

Safety information

Note:

This unit can be used only where the power supply is AC 120V, 60Hz. It cannot be used elsewhere.

CAUTION:

UNIT IS A CLASS I LASER PRODUCT. HOWEVER THIS RECORDER USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE RECORDER CORRECTLY AS INSTRUCTED.

WHEN THIS RECORDER IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS RECORDER .

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

THIS DEVICE IS INTENDED FOR CONTINUOUS OPERATION!

CAUTION:

NO EQUIPMENT GROUNDING IS PROVIDED. DO NOT USE THIS CORD SET FOR OTHER EQUIPMENT. USE PROVIDED EQUIPMENT ONLY. TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

DO NOT PLACE THIS APPARATUS INTO AN AUDIO RACK, BOOK SHELF OR SIMILAR LOCATION BECAUSE OF HEAT FROM THIS APPARATUS.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

**CAUTION****RISK OF ELECTRIC SHOCK
DO NOT OPEN**

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



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



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

FCC NOTE: (U.S.A Only)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

**CAUTION -LASER RADIATION WHEN OPEN.
DO NOT STARE INTO BEAM.**

(Inside of Recorder)

Precautions

This unit contains precision components which are readily affected by ambient conditions (temperature, humidity, dust, etc.). To ensure continued enjoyment of pictures and sound, please observe the following precautions.

Before audio/video recording or editing important material

- **Before recording an important event or editing an important recording, do a trial recording or trial editing to check that the audio and/or video will be recorded properly or the recording will be edited properly.**

The manufacturer cannot offer any compensation for any failure of the pictures and/or sound to be recorded owing to problems which have developed in the unit and discs during their use.

Copyrights

- Copyright laws prohibit the use of any video and audio material which you have recorded without the permission of the copyright holders, except in cases where that material is to be used for your own personal enjoyment or entertainment.
- The duplication, broadcasting, public presentation or rental of discs without permission is prohibited by law.
- This product employs copyright protection technology which itself is protected by U.S. patents held by MacroVision Development, Inc. and other copyright holders as well as by other intellectual property rights. Use of this technology requires permission from MacroVision Development and, insofar as special permission has not been granted by MacroVision Development, the technology is limited to use in home applications and to certain restricted entertainment applications. Disassembly and remodeling are also prohibited by law.

When installing and operating the unit

- **Turn off the power of all the equipment before proceeding with the connections.**
- **Use the unit on a flat surface.**
Do not use the unit while it is tilted to one side by placing magazines, etc. underneath it.
- **Do not insert objects other than discs in the tray.**
- **Keep objects with a strong magnetic field or items which generate a strong electromagnetic field (such as cell phones) away from the unit as they may adversely affect the picture and sound and/or impair the recording quality.**
- **Keep volatile insecticide sprays away from the unit.**
These may deform the cabinet or cause the paint to peel off.
- **Do not use the unit when condensation has formed.**
Bringing the unit from a cold location into a warm room causes condensation to form, which may result in malfunctioning and failure. At such times, remove the disc, and leave the unit standing for 1 to 2 hours with its power on.

When moving or transporting the unit

- **Do not drop the unit or knock it against other objects.**
- **Remove the disc, and disconnect the power cable and other cords and cables.**
When transporting the unit to another location it is recommended to put the unit back inside its original carton box.

When maintaining the unit

- **When the cabinet is dirty**
Disconnect the power plug from the power outlet, and use a soft, dry cloth to wipe the cabinet.
- **When removing stubborn dirt**
Dilute some kitchen detergent with water, dip a cloth into the solution, wring it out thoroughly, and wipe away the dirt. Then remove any remaining moisture using a dry cloth.
 - If a chemical cleaning cloth is to be used, heed the instructions which accompany it.

- Do not use benzine, paint thinners or other solvent since they will mar the cabinet finish and cause the paint to peel off.

- **When the recording/playback lens is dirty**

The recording/playback lens may become dirty with prolonged use, making it impossible for the unit to record or play back discs properly.

It is recommended that the lens be cleaned every one to four months using the DVD-RAM/PD lens cleaner (optional accessory) although this frequency will depend on the operating environment and how often the unit is used. For details on the cleaning method, refer to the instructions which accompany the cleaning kit.

When the unit is not going to be used for an extended period

- **When the unit will not be used for about a month or more**

First remove the disc and turn the power off, and then disconnect the power plug from the power outlet.

- If the unit is left connected to the power outlet, it will consume about 6 watts of power even with its power turned off.
- In order to maintain its functions, operate the unit about once a month by playing back one or more discs.

