OWNER'S MANUAL

⚡SANSUI®
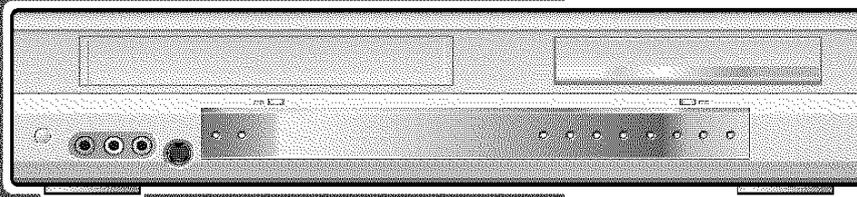
Before using your unit

Various settings

Disc playback

Tape playback

Recording

Editing the disc

Dubbing

Additional information

DVD-RW RECORDER & VCR

VRDVD4005

DVD VIDEO/R/RW

COMPACT disc DIGITAL AUDIO

MP3

RW COMPATIBLE

⫿⫿ DOLBY ™ **DIGITAL**

dts DIGITAL OUT ™

SPATIALIZER ® N-2-2™

VHS

HQ

TV/CATV MODE SELECTION
When shipped from the factory, the TV/CATV menu option is set to the "CATV" (Cable Television) mode.
If not using CATV (Cable TV), set this menu option to the "TV" mode.

ORION WEBSITE
FOR INFORMATION ON OUR OTHER PRODUCTS,PLEASE VISIT OUR WEBSITE AT
WWW.ORIONSALESINC.COM

Before operating the unit, please read this manual thoroughly.

Contents

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Contents

Media mark

Each applicable media are indicated using the symbol shown below.

DVD-VIDEO : DVD-Video	*DVD-R* : DVD-R
DVD-RW VR : DVD-RW in VR mode	*CD* : Audio CD and CD-R/CD-RW
DVD-RW Video : DVD-RW in Video mode	*VCR* : Video tape

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Sansui Dual Deck DVD Recorder

Warranty

One Year Full Warranty on Sansui Dual Deck DVD Recorder

If this product is defective in material or workmanship within one year from the date of purchase, RETURN IT TO YOUR NEAREST SEARS PARTS & REPAIR CENTER, and it will be repaired free of charge.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179

Master Protection Agreements

Congratulations on making a smart purchase. Your new Dual Deck DVD Recorder is designed and manufactured for years of dependable operation. But like all products, it may require preventive maintenance or repair from time to time. That's when having a Master Protection Agreement can save you money and aggravation.

Purchase a Master Protection Agreement now and protect yourself from unexpected hassle and expense.

The Master Protection Agreement also helps extend the life of your new product. Here's what's included in the Agreement:

☑ **Expert service** by our 12,000 professional repair specialists

☑ **Unlimited service and no charge** for parts and labor on all covered repairs

☑ **"No-lemon" guarantee** – replacement of your covered product if four or more product failures occur within twelve months

☑ **Product replacement** if your covered product can't be fixed

☑ **Annual Preventive Maintenance Check** at your request – no extra charge

☑ **Fast help by phone** – phone support from a Sears technician on products requiring in-home repair, plus convenient repair scheduling

☑ **Power surge protection** against electrical damage due to power fluctuations

☑ **Rental reimbursement** if repair of your covered product takes longer than promised

Once you purchase the Agreement, a simple phone call is all that it takes for you to schedule service. You can call anytime day or night, or schedule a service appointment online.

Sears has over 12,000 professional repair specialists, who have access to over 4.5 million quality parts and accessories. That's the kind of professionalism you can count on to help prolong the life of your new purchase for years to come. Purchase your Master Protection Agreement today!

Some limitations and exclusions apply.
For prices and additional information call 1-800-827-6655.

Sears Installation Service

For Sears professional installation of home appliances, garage door openers, water heaters, and other major home items, in the U.S.A. call **1-800-4-MY-HOME®**

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CAUTION

WARNING: 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.

CAUTION: Changes or modifications not expressly approved by the partly responsible for compliance with the FCC Rules could void the user's authority to operate this equipment.

CAUTION:
THIS DIGITAL VIDEO PLAYER EMPLOYS A LASER SYSTEM.

TO ENSURE PROPER USE OF THIS PRODUCT, PLEASE READ THIS USER'S GUIDE CAREFULLY AND RETAIN FOR FUTURE REFERENCE. SHOULD THE UNIT REQUIRE MAINTENANCE, CONTACT AN AUTHORIZED SERVICE LOCATION-SEE SERVICE PROCEDURE.

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

TO PREVENT DIRECT EXPOSURE TO LASER BEAM, DO NOT TRY TO OPEN THE ENCLOSURE. VISIBLE LASER RADIATION MAY BE PRESENT WHEN THE ENCLOSURE IS OPENED. DO NOT STARE INTO BEAM.

Location of the required Marking
The rating sheet and the safety caution are on the rear of the unit.

CERTIFICATION: COMPLIES WITH FDA RADIATION PERFORMANCE
STANDARD, 21 CFR SUBCHAPTER J.

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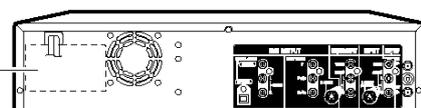
IMPORTANT SAFEGUARDS

1. **READ INSTRUCTIONS**
   All the safety and operating instructions should be read before the unit is operated.

2. **RETAIN INSTRUCTIONS**
   The safety and operating instructions should be retained for future reference.

3. **HEED WARNINGS**
   All warnings on the unit and in the operating instructions should be adhered to.

4. **FOLLOW INSTRUCTIONS**
   All operating and use instructions should be followed.

5. **CLEANING**
   Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.
   Use a damp cloth for cleaning the exterior cabinet only.

6. **ATTACHMENTS**
   The manufacturer of this unit does not make any recommendations for attachments, as they may cause hazards.

7. **WATER AND MOISTURE**
   Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

8. **ACCESSORIES**
   Do not place this unit on an unstable cart, stand, tripod, bracket, or table.
   The unit may fall, causing serious injury, and serious damage to the unit.

PORTABLE CART WARNING
(symbol provided by RETAC)

8A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

S3125A

9. **VENTILATION**
   Slots and openings in the cabinet back or bottom are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating.
   These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and/or the manufacturer's instructions have been adhered to.

10. **POWER SOURCES**
    This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.

11. **GROUNDING OR POLARIZATION**
    This unit is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug, if your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

12. **POWER-CORD PROTECTION**
    Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. **LIGHTNING**
    To protect your unit from a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

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IMPORTANT SAFEGUARDS

14. POWER LINES

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.

15. OVERLOADING

Do not overload wall outlets and extension cords, as this can result in a risk of fire or electric shock.

16. OBJECT AND LIQUID ENTRY

Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.

17. OUTDOOR ANTENNA GROUNDING

If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded to provide some protection against voltage surges and built-up static charges, Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

18. SERVICING

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

19. DAMAGE REQUIRING SERVICE

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a. When the power-supply cord or plug is damaged.

    b. If liquid has been spilled, or objects have fallen into the unit.

    c. If the unit has been exposed to rain or water.

    d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.

    e. If the unit has been dropped or the cabinet has been damaged.

    f. When the unit exhibits a distinct change in performance, this indicates a need for service.

20. REPLACEMENT PARTS

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original part.
Unauthorized substitutions may result in fire, electric shock or other hazards.

21. SAFETY CHECK

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

22. HEAT

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

23. DISC TRAY

Keep your fingers well clear of the disc tray as it is closing. It may cause serious personal injury.

24. CONNECTING

When you connect the product to other equipment, turn off the power and unplug all of the equipment from the wall outlet. Failure to do so may cause an electric shock and serious personal injury. Read the owner's manual of the other equipment carefully and follow the instructions when making any connections.

25. LASER BEAM

Do not look into the opening of the disc tray or ventilation opening of the product to see the source of the laser beam. It may cause sight damage.

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IMPORTANT SAFEGUARDS

26. **DISC**

Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

27. **NOTE TO CATV SYSTEM INSTALLER**

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING AS PER THE
NATIONAL ELECTRICAL CODE

ANTENNA LEAD IN WIRE

GROUND CLAMP

ANTENNA
DISCHARGE UNIT
(NEC SECTION 810-20)

ELECTRIC SERVICE
EQUIPMENT

GROUNDING CONDUCTORS
(NEC SECTION 810-21)

GROUND CLAMPS

POWER SERVICE GROUNDING
ELECTRODE SYSTEM
(NEC ART 250, PART H)

NEC-NATIONAL ELECTRICAL CODE
S2898A
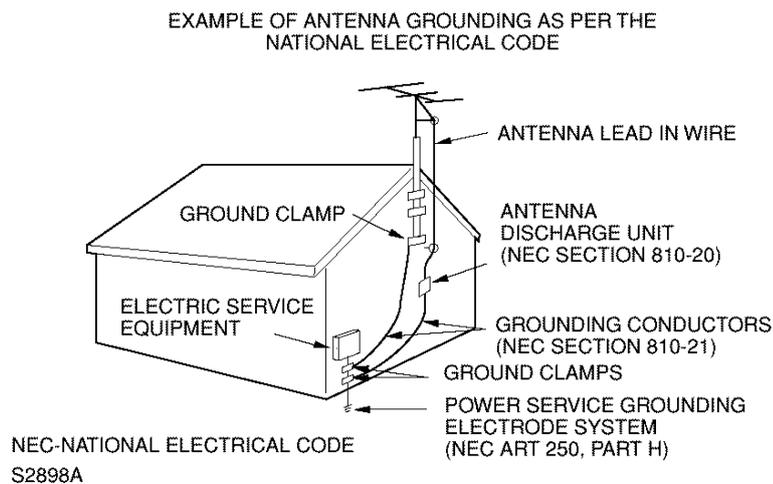
CONDENSATION

Moisture will form in the operating section of the DVD/VCR if the unit is brought from cool surroundings into a warm room or if the temperature of the room rises suddenly. When this happens, the DVD/VCR's performance will be impaired.

To prevent this, let the DVD/VCR stand in its new surroundings for about an hour before switching it on, or make sure that the room temperature rises gradually.

Condensation may also form during the summer if the DVD/VCR is exposed to the breeze from an air conditioner. In such cases, change the location of the DVD/VCR.

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Disc

Handling discs

Removing the Disc from its case
Be sure to hold the disc by its edges. Do not touch the surface of the disc.
Take the disc carefully from its case.

- Do not scratch the disc.
- Do not get dirt on the surface of the disc.
- Do not stick labels or adhesive tapes on the disc.
- Do not drop or bend the disc.

Storing discs
- Store the disc in the case to avoid any risk of scratches, dirt or damage.
- Do not leave the disc exposed to direct sunlight or in hot or humid places.

Cleaning discs
Wipe the disc with a clean, dry cloth from the center outward toward the edges.
- Do not wipe the disc in a circular motion around the center.
- Do not use liquid or aerosol cleaners.
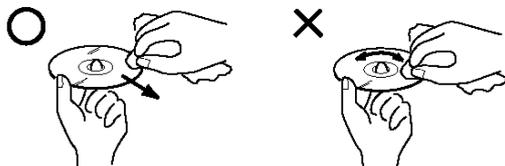
Discs which can be played back
In this unit, use only discs that meet the standard, such as those bearing the below logo marks on the disc label surface. If you use a non-standard disc, we cannot guarantee playback. Even if such a disc can be played back, we cannot guarantee the image or sound quality.
The DVD logo is a registered trademark.

Media type	Logo mark
DVD-Video	**DVD** VIDEO
DVD-RW Ver.1.0 Ver.1.1 Ver.1.1CPRM support	**DVD** RW
DVD-R Ver.2.0	**DVD** R4.7
Audio CD*	COMPACT disc DIGITAL AUDIO
CD-R/CD-RW	COMPACT disc Recordable COMPACT disc ReWritable

* This unit is designed to playback music Compact Discs (CD) that conform to the CD standard. CDs that contain (copy-restriction) signals to protect copyrights cannot be played back.

Region management information
This unit is designed and manufactured to support the region management information that is recorded on a DVD disc. If the region number written on the DVD disc does not correspond to the region number of this unit, this unit cannot play that disc.
- The region number of this unit is "1".
- The unit will play DVD-Video discs marked with labels containing "1" or "ALL".

Example:

Operating DVD-Video
- Some operations of DVD-Video may be prohibited by the manufacturer, or some operation methods or functions of the DVD-Video may be different from the description in this manual.
- If you attempt an operation that is prohibited by either the disc or the unit, a "🖑" mark will appear on the TV monitor. For operations prohibited by the disc, see the information that came with the disc.
- When the menu screen or the operation guide appears during disc playback, follow the displayed information.

Discs which cannot be played back
The discs listed below cannot be played back in general. Even if one of these can be played back, it may not be played back correctly. If a disc is played back by mistake, extensively loud sounds may blow the speakers or may damage the hearing of those in hearing range. Do not playback the below discs.
CDG, Photo-CD, CD-ROM, CD-TEXT, CD-EXTRA, VCD, SVCD, SACD, PD, CDV, DVD-ROM, DVD-RAM, DVD+R/RW, DVD audio, etc.

The below DVD-Video may not be played back.
- DVD-Video that do not have the region number "1" or "ALL".
- PAL or SECAM DVD-Video.
- Prohibited or business-use DVD-Video.

CD-R/CD-RWs cannot be played back for the following reasons.
- Compatibility of the disc and this unit.
- Compatibility of the disc and the recorder used.
- Unfinalized discs.

Do not playback the following discs. Playback of these discs may cause a failure.
- Discs on which paper, labels or stickers are affixed.
- Discs that have sticky areas left by adhesive tape.
- Special-shaped discs.

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Disc

Discs on which video can be recorded

To record video with this unit, use the discs below:

Media type	Logo mark
DVD-RW Ver.1.0 Ver.1.1 Ver.1.1CPRM support	DVD RW
DVD-R Ver.2.0	DVD R4.7

DVD-RW

*   The disc can repeatedly record about 1,000 times.
*   Only the VR mode can be used for Ver.1.0 discs.
*   With Ver.1.1 discs, you can record by selecting the VR mode or Video mode.
*   When you record in the VR mode, you can repeatedly record and erase. By erasing the unnecessary title, you effectively increase remaining time.
*   When you record in the Video mode, you can record until the disc becomes full.
*   When you use the Video mode, you can newly record on the disc by formatting the disc. However, if the disc is formatted, all the recorded contents will be erased.

DVD-R

*   You can record on the disc only in the Video mode.
*   You can record until the disc becomes full.
*   Finalizing the discs allows playback on other DVD players. However, the finalized discs can no longer be recorded or erased.
*   Discs can be additionally recorded on this unit until they are finalized.

NOTES:

*   There are some players that cannot playback discs that were recorded with this unit. We cannot guarantee the playback with other units.
*   This unit cannot record on DVD-R and DVD-RW of 8 cm diameter.
*   This unit cannot record on CD-R or CD-RW.

Recording format

This unit has two modes for formatting discs for recording: VR mode and Video mode.
When an unused DVD-RW (Ver.1.1) is loaded into this unit, the automatic format function starts to format the disc. (For the disc format setting in this step, see page 27.)

VR mode

*   This mode can be used for DVD-RW.
*   In this mode, the discs can be recorded and edited repeatedly.
*   The disc recorded in this mode can be played back with other DVD-RW-compatible players.
*   When a Ver.1.1 CPRM disc is used, you can record a "Copy Once" program (see page 53).

