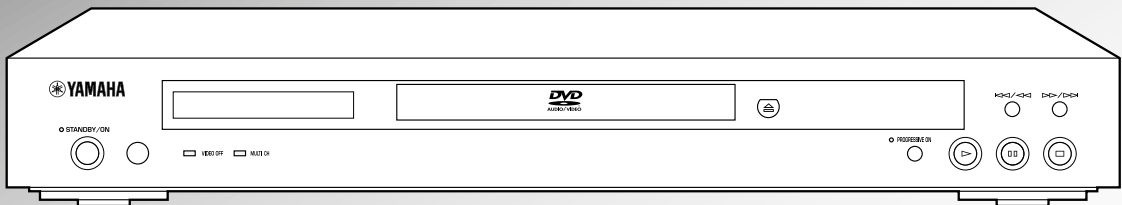




DVD-S840

DVD AUDIO/VIDEO PLAYER
LECTEUR DVD AUDIO/VIDEO



OWNER'S MANUAL
MODE D'EMPLOI

IMPORTANT SAFETY INSTRUCTIONS

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

Safety

1. **Power source**—Connect the unit to a power source of the type described in these instructions or as marked on the unit.
2. **Polarization**—The unit is equipped with a polarized power plug where one blade is wider than the other. This safety feature ensures that the plug fits into your household AC outlet only one way. If the plug doesn't fit one way, try reversing it. If the plug still doesn't fit, contact an electrician to replace the obsolete outlet. Do not attempt to defeat the safety purpose of the plug.
3. **Power cord protection**—Route the AC power supply cord so that it will not be walked on or pinched by items placed on or against it. Never take hold of the plug or cord with wet hands. Always grasp the plug body firmly when connecting and disconnecting it.
4. **Overloading**—When connecting the AC power supply cord, be careful not to overload the household AC outlet, extension cord, or outlet from any other device as this can result in fire or electric shock.
5. **Nonuse periods**—Turn the unit off when it is not in use. Unplug the unit from the household AC outlet if it is not to be used for a long time. Unplug the unit during lightning storms.
6. **Attachments and accessories**—Use only the attachments and accessories recommended in these operating instructions.

Installation

Placement

1. **Ventilation**—Situate the unit so that it receives proper ventilation. Do not install in a confined space such as a bookcase or cabinet. Allow at least 10 cm (4 inches) clearance from the rear of the unit. To prevent the risk of electric shock or fire due to overheating ensure curtains and other materials do not obstruct the unit's ventilation.
2. **Foreign material**—Ensure objects and liquids do not get into the unit. Avoid exposing the unit to excessive smoke, dust, mechanical vibration, and shock.
3. **Magnetism**—Situate the unit away from equipment and devices that generate strong magnetic fields.
4. **Stacking**—Do not place heavy objects on top of this unit.
5. **Surface**—Place the unit on a flat, level surface.
6. **Carts and stands**—Use the unit only with carts and stands recommended by the manufacturer. Move carts with care. Sudden stops, excessive force, and uneven surfaces can cause carts to overturn.
7. **Wall and ceiling mounting**—Do not mount the unit on walls or ceilings unless specified in the instructions.



Environment

1. **Water and moisture**—Do not use the unit near water, such as near a bathtub or swimming pool. Avoid damp basements.
2. **Heat**—Situate the unit away from heat sources, such as radiators. Do not situate where temperatures fall below 5°C (41°F) or rise above 35°C (95°F).

Maintenance

(See page 6 for details.)

Unplug the unit from the household AC outlet before cleaning. Clean with a damp cloth. Do not use abrasive pads, scouring powders, or solvents.

Service

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

CAUTION!

THIS PRODUCT UTILIZES A LASER.
 USE OF CONTROLS OR ADJUSTMENTS OR
 PERFORMANCE OF PROCEDURES OTHER THAN
 THOSE SPECIFIED HEREIN MAY RESULT IN
 HAZARDOUS RADIATION EXPOSURE.
 DO NOT OPEN COVERS AND DO NOT REPAIR YOUR-
 SELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR
 PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARA-
 TUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING
 AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH
 AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION:

TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF
 PLUG TO WIDE SLOT, FULLY INSERT.
 This Class B digital apparatus complies with Canadian ICES-003.



CAUTION
 RISK OF ELECTRIC SHOCK
 DO NOT OPEN



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



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



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

This product may receive radio interference caused by
 mobile telephones during use. If such interference is ap-
 parent, please increase separation between the product
 and the mobile telephone.

CAUTION!

- ≥ DO NOT INSTALL, OR PLACE THIS UNIT, IN A
 BOOKCASE, BUILT-IN CABINET OR IN ANOTHER
 CONFINED SPACE. ENSURE THE UNIT IS WELL
 VENTILATED. TO PREVENT RISK OF ELECTRIC
 SHOCK OR FIRE HAZARD DUE TO OVERHEATING,
 ENSURE THAT CURTAINS AND ANY OTHER MATE-
 RIALS DO NOT OBSTRUCT THE VENTILATION
 VENTS.
- ≥ DO NOT OBSTRUCT THE UNIT'S VENTILATION
 OPENINGS WITH NEWSPAPERS, TABLECLOTHS,
 CURTAINS, AND SIMILAR ITEMS.
- ≥ DO NOT PLACE SOURCES OF NAKED FLAMES,
 SUCH AS LIGHTED CANDLES, ON THE UNIT.
- ≥ DISPOSE OF BATTERIES IN AN ENVIRONMEN-
 TALLY FRIENDLY MANNER.

THIS UNIT IS INTENDED FOR USE IN MODERATE
 CLIMATES.

CLASS 1 LASER PRODUCT
 LASER KLASSE 1 PRODUKT
 LUOKAN 1 LASERLÄITE
 KLASS 1 LASER APPARAT
 PRODUIT LASER DE CLASSE 1



DANGER	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION	- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION	- RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNNGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	- AVATTAESSA OLET ALTIMA NÄKYMÄTÖN LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	- SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	- SYNLIG OG USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	- SICHTBARE UND UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEOFFNET NICHT DEM STRAHL AUSSETZEN.
注意	- 打开时有可见及不可见激光辐射。避免激光束照射。
注意	- ここを開くと可視及び不可視のレーザー光が出ます。 ビームを直接見たり、触れたりしないでください。 RQLS0233

(Inside of product)

User memo:

DATE OF PURCHASE _____
DEALER NAME _____
DEALER ADDRESS _____

TELEPHONE NUMBER _____

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

MODEL NUMBER _____ **DVD-S840** _____
SERIAL NUMBER _____

FOR CANADIAN CUSTOMERS

To prevent electric shock, match wide blade of plug to wide slot and
 fully insert.
 This Class B digital apparatus complies with Canadian ICES-003.

FCC INFORMATION (for U.S. customers only)

- 1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!** This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
- 2. IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
- 3. NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices.

This equipment generates /uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to coaxial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate retailer, please contact Yamaha Electronics Corp., U.S.A. 6660 Orangethorpe Ave, Buena Park, CA 90620.

The above statements apply **ONLY** to those products distributed by Yamaha Corporation of America or its subsidiaries.

We Want You Listening For A Lifetime

YAMAHA and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing. Since hearing damage from loud sounds is often undetectable until it is too late, YAMAHA and the Electronic Industries Association's Consumer Electronics Group recommend you to avoid prolonged exposure from excessive volume levels.



CONSUMERS SHOULD NOTE THAT NOT ALL HIGH DEFINITION TELEVISION SETS ARE FULLY COMPATIBLE WITH THIS PRODUCT AND MAY CAUSE ARTIFACTS TO BE DISPLAYED IN THE PICTURE. IN CASE OF 525 PROGRESSIVE SCAN PICTURE PROBLEMS, IT IS RECOMMENDED THAT YOU SWITCH THE CONNECTION TO THE "STANDARD DEFINITION" OUTPUT. IF THERE ARE QUESTIONS REGARDING YOUR VIDEO MONITOR COMPATIBILITY WITH THIS UNIT, PLEASE CONTACT OUR CUSTOMER SERVICE CENTER.

This unit is compatible with the complete line of YAMAHA projectors, including the DPX-1, LPX-500, DPX-1000 and with the YAMAHA PDM-1 plasma display.

CAUTION: READ THIS BEFORE OPERATING YOUR UNIT.

- 1 To assure the finest performance, please read this manual carefully. Keep it in a safe place for future reference.
- 2 Install this sound system in a well ventilated, cool, dry, clean place—away from direct sunlight, heat sources, vibration, dust, moisture, or cold. In a cabinet, allow about 2.5cm (1 inch) of free space all around this unit for adequate ventilation.
- 3 Locate this unit away from other electrical appliances, motors, or transformers to avoid humming sounds.
- 4 Do not expose this unit to sudden temperature changes from cold to hot, nor locate this unit in an environment with high humidity (i.e., a room with a humidifier) to prevent condensation inside this unit, which may cause an electrical shock, fire, damage to this unit, and/or personal injury.
- 5 Avoid installing this unit in a location where foreign objects may fall onto this unit or where this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:
 - Other components, as they may cause damage and/or discoloration on the surface of this unit.
 - Burning objects (i.e., candles), as they may cause fire, damage to this unit, and/or personal injury.
 - Containers with liquid in them, as they may fall, spilling the liquid and causing an electrical shock to the user and/or damage to this unit.
- 6 Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.
- 7 Do not plug in this unit to a wall outlet until all connections are complete.
- 8 Do not operate this unit upside-down. It may overheat, possibly causing damage.
- 9 Do not use excessive force on switches, knobs and/or cords.
- 10 When disconnecting the power cord from the wall outlet, grasp the plug; do not pull the cord.
- 11 Do not clean this unit with chemical solvents; this might damage the finish. Use a clean, dry cloth.
- 12 Use only the voltage specified on this unit. Using this unit with a higher voltage than specified is dangerous and may cause fire, damage to this unit, and/or personal injury. YAMAHA will not be held responsible for any damage resulting from use of this unit with a voltage other than as specified.
- 13 To prevent damage by lightning, disconnect the power cord from the wall outlet during an electrical storm.
- 14 Do not attempt to modify or fix this unit. Contact qualified YAMAHA service personnel when any service is needed. The cabinet should never be opened for any reason.
- 15 When not planning to use this unit for long periods of time (i.e., vacation), disconnect the AC power plug from the wall outlet.
- 16 Be sure to read the “Troubleshooting guide” section on common operating errors before concluding that this unit is faulty.
- 17 Before moving this unit, press STANDBY/ON to set the unit in standby mode, then disconnect the AC power plug from the wall outlet.

The unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.

NOTE

Pictures shown maybe different between countries. Never make or change connections with the power switched on.

When playing DTS encoded CDs, excessive noise will be heard from the analog stereo outputs. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo outputs of the player are connected to an amplification system.

Dear customer

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

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Accessories



Please check and identify the supplied accessories.

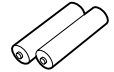
Note

The included power cable is for use with this unit only. Do not use it with other equipment.

II 1 Remote control



II 2 Batteries for remote control



II 1 Audio/video cable



II 1 Power cable



Disc information

Discs that can be played

Disc type	Logo	Indication in these operating instructions
DVD-Audio		DVD-A
DVD-Video		
DVD+RW/+R ^{#1}		DVD-V
DVD-R/RW ^{#1, #2}		
Video-CD		VCD
CD		CD
CD-R/RW ^{#1}		VCD CD MP3 WMA

^{#1} Some discs cannot be played depending on the recording conditions such as PC environment and application software. The characteristics and condition of the discs; materials, scratches, curvature, and etc, may result in failure.

^{#2} This unit can play DVD-R/RW if they are recorded with the Video Format.

Do not use irregularly shaped discs (e.g. heart-shaped), as these can damage the unit.

Region number supported by this player

Region numbers are allocated to DVD players and software according to where they are sold.

≥The region number of this player is "1".

≥The player will play DVD-Video marked with labels containing "1" or "ALL".

