables are connected to a VCR, pictures may be distorted due to the copy right protection system.
Completely distorted picture or black / white picture with BD / DVD	- Make sure the disc is compatible with this unit.
No sound or distorted sound	- Adjust the volume. - Check that the speakers are connected correctly. - Check the HDMI connections. - Check the settings in "Audio" menu.
Picture freezes momentarily during playback	- Check the disc for fingerprints / scratches and clean with a soft cloth wiping from center to edge. - Clean the disc.
Disc cannot be played back	- Clean the disc. - Ensure the disc label is facing up. - Check if the disc is defective by trying another disc. - Cancel the ratings control or change the control level. - Insert a correct disc that can be played back on this unit.
SD Memory Card cannot be read.	- The format of the card does not match to this unit or the card is not compatible.
No return to start-up screen when disc is removed	- Reset this unit by turning it off, then on again.
The unit does not respond to the remote control	- Aim the remote control directly at infrared sensor window on the front panel. - Reduce the distance to infrared sensor window. - Replace the batteries in the remote control. - Re-insert the batteries with their polarities (+ / - signs) as indicated.
Buttons do not work or the unit stops responding	- To completely reset the unit, unplug the AC cord from the AC outlet for 5-10 seconds.
The unit does not respond to some operating commands during playback	- Operations may not be permitted by the disc. Refer to the instructions of the disc.
The unit cannot read BD / DVD / CD	- Condensation? (Let sit 1 or 2 hours) - You are attempting to playback a disc other than one with one of the marks on page 17. - Wipe the dirt off the disc or replace the disc.
Angle does not switch	- The angle cannot be switched for BD / DVD which do not contain multiple angles. In some cases multiple angles are only recorded for specific scenes.
Playback does not start when the title is selected	- Check the settings in "Parental" menu.
The password for rating level has been forgotten	- Enter the default password "4737", then your forgotten password will be cleared.

> ### Note
> - Some functions are not available in specific modes, but this is not a malfunction. Read the description in this manual for details on correct operations.
> - Some functions are prohibited on some discs.

GLOSSARY

Analog Audio
An electrical signal that directly represents sound. Compare this to digital audio which can be an electrical signal, but is an indirect representation of sound. See also "Digital Audio".

Aspect Ratio
The width of a TV screen relative to its height. Conventional TVs are 4:3 (in other words, the TV screen is almost square); widescreen models are 16:9 (the TV screen is almost twice as wide as it is high).

BD-Java
With some BD which support Java applications, you can enjoy the interactive functions such as games or interactive menus.

Blu-ray Disc (BD)
Blu-ray Disc is a next generation optical video disc which is capable of storing much more data than a conventional DVD is. The large capacity makes it possible to benefit from the features such as high-definition videos, multi-channel surround sounds, interactive menus and so on.

Chapter
Just as a book is split up into several chapters, a title on a BD-video or DVD-video is usually divided into chapters. See also "Title".

Component Video Output
Each signal of luminance (Y) and component (P_B/C_B, P_R/C_R) is independent to output so that you can experience picture color as it is.
Also, due to compatibility with progressive video (525p/480p), you can experience higher-density picture than that in interlace (525i/480i).

Digital Audio
An indirect representation of sound by numbers. During recording, the sound is measured at discrete intervals (44,100 times a second for CD audio) by an analog-to-digital converter, generating a stream of numbers. On playback, a digital-to-analog converter generates an analog signal based on these numbers. See also "Sampling Frequency" and "Analog Audio".

Dolby Digital
The system to compress digital sound developed by Dolby Laboratories. It offers you sound of stereo (2ch) or multi-channel audio.

Dolby Digital Plus
Dolby Digital Plus is the next generation digital audio compression technology developed as an extension to Dolby Digital. Blu-ray Disc supports 7.1 multi-channel surround sound output.

Dolby TrueHD
Dolby TrueHD is a lossless coding technology developed for next generation optical discs. Blu-ray Disc supports 7.1 multi-channel surround sound output.

DTS (Digital Theater System):
DTS is a multi-channel surround sound system. By connecting to DTS decoder, you can enjoy movie dynamic and realistic sound like movie theater. DTS surround sound technologies were developed by DTS, Inc.

DTS-HD
DTS-HD is a lossless coding technology developed as an extension of the original DTS Coherent Acoustics format. Blu-ray Disc supports 7.1 multi-channel surround sound output.

HDMI (high-definition multimedia interface)
A digital interface between audio and video source. It can transmit component video, audio, and control signal with one cable connection.

MP3 (MPEG audio layer 3)
MP3 is a method of compressing files. You can copy MP3 files on CD-RW/-R, DVD or SD Memory Card from the computer and play back the files on this unit.

PCM (pulse code modulation)
The most common system of encoding digital audio, found on CD and DAT. Excellent quality, but requires a lot of data compared to formats such as Dolby Digital and MPEG audio. For compatibility with digital audio recorders (CD, MD and DAT) and AV amplifiers with digital inputs, this unit can convert Dolby Digital and MPEG audio to PCM. See also "Digital Audio".

Region Code
Regions associate discs and players with particular areas of the world. This unit will only play back discs that have compatible region codes. You can find the region code of your unit by looking on the rear panel. Some discs are compatible with more than one region (or all regions).