Video mode

*   This mode can be used for DVD-R and DVD-RW (Ver.1.1).
*   When you finalize the disc after recording, the disc recorded with this unit can be played back with other DVD players.
*   Recording, editing or playback of an unfinalized disc can be done only with this unit. However, there is some limitation to editing operations.
*   In this mode, you cannot record a "Copy Once" program (see page 53).
*   When you record a TV program of a bilingual broadcast, only the audio selected from main or sub can be recorded.

Format modes that can be used each disc

The usable format depends on the media type as shown in the below table.

Media type	Format	Available functions
DVD-RW (Ver.1.0)	VR mode	Playback, recording and editing (Original/playlist)
DVD-RW (Ver.1.1 and later)	VR mode	Playback, recording and editing (Original/playlist)
	Video mode	Playback and recording Editing (with limitation)
DVD-R (Ver.2.0 and later)	Video mode	Playback and recording Editing (with limitation)

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Disc

Title/Chapter/Track

A DVD-Video has large partitions called "Titles", and smaller partitions within them called "Chapters".
A music CD has another partitions called a "Tracks". A number is allotted to each partition and these numbers are called "title numbers", "chapter numbers" or "track numbers".

When recording in the VR mode

One-time recording is set to 1 title (1 chapter). However, if you stop recording temporarily or erase scenes by editing, the chapter will automatically be partitioned. The interval between chapters can be specified. (See page 31.)

When recording in the Video mode

One-time recording is set to 1 title. In recording, chapters are set automatically. The interval between chapters can be specified. (See page 31.)

NOTES:
- The title, chapter and track are numbered, but some discs may not record the numbers.
- Recording on DVD-R/RW in the Video mode is a new standard approved at the 2000 DVD forum. Conformity to this standard varies with each DVD player manufacturer. Some models of DVD player or DVD-ROM drive, therefore, will not playback recorded videos.
- In the Video mode, you can only change the disc name and the title name. Other editing operations cannot be performed.

Disc playback in other players

A disc recorded in this unit can be finalized. The finalized disc can be played back in players other than this unit that can playback DVD-RW and DVD-R.
For more information on finalization, see "FINALIZE" in "Setting the disc" (page 27).

When recording in the VR mode

Even if a disc recorded in the VR mode is finalized, you can record or edit by cancelling the finalization. (See "UNDO FINALIZE" on page 28.)
When you playback the disc with another player, make sure that the DVD player supports DVD-RW and bears the following mark.

RW
COMPATIBLE

When recording in the Video mode

When a disc recorded in the Video mode is finalized, it cannot be recorded onto any more. Therefore, before finalization, be sure to perform all desired recording. After finalization, a title list that can be used by the DVD player is automatically created.

NOTES:
- The finalization process may require a few minutes to about 1 hour according to disc type or the amount of free space on the disc.
- A DVD-RW Ver.1.1 recorded in the Video mode cannot be recorded or edited after finalization, but if you format the disc by erasing all the content, you can again record on this disc.
- A finalized disc may not play because of its condition or of the DVD player used for playback.
- Some players may not playback the discs recorded with this unit. We cannot guarantee the playback using other players.

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Parts and functions

Front

VCR indicator

Cassette Loading Slot   Display window

DVD indicator

STOP   REC   Disc tray
button   button

CHANNEL▲/▼ buttons

POWER   EJECT   VCR/DVD   OPEN/CLOSE   PLAY   FF (Fast Forward) button
button   button   button   button   button

AUDIO (L/R)/VIDEO   DVD S-VIDEO   REW (Rewind) button
IN (LINE 2) jacks   IN (LINE 2) jack

Rear

RF OUT jack

DVD COMPONENT
OUT jacks   RF IN jack

DVD COAXIAL DIGITAL   DVD S-VIDEO
AC power cord   AUDIO OUT jack   IN (LINE 1) jack

DVD S-VIDEO   DVD/VCR common
OUT jack   AUDIO (L/R)/VIDEO
DVD OPTICAL DIGITAL   IN (LINE 1) jacks
AUDIO OUT jack

DVD AUDIO (L/R)   DVD/VCR common
OUT jacks   AUDIO (L/R)/VIDEO OUT jacks

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Parts and functions

Display window
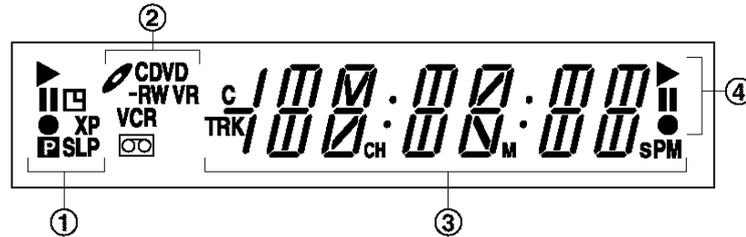
No.	Display	Description
①	▶	Lights during video tape playback.
	‖	Video tape is temporarily stopped.
	●	Lights during video tape recording.
	P	Progressive scanning mode.
	⊡	Timer recording display.
	XP/SP/LP/SLP	4 DVD recording modes. XP, SP, LP or SLP is selected in turn by pressing the REC MODE/SPEED repeatedly.
	SP/SLP	2 VCR recording modes. SP or SLP is selected in turn by pressing the REC MODE/SPEED repeatedly.
②	⬗ CD	Appears when a CD is inserted.
	⬗ CD-R	Appears when a CD-R is inserted.
	⬗ CD-RW	Appears when a CD-RW is inserted.
	⬗ DVD	Appears when a DVD-Video is inserted.
	⬗ DVD-R	Appears when a DVD-R is inserted.
	⬗ DVD-RW	Appears when a DVD-RW is inserted.
	VR	Appears when a DVD-RW in VR mode is inserted. When the disc is set to video mode, VR does not appear.
	VCR	Appears when the tuner built into this unit is selected. When you press TV/VCR, VCR disappears.
	⊡⊙	Video tape is in the unit.
③	10:00	Clock display (Colon [:] flashes).
	01H00M00s	Counter display in hour/minute/second for VCR/DVD, minute/second for CD.
	C 36CH	CATV channel display.
	2CH	TV channel display.
	TRK 2	Track number display for CD.
	PM	Display for afternoon (out in the morning).
	L1/L2	The external input channel (L1 or L2) display.
	Err	Error display.
④	▶	Lights during playback of DVD and CD. Flashes in auto resume.
	‖	DVD or CD is temporarily stopped.
	●	Lights during DVD recording.

NOTE:
Some discs may be displayed wrong or e.g. chapter number, playback time, etc. may not be displayed.

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Parts and functions

Remote control
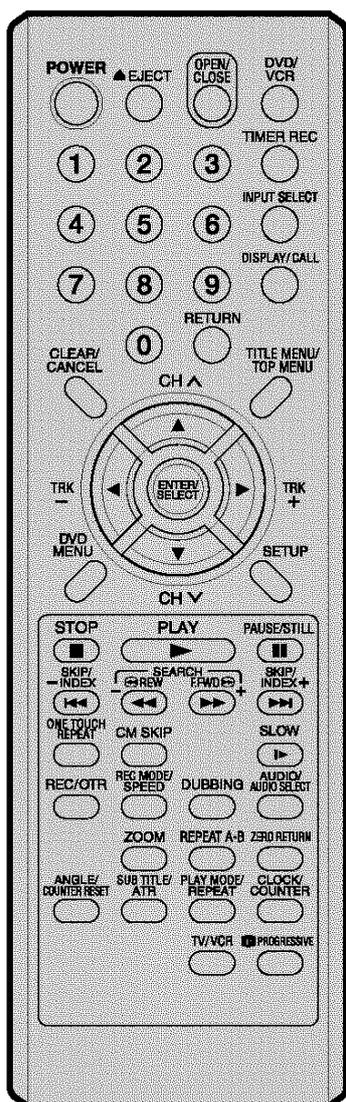
|		Page
POWER	Turns power on/off.	22
EJECT	Ejects the cassette tapes.	48
OPEN/CLOSE	Opens or Closes the tray.	33
DVD/VCR	Switches to operation between VCR and DVD.	22, 76, 77
0-9	Direct channel selection of TV	54
	Setting input	37, 74
	Entering a password	25
TIMER REC	Sets the unit to start recording at a preset time.	59
INPUT SELECT	Switches the connected TV to external inputs.	78
DISPLAY/CALL	Displays VCR or DVD operation status.	35, 51
RETURN	Close the menu window.	23, 45
CLEAR/CANCEL	Deletes the Timer recording program.	59
	Cancels input data in the setting mode.	25
TITLE MENU/TOP MENU	Selects titles of a DVD disc.	34, 39, 42, 62
CH ∧/∨	Channel selection for the connected TV or VCR	54
▲ / ▼	Cursor buttons	23, 33, 37, 57
TRK +/−	Manual tracking in the playback mode for VCR	50
◄ / ►	Cursor buttons	33, 37
ENTER/SELECT	Option selection in the menu	23, 33, 37, 57
DVD MENU	Displays the menu of the DVD disc.	39
SETUP	Displays the setup menu.	23, 57
STOP	Stop	33, 49, 55
PLAY	Playback	33, 49
PAUSE/STILL	Still picture/Recording pause on/off	36, 50
SKIP ◄◄/►►	Skips chapters in the forward or reverse direction	36
INDEX −◄◄/+►►	Searches for the INDEX mark of a tape	51
REW/SEARCH −	Rewind/Review playback	36, 49, 50
F.FWD/SEARCH +	Fast Forward/Forward search playback	36, 49, 50
ONE TOUCH REPEAT	Repeats playback between the section played	
	10 seconds before and present section.	38
CM SKIP	Skips commercial breaks.	37, 50
SLOW	Slow motion playback	37, 50
REC/OTR	Recording	54, 56, 78
REC MODE/SPEED	Selects the recording mode.	54, 56
DUBBING	Copies VCR to DVD or DVD to VCR.	76
AUDIO/AUDIO SELECT	Switches sound between mono and stereo.	60
	Changes the language of the DVD.	41
ZOOM	Zoom	40
REPEAT A-B	Repeats playback between A and B.	38
ZERO RETURN	Stops the tape when the counter reaches 00ʜ00ᴍ00s.	51
ANGLE	Changes playback angle.	40
COUNTER RESET	Resets the counter to 00ʜ00ᴍ00s.	51
SUB TITLE	Selects subtitles of the DVD disc.	41
ATR	Digital AUTO TRACKING	50
PLAY MODE	Selects the playback mode.	37
REPEAT	Repeats playback.	38, 50
CLOCK/COUNTER	Changes the front panel display mode.	51
TV/VCR	Switches input between the TV and VCR.	22, 55
▣ PROGRESSIVE	Activates the progressive scanning mode.	47

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Parts and functions

Inserting Batteries into the Remote Control:

1 Open the battery compartment cover in the direction of the arrow.

2 Install two "AAA" batteries, paying attention to the polarity diagram in the battery compartment.

3 Replace the compartment cover.
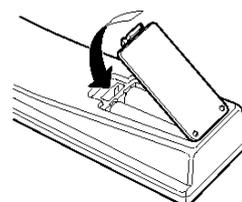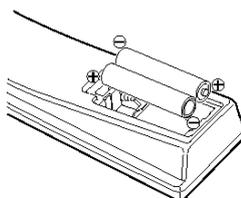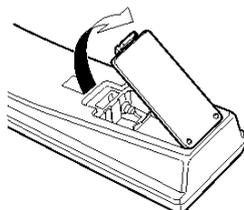
Battery precautions

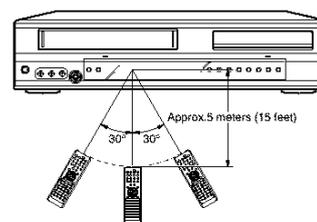The precautions below should be followed when using batteries in this device:

1. Use only the size and type of batteries specified.
2. Be sure to follow the correct polarity when installing the batteries as indicated in the battery compartment. Reversed batteries may cause damage to the device. To avoid a potential short circuit, insert the "–" end first.
3. Do not mix different types of batteries together (e.g. Alkaline and Carbon-zinc) or old batteries with fresh ones.
4. If the device is not to be used for a long period of time, remove the batteries to prevent damage or injury from possible battery leakage.
5. Do not try to recharge batteries not intended to be recharged; they can overheat and rupture. (Follow battery manufacturer's directions.)
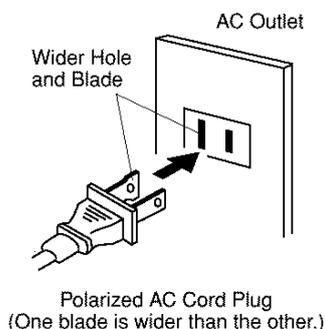
Remote control basics

- Press **POWER** to turn the DVD/VCR on or off.
- Press **CH** ∧ or **CH** ∨ to move through the channels one channel at a time.
- The ▲/▼/◀ / ▶ are also used to navigate on-screen menu system.
- You can directly access specific channels using **numeric keys**.
- Each press of **DVD/VCR**, switches the screen between the DVD screen (DVD mode) and the VCR screen (VCR mode).

Operation

- Aim the remote control at the remote sensor and press control buttons to operate.
- Operate the remote control within 30° angle on either side of the remote sensor, up to a distance of approximately 5 meters (15 feet).

Approx.5 meters (15 feet)

Power Source

AC Outlet

Wider Hole and Blade

Polarized AC Cord Plug
(One blade is wider than the other.)

TO USE AC POWER SOURCE

Use the AC polarized line cord provided for operation on AC. Insert the AC cord plug into a standard 120V 60Hz polarized AC outlet.

NOTES:

- Never connect the AC line cord plug to other than the specified voltage (120V 60Hz). Use the attached power cord only.
- If the polarized AC cord does not fit into a non-polarized AC outlet, do not attempt to file or cut the blade. It is the user's responsibility to have an electrician replace the obsolete outlet.
- If you cause a static discharge when touching the unit and the unit fails to function, simply unplug the unit from the AC outlet and plug it back in. The unit should return to normal operation.

15

Antenna connections

If you are using an antenna system, follow these instructions. If you are a cable (CATV) subscriber, skip ahead to page 18 for the proper connections.

ANTENNA TO DVD/VCR CONNECTION

The DVD/VCR must be connected "between" the antenna and the TV. First, disconnect the antenna from the TV and connect it to the DVD/VCR. Then connect the DVD/VCR to the TV. Below are 3 common methods of connecting an antenna system to a DVD/VCR. Find the type of antenna system you are using and follow the connection diagram.