Example:



Discs that cannot be played

DVD-ROM, DVD-RAM, CD-ROM, CDV, CD-G, CVD, SVCD, SACD, Divx Video Discs and Photo CD, etc.

DVDs that can be played

You can play discs with these symbols.



Playing DVDs and Video CDs

The producer of these discs can control how they are played so you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.

Video systems

≥This unit can play PAL and NTSC, but your television must match the system used on the disc.

≥PAL discs cannot be correctly viewed on an NTSC television.

≥When playing PAL discs, the output will automatically be interlace (576i).
 ≥NTSC is used. This unit converts PAL system DVD-Audio (still picture) to NTSC for play. The picture is compressed to show it in its entirety, but this may cause it to be stretched vertically.

CD-R and CD-RW discs

This unit can play CD-R and CD-RW if they are formatted as CD-DA (digital audio) or video CD and finalized^{#3}.

DVD-R/RW and DVD+RW/+R discs

Discs recorded and finalized^{#3} on a DVD video recorder.

^{#3} A process that allows play on compatible equipment.

To clean discs

Wipe with a damp cloth and then wipe dry.



Handling precautions

≥Do not write on the label side with a ball-point pen or other writing instrument.

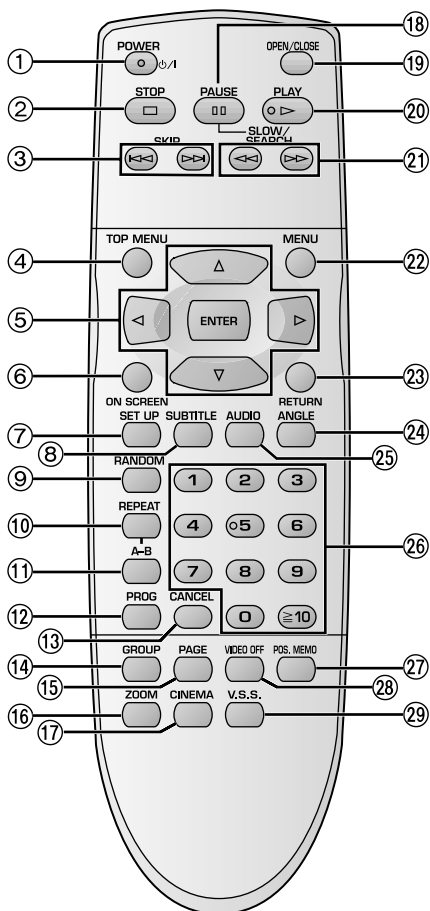
≥Do not use record cleaning sprays, benzene, thinner, static electricity prevention liquids or any other solvent.

≥Do not attach labels or stickers to discs. (Do not use discs with exposed adhesive from tape or left over peeled-off stickers.)

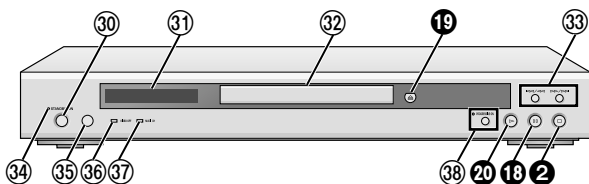
≥Do not use scratch-proof protectors or covers.

≥Do not use discs printed with label printers available on the market.

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



①	Standby/on button (POWER ⏻/I)	10
②	Stop button (■ STOP)	11
③	Skip buttons (⏮, ⏭) SKIP	12
④	Top menu button (TOP MENU)	11
⑤	Cursor buttons (▲, ▼, ◀, ▶), Enter button (ENTER)	10
⑥	On Screen button (ON SCREEN)	18
⑦	Setup button (SET UP)	10, 22
⑧	Subtitle button (SUBTITLE)	15
⑨	Random button (RANDOM)	17
⑩	Repeat button (REPEAT)	17
⑪	A-B repeat button (A-B)	16
⑫	Program button (PROG)	17
⑬	Cancel button (CANCEL)	17
⑭	Group button (GROUP)	16
⑮	Page button (PAGE)	16
⑯	4:3 TV zoom button (ZOOM)	15
⑰	Cinema button (CINEMA)	14
⑱	Pause button (⏸ PAUSE)	11
⑲	Open/Close button (▲, OPEN/CLOSE)	11
⑳	Play button (▶ PLAY)	11
㉑	Slow/Search buttons (⏮, ⏭ SLOW/SEARCH)	12
㉒	Menu button (MENU)	11
㉓	Return button (RETURN)	10
㉔	Angle button (ANGLE)	15
㉕	Audio button (AUDIO)	15
㉖	Numbered buttons (1-9, 0, ≥10)	12
㉗	Position memory button (POS. MEMO)	11
㉘	Video off button (VIDEO OFF)	16
㉙	Advanced Surround button (V.S.S.)	14
㉚	Standby/on switch (STANDBY/ON)	
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.		
㉛	Display	
㉜	Disc tray	11
㉝	Skip/Slow/Search buttons (⏮/◀, ▶/⏭)	12
㉞	Standby indicator	
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.		
㉟	Remote control signal sensor	
㊱	Video off indicator (VIDEO OFF)	16
㊲	Multi-channel indicator (MULTI CH)	15
㊳	Progressive on button/indicator (PROGRESSIVE ON)	11

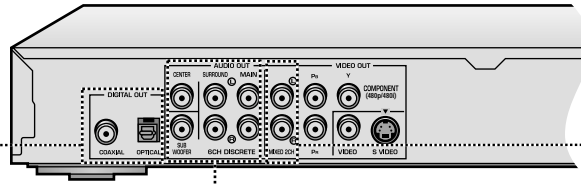


Buttons such as ② function the same as the buttons on the remote control.

Audio connection

Note

- The equipment connections described are examples.
- Peripheral equipment and optional cables sold separately unless otherwise indicated.
- Before connection, turn off all equipment and read the appropriate operating instructions.

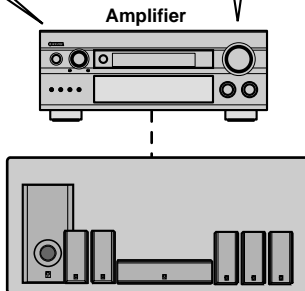
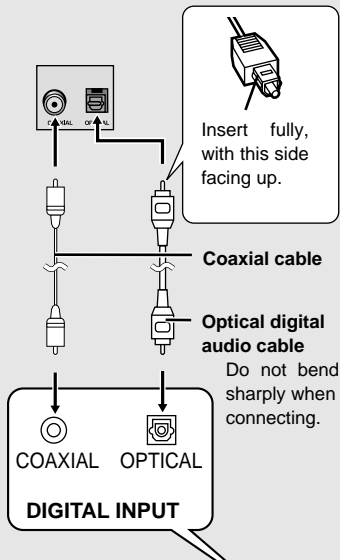


A Digital connection

Connect an amplifier with Dolby Digital and DTS decoders.

You can also enjoy high-quality stereo sound with sampling frequencies of 88.2 and 96 kHz if the material isn't copy-protected and the equipment you connect is compatible with these signals.

Change "Digital output" (⇒ page 22).



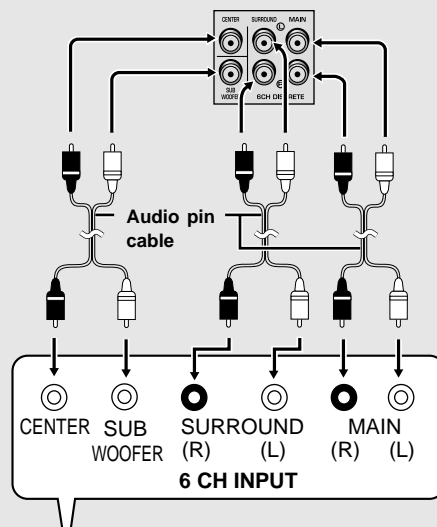
B Analogue (6CH DISCRETE) connection

Connect an amplifier with multi-channel audio input terminals to enjoy surround sound.

This unit can decode Dolby Digital and DTS and there are no limitations on sampling frequency with this kind of connection.

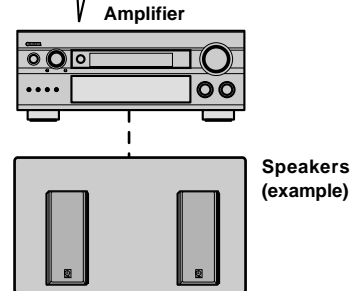
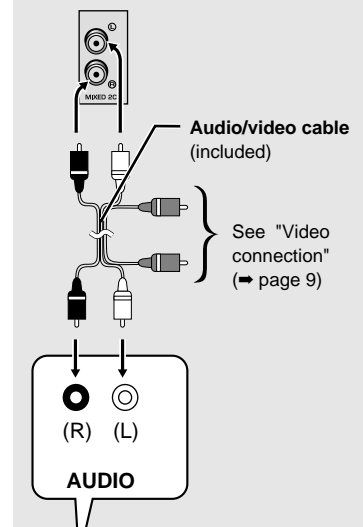
To obtain maximum performance of DVD-Audio multi-channel linear PCM sound, the connections are recommended.

Change "Speaker setting" (⇒ page 23).



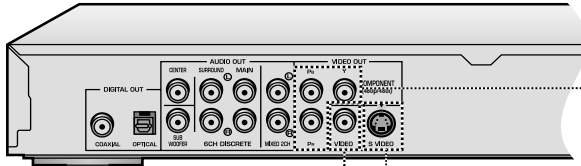
C Analogue (MIXED 2CH) connection

Connect these jacks to the AUDIO L and R input jacks of your amplifier using the supplied Audio/Video cable.



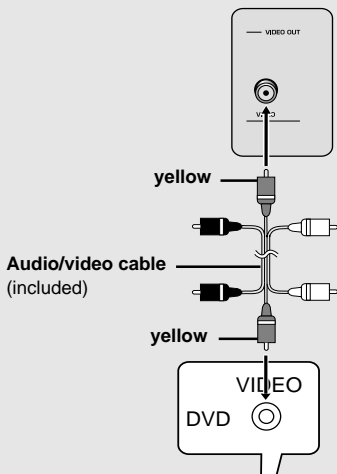
Video connection

This unit equips three types of video jacks as follows:



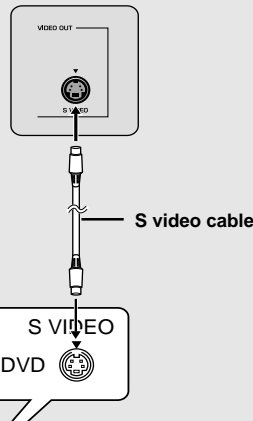
D VIDEO jack

This jack transmits conventional composite video signal. Connect this jack to your AV amplifier so that you can switch the both audio and video inputs at once.



E S VIDEO jack

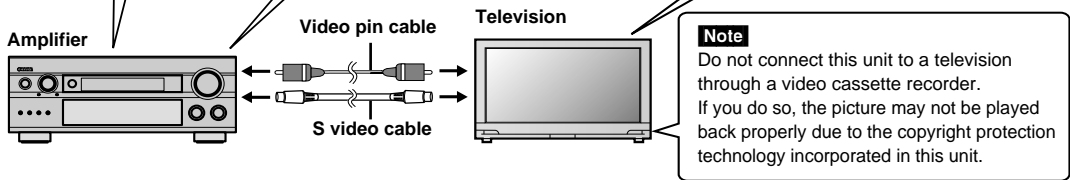
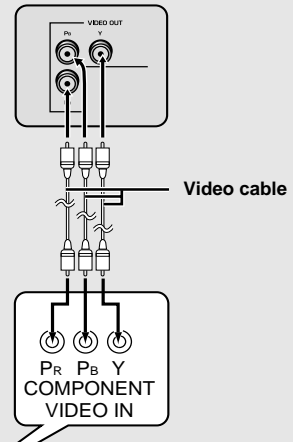
This jack transmits color and luminance separately and achieves high quality color reproduction. Connect this jack to your television using a commercially available S-Video cable. If your AV amplifier is equipped with S VIDEO input and output jacks, connect to the AV amplifier so that you can switch both audio and video inputs at once.