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This product was manufactured under license from DTS of the U.S. "DTS digital surround" is a trademark of DTS. Copyright (C) DTS 1996. All rights reserved.

VCR Plus+ and PlusCode are registered trademarks of Gemstar Development Corporation. The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

Disc information and care

*DVD-RAM discs recorded using this unit cannot be played on other DVD players (including units made by Panasonic except specific players having DVD-RAM playback capability). (As of July 2000)

Discs which the unit can record on and play back

	4.7 GB DVD-RAM discs 5" (12 cm) Video system: NTSC	RAM
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*This product employs a copyright protection technology defined for recordable media. Video contents allowed for "Once-copy" determined by content provider can be recorded on the DY-HB47 DVD-RAM discs, or equivalent, with this product.

Discs which the unit can play back

	DVD-Video discs 5" (12 cm) or 3" (8 cm) Region numbers: "1" or "ALL" Video system: NTSC	DVD-V
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	Video CDs 5" (12 cm) or 3" (8 cm) Video system: NTSC	VCD
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	CDs 5" (12 cm) or 3" (8 cm)	CD
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Discs which the unit cannot play back

- DVD-Video discs except for region numbers "1" and "ALL"
- DVD/Video CDs recorded using the PAL system
- DVD-RAM discs (2.6 GB)
- Photo CDs •DVD-RW •DVD-AUDIO •CD-ROM •CD-G
- SVCD •PD •DVD-R •MVDISC •CD-RW •CVD •SACD
- MD •DVD-ROM •+RW •CDV •VSD •MO •CD-R

Region numbers

A region number is a number which has been allocated to DVD-Video software and equipment in each marketing region. The region number for this unit is "1."
This unit can play only those discs marked with (or including) "1," numbers which include a digit that is "1" or "ALL."
Examples include the following: [1] [ALL] [1 2 6]



Jacket logos

- Audio number
- Number of subtitle
- Number of angles



(The number indicated refers to the number recorded)

Picture sizes (width by height)

4:3: Indicates that pictures have been recorded in the standard size with a width-to-height ratio (aspect ratio) of 4:3.

LB: Indicates that pictures have been recorded in the letter-box size (with the aspect ratio of 4:3 and black bands at the top and bottom of the screen).

16:9 LB: Indicates that pictures have been recorded in the wide-screen size with the aspect ratio of 16:9 and that, on a standard size (4:3) TV screen, the disc is instructed to ensure playback using the letter-box size.

16:9 PS: Indicates that pictures have been recorded in the wide-screen size with the aspect ratio of 16:9 and that, on a standard size (4:3) TV screen, the disc is instructed to ensure playback using panning and scanning (so that the picture is cut off at one side or both sides of the screen).

The pictures which appear on a TV set differ according to the size (aspect ratio) of the TV screen and TV screen mode.

Restrictions during playback

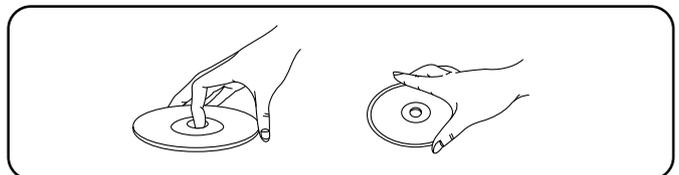
On some DVDs and Video CDs, the playback modes are intentionally fixed by the software producer. This unit will play back these discs in accordance with the intention of the software producer so that the disc's operations may not accurately reflect the operations performed in the unit. Refer to the instructions accompanying the discs to be played.
Example:

- During the menu playback of an interactive DVD or Video CD with playback control, continued playback, memory or repeat playback, markers and other functions may not work, etc.

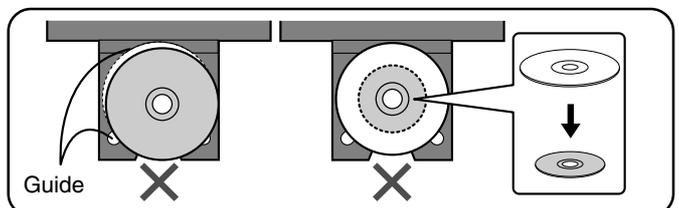
Handling precautions

Observe the following precautions: otherwise, disc or equipment failure may result.

- Do not use heart-shaped, octagonally-shaped and other specially shaped discs even if they come with the logos shown on the left. (They will cause the unit to malfunction.)
- Do not use significantly warped or cracked discs.
- Do not allow the discs to become dirty, and do not scratch or mark them.
- Do not drop or bend discs.
- Do not write on discs using marker pens or ball-point pens.
- Do not adhere pieces of paper or stickers onto discs.
- Do not use single disc (8 cm disc) adapters or CD stabilizers.
- Except for discs with a cartridge, do not touch their signal surfaces.