1 Combination UHF/VHF antenna with 75 ohm coaxial cable

DVD/VCR

75 ohm coaxial cable

7:

2 Combination UHF/VHF antenna with 300 ohm twin lead (flat) wire

DVD/VCR

Matching transformer
300 ohm input
75 ohm output
(not supplied)

300 ohm twin lead (flat) wire

7
(

3 Separate UHF and VHF antennas

DVD/VCR

VHF   UHF

Combiner
75/300 ohm input
75 ohm output
(not supplied)

300 ohm twin lead (flat) wire

75 ohm coaxial cable
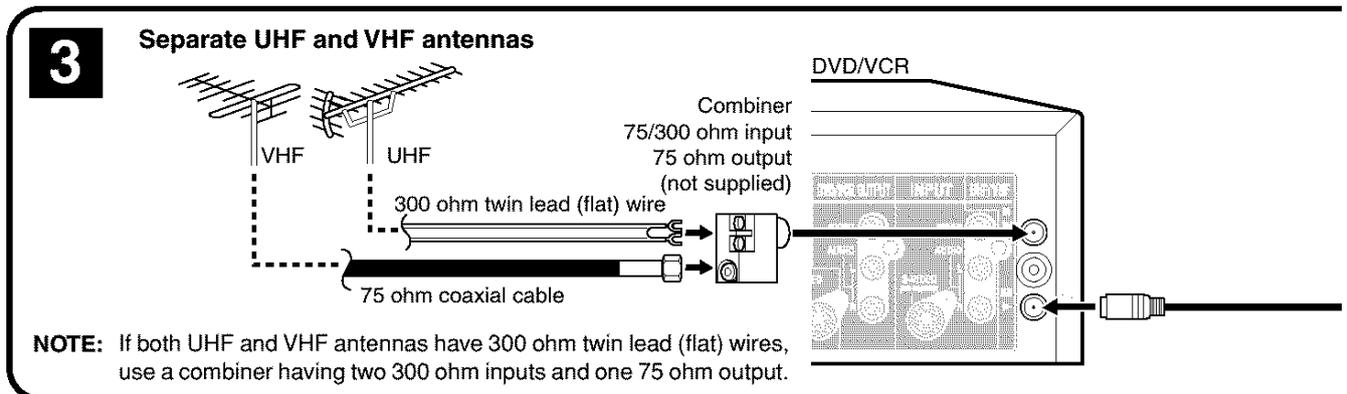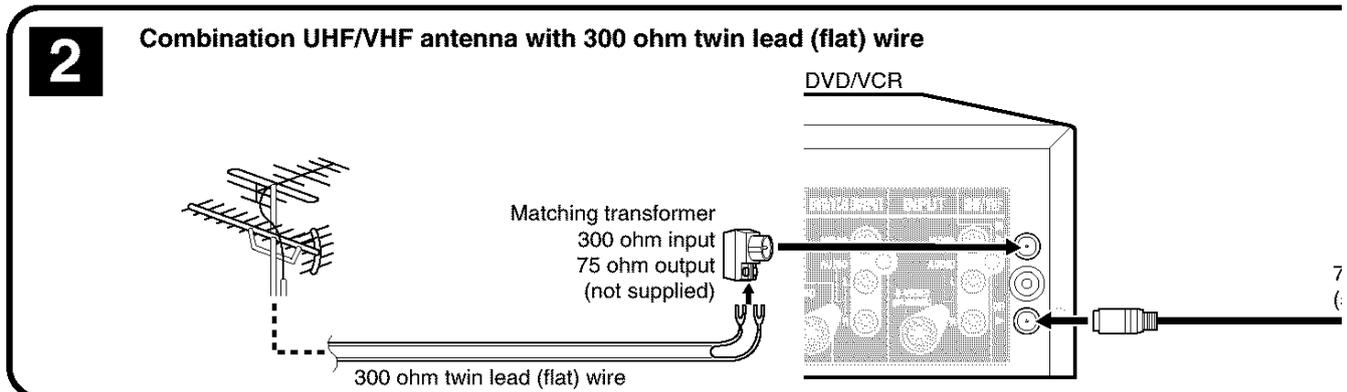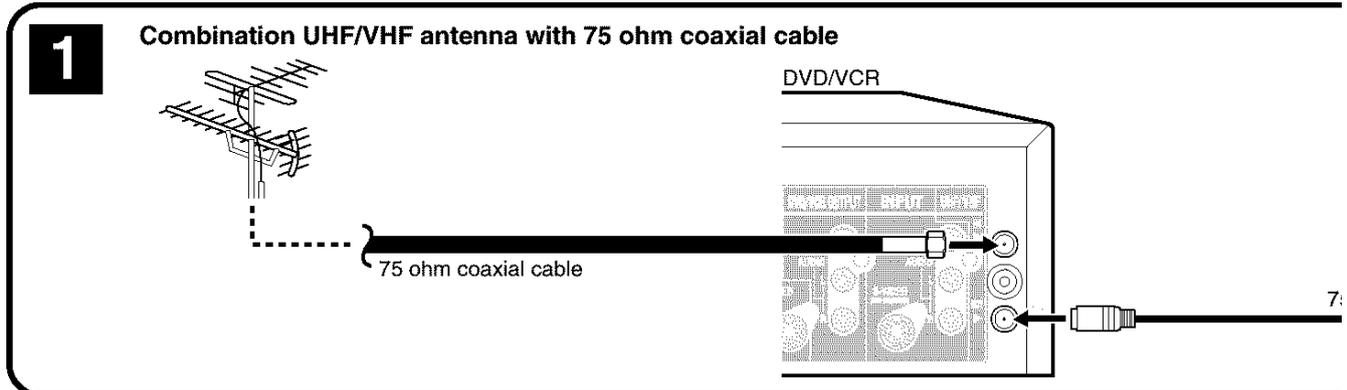
NOTE: If both UHF and VHF antennas have 300 ohm twin lead (flat) wires, use a combiner having two 300 ohm inputs and one 75 ohm output.

NOTES: • A clear picture will not be obtained by the DVD/VCR unless the antenna signal is good. Connect the antenna to the DVD/VCR properly.
• For better quality recording, an indoor antenna or a telescopic antenna is not recommended. The use of an outdoor type antenna is required.
• If you are not sure about the connection, please refer to qualified service personnel.
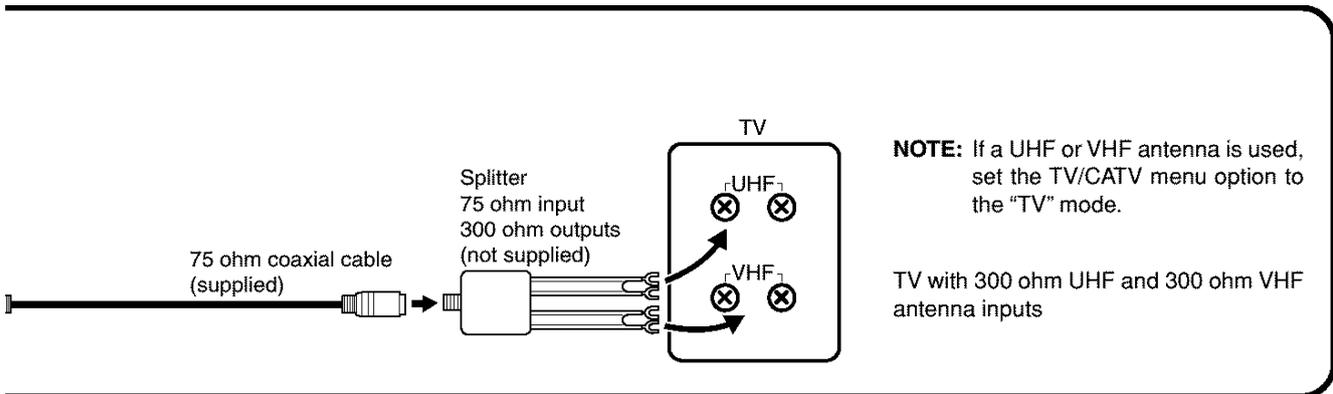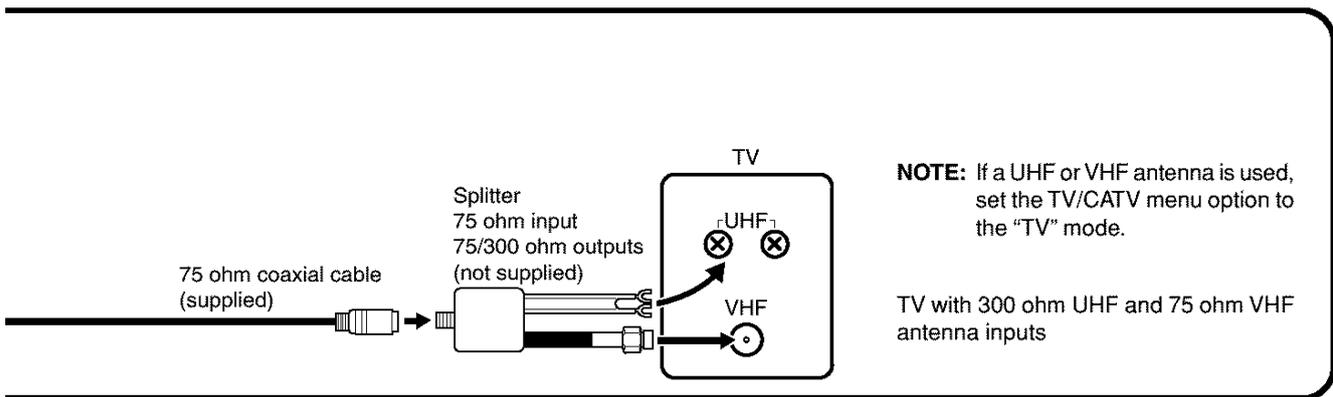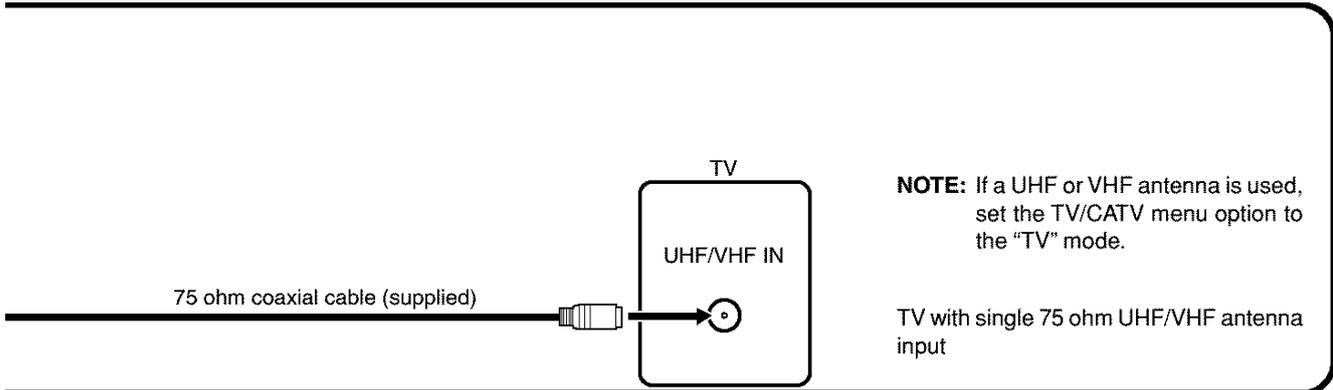
16

Antenna connections

DVD/VCR TO TV CONNECTION

After you have connected the antenna to the DVD/VCR, you must connect the DVD/VCR to the TV.
Below are 3 common methods of connecting your DVD/VCR to a TV. Find the type of TV you are using and follow the connection diagram.
This DVD/VCR has a single 75 ohm output for connection to a TV. If your TV has separate UHF and VHF antenna inputs (numbers 2 and 3 below), use a splitter to connect the DVD/VCR to the TV for UHF and VHF reception.

TV

UHF/VHF IN

75 ohm coaxial cable (supplied)

NOTE: If a UHF or VHF antenna is used, set the TV/CATV menu option to the "TV" mode.

TV with single 75 ohm UHF/VHF antenna input

TV

Splitter
75 ohm input
75/300 ohm outputs
(not supplied)

UHF

VHF

75 ohm coaxial cable
(supplied)

NOTE: If a UHF or VHF antenna is used, set the TV/CATV menu option to the "TV" mode.

TV with 300 ohm UHF and 75 ohm VHF antenna inputs

TV

Splitter
75 ohm input
300 ohm outputs
(not supplied)

UHF

VHF

75 ohm coaxial cable
(supplied)

NOTE: If a UHF or VHF antenna is used, set the TV/CATV menu option to the "TV" mode.

TV with 300 ohm UHF and 300 ohm VHF antenna inputs

17

CATV (CABLE TV) connections

Many cable companies offer services permitting reception of extra channels including pay or subscription channels. This DVD/VCR has an extended tuning range and can be tuned to most cable channels without using a cable company supplied converter box, except for those channels which are intentionally scrambled. If you subscribe to a special channel which is scrambled, you must have a descrambler box for proper reception.

1

DVD/VCR

Incoming cable

TV

UHF/VHF
IN (ANT)

ALLOWS:
- Recording of nonscrambled channels.
- Use of the programmable timer.
- Recording of one channel while watching another.

2

DVD/VCR

Converter/descrambler

Incoming cable

TV

UHF/VHF
IN (ANT)

ALLOWS:
- Recording of channels through the converter box (scrambled and unscrambled).
- Using the programmable timer to record only the channel selected at the converter box.

PREVENTS:
- Recording one channel while watching another.
- Using the DVD/VCR tuner to select channels.

NOTE:
To record from converter/descrambler, DVD/VCR tuner must be tuned to the converter output channel, usually channel 3 or 4.

3

DVD/VCR

Incoming cable

TV

Converter/descrambler

UHF/VHF
IN (ANT)

ALLOWS:
- Recording of nonscrambled channels.
- Use of the programmable timer.
- Recording an unscrambled channel while watching any channel selected at the converter box.

PREVENTS: Recording scrambled channels.

NOTE:
If you are playing a tape or using the tuner built into the DVD/VCR, the converter must be set to the video channel output of the DVD/VCR (either 3 or 4).

NOTE: Whenever a converter/descrambler box is placed before the DVD/VCR, you must tune the DVD/VCR to the output of the converter/descrambler box, usually channel 3 or 4.

18

CATV (CABLE TV) connections

IMPORTANT: Make sure the TV/CATV menu option is set to the "CATV" mode.
This DVD/VCR cannot receive scrambled programs since it does not contain a descrambler. In order to receive scrambled programs, your existing descrambler must be used. Descrambler boxes are available from cable companies. Consult your local cable company for more information concerning connection to their descrambler equipment. There are many ways to connect your DVD/VCR to a cable system. Below are six common methods of connection.

4

Splitter / DVD/VCR / Incoming cable / Converter/descrambler / A/B switch / TV / UHF/VHF IN (ANT)

ALLOWS:	• Recording of one channel while watching another.
	• Using the programmable timer to record only the channel selected at the converter box.
	• Recording of all channels through the converter box.
PREVENTS:	• Watching scrambled channels while recording another channel.
	• Using the DVD/VCR tuner to select channels.

5

Splitter / DVD/VCR / Incoming cable / Converter/descrambler / A/B switch / TV / UHF/VHF IN (ANT)

ALLOWS:	•Recording of nonscrambled channels.
	•Recording of one channel while watching another.
	•Watching premium channels through the converter while recording nonscrambled channels.
	•Using the programmable timer.
PREVENTS:	Recording scrambled channels.

6

Splitter / Converter/descrambler / DVD/VCR / Incoming cable / Converter/descrambler / A/B switch / TV / UHF/VHF IN (ANT)

| ALLOWS:	• Recording of all channels through the converter box.
	• Recording a scrambled or unscrambled channel while watching another (scrambled or unscrambled) channel.
	• Using the programmable timer to record only the channel selected at the converter box.
PREVENTS:	Using the DVD/VCR tuner to select channels.