F COMPONENT VIDEO OUT terminal

These terminals can be used for either interlace or progressive output and provide a purer picture than the S VIDEO OUT terminal. Connection using these terminals outputs the color difference signals (P_B/P_R) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors.

- The description of the component video input terminals depends on the television or monitor (e.g. Y/P_B/P_R, Y/B-Y/R-Y, Y/C_B/C_R). Connect to terminals of the same color.
- After making this connection, change the black level for a better picture (➔ page 21, Video—Black Level Control)



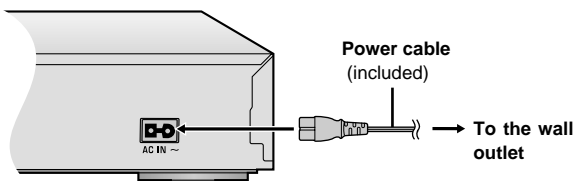
To enjoy progressive video

- Connect to the component video (480P) input terminals on a projector or television compatible with this unit's copy guard system. (Video will not be displayed correctly if connected to an incompatible television.)
- In QUICK SETUP, set "Progressive Out" to "Enable" (➔ page 10).

For your reference

- Some televisions that have 480P input connectors are not compatible. Consult the manufacturer.

Connecting the power cable



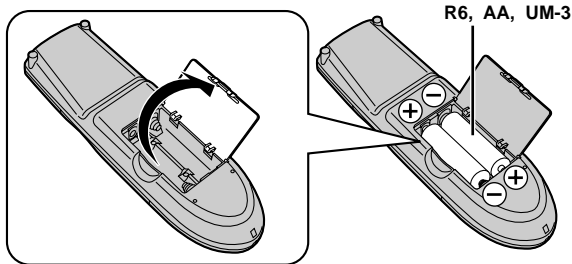
Plug the power cable into the AC IN when all connections are complete, and then plug this unit to the wall outlet.

Caution

Do not use other AC power cables than the one provided. Otherwise it may result in causing fire or an electrical shock.

The remote control

Batteries



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

Do not:

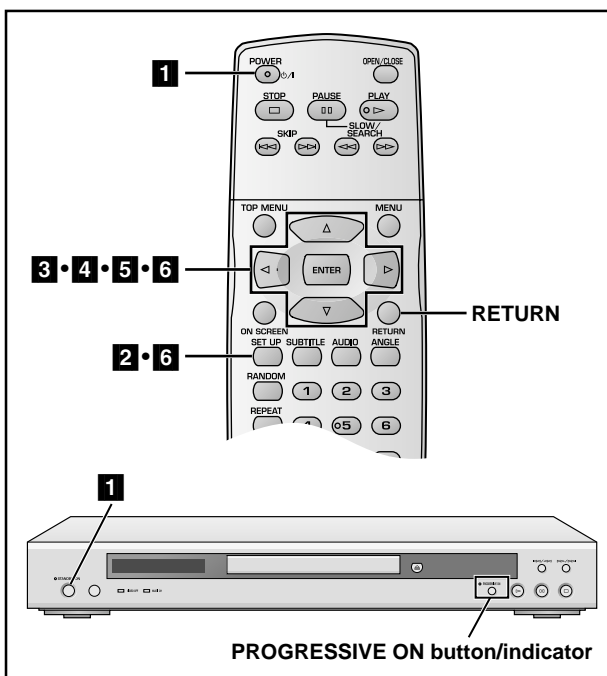
- mix old and new batteries.
 - use different types at the same time.
 - heat or expose to flame.
 - take apart or short circuit.
 - attempt to recharge alkaline or manganese batteries.
 - use batteries if the covering has been peeled off.
- Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

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

Use

Aim at the sensor (⇒ page 7, Control reference guide), avoiding obstacles, at a maximum range of 7 m directly in front of the unit.

Quick setup

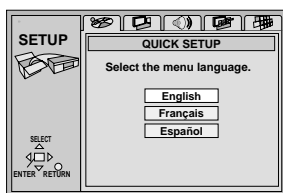


The **QUICK SETUP** screen appears when you press [SET UP] the first time after purchase and assists you to make necessary settings. You can access this screen again later if you need to (⇒ page 21, Others—QUICK SETUP).

Preparation

Turn on the other equipment (amplifier, television, etc.) and select the audio/video input to suit the connections to this player.

- 1 Press [POWER \odot /I] to turn on the unit.
- 2 Press [SET UP] to show the QUICK SETUP screen.



- 3 Press [\blacktriangle , \blacktriangledown , \blacktriangleleft , \blacktriangleright] to select the menu language and press [ENTER].

- 4 Press [\blacktriangle , \blacktriangledown] to select “Yes” to continue and press [ENTER].

- 5 Press [\blacktriangle , \blacktriangledown , \blacktriangleleft , \blacktriangleright] to select the item and press [ENTER].

- Audio Language (⇒ page 21)
- Subtitle Language (⇒ page 21)
- TV Aspect (⇒ below)
- Progressive Out (⇒ page 21)
- Speaker Setting (⇒ page 21)

- 6 Press [ENTER] and then [SET UP] to end the settings.

To return to the previous screen

Press [RETURN].

TV Aspect

Select “4:3” (regular) or “16:9” (widescreen) to suit your television. If you have a regular 4:3 television, you can also select how video on some discs is shown (⇒ page 21, Video—TV Aspect).

•4:3 Pan&Scan (Factory preset)

Widescreen software is expanded to fill the screen of a 4:3 aspect television (unless prohibited by the producer of the disc).



•4:3 Letterbox

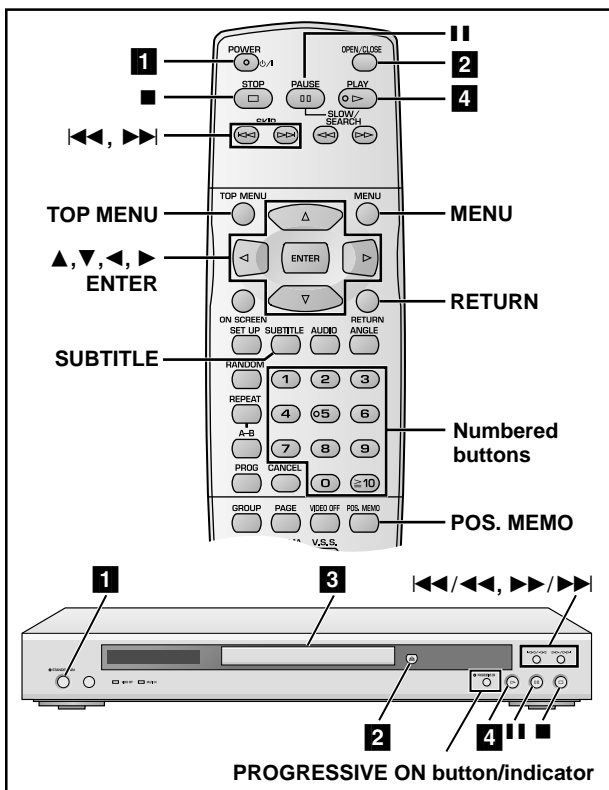
Widescreen software is shown in the letterbox style on a 4:3 aspect television.



■ Viewing 4:3 aspect pictures on a 16:9 widescreen television using progressive output

16:9 aspect pictures are shown correctly, but 4:3 aspect pictures are stretched horizontally to fill the screen.

- If your television can change the aspect when input is progressive Use the television to change the aspect to the correct one.
- If your television cannot change the aspect when input is progressive Try changing 4:3 aspect with the on-screen menu icons.

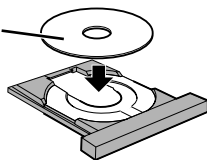


DVD-A DVD-V VCD CD MP3 WMA

Preparation

Turn on the other equipment (amplifier, television, etc.) and select the audio/video input to suit the connections to this player.

- 1 Press [POWER] to turn on the unit.**
For progressive output
Press [PROGRESSIVE ON] so the indicator lights.
- 2 Press [OPEN/CLOSE] to open the disc tray.**
- 3 Place the disc on the disc tray.**
Label-up (With double-sided discs, load so the label for the side you want to play is facing up.)
- 4 Press [▶] (PLAY).**
The disc tray closes and play begins.



Group and track names (MP3/WMA) or title and artist names (CD-text) are displayed on the television. Press [SUBTITLE] to turn the display on or off.

To stop play

Press [■] (→ right, Resume function).

To pause play

Press [⏏].

Press [▶] (PLAY) to restart play.

Auto standby

The unit switches to standby mode after about 30 minutes in the stop mode.

Note

- If "⏏" appears on the television
The operation is prohibited by the unit or disc.
- Discs continue to rotate while menus are displayed even after playing an item. Press [■] when you finish to preserve the unit's motor and your television screen.
- Volume may be lower when playing DVDs than when playing other discs or during television broadcasts. Reduce the volume before playing other sources so that a sudden increase in output does not occur.
- Progressive output is not possible if the "Progressive Out" setting is left as "Disable" in the QUICK SETUP menu.
- If the unit is connected to the TV through VIDEO OUT or S VIDEO OUT, or playing PAL discs, output will be interlace only (even when "Progressive Out" enabled in the QUICK SETUP menu and the progressive on indicator lights up when pressed.)
- When progressive output is on, closed captions will not be displayed.

When a menu screen appears on the television

DVD-A DVD-V VCD

Press the numbered buttons to select an item.

To select a 2-digit number

e.g. 23: [≧10] → [2] → [3].

- When playing DVDs, you can also use [▲, ▼, ◀, ▶] to select items.
Press [ENTER] to confirm your selection.

Play of the selected item now begins.

Other buttons used to operate menus

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

- [▶], [▶▶/▶▶▶]: Shows the next menu.
- [◀◀◀], [◀◀/◀◀]: Shows the previous menu. VCD
- [RETURN]: Shows the menu screen.
- [TOP MENU]: Shows the first menu screen. DVD-A DVD-V
- [MENU]: Shows the menu screen. DVD-V

Resume function

DVD-A DVD-V VCD CD MP3 WMA

(When the play time is displayed)

The position you stopped play at is recorded by the unit when "▶" is flashing on the display.



While "▶" is flashing, press [▶] (PLAY) to start play from where you stopped it. (When playing DVD-Video → Chapter Review below)

- The position is cleared when the disc tray is opened or the unit is switched to standby.

To clear the position

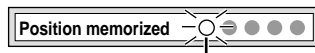
Press [■] before recalling the memorized position.

Position Memory function

This function allows you to memorize a position to start from even after switching the unit to standby or changing discs. You can memorize positions on up to five different discs at a time. When you memorize another position, the earliest position is replaced.

- This function does not work while playing some DVDs.

1. During play, press [POS. MEMO].



Light as you memorize positions.

2. Press [POWER] to switch the unit to standby or press [OPEN/CLOSE] to remove the disc.
3. When you are ready to play the disc again, press [▶] (PLAY).
Play starts from the memorized position and the position is cleared.
(When playing DVD-Video → Chapter Review below)

To clear the position

Press [■] before recalling the memorized position.