- Do not close the tray while the disc is not positioned correctly in the guide. Do not touch any disc on their signal surface.
- Do not stack two or more discs on the tray.

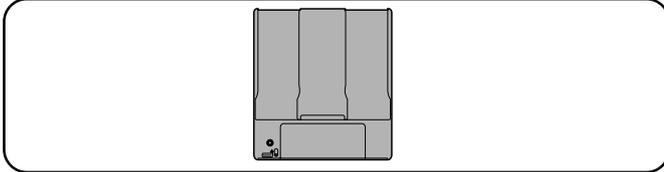


Disc information and care (continued)

DVD-RAM discs

■ It is recommended that Type 2 cartridge 4.7GB DVD-RAM discs (optional accessories/available from stores) be used with this unit.

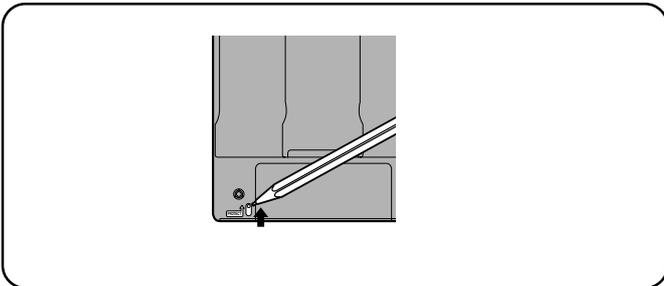
- Some DVD-RAM discs come with a cartridge and some come without. Use of discs that come with a cartridge are recommended, however both types of discs can be used with the unit. Panasonic's DY-HB47 Type 2 cartridge DVD-RAM discs (optional accessories) have a cartridge.



- DVD-RAM discs require that extremely precise information be recorded. As such, touching a disc or exposing it to even small amounts of dust may make it impossible for the disc to record or be played or edited properly. The type that comes with a cartridge is better able to withstand fingerprints and dust, and it thereby enables more stable recording, playback and editing.
- Do not open the cartridge shutter with your fingers. Touching the disc inside or allowing even small amounts of dust to enter may make it impossible for information to be recorded, played or edited properly.
- Some discs that come with a cartridge allow the inside disc to be removed, and others do not allow this. Even if the inside disc can be removed, it is recommended that the disc be kept in its cartridge. If the disc is to be removed for some important reason, read the instructions that accompany the disc before doing so.
- When some types of discs available on the market are removed from their cartridges, they are no longer capable of recording video.
- Panasonic will not be held liable if audio and/or video recording or editing was not accomplished or if content was lost.

■ To prevent recordings from being accidentally erased

- Use a ball-point pen or other pointed implement to set the write protect tab (for preventing accidental erasure) on the disc to the PROTECT position. The disc can still be played back but video recording, erasure, play list editing etc. and disc formatting (initializing) using the direct navigator can no longer be performed. Read the instructions accompanying the discs as well.

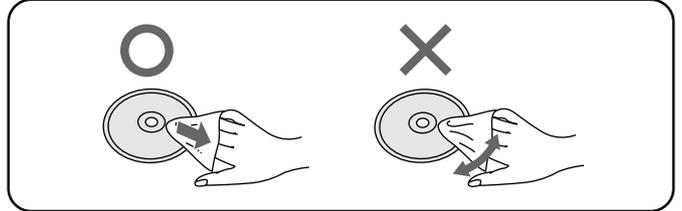


- Compatibility with other DVD recorders or DVD disc drives is not guaranteed.

Disc maintenance and storage

■ When fingerprints or dust has been left on a disc DVD-Video discs, Video CDs and CDs

- Use a soft cloth and wipe the disc in the direction shown in the figure.



- Do not use record cleaners, paint thinners, benzine or alcohol to wipe the discs clean.

DVD-RAM discs

- Be absolutely sure to use the dedicated LF-K200DCA1 DVD-RAM/PD disc cleaner (optional accessory) and wipe the discs well. This cleaner can also be used with discs that do not come with a cartridge. For further details on how to use this disc cleaner, refer to the instructions accompanying the cleaner.