19

Connections with the TV or audio component

The exact arrangement you use to interconnect various video and audio components to the DVD/VCR is dependent on the model and features of each component. Check the Owner's Manual provided with each component for the location of video and audio inputs and outputs.
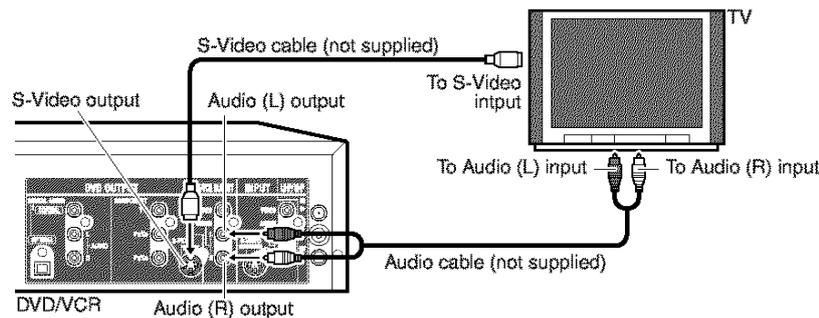
Connect to a TV with Audio/Video output
You can enjoy playback by connecting the unit to a TV.
Connect the unit to a TV equipped with audio input (L/R) and video input jacks using the supplied audio/video cable.
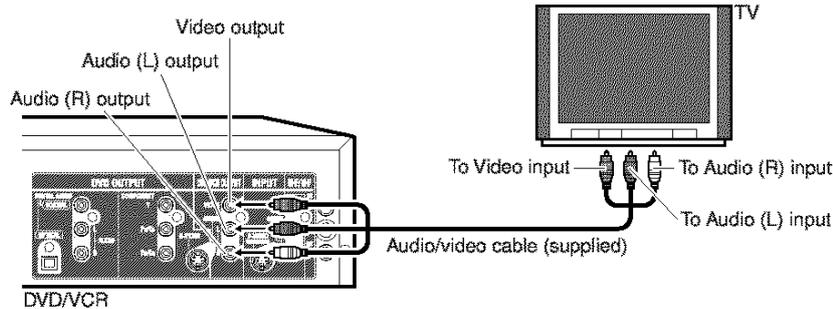
Connect to a TV with S-Video output (for DVD/CD playback)
If your TV has an S-Video input, you can get higher quality by connecting it with the S-Video output of the unit using the S-Video cable instead of connecting the video input of the TV to the video output jack of the unit.

Connect to a TV with Component video output (for DVD/CD playback)
You can enjoy high quality picture by connecting the unit's component video out jacks to the component video in jacks of your TV with the component video cables (not supplied).
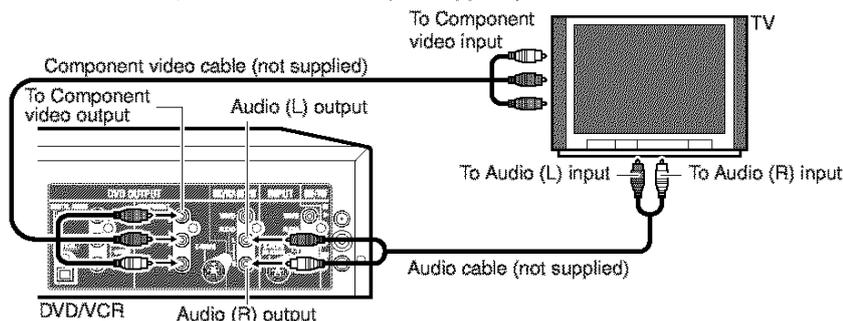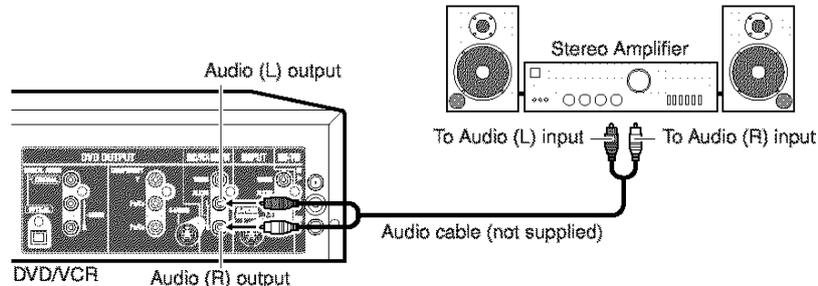

NOTES:
- When connecting to a TV using the video or S-Video jack, make sure that the progressive indicator on the display window is not lit. If it is lit, the video and S-Video outputs do not feed the correct signals and you cannot see any picture. To turn off the progressive indicator, make the progressive scanning mode inactive (see page 47).
- When the component video input jacks on a TV is of the BNC type, use an adapter to convert a pin jack to a BNC jack (not supplied).

20

Connections with the TV or audio component

Connect to a stereo amplifier with audio output

You can enjoy high quality audio by connecting the audio output to your amplifier.
Connect the audio output jacks to any line-level inputs (such as AUX, DVD, CD, etc.) of an audio amplifier.

Audio (L) output

Stereo Amplifier

To Audio (L) input — To Audio (R) input

Audio cable (not supplied)

DVD/VCR   Audio (R) output

Connect to an AV Amplifier with built-in digital surround

If you are using an Amplifier with a built-in digital surround as follows, you can enjoy the various audio systems such as Dolby Digital and DTS by using the optical or coaxial digital output.

Use this connection to connect an:
- **AV amplifier with built-in *Dolby Digital decoder**
- **AV amplifier with built-in *DTS decoder**

NOTE:
You may connect to a TV with a component video cable (not supplied) or S-Video cable (not supplied) instead of a video cable (not supplied).

Video cable (not supplied)

Coaxial digital audio output   To Video intput

Video output   TV

Coaxial digital
cable (not supplied)

DVD/VCR   AV Amplifier with built-in various
decoder as above
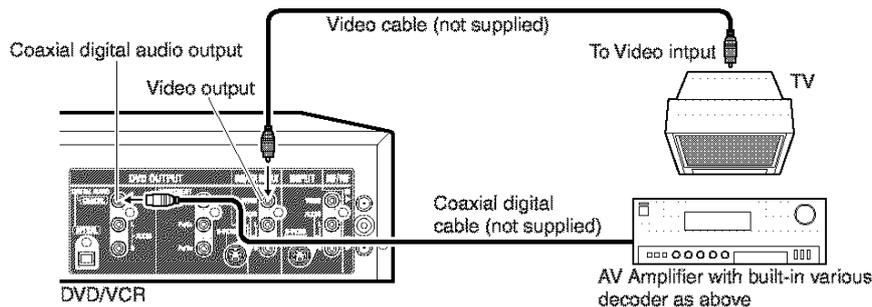
Connecting the optical digital cable

You may connect to an AV Amplifier with an optical digital cable (not supplied) instead of a coaxial digital cable.

When you connect the optical digital cable (not supplied), remove the dust protection cap from the rear panel.
When not using the optical digital cable, attach the dust protection cap to protect against dust.
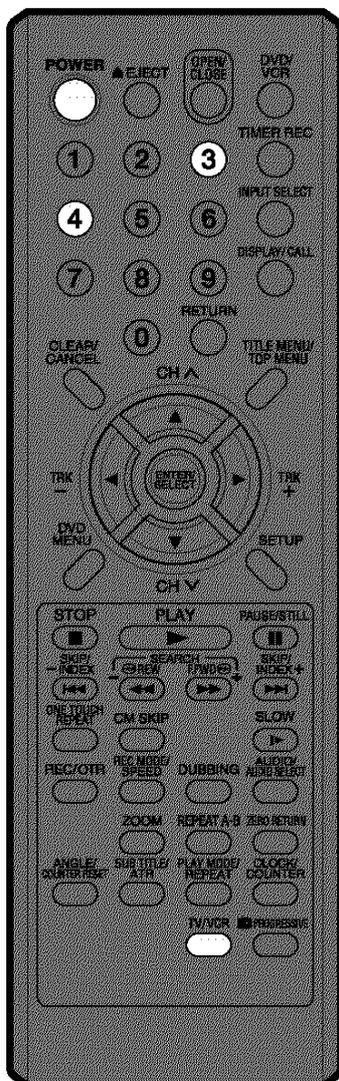
NOTES:
- **The DVD OUTPUT jacks (OPTICAL, COAXIAL, AUDIO L/R, S-VIDEO and COMPONENT) are useful only for DVD section. The VHS signal is output only from the composite jacks (DVD/VCR OUTPUT) and UHF/ VHF OUT.**
- When you make the connections above, do not set DOLBY DIGITAL to DOLBY DIGITAL or DTS to ON on the AV amplifier. If you do, a loud noise will suddenly come out from the speakers, affecting your ears or causing the speakers to be damaged.
- Caution for the optical digital audio output connector: Do not connect to an amplifier (with an optical digital input connector) which does not contain a Dolby Digital or DTS decoder. Otherwise, any attempt to play DVDs may cause such a high level of noise that it may be harmful to your ears and damage your speakers.
- DTS audio will be output only from the COAXIAL or OPTICAL output. To hear DTS audio, DTS-Decoder is necessary.
- When playing DTS-encoded CDs, only noise will be heard from the speakers or analogue stereo outputs.
- Some DTS decoders which do not support DVD-DTS interface may not work properly with the unit.

21

Auto clock setting / Setting the video channel

Auto clock setting

Preparation:

You must set the antenna connection before the AC cord plug is inserted into the AC outlet.

WAIT 30 MINUTES when the power switch is off, after the connections of the antenna and the power plug, because the auto clock setting feature is activated.

After the clock is set automatically, you may have to set the time zone and daylight saving time. (See page 26.)

Press **POWER** to turn on the DVD/VCR after the auto clock operation completed.

- When shipped from factory, the "AUTO CLOCK" option is set to "ON" position.
- If you turn the DVD/VCR on during auto clock setting, the clock is not set.
- After a power failure or disconnection of the power plug, the clock will be lost. In this case, wait 30 minutes before turning the DVD/VCR on.
- With cable box connection, if the auto clock setting is unsuccessful, select the PBS channel carrying the XDS information, then turn the DVD/VCR off. After 30 minutes, turn the DVD/VCR on.
- If the clock is not set automatically, set the clock manually. (See page 26.)

Setting the video channel

To view playback of a recorded tape or DVD disc, or to watch a program selected by the VCR's channel selector, the TV must be set to channel 3 or 4 (video channel).

When a TV is connected with the 75 ohm coaxial cable only:

1 Press and hold **3** or **4** on the remote control for 3 seconds **in the standby mode** to select CH **3** or **4**. The selected channel number will flash on the display for about 4 seconds.

2 Turn ON the TV and set to CH **3** or **4** to correspond with the channel selected in step 1.

3 Press **POWER** to turn on the DVD/VCR.

4 Press **TV/VCR** to select the VCR position.
The VCR indicator will appear in the display.

5 Select any channel to receive a TV station in your area.
The channel number will appear on the screen for about 4 seconds.

For a push-button TV tuner

If CH **3** or **4** corresponding to the video channel cannot be tuned on your TV, proceed as follows: set the VCR 3/4 channel selector and the TV to CH **3** or **4**, playback a prerecorded tape and tune the TV to receive a sharp color picture from the video cassette recorder. Refer to your TV owner's manual for details.

NOTES:
- **When shipped from factory, the video channel is set to CH 3.**
- **If the unit does not operate properly, or No key operation (by the unit and/or the remote control):**
Static electricity, etc., may affect the operation. Disconnect the AC power cord once, then connect it again.

22

SETUP MENU

The SETUP MENU consists of several menus where you can make various settings concerning language, audio functions, and images. In addition, this menu includes a clock, channel and other things that require setting just after purchase.
For details of each menu, see the corresponding section in this chapter.

Using the SETUP MENU

The following example shows the basic setting procedure of the SETUP MENU. The remote control keys that can be operated in the SETUP MENU mode are displayed at the bottom of the screen.

1 Press **SETUP** while the DVD or video tape is stopped.
The SETUP MENU screen will appear.

2 Press ▲ or ▼ to select the desired menu and press **ENTER**.
The submenu screen of the selected menu will appear.

3 Press ▲ or ▼ to select the desired submenu and press **ENTER**.
The setting screen of the selected submenu will appear.

4 Press ▲ or ▼ to select the desired item you want to select and press **ENTER**.
Selectable items will be listed.

5 Press ▲ or ▼ to select the desired item and press **ENTER**.
This completes the setting procedure.
• To return to the previous screen, press **RETURN**.
• To close the SETUP MENU, press **SETUP**.

NOTES:
• For items that require different operations from the basic setting procedure, the setting procedure is described in each individual section.
• Some items cannot be selected depending on the setting conditions.

23

Setting the language

You can choose the language of the menu screen, DVD menu, DVD audio and subtitles.

Preparation:
• Turn ON the TV and set it to the video input mode.
• Select **"LANGUAGE"** from **"SYSTEM SETUP"**. For the procedure, see steps **1** to **3** in "Using the SETUP MENU" on page 23.
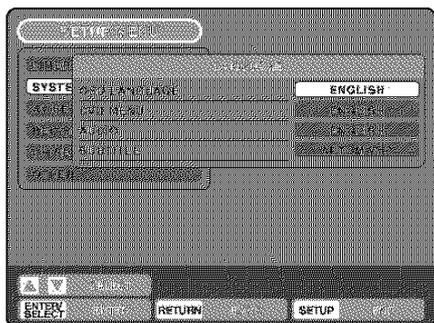
OSD LANGUAGE
You can set the language for on screen display.
Select "OSD LANGUAGE" and select the language from the list below.

Selectable languages:
ENGLISH, FRANCAIS, ESPANOL

DVD MENU
When several menu languages are recorded on a DVD, you can select the language to be used for the DVD menu.
Select "DVD MENU" and select the language from the list below.

Selectable languages:
ENGLISH, FRANCAIS, ESPANOL
The selected language is the first priority menu language.

OTHER
If you want to select another language, before pressing **ENTER**, input the language code by using the **numeric keys**. (See the Language code list on page 81). Then press **ENTER**.
• If you input a wrong number, press **CANCEL**.

AUDIO
When several audio languages are recorded on a DVD, you can select the audio language to be played back. The selected language remains effective after the power is turned off or the disc is replaced.
Select "AUDIO" and select the audio language from the list below.

Selectable languages:
ENGLISH, FRANCAIS, ESPANOL
The language you have selected will play if it is recorded on the disc.

ORIGINAL
The unit will select the first priority language of each disc.

OTHER
If you want to select another language, before pressing **ENTER**, input the language code by using the **numeric keys**. (See the Language code list on page 81). Then press **ENTER**.
• If you input a wrong number, press **CANCEL**.

NOTE:
If the selected language is not recorded on the disc, the first-priority language is selected.

SUBTITLE
When several subtitles languages are recorded on DVD, you can select the language to be used for the subtitles. The selected language remains effective after the power is turned off or the disc is replaced.
Select "SUBTITLE" and select the menu language from the list below.

Selectable languages:
ENGLISH, FRANCAIS, ESPANOL
The subtitle is displayed with the selected language if it is recorded on the disc.

OTHER
If you want to select another language, before pressing **ENTER**, input the language code by using the **numeric keys**. (See the Language code list on page 81). Then press **ENTER**.
• If you input a wrong number, press **CANCEL**.

AUTOMATIC
• The unit will automatically select the same language in the AUDIO setting.
• When the unit selects the same language as the AUDIO setting, the subtitles will not appear during playback.
• When you do not use the same language as the AUDIO setting, the subtitles will appear during playback.

OFF
Subtitles do not appear.

NOTE:
If the selected language is not recorded on the disc, the first-priority language is selected.

24

Setting the parental control

Some discs are specified as not suitable for children. This unit can prevent playback of such discs.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select "**PARENTAL**" from "**SYSTEM SETUP**". For the procedure, see steps **1** to **3** in "Using the SETUP MENU" on page 23.
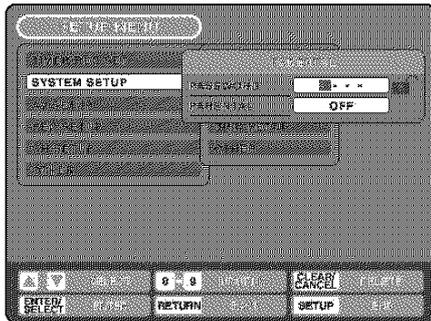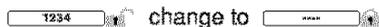

Selecting parental control

Select "PARENTAL" and select the parental control level from the list below.