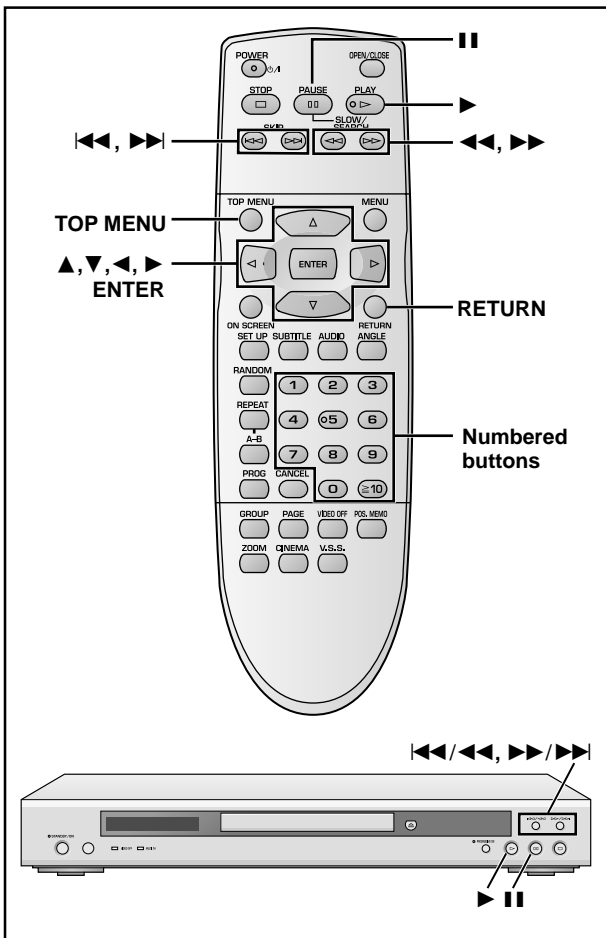
Chapter Review DVD-V

The following message appears immediately after you press [▶] (PLAY).

Press PLAY to Chapter Review

Press [▶] (PLAY) while the message is displayed and the beginning portions of each chapter up to the current one are played. Full play resumes from the point where you pressed [■] or [POS. MEMO].
(This feature works only within a title.)

If you do not press [▶] (PLAY), the message disappears and play starts from where you pressed [■] or [POS. MEMO].



Skipping items

DVD-A **DVD-V** **VCD** **CD** **MP3** **WMA**

You can skip chapters on DVD-Video, tracks on DVD-Audio, Video CDs, CDs, MP3, and WMA discs.

During play or while paused

Press [**⏮**] or [**⏭**].

- Press [**⏮**/**⏮**] or [**⏭**/**⏭**] on the main unit.
- Each press increases the number of skips.

Fast forward and rewind—SEARCH

DVD-A **DVD-V** **VCD** **CD** **MP3** **WMA**

During play

Press [**⏮**] or [**⏭**].

- Press and hold [**⏮**/**⏮**] or [**⏭**/**⏭**] on the main unit.
- You may erase sound during search (➔ page 21, Audio—Audio during Search).

Slow-motion play

DVD-A **DVD-V** **VCD**

While paused

Press [**⏮**] or [**⏭**].

Press and hold [**⏮**/**⏮**] or [**⏭**/**⏭**] on the main unit.

Frame-by-frame viewing

DVD-A **DVD-V** **VCD**

While paused

Press [**◀**] or [**▶**].

The frame changes each time you press the button.

- The frames change in succession if you press and hold the button.
- Pressing [**⏮**] also activates forward frame-by-frame.

Notes

- The speed of search and slow-motion increases up to 5 steps.
- Press [**▶**] (PLAY) to restart play.
- You cannot move backwards with Video CD during slow-motion and frame-by-frame.
- Slow-motion and frame-by-frame only work on the moving picture parts of DVD-Audio.
- **When playing Video CDs with playback control**
Pressing buttons to perform skip, search or slow-motion may take you to a menu screen.

Starting play from a selected item

DVD-A **DVD-V** **VCD** **CD** **MP3** **WMA**

Press the numbered buttons to select the item.

To select a 2-digit number

e.g. 23: [**⏮**10] ➔ [2] ➔ [3].

MP3 **WMA**

Press [ENTER] after pressing the numbered buttons. (You do not have to press [**⏮**10].)

Play starts from the selected item.

Note

- This works only when stopped with some discs.
- When playing DVD-Audio and you want to start play from a track in a different group, select the group first (➔ page 16).

Using menus to play MP3/WMA discs and CD text

MP3 | WMA

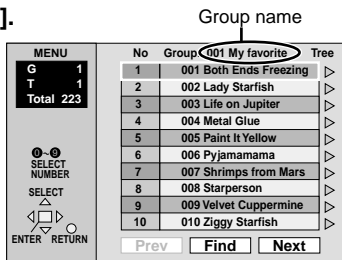
This unit can play MP3 and WMA (Windows Media Audio) files recorded on CD-R/RW with a computer. Files are treated as tracks and folders are treated as groups.

CD | (CD text)

This unit reads and displays the information on CD text discs. You can display disc titles, artist names and track titles.

1 Press [TOP MENU].

e.g. MP3



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

Play continues to the last track in the last group.

"☞" indicates the track currently playing.

To show other pages

Press [▲, ▼, ◀, ▶] to select "Prev" or "Next" and press [ENTER].

After listing all the tracks in one group, the list for the next group appears.

To exit the file list

Press [TOP MENU].

Note

- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- This unit is compatible with multi-session but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.
- If you play a MP3/WMA track that includes still picture data, it will take some time before the music itself starts playing and the elapsed time will not be displayed during this time. Even after the track starts, the correct play time will not be displayed.

WMA

- When creating a WMA disc, ensure the copyright feature is off.
- WMA files must have the extension ".WMA" or ".wma".
- Noise may occur when playing WMA files.
- There are some files this unit cannot play (e.g., copyright protected). "TRACK PROTECTED" or "CANNOT PLAY THIS TRACK" appear on the unit's display to indicate such tracks.

MP3

- MP3 files must have the extension ".MP3" or ".mp3".
- This unit is not compatible with ID3 tags.
- This unit is not compatible with files with a sampling rate of 32 kHz.

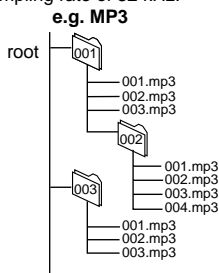
Naming folders and files

At the time of recording, prefix folder and file names with 3-digit numbers in the order you want to play them (this may not work at times).

CD | (CD text)

When making your own CD text discs

The unit plays the tracks in the order you record them so you do not have to prefix the titles with numbers.



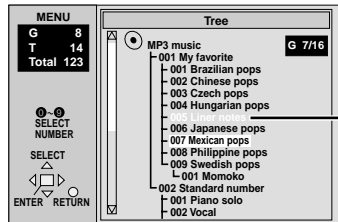
MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/ or other countries. WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.



Using the tree screen to find a group | MP3 | WMA

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



You cannot select groups that contain no compatible files.

2 Press [▲, ▼] to select a group and press [ENTER].

The file list for the group appears.

For your reference

Press [◀, ▶] to jump layers in the tree screen.

To return to the file list

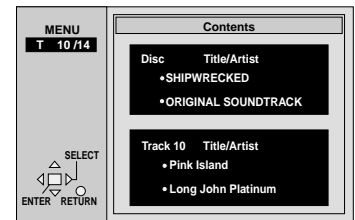
Press [RETURN].

To show the text information for a track | CD | (CD text)

1 Press [▲, ▼] to select a track.

2 Press [▶] to show the text information.

- Press [◀, ▶] to select other tracks.
- Press [ENTER] to play tracks selected here.



To return to the list screen

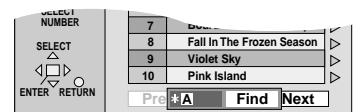
Press [RETURN].

Finding a track to play

Enter part of a track title to make a search. Although the characters are upper case, the unit also searches for lower case.

Example: search for tracks including the word "LOVE".

1 Press [▲, ▼] to select "Find" and press [ENTER].



2 Press [▲, ▼] to select "L" and press [ENTER].

Characters change in alphanumeric order each time you press [▲].

- Press [◀, ▶] to skip between A, E, I, O and U.
- Press [◀] to erase a character.
- Repeat this step to enter "O", "V", and "E".

3 Press [▶] to select "Find" and press [ENTER].

The search results screen appears.

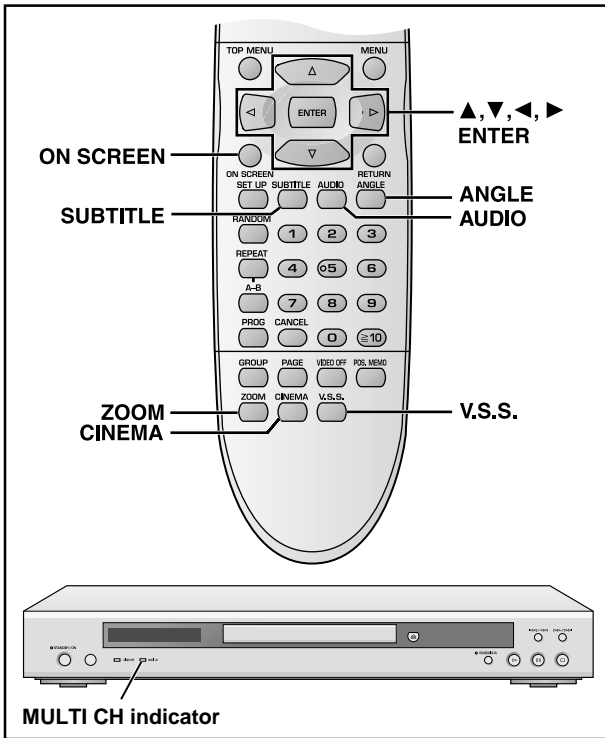
4 Press [▲, ▼] to select the track and press [ENTER].

Press [▼] to show other tracks if there are more than fifteen.

- To search for the first word in a title, erase the asterisk (*) first.
- You can also enter numbers with the numbered buttons.

To return to the list screen

Press [RETURN].



Cinema

DVD-A DVD-V VCD

You can change the picture quality for movie viewing.

Press [CINEMA].

Each time you press the button:



- **Cinema1:** Mellows images and enhances detail in dark scenes.
- ↓
- **Cinema2:** Sharpens images and enhances detail in dark scenes.
- ↓
- **Normal:** Normal mode (Factory preset)



For your reference

You can make finer adjustments to the picture if desired (→ page 20, Picture Menu).

Dialogue Enhancer

DVD-V

You can enjoy this function when viewing discs that use Dolby Digital or DTS encoding. Dialogue Enhancer is a technology that amplifies the center channel, where dialogue is usually recorded.

This makes the dialogue in movies easier to hear.

1. Press [ON SCREEN] to display Unit information.



2. While the leftmost icon is highlighted, press [▲, ▼] to select Audio Menu.



3. Press [◀, ▶] to select Dialogue Enhancer.

Dialogue Enhancer

4. Press [▲, ▼] to select ON or OFF (Factory preset).



Note

- Dialogue Enhancer will not work or will have less effect with some discs.
- Dialogue Enhancer does not work when the unit is outputting bitstream signals.

Advanced Surround

DVD-V VCD

SP: (Dolby Digital, DTS, LPCM, MPEG, 2-channel or over only)

HP: (Dolby Digital, LPCM, MPEG, 2-channel or over only)

Use Advanced Surround V.S.S. (Virtual Surround Sound) to enjoy a surround-like effect if you are using 2 front speakers (SP) or headphones (HP). (To enjoy HP-V.S.S., connect the unit to equipment that has a headphone jack.)

If you are playing a disc with surround effects recorded on it, the effect is broadened and sound seems to come from virtual speakers on either side.

Press [V.S.S.].

Each time you press the button:

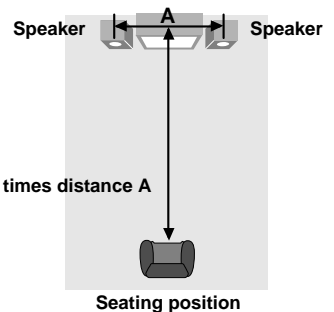


- **SP1/HP1:** Natural effect
- ↓
- **SP2/HP2:** Emphasized effect
- ↓
- **SP OFF/HP OFF:** Cancel (Factory preset)

To change the mode: [◀] ⇒ [▲, ▼] to select "SP" or "HP"



Optimum seating position



Note

- Advanced Surround will not work, or will have less effect with some discs.
- Turn off the surround sound effects on the equipment you have connected when using this effect.
- Turn Advanced Surround off if it causes distortion.
- Even if three or more speakers are connected, output from this unit will be in stereo (two channels) when Advanced Surround is on.
- Turn Advanced Surround off when using Dolby Pro Logic. Dolby Pro Logic will not work correctly if it is on.