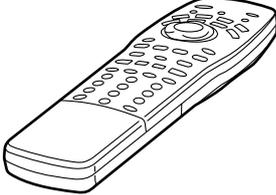
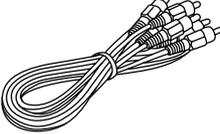
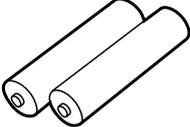
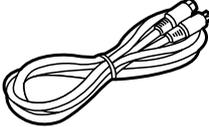
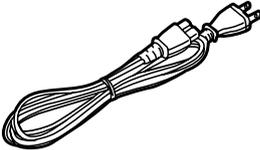
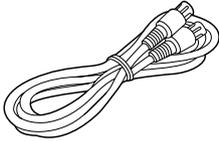
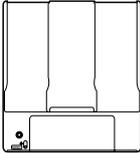
■ When storing discs

- Put the discs back in their cases.
- Do not store discs where they will be exposed to direct sunlight, where there are high levels of moisture or concentrations of dust or where they will be directly exposed to the heat from heaters.

Accessories

Check that you have the accessories shown below .



<input type="checkbox"/> Remote control ... 1 (Part No. EUR511161) 	<input type="checkbox"/> Audio/video cable ... 1 (Part No. VJA1062 or VJA0788) 	
<input type="checkbox"/> Batteries (size "AA") for remote control ... 2 	<input type="checkbox"/> S-video cable ... 1 (Part No. VJA0658-A) 	
<input type="checkbox"/> AC cord ... 1 (Part No. RJA0065-A) 	<input type="checkbox"/> 75-ohm coaxial cable ... 1 (Part No. VJA1013) 	<input type="checkbox"/> DVD-RAM blank disc ... 1 (Part No. DY-HB47) 

(U.S.A. only)

Product Registration Card

Please complete and return the included product registration card, or register via the Internet at:
<http://www.panasonic.com/host/consumer.html>

Optional accessories

- Optical digital audio cable
- DVD-RAM/PD Lens cleaner (LF-K123LCA1)
- DVD-RAM/PD Disc cleaner (LF-K200DCA1)

(U.S.A. only)

To order accessories, call PASC Accessory Dept.
1-800-332-5368 or visit www.panasonic.com/store

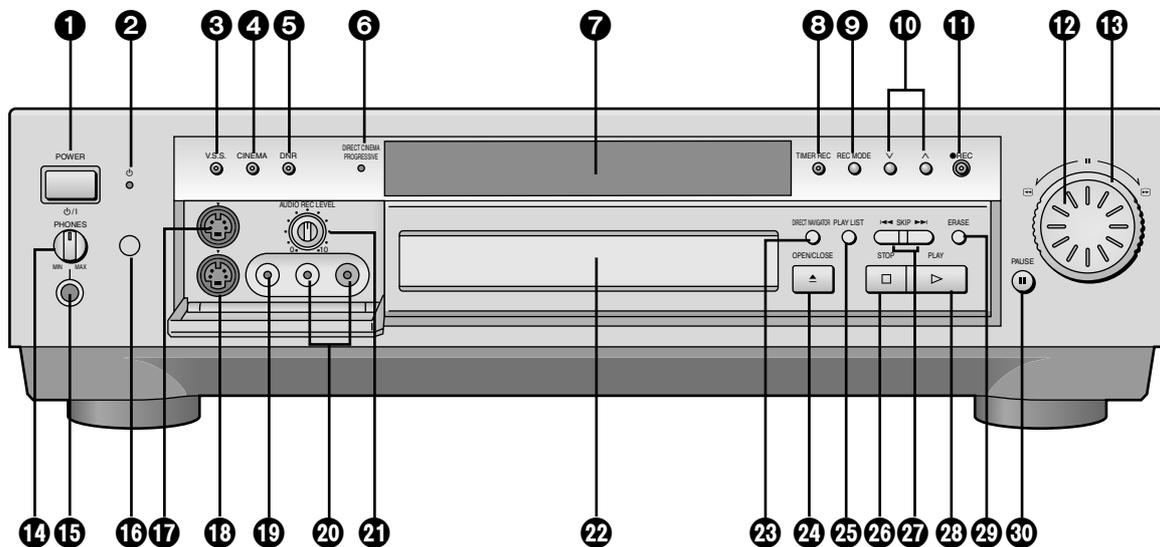
(Canada only)

To order accessories, call the dealer where you purchased the unit.

Front panel controls and functions

For further details, refer to the pages indicated. (These instructions mainly describe the operations that involve the use of the remote control.)