Level Off:	Parental control is turned off.
Level 1:	Adult discs and general discs (R-rated disks included) cannot be played back.
Level 2 to 3:	Adult discs and R-rated discs cannot be played back.
Level 4 to 7:	Adult discs cannot be played back. (Level 4 to 7 discs contain content children age 15 and younger may not see.)
Level 8:	All discs can be played back without restriction.

Select from level 1 to level 8.
On a scale of 1- 8, "1" is the most restrictive.

To lock the selected parental control level

1 To lock the selected parental control level, press ▲ or ▼ to select "PASSWORD".

2 Use the **numeric keys** to input a 4-digit password.
- If you input a wrong number, press **CANCEL**.
- Be sure to remember this number!

3 Press **ENTER**.

　　　1234　　 change to 　　 ----

To cancel the locked parental control level

1 Select "PASSWORD" shown in step **1** of the above section and use the **numeric keys** to input the password.

2 Press **ENTER**.
The locked mark "🔒" will change to an unlocked mark "🔓".
Then, you can change the parental control level, or enter a new password.

NOTE:
- The selected level will apply to operations executed after this.
- The unit cannot restrict playback of some discs.
- Some discs may not be encoded with specific rating level information though its disc jacket says "adult". Parental control will not work with those discs.
- Do not forget the password. If you forget the password, contact customer service.

Temporarily cancelling parental control

Parental control can temporarily be cancelled with some DVDs.

1 Playback a DVD. (See page 33.)

2 If the DVD disc has been designed to temporarily cancel the rating level, the screen that follows the "READING" screen will change. If you select "YES" with the **ENTER**, the message "YOUR DISC EXCEEDS THE PARENTAL CONTROL LEVEL 1."(e.g.) will then appear.

3 If you wish to cancel the set rating level temporarily, select "PARENTAL CONTROL LEVEL" with ▲ or ▼, then press **ENTER**. If the password has been selected, the password input screen will appear. Alternatively, if the password has not been set, playback will commence. If you don't know (or have forgotten) the password, select "CANCEL PICTURE". The setting screen will disappear. Press **OPEN/ CLOSE** to remove the disc.

4 Use the **numeric keys** to input the password.
- To interrupt the input process, press **RETURN**.

5 Press **ENTER**.

6 Playback will commence if the entered password was correct.

NOTE:
This temporary cancellation of the rating level will remain active until the disc is ejected.
When the disc is ejected, the original rating level will be set again automatically.

25

Setting the clock

The clock is set to the correct time automatically, but it can also be set manually. The clock can be set for daylight saving time and time zone.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select "**CLOCK**" from "**SYSTEM SETUP**". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
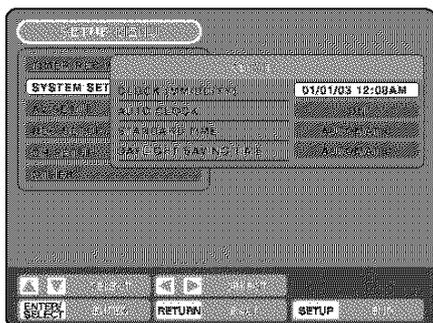

CLOCK (manually)

You can manually set the date, year and present time with the remote control.
Ex.: Setting the clock to "10:20AM" November, 15th, 2003.

1 Select "CLOCK" and press **ENTER**.

2 Select the desired items using ◀ or ▶ (month, date, year, hour, minute and AM/PM).

3 Press ▲ or ▼ to set the value of the selected item.
- For the minutes, press ▲ or ▼ once to set the time minute by minute, or hold down either of buttons for several seconds to set the time in 10-minute intervals.

4 Repeat steps 2 and 3 to set the date, year and present time, and press **ENTER**. The SETUP MENU will close.
This completes clock time setting.

AUTO CLOCK

You can automatically set the clock by turning "ON" the AUTO CLOCK function.
When you want to set the auto clock function to "OFF", select "AUTO CLOCK", press **ENTER** and select "OFF" from the list.
For more information see page 22.

STANDARD TIME (Time zone)

In the rare event that you live within the broadcast range of two stations in two different time zones, the DVD/VCR may recognize the wrong station for the auto clock set. To correct the situation:

Select "STANDARD TIME" and select the time zone from the list below.

Selectable time zones and correction times

ATLANTIC:	GMT – 4 hours
	(GMT: Greenwich Mean Time)
EASTERN:	GMT – 5 hours
CENTRAL:	GMT – 6 hours
MOUNTAIN:	GMT – 7 hours
PACIFIC:	GMT – 8 hours
ALASKA:	GMT – 9 hours
HAWAII:	GMT – 10 hours
AUTOMATIC:	AUTO SET

NOTES:
- When shipped from the factory, the "TIME ZONE" is set to "AUTOMATIC".
- After making the auto clock setting, in some cases the clock may display another time zone. You can correct the clock by selecting your time zone setting above.
- When the clock is not set or you set the clock manually, the time zone setting is not available.

DAYLIGHT SAVING TIME

You can set the clock to daylight saving time automatically or manually.
To select daylight saving time, select "DAYLIGHT SAVING TIME" and select "ON", while to cancel the daylight saving time, select "OFF".

ON:	For manual setting (forward 1 hour)
OFF:	For manual setting (back 1 hour)
AUTOMATIC:	For automatic setting (read XDS in the signal)

NOTES:
- When you want to set daylight saving time, on the first Sunday in April you set it to "ON", and on the last Sunday in October you set it to "OFF".
- When shipped from the factory, the "DAYLIGHT SAVING TIME" option is set to "AUTOMATIC".
- When the clock is not set, the daylight saving time setting is not available.
- When there is no daylight saving time in your area, always select "OFF".

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Setting the disc

You can format, protect or finalize the disc.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select "**DISC SETUP**" from "**SYSTEM SETUP**". For the procedure, see steps **1** to **3** in "Using the SETUP MENU" on page 23.
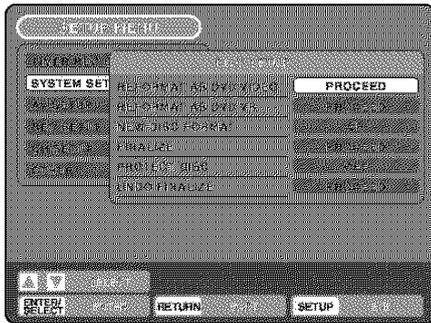
REFORMAT
You can format a recorded DVD-RW.
Check the content of the disc before format. If you format the disc, the recorded content of the disc will be erased.
To format a DVD in the video mode, select "REFORMAT AS DVD VIDEO", and to format it in the VR mode, select "REFORMAT AS DVD VR".
The screen below will appear.
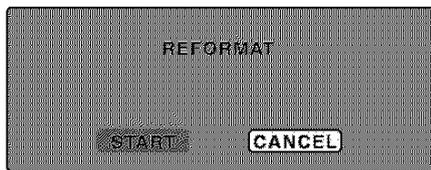
- When you select "START" and press **ENTER**, format will start. The screen below will appear.
- When you select "CANCEL" and press **ENTER**, the DISC SETUP screen will appear.
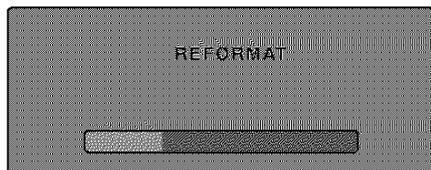
NOTE:
You cannot format Ver. 1.0 DVD-RW and DVD-R.

NEW DISC FORMAT
If you insert a blank DVD-RW, the disc is automatically formatted.
Select "NEW DISC FORMAT" and select the mode to be used for automatic format from the list below.

    VR: Format the DVD in the VR mode.
    Video: Format the DVD in the Video mode.

When you insert a blank DVD-RW, the following message screen will appear.
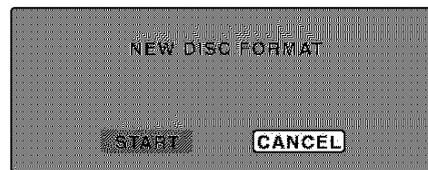
- When you select "START" and press **ENTER**, format will start. The screen below will appear.
- When you select "CANCEL" and press **ENTER**, the normal TV screen will appear.
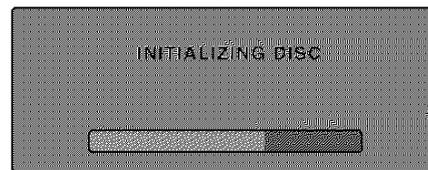
NOTES:
- The automatic format is effective only for Ver. 1.1 or later DVD-RW.
- Even if the recorded disc is inserted the above screen may appear due to any scratch or contamination on the disc. In this case, select "CANCEL".

FINALIZE
When you finalize the disc recorded or edited by this unit, you can playback the disc on other DVD players. When "FINALIZE" is selected, the screen below will appear.

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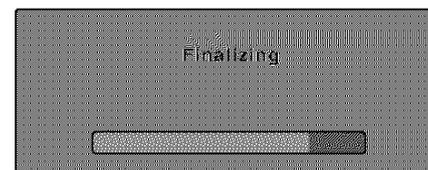
Setting the disc / Other (SYSTEM SETUP)

NOTES:
- The finalization process may require a few minutes to about 1 hour according to disc type or the amount of free space on the disc.
- You can record or edit a finalized DVD-RW (in VR mode) by cancelling the finalizing, but you cannot do these operations with a DVD-RW (in Video mode) or DVD-R.
- For a DVD-RW (in VR mode) which was finalized by another unit, you can record or edit on this unit by cancelling the finalization.
- You cannot playback a disc recorded on VR mode on a unit that does not support DVD-RW.
- Even if you finalize a disc in the Video mode, the disc cannot be played back in some DVD players.

PROTECT DISC

You can protect a disc to prevent the content recorded on it from being erased, edited or re-recorded.
Only DVD-RW (in VR mode) can be protected.
Select "PROTECT DISC" and select "ON" to protect the disc.
To cancel the disc protection, select "OFF".

NOTE:
You can format a disc even if the disc protection is "ON".

UNDO FINALIZE

You can cancel the finalization of a finalized DVD-RW (in VR mode).
You cannot cancel the finalization for discs other than above. You can record or edit on a disc whose finalization has been cancelled.
Select "UNDO FINALIZE", and the screen below will appear.
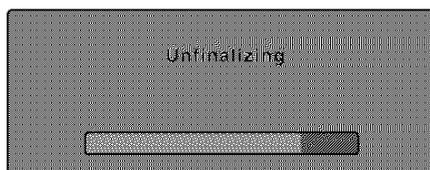
NOTES:
- The cancelling finalization process may require a few minutes to about 1 hour according to disc type or the amount of free space on the disc.
- When the disc's finalization cannot be cancelled, you cannot select "UNDO FINALIZE".

You can turn the display window and screen display "ON" or "OFF".

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select "OTHER" from "SYSTEM SETUP". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
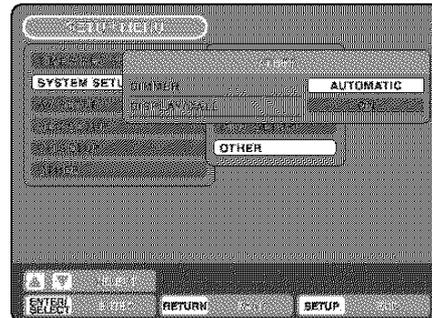
DIMMER (Brightness of the display window)

Set the brightness of the display window on the front panel of this unit.
Select "DIMMER" and select the display window status from the list below.

AUTOMATIC: When the power is on, the display window appears bright. When the power is off, it appears dark.
DIM: The window display always appears dark.
OFF: When the power is on, the display window appears dark. When the power is off, it is turned off.

DISPLAY/CALL (Turning the screen display "ON" or "OFF")

You can turn off the screen display that is output to the TV screen by this unit. Select "DISPLAY/CALL", and select "ON" or "OFF".

ON: The screen display appears.
OFF: Nothing but the SETUP MENU and error messages appear.

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Setting the screen

This section describes settings about the screen.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select "AV SETUP 1" from "AV SETUP". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
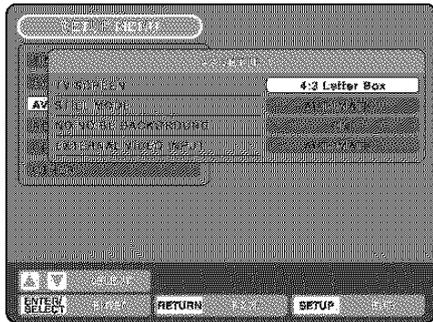

TV SCREEN
You can select the TV screen size to suit the screen image.
Select "TV SCREEN" and select screen size from the list below.

4:3 Pan Scan
It displays a wide picture across the whole screen with left and right edges automatically cut off.

4:3 Letter Box
Select this mode when connecting to a conventional TV. When playing back a wide screen DVD disc, it displays a wide picture with black bands at the top and bottom of screen.

16:9
Select this mode when connecting to a wide-screen TV. A wide-screen picture is displayed in full size.

NOTE:
If the DVD disc is not formatted in the pan scan format, it displays a 4:3 aspect ratio.

STILL MODE
You can set the type of image displayed on the TV screen when the playback of the DVD is stilled.
Select "STILL MODE" and select the image to be displayed from the list below.

AUTOMATIC
The field still or frame still is automatically selected. (For normal use.)

STILL BY FRAME
The frame still is set.

Note for the field still and frame still:
(with 480i interlaced scanning mode)
- Field* still (240 lines)
  Since only one field (half of the video information) is shown on the TV screen, the picture appears rough but does not shake.
- Frame* still (480 lines)
  Two fields are alternatively shown on the TV screen. The picture shakes but the resulting picture quality is superior to the field still pictures.

Field*: A field refers to the video information in one-half of a frame. 1 frame (screen) consists of 2 fields.
Frame*: A frame refers to the total area occupied by each picture on the TV screen.

NO NOISE BACKGROUND
When you select a channel where the broadcast has finished or no broadcast is set, the TV screen will automatically appear blue.
The function above works when you select "NO NOISE BACKGROUND" and select "ON" from the list. If you don't want to use this blue background function, select "OFF".
The default setting is "ON".

EXTERNAL VIDEO INPUT
This unit comes with an S-Video input jack and Video input jack. If both jacks are used, the priority jack can be selected.
Select "EXTERNAL VIDEO INPUT" and select the mode from the following list.

AUTOMATIC
The S-Video input jack has priority.

COMPO. VIDEO
The video signal is input only from the video input jack.

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Setting the image quality / Setting the audio

This section describes image quality settings.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select **"AV SETUP 2"** in **"AV SETUP"**. For the procedure, see steps **1** to **3** in "Using the SETUP MENU" on page 23.
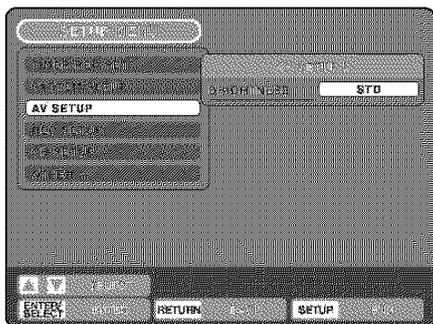
BRIGHTNESS
You can control the brightness level of the image.
Select "BRIGHTNESS" and select the level from the list below.