Changing soundtracks, subtitles and angles

- Some DVDs have multiple soundtracks, subtitle languages and camera angles, and you can change them during play.
- “-” or “- -” is displayed instead of the language number in circumstances such as when no language is recorded on the disc.
- Some discs allow changes to soundtracks, subtitle languages and angles only by using the disc's menus.

Soundtracks

DVD-A DVD-V VCD

During play

Press [AUDIO].

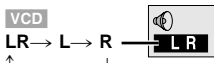
The setting changes each time you press the button.

DVD-A

Soundtrack playing



Soundtrack selected



DVD-V

Soundtrack selected



- The MULTI CH indicator on the main unit lights when a multi-channel soundtrack is playing.
- Indicates that a multi-channel soundtrack can be down-mixed to two channels.

e.g. DVD-Video



- Play restarts from the beginning of the soundtrack when playing DVD-Audio soundtracks that are accompanied by still pictures.
- Even if a second soundtrack isn't recorded on a DVD-Audio, two soundtrack numbers will normally be shown when you press [AUDIO]. The soundtrack currently playing is number 1.
- You can also use this button to turn the vocals on and off on karaoke discs. Read the disc's instructions for details.
- Refer to **B** below for audio signal type details.

A Audio/Subtitle language

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

B Signal type/data

LPCM/PPCM/Digital/DTS/MPEG: Signal type

k (kHz): Sampling frequency

b (bit): Number of bits

ch (channel): Number of channels

Example: 3/2_1ch

1: Subwoofer signal
(not displayed if there is no subwoofer signal)

0: No surround

1: Mono surround

2: Stereo surround (left/right)

1: Center

2: Front left+Front right

3: Front left+Front right+Center

Subtitles

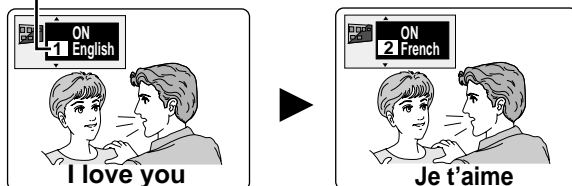
DVD-A DVD-V

You can change the subtitle language and turn the subtitles on and off.

During play

Press [SUBTITLE].

The number changes each time you press the button.



- In some cases, the subtitle language is not changed to the selected one immediately.
- If the subtitles overlap closed captions recorded on discs, turn the subtitles off.

To clear/display the subtitles

1. Press [SUBTITLE].
2. Press [▶].
3. Press [▲, ▼] to select "OFF" or "ON".

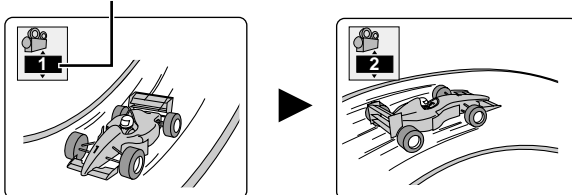
Angles

DVD-A DVD-V

During play

Press [ANGLE].

The number changes each time you press the button.



4:3 TV Zoom function

DVD-A DVD-V

Widescreen software often appears as a letterbox picture (⇔ page 10) when shown on a regular 4:3 aspect television. Use 4:3 TV Zoom to expand these pictures to fill more of the television. (The sides of the picture are cut off when you do this.)

During play

Press [ZOOM].

Each time you press the button:

ON ← → OFF (Factory preset)

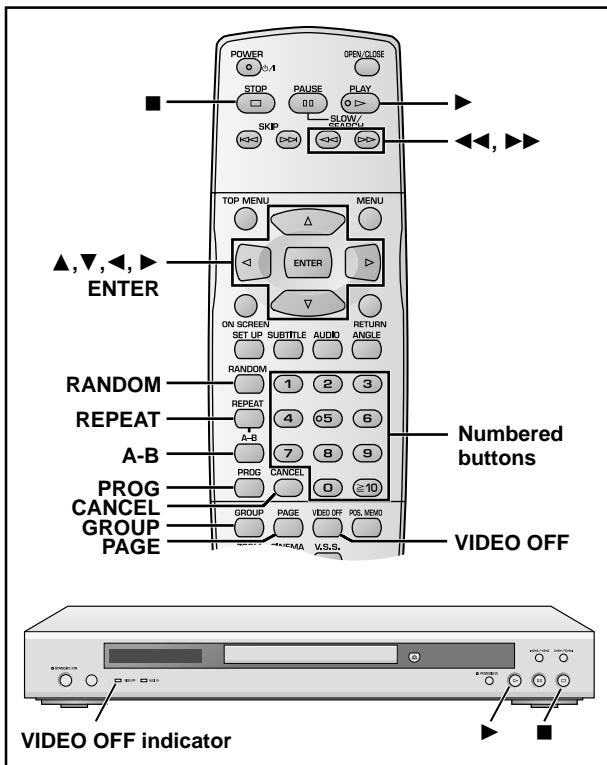
- 4:3 TV Zoom is canceled when the disc tray is opened or the unit is switched to standby.



Note

- Depending on the video format of the disc and current play status, this feature may not work as described.
- Menus may act or appear differently while 4:3 TV Zoom is on.

Convenient features



Selecting still pictures—Page Skip

DVD-A

During play or while paused

Press **[PAGE]**.

The page changes each time you press the button.

PAGE 1

To enjoy even higher quality sound—VIDEO OFF

DVD-A DVD-V VCD CD MP3 WMA

You can enjoy higher quality audio by stopping the video signal.

During play

Press **[VIDEO OFF]**.

- The indicator on the main unit lights.

- VIDEO OFF is canceled if you press the button again or turn the unit off.

Note

- Video is output when you stop the disc and during operations such as search.

- The television screen can appear unusual while video signals are not being output.

A-B repeat play

DVD-A DVD-V VCD CD MP3 WMA

(When the play time is displayed)

You can repeat a section between points A and B within a title or track.

During play

- 1 Press **[A-B]** at the starting point (A).
- 2 Press **[A-B]** at the finishing point (B).



To cancel

Press **[A-B]** to display “* * *”.

Note

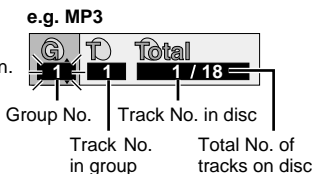
- Some subtitles recorded around point A or B may fail to appear. **DVD-V**
- The unit automatically determines the end of a title/track as point B when the end of the title/track is reached.

Selecting groups to play

DVD-A MP3 WMA

The tracks on DVD-Audio, MP3 and WMA are divided into groups. How these groups are played depends on the recording method.

- 1 Press **[GROUP]**.
The group number changes each time you press the button.
- 2 Press **[ENTER]**.
- 3 Press the numbered buttons to select the track number and press **[ENTER]**.
The selected group and track begin to play.



Note

- You can also select groups and tracks with the cursor buttons.
- Selection may not be allowed in some situations.

DVD-A

Playing all the groups in succession (⇒ page 17, All group play)

Playing bonus groups

DVD-A

Some discs contain bonus groups. To enjoy these groups you may have to enter a password. Refer to the disc's jacket.

1. Select the bonus group while stopped (⇒ steps 1 and 2, above).
2. Enter the 4-digit password with the numbered buttons.
 - You can erase it by pressing **[CANCEL]**.
3. Press **[ENTER]**.
4. Press the numbered buttons to select a track and press **[ENTER]** to start play.

Note

- Some discs will show a menu screen to accept your password. Follow the on-screen instructions.
- You may have to reenter the password after removing the disc or switching the unit to standby.

Repeat play

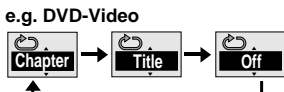
DVD-A DVD-V VCD CD MP3 WMA

(When the play time is displayed)

During play

Press **[REPEAT]**.

The indication changes each time you press the button.



DVD-A MP3 WMA

Track
Group
All*1
Off

DVD-V

Chapter
Title
All*1
Off

VCD CD

Track
All
Off



*1 You can select "All" only when "Random play", "Program play", and "All group play", are chosen.

If the Video CD has playback control

1. Press **[PBC]** to clear "PBC" from the display.
2. Press the numbered buttons to select a track to start play (⇒ page 12).
3. Press **[REPEAT]** (⇒ above).

Note

You cannot use repeat play to repeat an entire DVD-Video or an entire MP3/WMA disc.

To repeat only your favorite tracks/chapters

DVD-A DVD-V VCD CD MP3 WMA

Start program play (⇒ right) and press **[REPEAT]** to display "All".

Random play

DVD-A DVD-V VCD CD MP3 WMA

While stopped

1 Press [RANDOM].

2 DVD-A DVD-V

Press the numbered buttons to select a group (**DVD-A**) or a title (**DVD-V**).

- Some items cannot be selected. **DVD-V**
- You can select more than one group.
To enter all groups, select "All" using **[◀, ▶]** and press **[ENTER]**.
- To deselect a group, press the numbered buttons corresponding to the group you want to clear.
- If you select bonus groups, you will have to enter a 4-digit password (⇒ page 16).

e.g. DVD-Video



3 Press [▶] (PLAY).

To exit the random mode

Press **[RANDOM]** while stopped.

Program play/All group play

DVD-A DVD-V VCD CD MP3 WMA

While stopped

Press **[PROG]**.

The display changes each time you press the button.

Program → All group (**DVD-A**) → Off

Program play

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

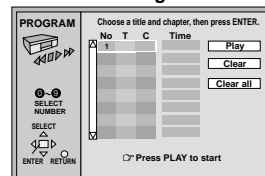
1 DVD-A DVD-V MP3 WMA

Press the numbered buttons to select a group

(**DVD-A MP3 WMA**) or a title (**DVD-V**).

- Some items cannot be selected. **DVD-V**
- If you select bonus groups, you will have to enter a 4-digit password (⇒ page 16). **DVD-A**

e.g. DVD-Video



Title No. Chapter No. Program No.

2 Press the numbered buttons to select a track (**DVD-A VCD CD**) or a chapter (**DVD-V**).

(**MP3 WMA** and press **[ENTER]**).

- Repeat steps 1 and 2 to program other items.
- Times are not displayed when programming DVD-Video, MP3 and WMA.

3 Press [▶] (PLAY).

Some items will not be played even if you programmed them. **DVD-V**

To select using the cursor buttons

Press **[ENTER]** and **[▲, ▼]** to select an item, then press **[ENTER]** again to register. Select "ALL" to enter all items (on the disc or in the title or group).

Changing the program

Press **[▲, ▼]** to select an item.

–To change an item, repeat steps 1 and 2.

–To clear an item, press **[CANCEL]** (or select "Clear" and press **[ENTER]**).

Press **[◀◀]** or **[▶▶]** to change pages.

To clear the whole program

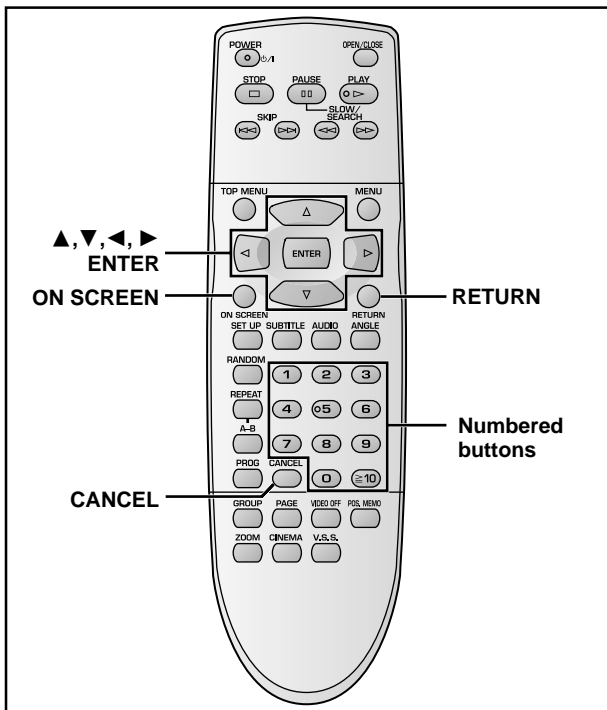
Move to "Clear all" with **[▲, ▼, ◀, ▶]** and press **[ENTER]**. The whole program is also cleared when the unit is turned off or the disc tray is opened.