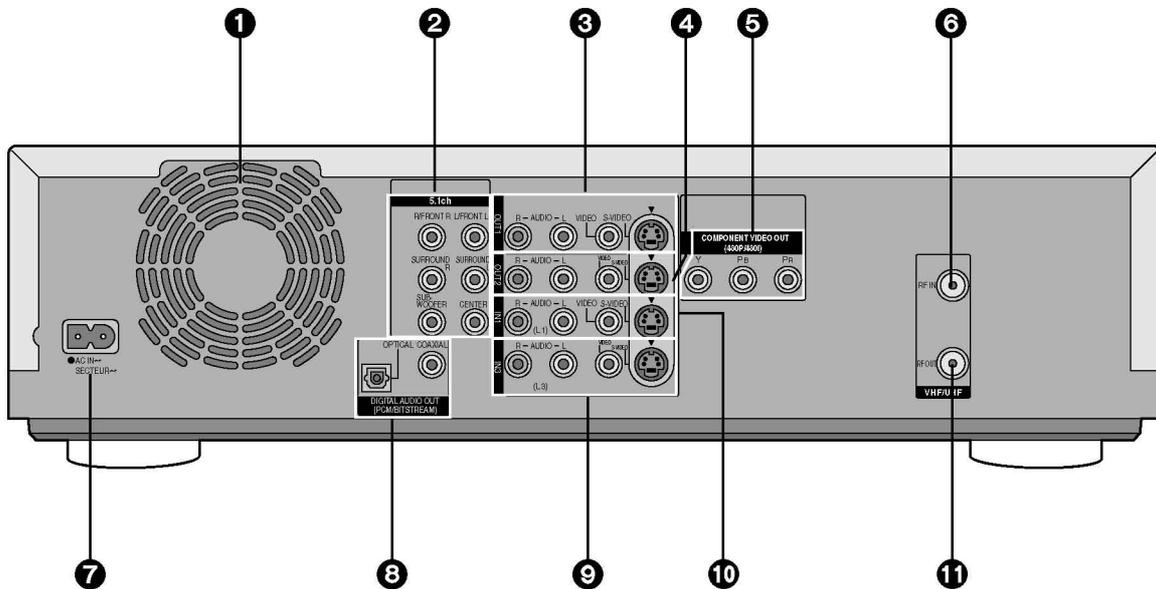
[Front Panel]



- 1** [POWER] button (⏻) (p. 17)
- 2** Standby lamp (⏻)
This lights when the power is off. ("Standby" refers to the state in which the unit still consumes a small amount of power in order to retain the memory contents, etc. even after the power has been turned off.)
- 3** [V.S.S.] (virtual surround sound) button/lamp (p. 88)
- 4** [CINEMA] button/lamp (p. 88)
- 5** [DNR] (digital noise reduction) button/lamp (p. 90)
- 6** [DIRECT CINEMA PROGRESSIVE] lamp (p. 118)
- 7** Main unit's display window (p. 11)
- 8** [TIMER REC] (timer OFF/ON) button/lamp (p. 62, 64)
- 9** [REC MODE] (recording mode) button (p. 52)
- 10** [V] [^] (channel) buttons (p. 52)
- 11** [REC] (recording) button/lamp (p. 52)
- 12** Jog dial (p. 30)
- 13** Shuttle ring (p. 31)
- 14** PHONES (headphones) level control (p. 23)
- 15** Headphones jack (p. 23)
- 16** Remote control sensor (p. 14)
- 17** [VIDEO PRINTER OUT] (video printer output/S-video output) connector (p. 107)
- 18** [S-VIDEO IN (L2)] (S-video input) connector (p. 97)
- 19** [VIDEO IN (L2)] (video input) connector (p. 97)
- 20** [AUDIO IN (L2)] (audio input) connector (p. 97)
- 21** [AUDIO REC LEVEL] (recording level) control (p. 54)
- 22** Disc tray (p. 21)
- 23** [DIRECT NAVIGATOR] button (p. 68)
- 24** [OPEN/CLOSE] button (▲) (p. 21)
- 25** [PLAY LIST] button (p. 80)
- 26** [STOP] button (□) (p. 23)
- 27** [SKIP] buttons (⏮ ⏭) (p. 32, 56)
- 28** [PLAY] button (▶) (p. 22)
- 29** [ERASE] button (p. 56)
- 30** [PAUSE] (still/pause) button (⏸) (p. 30)

Rear panel connections

[Rear Panel]



1 Internal cooling fan

The fan runs continuously while the power is on. Do not block it.