MAX: The image becomes brighter.
STD: The image is of standard brightness.
MIN: The image becomes darker.

This section describes audio settings.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Select "AUDIO" from "AV SETUP". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
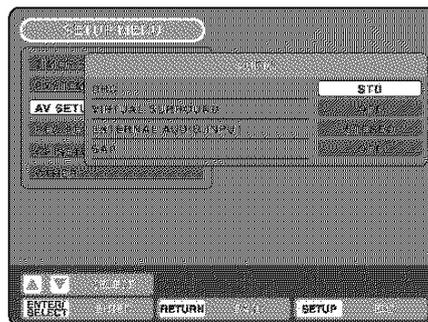
DRC
DRC (Dynamic Range Control) enables you to control the dynamic range so as to achieve a suitable sound for your equipment.
Select "DRC" and select the level from the list below.

MAX: Full dynamic range is increased.
STD: Full dynamic range is maintained.
MIN: Dynamic range is reduced.

NOTES:
- This function works only during playback of Dolby Digital recorded discs.
- The level of Dynamic Range Reduction may differ depending on the DVD.

VIRTUAL SURROUND (Spatializer N-2-2™)
Sound that is not recorded in the surround mode will be changed to artificial surround sound and output.
Select "VIRTUAL SURROUND" and select "ON" from the list to activate the virtual surround function. To not use the virtual surround, select "OFF".

NOTE:
This function does not work with a video tape.

EXTERNAL AUDIO INPUT
The audio mode for the audio input jack can be selected between stereo or monaural.
Select "EXTERNAL AUDIO INPUT" and select from the list below.

STEREO: The sound is treated as stereo sound
L CH: The sound is treated as the monaural sound of the left channel.
R CH: The sound is treated as the monaural sound of the right channel.

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Setting the audio / Setting the recording

SAP (Second Audio Program)

This unit is fitted with an SAP broadcast system that enables you to switch to a second audio program while viewing a selected channel.

This function applies only when the program is broadcast in multiple languages through the SAP broadcast system.

Select "SAP" and select "ON" to use SAP, and to not use it, select "OFF".

Listening to SAP

When the unit is turned on or a channel selection is made, make certain the letters "SAP" appear on the screen. This means that "Second Audio Program" broadcasting is available.

This section describes recording settings.

Preparation:

- Turn ON the TV and set it to the video input mode.
- Select "REC SETUP". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
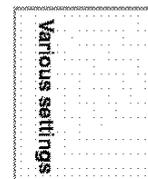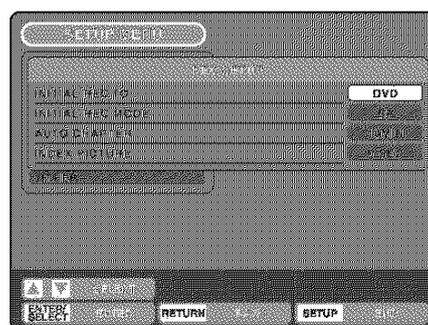

INITIAL REC TO

You can select the recording media that is first displayed in the item "REC TO" on the timer recording screen.
Select "INITIAL REC TO" and select "DVD" or "VCR".

INITIAL REC MODE

You can select the recording mode that is first displayed in the item "REC MODE" on the timer recording screen.
Select "INITIAL REC MODE" and select XP, SP, LP, or SLP.

NOTE:
For the DVD recording mode, see page 52. And for the VCR recording mode, see page 48.

AUTO CHAPTER

You can automatically make chapter marks on the DVD to be recorded.
Select "AUTO CHAPTER" and select the interval between chapter marks from the list below.

OFF: The automatic chapter is not used.
5 MIN: The interval is set to 5 minutes.
10 MIN: The interval is set to 10 minutes.
15 MIN: The interval is set to 15 minutes.
30 MIN: The interval is set to 30 minutes.

INDEX PICTURE

You can set the time that the thumbnail image is registered in the title menu of DVD-RW (VR mode).
Select "INDEX PICTURE" and select from the list below.

0 SEC: The image of a recording start point is registered.
1 MIN: The image 1 minute after a recording start is registered.
3 MIN: The image 3 minutes after a recording start is registered.

NOTE:
You cannot select the thumbnail image for Video mode.

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Setting the channel / Setting other items

This DVD/VCR is equipped with a channel memory feature that allows you to skip channels up or down to the next channel set in memory, hence skip over unwanted channels.
Before selecting channels, they must be programmed into the DVD/VCR's memory. In addition to normal VHF and UHF channels, this DVD/ VCR can receive up to 113 Cable TV channels. To use this DVD/VCR with an antenna, set the TV/CATV menu option to the TV mode. When shipped from the factory, this menu option is in the CATV mode.

Preparation:
• Turn ON the TV and set it to the video input mode.
• Select "CH SETUP". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
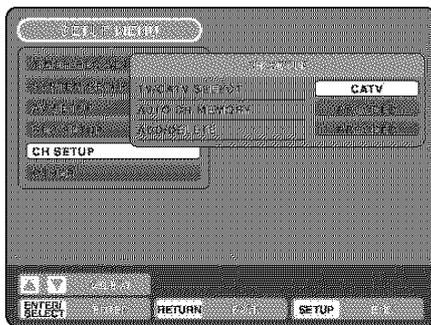
TV/CATV SELECT
Select "TV/CATV SELECT" and select "TV" or "CATV".

TV: VHF/UHF channels
CATV: CABLE TV channels

AUTO CH MEMORY
The VCR can receive a maximum of 181 channels by presetting the channels into memory.
When you select "AUTO CH MEMORY" and press EN-TER.
The AUTO CH MEMORY function will be activated.
The channel display will count up and, when finished, the screen returns to normal.

ADD/DELETE (channels)
You can add the channels you want or delete the channels you do not want manually.
Select "ADD/DELETE" and select "ADD" or "DEL." for each channel.

• Press ▲ or ▼ to select the channel.
 The numeric keys can also be used for selection.
• When you want to delete the selected channel, use ▶or◀ to select "DELETE" and press ENTER.
• When you want to use the selected channel, use ▶or◀ to select "ADD" and press ENTER.

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You can set the switching interval between played back images in the slide show mode.

Preparation:
• Turn ON the TV and set it to the video input mode.
• Select "OTHER". For the procedure, see steps 1 to 3 in "Using the SETUP MENU" on page 23.
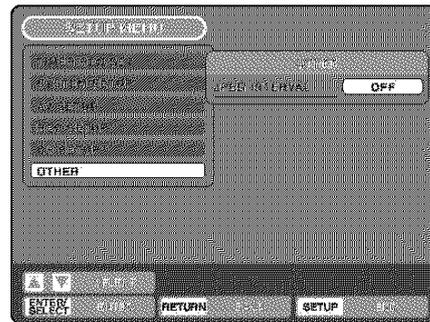
JPEG INTERVAL
You can select the interval time for JPEG slide show (page 46).
Select "JPEG INTERVAL" and select the switching interval between images from the list below.

OFF: The slide show mode is not used.
5 SEC: The interval is set to 5 seconds.
10 SEC: The interval is set to 10 seconds.
15 SEC: The interval is set to 15 seconds.

Playback procedure
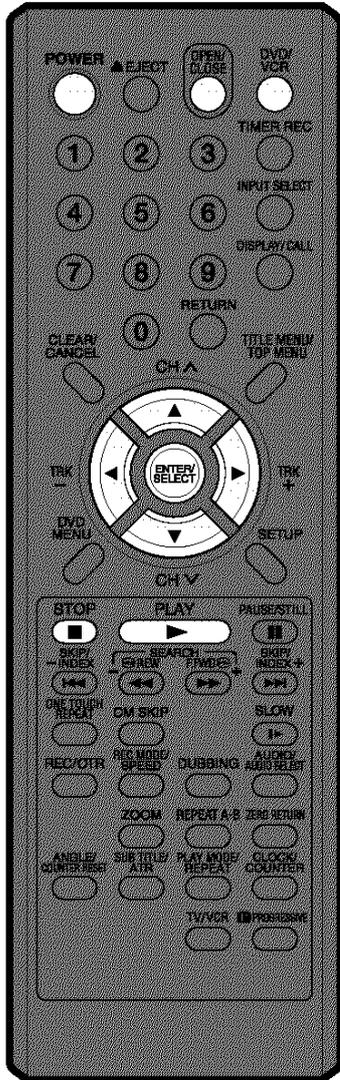
Preparation:
- Turn ON the TV and set to the video input mode.
- Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

1 Press **OPEN/CLOSE**.
The disc tray will open.
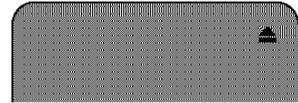
2 Place a disc onto the tray.
Hold the disc, position it with the printed label side up, align it with the guides, and place it in its proper position.
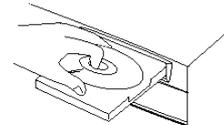
3 Press **OPEN/CLOSE** to close the disc tray.
"READING" appears on the screen and some discs start playback automatically.
- A menu screen may appear on the TV screen, if the disc has a menu feature. In this case, press ▲, ▼, ◄, ► or **ENTER** to operate a menu feature.

4 Press **PLAY** to start playback.

5 Press **STOP** to end playback.
- The DVD/VCR memorizes the stopped point, depending on the disc. "▶" appears on the screen for approx. 4 seconds. "▶" keeps blinking in the display until the playback is stopped completely. Press **PLAY** to resume playback (from the scene point).
- If you press **STOP** again ("■" appears on the screen) or unload the disc, the DVD/VCR will clear the stopped point.

6 Then press **OPEN/CLOSE**.
The disc tray opens.
Remove the disc and press **POWER**.
The disc tray closes automatically and DVD/VCR turns off.

NOTES:
- If a non-compatible disc is loaded, "INCORRECT DISC" or "REGION CODE ERROR" will appear on the TV screen according to the type of loaded disc. In this case, check your disc again (See page 9).
- Some discs may take a minute or so to start playback.
- A prohibition symbol "🚫" may appear at the upper right of the screen. This symbol means either the feature you tried is not available on the disc, or the DVD/VCR can not access the feature at this time. This does not indicate a problem with the DVD/VCR.
- When you set a single-faced disc label downwards (ie. the wrong way up) and press **PLAY** or **OPEN/CLOSE**, "READING" will appear and then it will change to "NO DISC".
- Some playback operations of DVDs may be intentionally fixed by software producers. Since this DVD/VCR plays DVDs according to the disc contents the software producers designed, some playback features may not be available. Also refer to the instructions supplied with the DVDs.
- When playing DTS-encoded Audio 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 DVD/VCR are connected to an amplification system.

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Playback by selecting a title

When playing back a recorded disc, you can display the title menu and select the title to be played back.
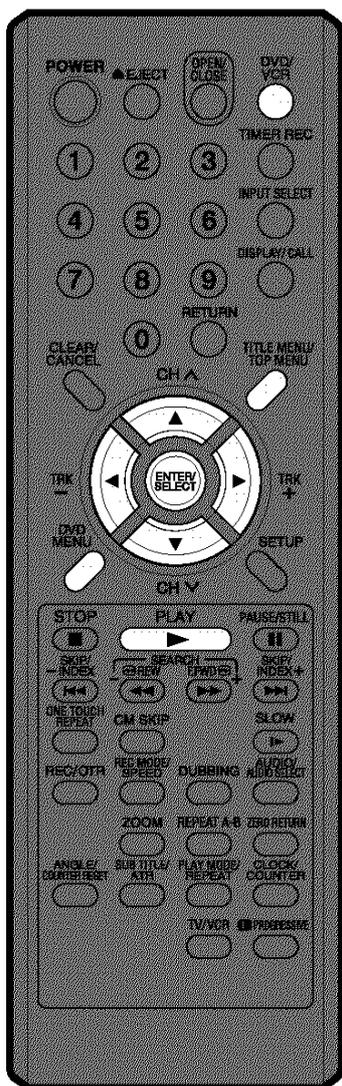
NOTE:
In case the disc includes more than 10 titles, you can turn to the next or the previous page. Press ◄ , then press ▼ or ▲ to display next/previous page. To return to normal use, press ►.

Preparation:
- Turn ON the TV and set to the video input mode.
- Load a recorded DVD.
- Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

1 Press **TITLE MENU.**
The title menu will appear.

Playlist   Thumbnail image
Original titles   Recording information
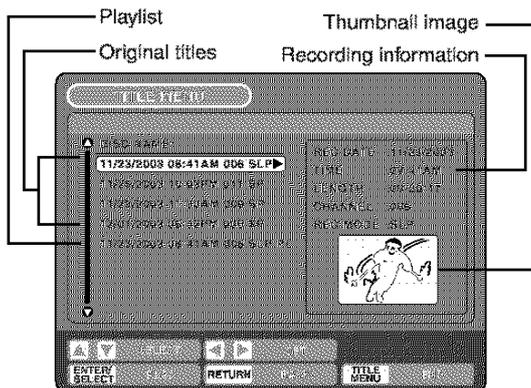
If there are many original titles and playlists...
Before pressing **TITLE MENU**, press **DVD MENU** until "VR ORG" or "VR PL" will appear on the upper right of the TV screen, then press **TITLE MENU.**
The first original title or playlist will be highlighted.

2 Press ▲ or ▼ to select the title you want to playback.
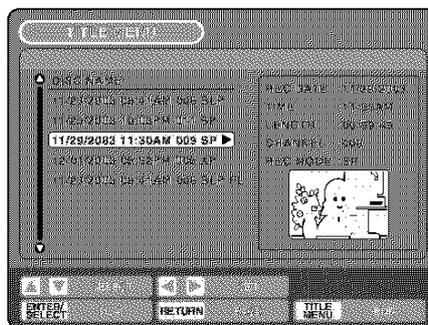
3 Press **ENTER.**
The selected title is played back.

NOTES:
- When a disc that has been recorded in the Video mode is finalized, a title list is automatically created that can be played back even with other DVD players. Consequently, the menu before finalizing is different from that of after finalizing.
- If you don't display the title menu and press **PLAY**, the first title is played back.
- The title menu is used not only for playing back titles but also for editing various discs and titles. For details of editing operation, see page 61.
- If you create a playlist, an original title and playlist appear in the title menu. For creating a playlist, see page 62.

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Checking media information

⟨DVD-VIDEO⟩ ⟨DVD-RW VR⟩ ⟨DVD-RW Video⟩ ⟨DVD-R⟩ ⟨CD⟩

Various information on the loaded disc can be displayed on the TV screen.

NOTES:
- The displayed information varies with the type of media.
- Some information may not appear due to media type or operating conditions.

Preparation:
- Turn ON the TV and set it to the video input mode.
- Load the disc.
- Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

1 Press **DISPLAY/CALL**.
Media information will appear.

The number of titles and present title number
Playback elapsed time
Playback condition (playback, stop, pause and record)
present time
present channel

Current subtitles language

The number of audio languages and present language

Recording mode

The number of angles and present angle number

The number of chapters and present chapter number

2 Press **DISPLAY/CALL** while the media information above is displayed. The next media information will appear.

Title
Media type
Disc name

Finalize
Disc protect
Remaining time*

*The remaining time displayed during recording may be different from the actual remaining time. When you want to check the correct remaining time, stop recording and display the media information again.