All group play

DVD-A

The unit plays tracks in all the groups on a disc.

Press **[▶] (PLAY)**.



DVD-A DVD-V VCD CD MP3 WMA

GUI screens are menus that contain information about the disc or unit. These menus allow you to perform operations by changing this information.

Common procedures

1 Press [ON SCREEN].

Each time you press the button:

- Disc information (⇒ right)
- ↓
- Unit information (⇒ pages 19 and 20)
- ↓
- Original display

2 [Unit information only]

While the leftmost icon is highlighted
Press [▲, ▼] to select the menu.

Each time you press the button:

- Play Menu ↔ Picture Menu
- ↑ ↓
- Display Menu ↔ Audio Menu

3 Press [◀, ▶] to select the item.

4 Press [▲, ▼] to select the setting.

- Items with “▲” or “▼” above and below can be changed by [▲, ▼].
- Press [ENTER] if the setting does not change after pressing [▲, ▼].
- Some items require different operations. Read the following explanations.

For your reference

- Depending on the condition of the unit (playing, stopped, etc.) and the type of software, there are some items that you cannot select or change.
- When numbers are displayed (e.g. title No.), the numbered buttons are also effective for setting. Press [ENTER] to register the setting.

To clear the menus

Press [RETURN] until the menus disappear.

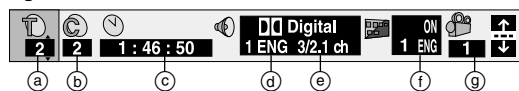
■ To change the position of the icons

1. Press [◀, ▶] to select the Bar Position icon.
2. Press [▲, ▼] to move the icons. (There are 5 positions.)

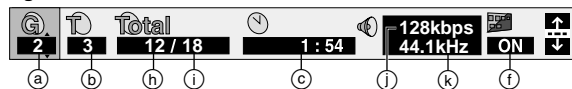


Disc information

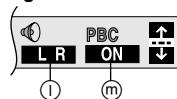
e.g. DVD-Video



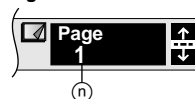
e.g. MP3 disc



e.g. Video CD



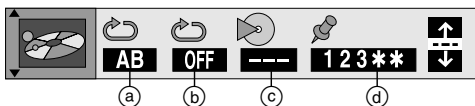
e.g. DVD-Audio



- a) T: Title number **DVD-V**
Track number **VCD CD**
- G: Group number **DVD-A MP3 WMA**
- b) T: Track number in group **DVD-A MP3 WMA**
- C: Chapter number **DVD-V**
- c) Time **DVD-A DVD-V**
 - Press [▲, ▼] to show the elapsed play time or remaining time for the group, track or title (or chapter during program and random play).
 - Select a position to start play by specifying a time with the numbered buttons and press [ENTER].
- Changing the time display **VCD CD**
Press [▲, ▼] to show the elapsed play time, remaining time for the track, or remaining time for the disc.
- Elapsed play time **MP3 WMA**
(display only, cannot be changed)
- d) Soundtrack language **DVD-A DVD-V** (⇒ page 15)
(See [A] on page 15 for language abbreviations.)
- e) Audio signal type **DVD-A DVD-V** (⇒ page 15)
(See [B] on page 15 for details.)
Karaoke vocal on/off (Karaoke DVD only) **DVD-V**
Solo: OFF or ON
Duet: OFF, V1 + V2, V1 or V2
- f) Subtitle language **DVD-A DVD-V** (⇒ page 15)
(See [A] on page 15 for language abbreviations.)
Subtitles on/off **DVD-A DVD-V**
ON ↔ OFF
Track information on/off **MP3 WMA CD** (CD text)
ON ↔ OFF
- g) Angle number **DVD-A DVD-V** (⇒ page 15)
- h) Track number in disc **MP3 WMA**
- i) Total number of tracks on disc **MP3 WMA**
- j) Current bitrate **MP3 WMA**
- k) Current sampling frequency **MP3 WMA**
- l) Audio mode **VCD** (⇒ page 15)
LR ↔ L ↔ R
- m) Menu play **VCD** (with playback control only)
Indicates whether menu play (playback control) is on or off.
- n) Still picture number **DVD-A**
Selected picture is shown during play.

Play Menu

e.g. DVD-Video



a) **A-B repeat** **DVD-A** **DVD-V** **VCD** **CD** **MP3** **WMA** (⇒ page 16)
 [ENTER] (start point) ⇒ [ENTER] (finish point)
 To cancel: [ENTER]

b) **Repeat mode** (⇒ page 17)

DVD-A **MP3** **WMA** **DVD-V** **VCD** **CD**
 T: Track C: Chapter T: Track
 G: Group T: Title A: All
 A: All*1 A: All*1 OFF: Off
 OFF: Off OFF: Off

*1 You can select "All" only when "Random play", "Program play", and "All group play", are chosen.

c) **Play mode display** **DVD-A** **DVD-V** **VCD** **CD** **MP3** **WMA**

---: Normal play
 PGM: Program play
 RND: Random play
 ALL: All group play (**DVD-A**)

d) **Marker**

DVD-A **DVD-V** **VCD** **CD** **MP3** **WMA**: 5 positions

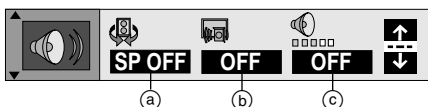
[ENTER] (The unit is now ready to accept markers.)
 To mark a position: [ENTER] (at the desired point)
 To mark another position: [◀, ▶] ⇒ [ENTER]
 To recall a marker: [◀, ▶] ⇒ [ENTER]
 To erase a marker: [◀, ▶] ⇒ [CANCEL]

Note

- This feature doesn't work during program and random play.
- All the markers are cleared when the disc tray is opened or the unit is switched to standby.

Audio Menu

e.g. DVD-Video



a) **Advanced Surround** **DVD-V** **VCD** (⇒ page 14)

• **VSS mode**
 SP ↔ HP
 • **SP/HP level**
 1 ↔ 2 ↔ OFF

b) **Dialogue Enhancer** **DVD-V** (⇒ page 14)

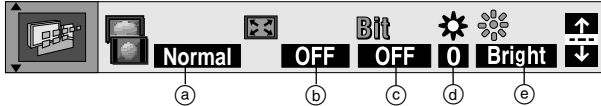
ON ↔ OFF

c) **Attenuator**

Switch on if sound distorted.
 ON ↔ OFF (Factory preset)

Display Menu

e.g. DVD-Video



a) **4:3 Aspect** **DVD-A** **DVD-V**

Select how to show images made for 4:3 aspect screens on a 16:9 aspect television.

Normal: Laterally stretches images made for a 4:3 screen.

Auto: Expands suitable 4:3 letterbox images to fill more of the screen. Other images appear in full in the center of the screen.

Shrink: Images appear in the center of the screen.

Zoom: Expands all images to fill the screen.

If your television has a similar feature, use it instead for a better effect.

b) **4:3 TV Zoom** **DVD-A** **DVD-V** (⇒ page 15)

ON ↔ OFF

c) **Bitrate display** **DVD-A** **DVD-V** **VCD**

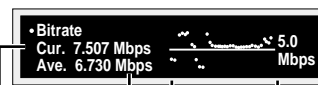
Displays the bitrate (approximate values) and type of picture (⇒ page 25, Glossary—I/P/B)

ON ↔ OFF

To change the bitrate display: [◀, ▶]



- During play: shows the average bitrate of the video being played
- While paused: shows the data volume of the frame



Current bitrate Bitrate record
 Average bitrate

- A record of bitrates for a sampling period.

d) **OSD brightness** (−3 to +3)

Adjust the brightness of the on-screen displays.

e) **FL dimmer** **DVD-A** **DVD-V** **VCD** **CD** **MP3** **WMA**

Changes the brightness of the unit's display.

Bright ↔ Dim ↔ Auto*2 (**DVD-A** **DVD-V** **VCD**)

*2 The display is dimmed during play, but brightens when you perform operations such as slow-motion, search, and pause.

Unit information

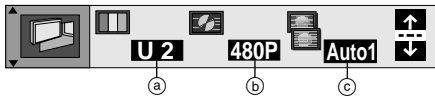
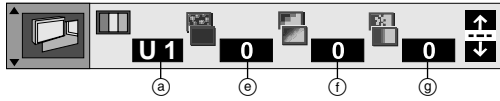
Picture Menu

DVD-A DVD-V VCD

When the progressive on indicator is on



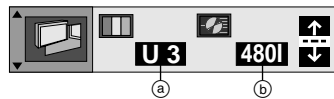
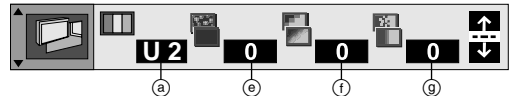
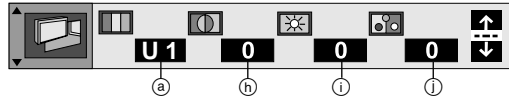
■ User mode



When the progressive on indicator is off



■ User mode



(a) Picture mode (⇒ page 14, Cinema)

- **N**: Normal mode
 - **C1**: Mellows images and enhances detail in dark scenes
 - **C2**: Sharpens images and enhances detail in dark scenes
 - **U1/U2/U3**: User mode (⇒ right)
- *U3 appears only when the progressive on indicator is off.

(b) Video output mode

- (⇒ page 25, Glossary—Interlace and progressive output)
- 480I**: Interlace video (the progressive on indicator off)

↑
480P: Progressive video (the progressive on indicator on)

You can change the video output mode only when “Progressive Out” in the Video menu is set to “Enable” (⇒ page 21).

(c) Transfer mode

Select the method of conversion for progressive output to suit the type of material being played (⇒ page 25, Glossary—Film and video).

- **Auto 1 (normal)**: for viewing film material
- **Auto 2**: for viewing film material (the same as Auto 1, but able to convert 30-frame-per-second progressive video)
- **Video**: for video material

■ User mode

To change the user mode

1. Select User mode and press [▶] to highlight the number.
2. Press [▲, ▼] to select “1”, “2” or “3”.



—MPEG Digital Noise Reduction—

- (e) **3D-NR** (0 to +4)
Reduces overall noise.
- (f) **Block NR** (0 to +3)
Smooths block noise.
- (g) **Mosquito NR** (0 to +3)
Reduces the smudging that appears around contrasting sections of the picture.






—Picture Control—

- (h) **Contrast** (−7 to +7)
Increases the contrast between light and dark parts of the picture.
- (i) **Brightness** (0 to +15)
Brightens the picture.
- (j) **Color** (−7 to +7)
Adjust the shade of the picture’s color.

Changing settings

This chart shows the settings for this unit. Change the settings to suit your preferences and to suit the unit to the environment in which it is being used. These settings are retained in memory until they are changed, even if the unit is turned off. See page 22 for details on menu operation.

• Underlined items are the factory preset.