2 5.1ch connectors (p. 104)

(Front left and right, surround left and right, sub-woofer, center)

3 [OUT1] Output 1 connectors (p. 15)

(Audio left and right, video, S1/S2 video)

4 [OUT2] Output 2 connectors (p. 106)

(Audio left and right, video, S1/S2 video)

5 [COMPONENT VIDEO OUTPUT (480P/480I)] connectors

(Y, Pb, Pr) (p. 101)

6 VHF/UHF RF-IN (antenna input) terminal (p. 15)

7 Power socket (p. 15)

8 [DIGITAL AUDIO OUTPUT (PCM/BIT STREAM)]

connectors (optical, coaxial) (p. 105)

9 [IN3] External input 3 (L3) connectors

(audio left and right, video, S1/S2 video) (p. 97)

10 [IN1] External input 1 (L1) connectors

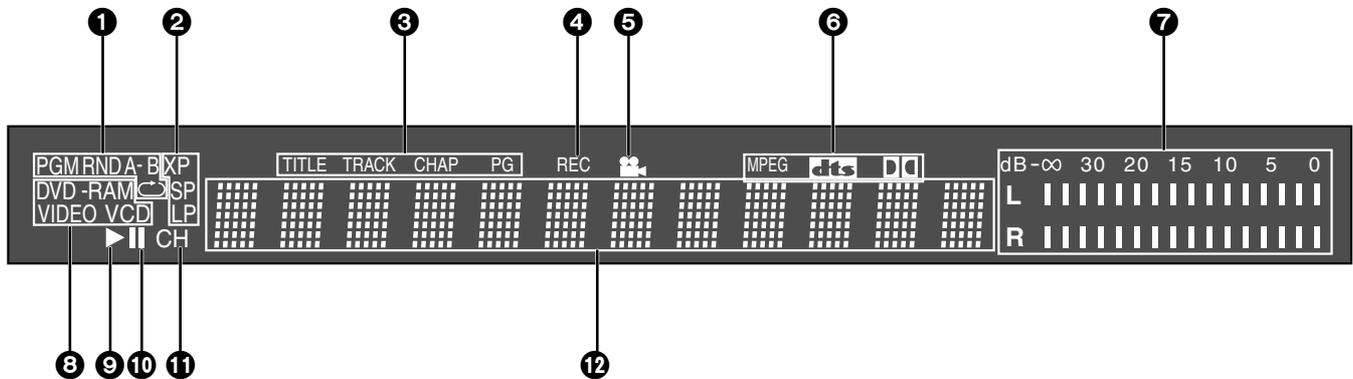
(audio left and right, video, S1/S2 video) (p. 97)

11 VHF/UHF RF-OUT (antenna output) terminal (p. 15)

Display information

For further details, refer to the pages indicated.

[Main Unit Display Window]



1 Playback modes (p. 35, 49)

- PGM:** Programmed playback
- RND:** Random playback
- A-B** : A-B repeat playback
- : Repeat playback
- PGM** : Programmed repeat playback

2 Recording modes (p. 52, 63, 64)

- XP:** High-picture-quality play mode
- SP:** Standard play mode
- LP:** Long play mode
- XP, SP, LP (all indicators light):** FR (flexible recording) mode (for programmed recording only)

3 Modes indicating what is shown on main display area

- TITLE:** Title display mode
- TRACK:** Track display mode
- CHAP:** Chapter display mode
- PG:** Program number display mode

4 Recording underway (p. 52)

5 Multi-angle (p. 51)

6 Audio signal types (p. 40)

- MPEG:** MPEG signals
- : dts signals
- : Dolby Digital signals

7 Volume level meter (p. 54)

8 Discs used

- DVD-RAM:** DVD-RAM disc (for recording)
- DVD VIDEO:** DVD-Video disc
- VCD:** Video CD
- CD:** Music CD

9 Playback underway

- Lighted:** during playback (p. 22)
- Flashing:** When the resume playback memory function is working (p. 23)
- : When one-shot playback is enabled (p. 67)