3 Press **DISPLAY/CALL** again while the media information above is displayed. The media information will disappear.

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Special playback

DVD-VIDEO **DVD-RW VR** **DVD-RW Video** **DVD-R** **CD**

NOTE: There may be a slight delay between pressing the button and the function activation.
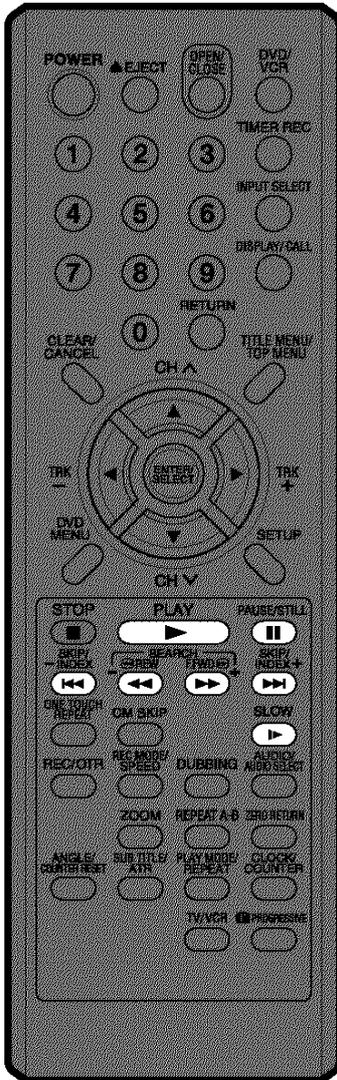
Fast forward playback

Press **F.FWD** during normal playback.
Each press of **F.FWD** will increase the speed of the search ▶▶(x2), ▶▶▶ (x12), ▶▶▶▶ (x24), ▶▶▶▶▶ (x60).
(The speed of the serch is increased up to only 2 steps in Audio CD.)

* To resume normal playback, press **PLAY**.

Review playback

Press **REW** during normal playback.
Each press of **REW** will increase the speed of the search ◀◀ (x2), ◀◀◀ (x12), ◀◀◀◀ (x24), ◀◀◀◀◀ (x60).
(The speed of the serch is increased up to only 2 steps in Audio CD.)

* To resume normal playback, press **PLAY**.

Still playback

Press **PAUSE/STILL** during normal playback.

To resume normal playback, press **PLAY**.
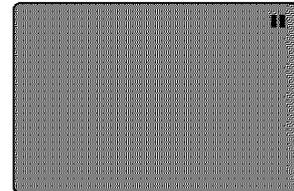
Frame advance

Press **PAUSE/STILL** during still playback.
One frame is advanced each time you press **PAUSE/STILL**.

To resume normal playback, press **PLAY**.
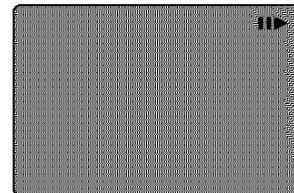
Slow motion playback

Press **SLOW** during normal playback or still playback.
Each press of **SLOW** will change the speed of the slow "▶1/2", "▶1/4", "▶1/8".

* To resume normal playback, press **PLAY**.
* To resume the still playback, press **PAUSE/STILL**.

Locating a chapter or track

Press **SKIP (▶▶I)** Forward or **SKIP (I◀◀)** Reverse during playback to locate a chapter that you want to watch.
Each time you press the button, a chapter or track is skipped.

NOTES:

* The unit is capable of holding a still video image or On screen display image on your television screen indefinitely. If you leave the still video image or On screen display image displayed on your TV for an extended period of time, you risk permanent damage to your television screen. Projection televisions are very susceptible.
* Fast forward and review playback does not work with a MP3/WMA/JPEG-CD.
* Frame advance and slow motion does not work with a CD.

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Commercial skip / Locating a specific scene
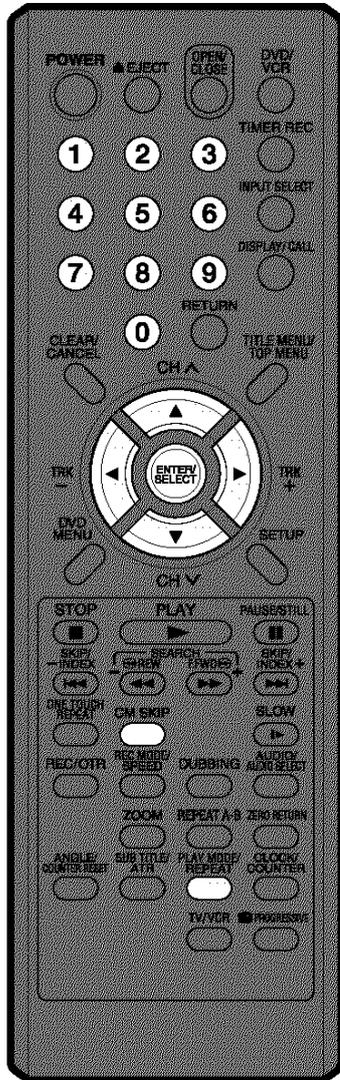
Commercial skip

Use this function to skip commercials while you playback.

Press **CM SKIP** during playback.
The time jumps to a point approx. 30 seconds later and playback resumes.

NOTE:
With some DVD-Video, the Commercial skip operation may not work.

Locating a specific scene

Specify the time recorded on the disc, chapter or title to playback.

1 Press **PLAY MODE**.
The play mode screen will appear.

2 Press ◀ or ▶ to select "TIME SEARCH", "CHAPTER SEARCH" or "TITLE SEARCH".

TIME SEARCH: Input the time until the playback is restarted.
CHAPTER SEARCH: Select the chapter number to be played back.
TITLE SEARCH: Select the title number to be played back.
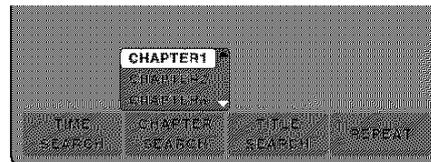
The screen above shows the display when "CHAPTER SEARCH" is selected.

3 When selecting "TIME SEARCH", input the time until the playback is restarted with the **numeric keys**. When selecting "CHAPTER SEARCH" or "TITLE SEARCH", press ▲ or ▼ to select the chapter number or title number.

4 Press **ENTER**.
The playback starts at the point you selected.

NOTE:
For "REPEAT", see "Title, Chapter repeat playback" (page 38).

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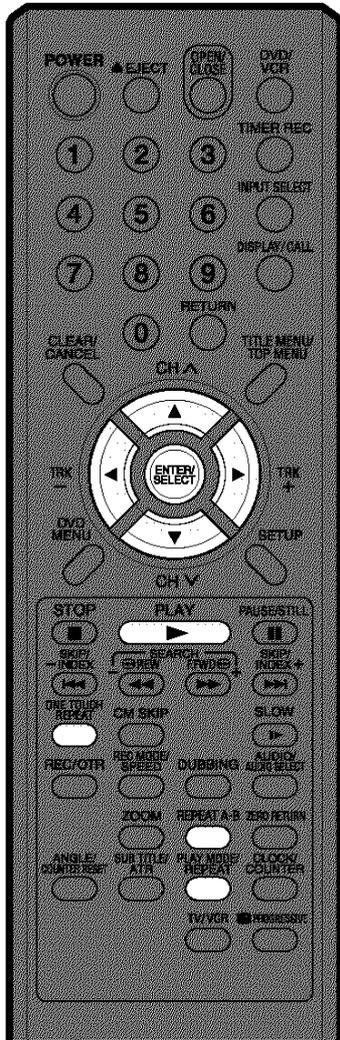
Repeat playback

NOTES:
- Some discs may not work with the repeat operation.
- In A-B repeat mode, subtitles near point A or B may not appear.
- A-B repeat does not work during the Title and the Chapter repeat playback.
- During the A-B repeat playback the ANGLE feature will not operate.
- You may not be able to set A-B repeat, depending on the scenes of the DVD.
- A-B repeat does not work with a MP3/WMA/JPEG-CD.
- When the CD or CD-R/CD-RW is selected, you cannot use Title and Chapter repeat playback.

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One touch repeat
This feature repeats playback on a recent section during playback by returning the video to a recently viewed point.

Press **ONE TOUCH REPEAT** during playback.
The video returns to a point 10 seconds before and playback resumes.

NOTES:
- If the time from the title top is less than 10 seconds when **ONE TOUCH REPEAT** is pressed, the title top is repeated and then the video is played back.
- With some DVD-Video, the one touch repeat operation may not work.

A-B repeat playback
A-B repeat playback allows you to repeat material between two selected points.

1 Press **REPEAT A-B** during playback.
The start point is selected.

2 Press **REPEAT A-B** again.
The end point is selected. Playback starts at the point that you selected. Playback stops at the end point, returns to point A automatically, then starts again.
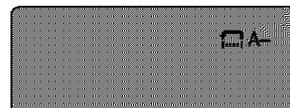
To resume normal playback press **REPEAT A-B** again.
"OFF" appears on the screen.

Title, Chapter repeat playback

1 Press **REPEAT**.

2 Press ◀ or ▶ to select "REPEAT" and press **ENTER**.
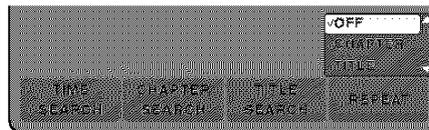
3 Press ▲ or ▼ to select "OFF", "CHAPTER" or "TITLE" from the list.
OFF: Playback is not repeated.
CHAPTER: The chapter in playback is repeatedly played back.
TITLE: The title in playback is repeatedly played back.

4 Press **ENTER**.
- When you perform the steps 1 to 3 in the playback or temporarily stop of the disc, the chapter and the title in the playback or temporarily stop of the disc are repeatedly played back. When you press **PLAY** in the temporarily stop of the disc, the playback restarts.
- When you perform the steps 1 to 3 in the stop of the disc and press **PLAY**, the first chapter and the title is repeatedly played back.
- To cancel the repeat playback, select "OFF" in step 3.

Title selection / DVD menu
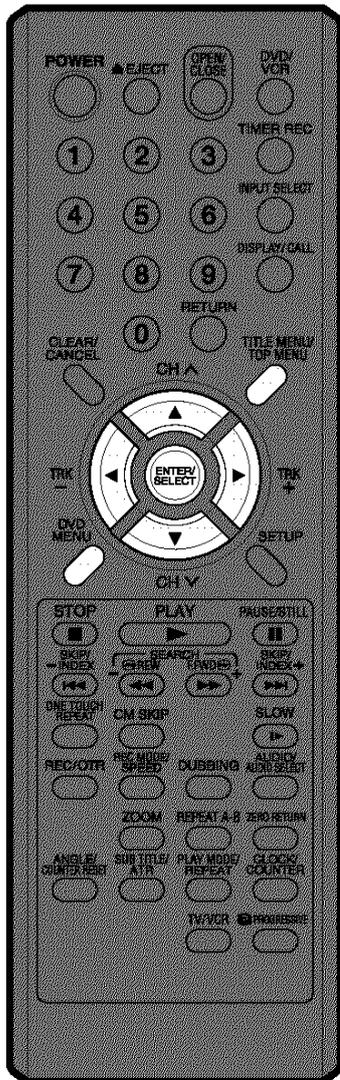
Title selection

Two or more titles are recorded on some discs. If the title menu is recorded on the disc, you can select the desired title.

1 Press **TITLE MENU/TOP MENU** during playback.
The title menu appears on the screen.

- Press **TITLE MENU/TOP MENU** again to resume playback at the scene when you pressed **TITLE MENU/TOP MENU**.

2 Press ▲/▼ or ◄/► to select the desired title.

3 Press **ENTER**.
The playback of the selected title will start.

DVD menu

Some DVDs allow you to select the disc contents using the menu. When you playback these DVDs, you can select the subtitles language and soundtrack language,etc. using the DVD menu.

1 Press **DVD MENU** during playback.
The DVD menu appears on the screen.

- Press **DVD MENU** again to resume playback at the scene when you pressed **DVD MENU**.

2 Press ▲/▼ or ◄/► to select the desired item.

3 Press **ENTER**.
The menu continues to another screen. Repeat steps **2** and **3** to set the item completely.

NOTE:
Depending on the DVD, you may be unable to select the title, and a "title menu" may simply be called a "menu" or "title" in the instructions supplied with the disc.

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Changing angles / Zooming
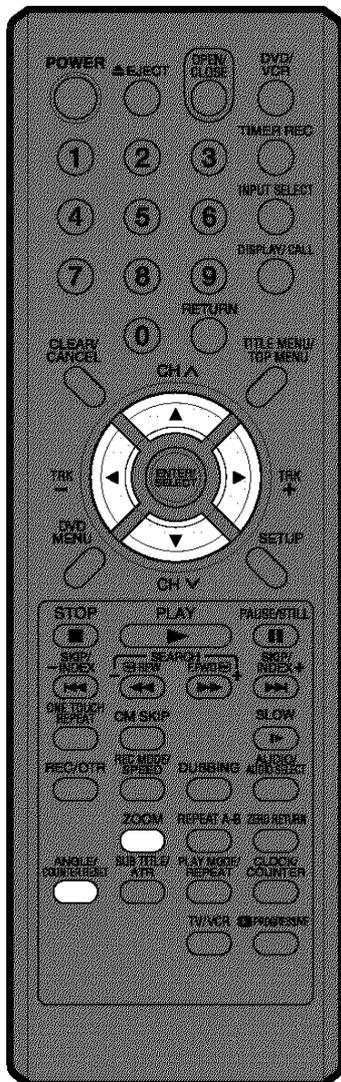
Changing angles

When playing back a disc recorded with multi-angle facility, you can change the angle that you are viewing the scene from.

1 Press **ANGLE** during playback.
The current angle will appear.

Angle 1 out of 3
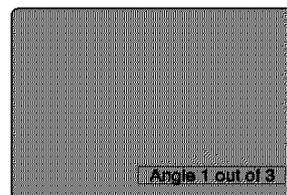
2 Press **ANGLE** repeatedly until the desired angle is selected.

Zooming

This unit will allow you to zoom in on the frame image. You can then make selections by switching the position of the frame.

1 Press **ZOOM** during playback.
The center part of the image will be zoomed in.
Each press of **ZOOM** will change the ZOOM "X2", "X3" and "X4".

X2
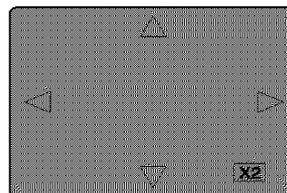
2 Press ▲/▼ or ◄/► to view a different part of the frame.
You may move the frame from the center position to UP, DOWN, LEFT or RIGHT direction.

3 In the zoom mode press **ZOOM** repeatedly to return to a 1:1 view "X1".

NOTES:
• Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the disc.
• You can use the Pause, Slow, Search or Skip feature in the zoom mode.

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Changing soundtrack language / Subtitles
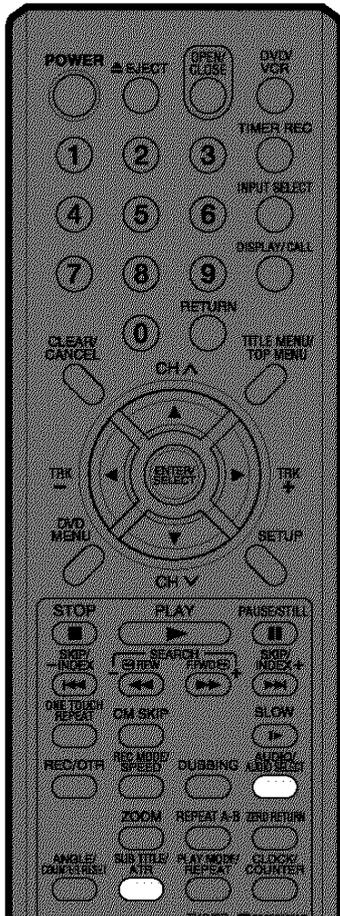
Changing soundtrack language

You can select the language when you play a multilingual disc.