Menus	Items	Options
	Audio Choose the audio language.	<u>English</u> French Spanish Original ^{#1} Other * * * * * ^{#2}
	Subtitle Choose the subtitle language.	<u>Automatic</u> ^{#3} English French Spanish Other * * * * * ^{#2}
	Menus Choose the language for disc menus.	<u>English</u> French Spanish Other * * * * * ^{#2}
	Ratings Set a ratings level to limit DVD-Video play. • The password screen is shown if you choose levels 0 to 7 or if you choose "Ratings" when levels 0 to 7 have been selected. (⇒ page 22) • Select "Level 0" to prevent play of discs that do not have ratings levels recorded on them.	Setting ratings (When level 8 is selected) 8 <u>No Limit</u> 1 to 7 ^{#4} 0 Lock All <hr/> Changing ratings (When level 0–7 is selected) Unlock Player Change Password Change Level Temporary Unlock
	TV Aspect (⇒ page 10) Choose the setting to suit your television and preference.	<u>4:3 Pan&Scan</u> 4:3 Letterbox 16:9
	Progressive Out Choose "Enable" to enable progressive output.	<u>Disable</u> Enable
	Still Mode (⇒ page 25, Glossary—Frame still and field still) Specify the type of picture shown when paused.	<u>Automatic</u> Field Frame
	Black Level Control Change the black level of the picture if you connected a television through the COMPONENT VIDEO OUT terminals.	Lighter: When connected through VIDEO OUT or S VIDEO OUT. Darker: When connected to through COMPONENT VIDEO OUT (Y/PB/PR).
	Speaker Setting (⇒ page 23) Choose the settings to suit your audio system and the listening environment.	Multi-channel: when 3 or more speakers are connected. • Speaker presence and size • Delay time • Channel balance <hr/> 2-channel: when 2 speakers or an amplifier with a Dolby Pro Logic decoder is connected.
	Digital Audio Output (⇒ page 22, Digital output)	<u>On</u> Off
	PCM Down Conversion (⇒ page 22)	<u>No</u> Yes
	Dolby Digital (⇒ page 22)	<u>Bitstream</u> PCM
	DTS Digital Surround (⇒ page 22)	<u>PCM</u> Bitstream
	Dynamic Range Compression (Dolby Digital only) (⇒ page 25, Glossary) Change the dynamic range for late night viewing.	<u>Off</u> On
	Audio during Search ^{#5} Choose whether to have sound during search.	<u>On</u> Off
	Menu Language Choose the language for these menus and the on-screen messages.	<u>English</u> Français Español
	On-Screen Messages Choose whether to show on-screen messages or not.	<u>On</u> Off
	DVD-Video Mode Select how to play pictures contained on some DVD-Audio. The setting returns to "Off" when you remove the disc or turn the unit off.	<u>Off:</u> DVD-Audio are played as DVD-Audio. <u>On:</u> DVD-Video contents found on DVD-Audio can be played.
	Demo A demonstration of the unit's on-screen displays starts when you select "On". The demonstration stops when you press a button and the setting reverts to "Off".	<u>Off</u> On
	QUICK SETUP (⇒ page 10) Answer questions to make basic settings.	<u>Yes</u> No

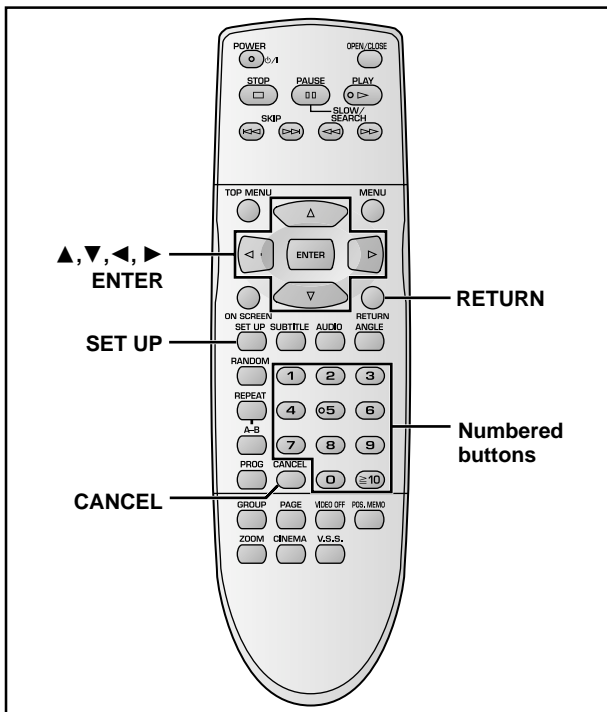
^{#1} The original language of each disc will be selected.

^{#2} Input a code number with the numbered buttons (⇒ page 23).

^{#3} If the language selected for "Audio" is not available, subtitles of that language will automatically appear if available on that disc.

^{#4} Prohibits play of DVD-Video with corresponding ratings recorded on them.

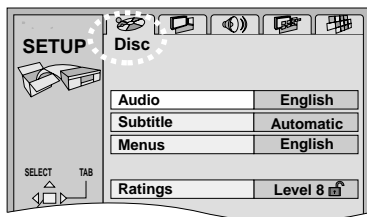
^{#5} This feature doesn't work for DTS-CD discs. Audio will be heard when playing some DVD-Audio despite the settings you make here.



Common procedures

See page 21 for menu and option details.

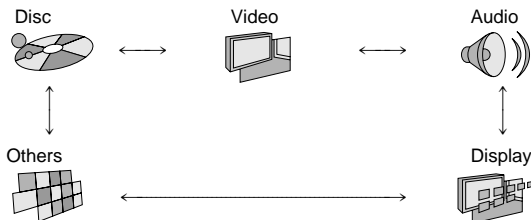
1 Press [SET UP] to show the menus.



•The QUICK SETUP screen appears when you press [SET UP] the first time after purchase (⇒ page 10).

2 Press [◀, ▶] to select the menu's tab.

The screen changes to display the menu.



3 Press [▲, ▼] to select the item you want to change and press [ENTER].

4 Press [▲, ▼, ▶, ◀] to select the option and press [ENTER].

The screen now shows the menu again.

To return to the previous screen
Press [RETURN].

To exit the SETUP menu
Press [SET UP].

Entering a password (Ratings)

DVD-V

The password screen is shown when you select levels 0 to 7.

1. Input a 4-digit password with the numbered buttons.
 - If you enter a wrong number, press [CANCEL] to erase it.
2. Press [ENTER].
 - The lock symbol appears closed to show the rating is locked.
 - Do not forget your password.
3. Press [ENTER] to confirm the 4 digits.

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

Digital output

DVD-A DVD-V

Change the settings when you have connected equipment through this unit's DIGITAL OUT terminal (OPTICAL or COAXIAL).

Digital Audio Output

Select whether to output digital signals or not.

- On: Digital signals are output.
- Off: Digital signals are not output.

PCM Down Conversion

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

- Select "Yes" if the equipment you connect cannot process signals with a sampling frequency of 96 kHz or 88.2 kHz.
- Also make the appropriate "Digital Audio Output" setting (⇒ above).

No (Factory preset): Output as 96 kHz or 88.2 kHz

Yes: Converted to 48 kHz or 44.1 kHz

Note

- Signals are converted to either 48 kHz or 44.1 kHz despite the above settings if the signals have a sampling frequency of over 96 kHz, or the disc has copy protection.
- Some equipment cannot handle sampling frequencies of 88.2 kHz, even if they can handle 96 kHz. Read your equipment's operating instructions for details.

Dolby Digital and DTS Digital Surround

Bitstream (Factory preset for Dolby Digital):

Select if the equipment you connected can decode the signal.

PCM (Factory preset for DTS Digital Surround):

Select if the equipment you connected cannot decode the signal.

IMPORTANT

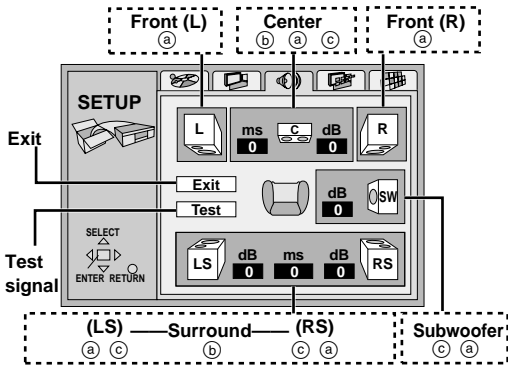
If the equipment you connected cannot decode the signal, the setting must be changed to PCM. If not, signals the equipment cannot process will be output by this unit, causing high levels of noise which can damage your hearing and the speakers.

Speaker setting

Change speaker presence and size (a), delay time (b), and channel balance (c) to suit the speakers you have connected. These settings are not necessary when you select "2-channel" (only two speakers are connected).

Note

This feature works only for analog connection (→ page 8 B).

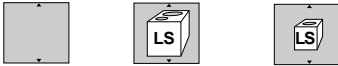


Speaker presence and size (a)

1. Press [▲, ▼, ◀, ▶] to select the item and press [ENTER].
2. Press [▲, ▼] to select the setting and press [ENTER].

Icon examples:

Surround speaker (LS)



No Large Small

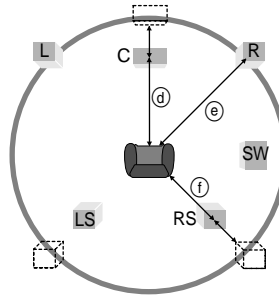
- **Large:** When the speaker supports low-frequency (under 100 Hz) reproduction.
- **Small:** Select when the speaker does not support low-frequency reproduction.

If the subwoofer set to No, the front speakers will automatically be set to Large.

Delay time (b)

DVD-V (Dolby Digital, center and surround speakers only)

For optimum listening with 5.1-channel sound, all the speakers, except for the subwoofer, should be the same distance from the seating position. If you have to place the center or surround speakers closer to the seating position, adjust the delay time to make up for the difference.



d Center speaker

Difference	Setting
Approx. 50 cm (1 1/2 feet)	1.3 ms
Approx. 100 cm (3 feet)	2.6 ms
Approx. 150 cm (5 feet)	3.9 ms
Approx. 200 cm (6 feet)	5.3 ms

f Surround speakers

Difference	Setting
Approx. 200 cm (6 feet)	5.3 ms
Approx. 400 cm (12 feet)	10.6 ms
Approx. 600 cm (18 feet)	15.9 ms

If distances (a) (from the center speaker) and (f) (from the surround speakers) are the same as or greater than (e) (from the front speakers), leave the delay time as "0", the factory preset.

If either distance (d) or (f) is less than (e), find the difference in the relevant table and change to the recommended setting.

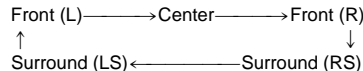
Changing the delay time

1. Press [▲, ▼, ◀, ▶] to select the delay time box and press [ENTER].
2. Press [▲, ▼] to adjust the delay time and press [ENTER].

Channel balance (c)

1. Press [▲, ▼, ◀, ▶] to select "Test" and press [ENTER].

A test signal is output from one speaker at a time, starting with the front left speaker and proceeding clockwise.



2. While listening to the test signal, press [▲, ▼] to adjust the volume of the center and surround speakers so they are the same apparent volume as the front speakers (-6 to +6). (The front speakers cannot be adjusted here.)

3. Press [ENTER].

The test signal stops.

- No signal is output for the subwoofer. To adjust its volume, play something, then return to this screen to adjust to suit your taste.

To finish the speaker setting

Press [▲, ▼, ◀, ▶] to select "Exit" and press [ENTER].

Note

The unit may be unable to output as set here due to limitations imposed by the unit itself or the disc being played. (The display's "D.MIX" indicator goes out in these cases.)