10 Still (pause) (p. 28)

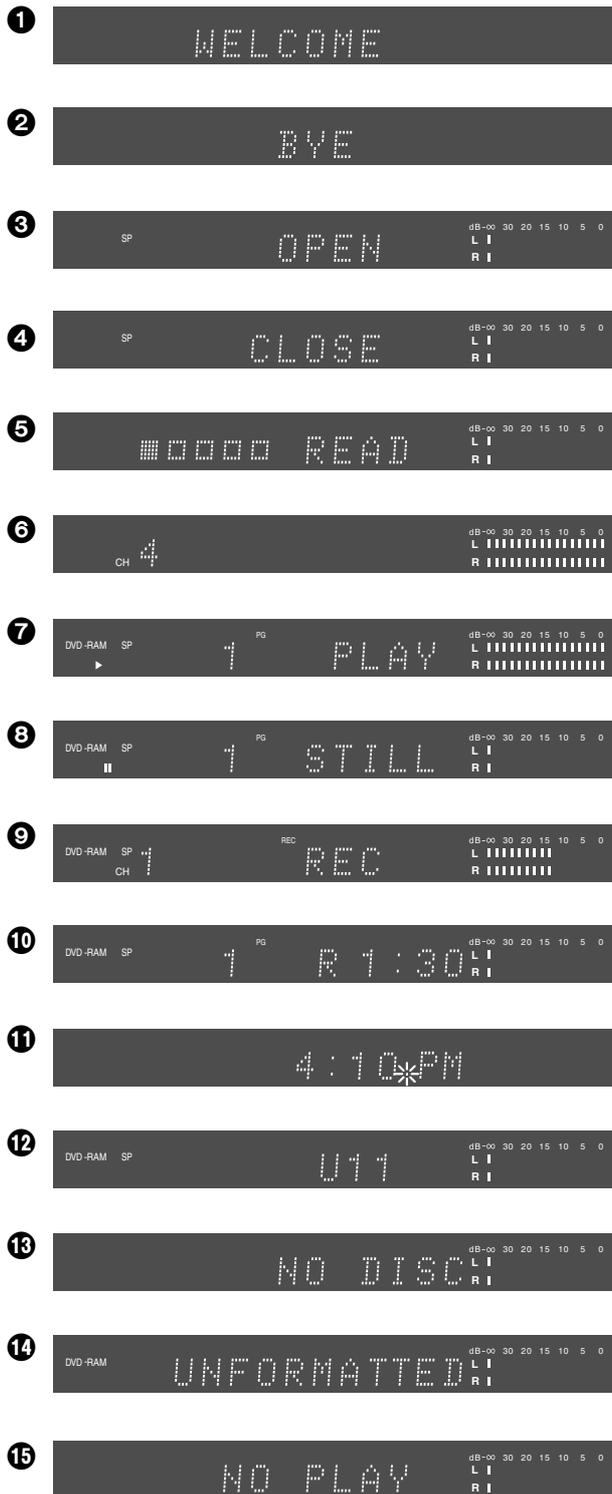
11 Channel (p. 52)

12 Main display area (p. 12)

- Recording/playback time (counter)**
- Amount of disc remaining**
- Present time**
- Programmed recording**
- Title, chapter/track, program number**
- Messages**

Display information (continued)

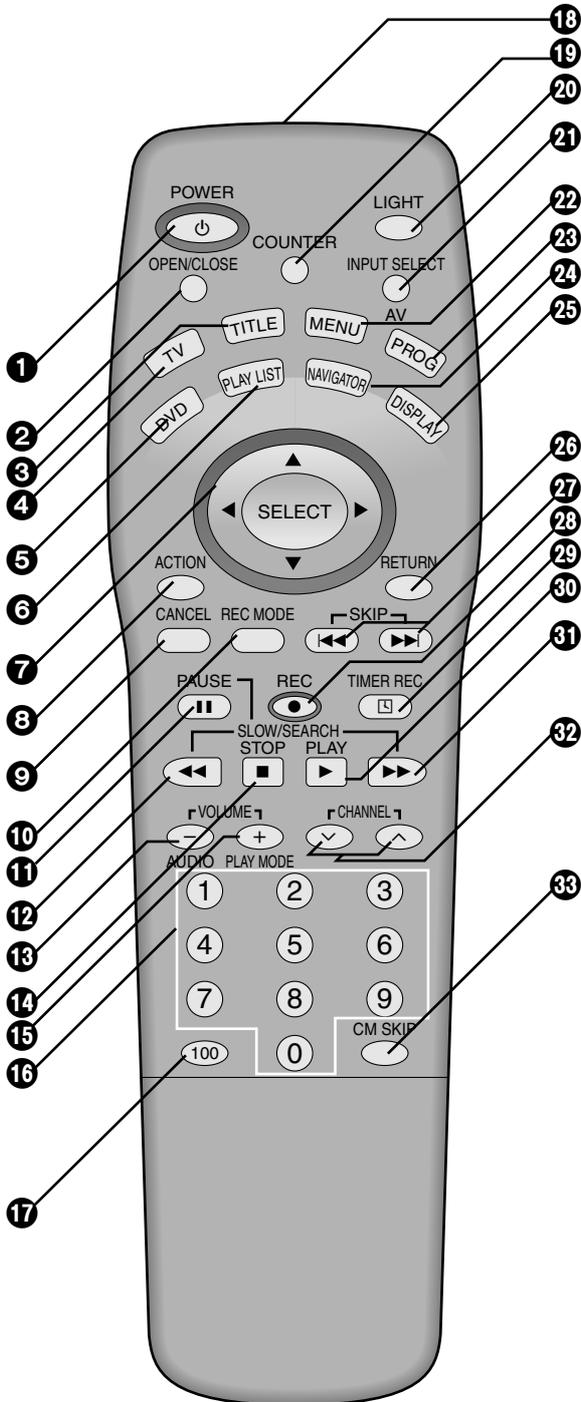
■ Display which appears (example)