Sampling Frequency
The rate which sound is measured by a specified interval to turn into digital audio data. The numbers of sampling in one second defines as sampling frequency. The higher the rate, the better the sound quality.

Title
A collection of chapters on BD-video or DVD-video. See also "Chapter".

Track
Audio CD use tracks to divide up the content of a disc. The BD-video or DVD-video equivalent is called a chapter. See also "Chapter".

LANGUAGE CODE

Language	Code	Language	Code	Language	Code	Language	Code
A-B		French [FRE]	5264	Macedonian	5957	Siswat	6565
Abkhazian	4748	Frisian	5271	Malagasy	5953	Slovak [SLO]	6557
Afar	4747	Galician	5358	Malay	5965	Slovenian	6558
Afrikaans	4752	Georgian	5747	Malayalam	5958	Somali	6561
Albanian	6563	German [GER]	5051	Maltese	5966	Spanish [SPA]	5165
Amharic	4759	Greek [GRE]	5158	Maori	5955	Sundanese	6567
Arabic	4764	Greenlandic	5758	Marathi	5964	Swahili	6569
Armenian	5471	Guarani	5360	Moldavian	5961	Swedish [SWE]	6568
Assamese	4765	Gujarati	5367	Mongolian	5960	**T**	
Aymara	4771	Hausa	5447	Nauru	6047	Tagalog	6658
Azerbaijani	4772	Hebrew	5569	Nepali	6051	Tajik	6653
Bashkir	4847	Hindi	5455	Norwegian [NOR]	6061	Tamil	6647
Basque	5167	Hungarian [HUN]	5467	**O-R**		Tatar	6666
Bengali;Bangla	4860	**I-K**		Occitan	6149	Telugu	6651
Bhutani	5072	Icelandic [ICE]	5565	Oriya	6164	Thai	6654
Bihari	4854	Indonesian	5560	Oromo(Afan)	6159	Tibetan	4861
Bislama	4855	Interlingua	5547	Panjabi	6247	Tigrinya	6655
Breton	4864	Interlingue	5551	Pashto;Pushto	6265	Tonga	6661
Bulgarian [BUL]	4853	Inupiak	5557	Persian	5247	Tsonga	6665
Burmese	5971	Irish [IRI]	5347	Polish [POL]	6258	Turkish [TUR]	6664
Byelorussian	4851	Italian [ITA]	5566	Portuguese [POR]	6266	Turkmen	6657
C-E		Japanese [JPN]	5647	Quechua	6367	Twi	6669
Cambodian	5759	Javanese	5669	Rhaeto-Romance	6459	**U-Z**	
Catalan	4947	Kannada	5760	Romanian [RUM]	6461	Ukrainian	6757
Chinese [CHI]	7254	Kashmiri	5765	Russian [RUS]	6467	Urdu	6764
Corsican	4961	Kazakh	5757	**S**		Uzbek	6772
Croatian	5464	Kinyarwanda	6469	Samoan	6559	Vietnamese	6855
Czech [CZE]	4965	Kirghiz	5771	Sangho	6553	Volapuk	6861
Danish [DAN]	5047	Kirundi	6460	Sanskrit	6547	Welsh	4971
Dutch [DUT]	6058	Korean [KOR]	5761	Scots Gaelic	5350	Wolof	6961
English [ENG]	5160	Kurdish	5767	Serbian	6564	Xhosa	7054
Esperanto	5161	**L-N**		Serbo-Croatian	6554	Yiddish	5655
Estonian	5166	Laothian	5861	Sesotho	6566	Yoruba	7161
F-H		Latin	5847	Setswana	6660	Zulu	7267
Faroese	5261	Latvian;Lettish	5868	Shona	6560		
Fiji	5256	Lingala	5860	Sindhi	6550		
Finnish [FIN]	5255	Lithuanian	5866	Singhalese	6555		

Note
- If you choose a language that has a 3-letter-language code (written in bracket), the code will be displayed every time you change the audio or subtitle language setting on page 29. If you choose any other languages, '---' will be displayed instead.

SPECIFICATIONS

General	
Signal system	NTSC color
Power requirements	120V AC, 60Hz
Power consumption	30W (standby: 0.8W)
Dimensions (width x height x depth)	17-1/8 x 3-1/4 x 14-1/8 inches (435 x 82.3 x 359mm)
Weight	9.0 lbs (4.1kg)
Operating temperature	41°F (5°C) to 104°F (40°C)
Operating humidity	Less than 80% (no condensation)

Terminals			
Audio output (Analog)			
RCA jack x 2	L/R: 2Vrms (output impedance: more than 1kΩ)		
Video output			
RCA jack x 1	1Vp-p (75Ω)		
Component video output			
RCA jack x 3	Y: 1Vp-p (75Ω)	P_B: 700mVp-p (75Ω)	P_R: 700mVp-p (75Ω)
Audio output (Digital)			
RCA jack x 1	500mVp-p (75Ω)		
Optical jack x 1	Digital connector		
HDMI output			
HDMI jack x 1	Video: 480p, 720p, 1080i, 1080p, 1080p24 / Audio		

Rear (label for Terminals section)

Note
• The specifications and design of this product are subject to change without notice.

MEMO

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