Language code list

Abkhazian: 6566	Byelorussian: 6669	Georgian: 7565	Kazakh: 7575	Nauru: 7865	Serbian: 8382	Tibetan: 6679
Afar: 6565	Cambodian: 7577	German: 6869	Kirghiz: 7589	Nepali: 7869	Serbo-Croatian: 8372	Tigrinya: 8473
Afrikaans: 6570	Catalan: 6765	Greek: 6976	Korean: 7579	Norwegian: 7879	Shona: 8378	Tonga: 8479
Albanian: 8381	Chinese: 9072	Greenlandic: 7576	Kurdish: 7585	Oriya: 7982	Sindhi: 8368	Turkish: 8482
Ameharic: 6577	Chinese: 9072	Guarani: 7178	Laotian: 7679	Pashto, Pushto: 8083	Singhalese: 8373	Turkmen: 8475
Arabic: 6582	Corsican: 6779	Gujarati: 7185	Latin: 7665	Persian: 7065	Slovak: 8375	Tw: 8487
Armenian: 7289	Croatian: 7282	Hausa: 7265	Latvian, Lettish: 7686	Polish: 8076	Slovenian: 8376	Ukrainian: 8575
Assamese: 6583	Czech: 6783	Hebrew: 7387	Lingala: 7678	Portuguese: 8084	Somali: 8379	Urdu: 8582
Aymara: 6588	Danish: 6865	Hindi: 7273	Lithuanian: 7684	Punjabi: 8065	Spanish: 6983	Uzbek: 8590
Azerbaijani: 6590	Dutch: 7876	Hungarian: 7285	Macedonian: 7775	Quechua: 8185	Sundanese: 8385	Vietnamese: 8673
Bashkir: 6665	English: 6978	Icelandic: 7383	Malagasy: 7771	Rhaeto-Romance: 8277	Swahili: 8387	Volapük: 8679
Basque: 6985	Esperanto: 6979	Indonesian: 7378	Malay: 7783	Romanian: 8279	Swedish: 8386	Welsh: 6789
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Breton: 6682	French: 7082	Javanese: 7487	Marathi: 7782	Scots Gaelic: 7168	Tatar: 8484	Zulu: 9085
Bulgarian: 6671	Frisian: 7089	Kannada: 7578	Moldavian: 7779		Telugu: 8469	
Burmese: 7789	Galician: 7176	Kashmiri: 7583	Mongolian: 7778		Thai: 8472	

Troubleshooting guide

Before requesting service, make the below checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, consult your dealer for instructions.

Power

Page

No power.	●Insert the power cable securely into the wall outlet.	9
The unit is automatically switched to the standby mode.	●To conserve power, the unit automatically switches to standby after approximately 30 minutes in the stop mode. Turn the power back to ON.	–

Unit displays

“NoPLAY”	●You inserted a disc the unit cannot play; insert one it can.	6
“CHECK”	●Disc is dirty: Wipe it clean.	6
“H□□” □□ stands for a number.	●Trouble may have occurred. The number following “H” depends on the status of the unit. Reset procedure: Press [POWER ⏻/I] to switch the unit to the standby mode and then back to ON. Alternatively, press [POWER ⏻/I] to switch the unit to the standby mode, disconnect the power cable, and then reconnect it. ●If the service numbers fail to clear, note the service number and contact a qualified service person.	–
“NoDISC”	●You haven't inserted a disc: Insert one. ●You haven't inserted the disc correctly: Insert it correctly.	– 11

Operation

No response when buttons pressed.	●Some operations may be prohibited by the disc. ●The unit may not be operating properly due to lightning, static electricity or some other external factor. Reset procedure: Press [POWER ⏻/I] to switch the unit to the standby mode and then back to ON. Alternatively, press [POWER ⏻/I] to switch the unit to the standby mode, disconnect the power cable, and then reconnect it.	– –
No operations can be performed with the remote control.	●Check that the batteries are installed correctly. ●The batteries are depleted: Replace them with new ones. ●Point the remote control at the remote control sensor and operate.	10 10 7
Play doesn't start (or stops immediately) when you press [▶] (PLAY).	●Condensation has formed: Wait 1 to 2 hours for it to evaporate. ●This unit cannot play discs other than the ones listed in these operating instructions. ●This unit cannot play DVD-Video with a region number other than “1”, “ALL” or multiple region number including “1”. ●The disc may be dirty and require cleaning. ●Ensure that the disc is installed with the label of the side to be played facing upwards.	– 6 6 6 11
Cannot select alternative languages.	●This function is dependent on software availability. ●Try selecting from the disc's menu if one is available.	– 11
No menu play.	●This function is dependent on software availability.	–
No subtitles.	●This function is dependent on software availability. ●Subtitles are cleared from the television. Display the subtitles.	– 15
Soundtrack and/or subtitle language is not the one selected with the SETUP menus.	●This function is dependent on software availability.	–
Cannot change angle.	●This function is dependent on software availability. Even if a disc has a number of angles recorded, these angles may be recorded for specific scenes only.	–
Dialogue Enhancer has no effect.	●This feature does not work when the unit is outputting bitstream signals.	–
You have forgotten your ratings password. Reset all the settings to Factory Preset.	●While stopped, press and hold [◀◀/◀◀] and [■] on the unit and then also press and hold [▲] on the unit until “Initialized” disappears from the television. Turn the unit off and on again. All settings will return to the default values.	–
The progressive on indicator does not light.	●Go to Video in the SETUP menus, and select “Enable” in “Progressive Out”.	21

Picture

Picture distorted.	●Some distortion is normal during SEARCH. ●The screen may be disrupted briefly when you turn off the VIDEO OFF feature.	– –
No picture.	●Check the connection. ●Make sure the television is on. ●Ensure the television's video input setting (e.g., VIDEO 1) is correct.	9 – –
The picture shown on the television is not normal. (The sides of the picture are cut off, the picture is stretched horizontally, or black bands appear at the top and bottom of the screen.)	●Go to Video in the SETUP menus, and change “TV Aspect” to suit your television. ●Use the television to change the aspect to the correct one. ●The 4:3 TV Zoom function is on. ●Ensure that the unit is not connected through a video cassette recorder. ●Connect to the component video (480P) input terminals on a television compatible with this unit's copy guard system. You cannot view progressive video if your television is not compatible.	21 15 9 9
There is ghosting when progressive output is on.	●Press [PROGRESSIVE ON] so the indicator goes out. This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.	11
Picture quality is poor.	●Check the settings in the GUI screen's Picture Menu.	20
The “Menu” does not show correctly on the display.	●Select OFF from 4:3 TV Zoom ON/OFF in the Display Menu. ●Select Normal from the 4:3 Aspect in the Display Menu.	19 19

Sound		Page
No sound. Distorted sound.	•Check the connections.	8
	•Check the volume on the equipment you have connected.	–
	•Ensure that the input settings on the other equipment are correct.	–
	•Turn Advanced Surround off if it causes distortion.	14
	•Output from this unit will be in stereo (two channels) when Advanced Surround is on. Turn Advanced Surround off if you are using three or more speakers.	14
Piercing noise comes from the speakers.	•If you have connected this unit to an amplifier through the 6CH DISCRETE terminals, go to the Audio menu in the SETUP menu, and change "Speaker Setting" to suit to your speakers. Select the large or small icon for all the speakers you have connected.	23
	•Due to the specifications on some types of televisions, both video and audio may be cut off when you turn the VIDEO OFF feature on.	–
	•If the "D.MIX" indicator on the display goes out while playing a multi-channel DVD-Audio disc, sound will only be output from speakers specified by the disc. Read the disc's instructions for details.	–
	•Noise may occur when playing WMA files.	–
Effects do not work.	•Dialogue Enhancer and Advanced Surround do not work when the unit is outputting bitstream signals.	–

Television displays

"The progressive out is set to "Disable"	•Go to Video in the SETUP menus, and select "Enable" in "Progressive Out".	21
"The software has a 4:3 aspect ratio"	•Use the television to change the aspect to the correct one. If your television cannot change the aspect when input is progressive, try changing 4:3 aspect with the on-screen menu icons.	10
No on-screen display.	•Go to Display in the SETUP menus, and select "On" for "On-Screen Messages".	21
On-screen displays (including GUI screens) not displayed or only partially displayed on the television.	•Press [ON SCREEN], and press [◀, ▶] to highlight the Bar Position icon, then press [▲, ▼] to adjust the position.	18
The disc's menu is displayed in a different language.	•Go to Disc in the SETUP menus, and select the preferred language for "Menus".	–

Glossary

Bitstream

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

Decoder

A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

Dolby Digital

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

Dolby Pro Logic

A surround system where a 4-channel audio track is recorded as 2 channels and then is restored to 4 channels for play. The surround channel is monaural and can reproduce up to 7 kHz.

DTS (Digital Theater Systems)

This surround system is used in many movie theaters around the world. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range

Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs.

Film and video

DVD-Videos are recorded using either film or video. Usually, film is recorded at 24 frames per second, the rate movies are filmed at, while video is recorded at 30 frames per second.

Frame still and field still

Frames are the still pictures that go together to make a moving picture. There are about 30 frames shown each second. One frame is made up of two fields. A regular television shows these fields one after the other to create frames. A still is shown when you pause a moving picture. A frame still is made up of two alternating fields, so the picture may appear blurred, but overall quality is high. A field still is not blurred, but it has only half the information of a frame still so picture quality is lower.

Interlace and progressive output

NTSC, the video signal standard, has 480 interlaced (I) scan lines, whereas progressive scanning uses twice the number of scan lines. This is called 480P. The video signals output from this unit's COMPONENT VIDEO OUT terminals (Y, P_B, P_R) allow you to enjoy higher quality pictures than if the signals were output from the VIDEO OUT terminal or S VIDEO OUT terminal.

I/P/B

MPEG 2, the video compression standard adopted for use with DVD-Video, codes frames using these 3 picture types.

I: Intra coded picture

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

P: Predictive coded picture

This picture is calculated based on past I or P-pictures.

B: Bidirectionally-predictive coded picture

This picture is calculated by comparing past and future I and P-pictures so it has the lowest volume of information.

Linear PCM (pulse code modulation)

These are uncompressed digital signals, similar to those found on CDs.

Playback control (PBC)

If a Video CD has playback control, you can select scenes and information with menus (called menu play in these instructions).

Specifications

Signal system: NTSC
Operating temperature range: +5 to +35 °C
Operating humidity range: 5 to 90 % RH (no condensation)

Discs played [8 cm or 12 cm]:

- (1) DVD-Audio
- (2) DVD-Video
- (3) DVD+RW/DVD+R
- (4) DVD-R/DVD-RW (DVD-Video compatible)
- (5) CD-Audio (CD-DA)
- (6) Video CD
- (7) CD-R/CD-RW (CD-DA, Video-CD formatted discs)
- (8) MP3/WMA
 - Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
 - Compatible compression rate: between 32 kbps and 320 kbps (MP3) between 48 kbps and 192 kbps (WMA)

Video output:

Output level: 1 V_{p-p} (75 Ω)
Output terminal: Pin jack (1 system)

S video output:

Y output level: 1 V_{p-p} (75 Ω)
C output level: 0.286 V_{p-p} (75 Ω)
Output terminal: S terminal (1 system)

Component video output:

Y output level: 1 V_{p-p} (75 Ω)
P_B output level: 0.7 V_{p-p} (75 Ω)
P_R output level: 0.7 V_{p-p} (75 Ω)
Output connector: Pin jack
(Y: green, P_B: blue, P_R: red)
Number of connectors: 1 system

Audio output:

Output level: 2 V_{rms} (1 kHz, 0 dB)
Output connector: Pin jack
Number of connectors:
2 channel: 1 system
5.1-channel discrete output (5.1 channel): 1 system

Audio performance:

- (1) Frequency response:
 - DVD (linear audio): 2 Hz–22 kHz (48 kHz sampling)
2 Hz–44 kHz (96 kHz sampling)
2 Hz–88 kHz (192 kHz sampling)
 - DVD-Audio: 2 Hz–20 kHz
 - CD audio: 2 Hz–20 kHz
- (2) S/N ratio:
 - CD audio: 115 dB
- (3) Dynamic range:
 - DVD (linear audio): 102 dB
 - CD audio: 98 dB
- (4) Total harmonic distortion:
 - CD audio: 0.0025 %

Digital audio output:

Optical digital output: Optical terminal
Coaxial digital output: Pin jack

Pickup: Wave length: 658 nm/790 nm
Laser power: CLASS IIa/CLASS I

Power supply: AC 120 V, 60 Hz

Power consumption: 11 W

Dimensions: 435 (W)×258 (D)×60 (H) mm
[16^{5/16}" (W)×10^{1/8}" (D)×2^{3/8}" (H)]

Mass: 3.3 kg (7.3 lb)

Power consumption in standby mode:	approx. 1.5 W
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Note

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

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