- 1 Illuminates immediately after the power is turned on
 - “TO DVD WORLD” is displayed after this.
- 2 Illuminates immediately after the power is turned off
 - After this, the power is turned off and the clock display appears.
- 3 Illuminates when the tray is opened
- 4 Illuminates when the tray is closed
- 5 Illuminates while the disc information is being read
 - While this display is shown, the only operations which can be performed are tray open and tray close.
- 6 Example: While channel 4 is being received
 - The figure on the left omits all displays except for the channel display.
- 7 Illuminates immediately after playback has commenced
 - After this, the counter display appears.
- 8 Illuminates during pause
- 9 Illuminates immediately after recording has commenced
 - After this, the counter display appears.
- 10 Example: 1 hour 30 minutes of disc remaining (in SP mode)
- 11 Present time
 - Example: 4:10 pm
- 12 Service number
 - For details, refer to p. 133.
- 13 When there is no disc loaded
When the disc cannot be played
- 14 When an unformatted disc (p. 128) is inserted
- 15 When there is no disc loaded
When the disc cannot be played
 - DVD with Region No. other than “1” or “ALL.”
 - DVD for which playback is prohibited by the initial settings “1 Set Up” → “8 Ratings.”
 - PAL system disc.
 - Incompatible disc. (p. 6)

Remote control functions

For further details, refer to the pages indicated.



Press [TV] when performing operations for the television, and [DVD] when performing operations for the DVD Video Recorder.

- ❶ [POWER] button (⏻) (p. 17)
- ❷ [OPEN/CLOSE] button (p. 21)
- ❸ [TITLE] button (p. 27)
- ❹ [TV] button (p. 54)
- ❺ [DVD] button (p. 18)
- ❻ [PLAY LIST] button (p. 80)
- ❼ [◀▲▼▶/SELECT] buttons (p. 18, 24, 58, 68, 80, 108)
 ▶▲▼▶: Used to move the cursor on the menu screen or move the selection item.
 Select: Used to enter the item selected by [◀], [▲], [▼] and [▶]. When pressing this button, press its center firmly.
- ❽ [ACTION] button (p. 108)
- ❾ [CANCEL] button (p. 47)
- ❿ [REC MODE] button (p. 52)
- ⓫ [PAUSE] button (p. 30)
- ⓬ [REVERSE-SLOW/SEARCH] button (◀◀) (p. 28, 29)
- ⓭ [AUDIO/VOLUME(-)] button (p. 91)
- ⓮ [STOP] Button (■) (p. 23)
- ⓯ [PLAY MODE/VOLUME(+)] button (p. 35)
- ⓰ Numeric buttons (p. 24)
- ⓱ 100 button (p. 54)
- ⓲ Remote control transmitter (p. 14)
- ⓳ [COUNTER] button (p. 93)
- ⓴ [LIGHT] button
 When [LIGHT] is pressed, buttons ❸, ❹, ❺, ❻ and ⓴, ⓵ light for approximately 2 seconds. Further, either the [TV] or [DVD] will flash, depending on the mode selected.
- ⓵ [INPUT SELECT /AV] button (p. 54)
- ⓶ [MENU] button (p. 26)
- ⓷ [PROG] button (p. 62)
- ⓸ [NAVIGATOR] button (p. 76)
- ⓹ [DISPLAY] button (p. 91)
- ⓺ [RETURN] button (p. 37)
- ⓻ [SKIP] button (◀◀ ▶▶) (p. 32, 56)
- ⓼ [REC] button (p. 52)
- ⓽ [TIMER REC] button (⏏) (p. 63)
- ⓾ [PLAY] button (▶) (p. 22)
- ⓿ [FORWARD-SLOW/SEARCH] button (▶▶) (p. 28, 29)
- ⓿ [CHANNEL] button (▼▲) (p. 52)
- ⓿ [CM SKIP] button (p. 34)