1 Press **AUDIO** during playback.
The current soundtrack language will appear.
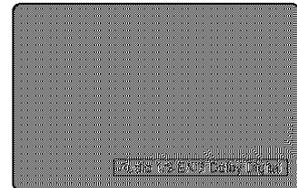
2 Press **AUDIO** repeatedly until the desired language is selected.
The on-screen display will disappear after a few seconds.
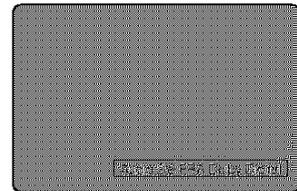
Turning the subtitles On and Off

When playing back a disc recorded with subtitles, you can turn the subtitles on or off.

Press **SUB TITLE** during playback until "Subtitle OFF" appears.
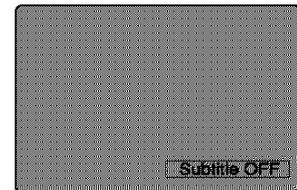
Changing the subtitles language
You can select the language when playing back a disc recorded with multilingual subtitles.

Press **SUB TITLE** repeatedly during playback until your desired language appears.
The on screen display will disappear after a few seconds.
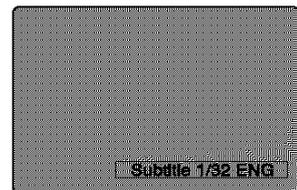
NOTES:
- If the desired language is not heard after pressing the button several times, the language is not recorded on the disc.
- Changing soundtrack or subtitles language is cancelled when you open the disc tray. The initial default language or available language will be heard and seen if the disc is played back again.
- Depending on the DVD you may be unable to turn on, turn off, or change the subtitles, even if they are recorded on the disc. While playing the DVD, the subtitles may change while opening or closing the disc tray, or while changing the title.
- In some cases, the subtitles language is not changed to the selected one immediately.

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Various operations on CD

This section describes the TRACK INFO screen where music CDs can be played back using the various operations.
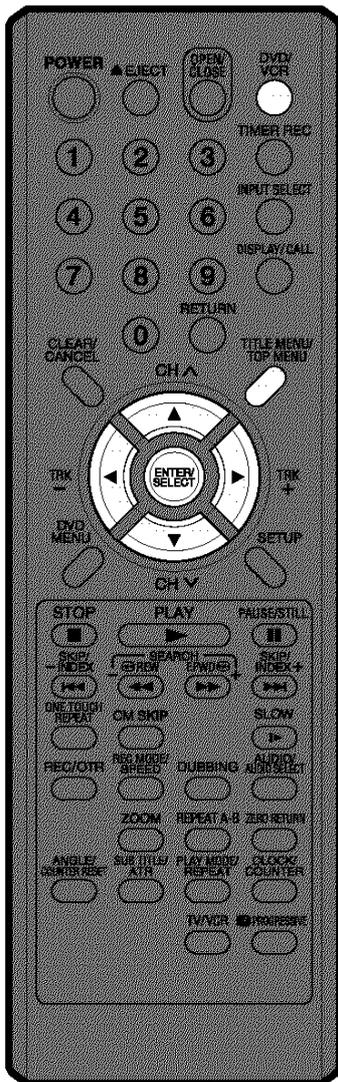
NOTE:
In case the disc includes more than 10 tracks, you can turn to the next or the previous page. Press ◀ , then press ▼ or ▲ to display next/previous page. To return to normal use, press ▶ .

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Preparation:
* Turn ON the TV and set to the video input mode.
* Load the music CD.
* Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

Press **TITLE MENU/TOP MENU**.
The TRACK INFO screen will appear.

The elapsed time and total time of the music data (during playback)

The track number during playback

Scroll bar

The music data recorded on the CD
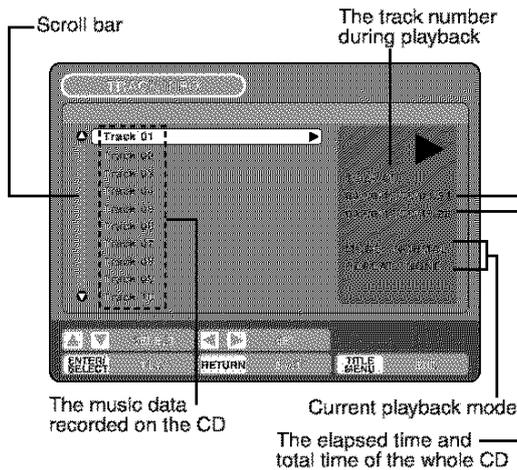
Current playback mode
The elapsed time and total time of the whole CD

Press ▶ . The menu list will appear.
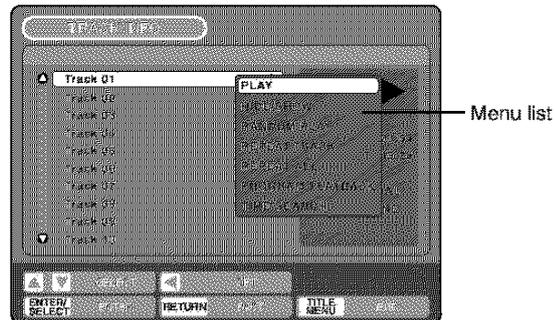
Menu list

Playing back a selected track

1 Press ▲ or ▼ to select the track number you want to playback and press ▶ .

2 Press ▲ or ▼ to select "PLAY" from the menu list and press **ENTER**. The selected track will be played back.

Excluding specified track

1 During stop, press ▲ or ▼ to select the track number you do not want to playback and press ▶ .

2 Press ▲ or ▼ to select "HIDE/SHOW" from the menu list and press **ENTER**.
The selected track will not be played back. ("H" appears at the side of the track number.)

When you want to cancel the exclusion, press ▲ or ▼ to select the track number with "H" and press ▶ .
Press ▲ or ▼ to select "HIDE/SHOW" from the menu list and press **ENTER**. "HIDE" will be cancelled.

Various operations on CD
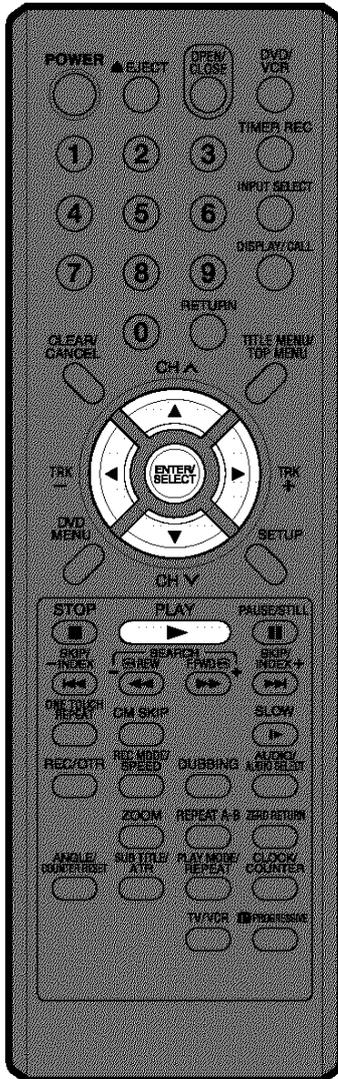
Random playback

1 Press ▲ or ▼ to select "RANDOM PLAY" from the menu list and press **ENTER**.
The order of music tracks is randomly changed.

2 Press **PLAY**.
Music is played back in random order.

To cancel random playback, select "RANDOM PLAY" from the menu list again, and press **ENTER**.

Repeat playback of selected track

1 Press ▲ or ▼ to select the track number you want to repeat playback and press ▶.

2 Press ▲ or ▼ to select "REPEAT TRACK" from the menu list and press **ENTER**.

3 Press **PLAY**.
The selected track will be played back repeatedly.

To cancel repeat track playback, select "REPEAT TRACK" from the menu list again, and press **ENTER**.

Repeat playback of all tracks

1 Press ▲ or ▼ to select "REPEAT ALL" from the menu list and press **ENTER**.

2 Press **PLAY**.
All tracks on CD will be played back repeatedly.

To cancel the repeat all playback, select "REPEAT ALL" from the menu list again, and press **ENTER**.

Playing back programs
You can specify the playback order yourself.

1 Press ▲ or ▼ to select "PROGRAM PLAYBACK" from the menu list and press **ENTER**.

2 Press ▲ or ▼ to select to the track number that you want to change the order of and press **ENTER**.
The "▶" mark will appear at the right side of the track number.

3 Press ▲ or ▼ to select to the track number that you want to specify and press **ENTER**.
The track number that you select in step **2** moves to the position that you specified.

4 Repeat steps **2** and **3** to change the playback order.

5 Press **PLAY**.
The tracks will be played back in the changed order.

To cancel program playback, select "Exit program mode" from the menu list and press **ENTER**.

Playing back track by specifying the time

1 Press ▲ or ▼ to select "TIME SEARCH" from the menu list during playback and press **ENTER**.

2 Press ▲/▼ or ◀/▶ to specify the elapsed time of the track (this will be the starting point of playback) and press **ENTER**.
Playback will start from the specified elapsed time.

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MP3/WMA/JPEG playback

⊕CD

MP3 and WMA files can be played back. Also, you can display JPEG files on the TV screen and enjoy them as a slide show.
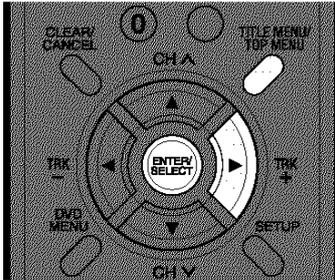
Limitations on MP3/WMA/ JPEG CD playback:

- MP3/WMA/JPEG CD is a disc that is standardized by ISO9660.
- The directory and file names of the MP3/WMA/JPEG CD must correspond to the ISO standardized file names.
- This unit can read 200 files per disc. If one directory has more than 200 files, it reads up to 200 files, the remaining files will be omitted.
- The unit is able to recognize up to a maximum of 50 directories per disc.
- MP3/WMA CDs cannot be used for playback for the purpose of recording.
- MP3/WMA/JPEG CDs may be used for playback, but not for recording.
- If the CD has both audio tracks and MP3/WMA/JPEG files, only audio tracks are played.
- It may take more than one minute for this unit to read MP3/WMA/ JPEG files depending on its structure.
- Music recorded by "Joliet Recording Specification" can be played back. Long file names will be cut.
- The music files recorded by "Hierarchical File System " (HFS) cannot be played.

Preparation:

- Turn ON the TV and set to the video input mode.
- Load the disc storing MP3, WMA or JPEG.
- Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

Using the BROWSER screen

1 Press **TITLE MENU**.
   The BROWSER screen will appear.

2 The MP3, WMA and JPEG files and folders stored in the disc are displayed on the BROWSER screen.
   - Select a folder and press **ENTER**. The files in the folder appear.

When the file to be displayed is selected

You can select the file types to be displayed on the BROWSER screen.

1 Press ▶ to select "SELECT FILES" and press **ENTER**.
   The following list will appear.

MUSIC ONLY: Only the MP3 and WMA files appear.
PICTURES ONLY: Only the JPEG files appear.
ALL: All files and folders appear.

2 Select one item in the above list and press **ENTER**.
   The display will be changed to the selected display type.

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MP3/WMA/JPEG playback
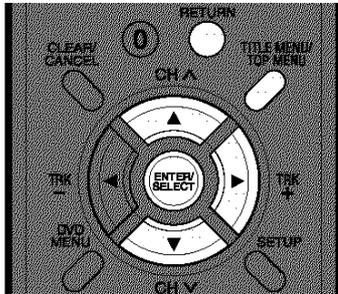
MP3 CD

- MP3 files must have the extension letters ".mp3".
- Standard, sampling frequency, and the bit rate:
  MPEG-1 Audio
  32kHz, 44.1kHz, 48kHz
  32kbps to 320kbps (constant bit rate or variable bit rate)
- The recommend recording setting for a high quality sound is 44.1kHz of sampling frequency and 128kbps of constant bit rate.

WMA CD

- When creating a WMA disc, make sure that the copyright function is off. DRM (Digital Rights Management) files cannot be played back.
- WMA files must have the extension letters ".wma".
- Standard, sampling frequency, and the bit rate:
  WMA version 7 and 8
  32kHz, 48kbps
  44.1kHz, 48kbps to 192kbps
  48kHz,128kbps to 192kbps
- The file recorded by mono, 48kHz, 48 kbps is not available to this unit.

Playing back MP3/WMA files

1 Press ▲ or ▼ to select MP3 or WMA file.
  - In case the disc includes more than 11 files, you can turn to the next or the previous page.
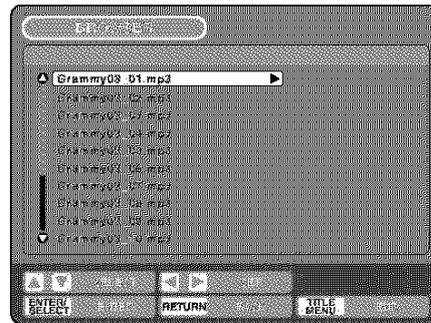
2 Carry out either of the item a or b below.
   a: Press **ENTER**.
   b: Press ▶ to select "PLAY" and press **ENTER**.
The TRACK INFO screen appears to playback the selected file.
For the details of the TRACK INFO screen,
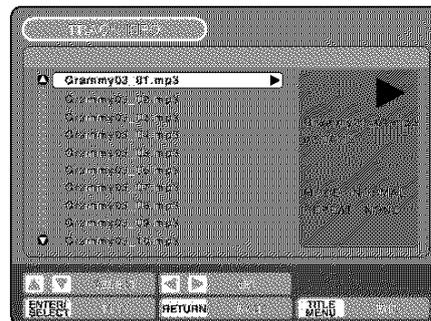
3 To return to the BROWSER screen, press **RETURN**.
  - To stop playback of the MP3 or WMA files, press **TITLE MENU**.

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MP3/WMA/JPEG playback

(CD)
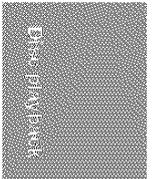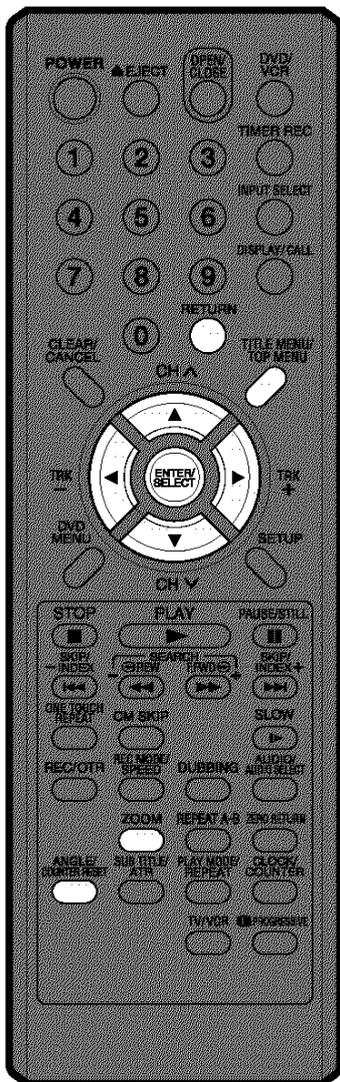
JPEG CD

- JPEG files must have the extension letters ".jpe", ".jpeg" or ".jpg".
- This unit can playback baseline and progressive JPEG files.

Playing back JPEG files

1 Press ▲ or ▼ to select JPEG file.
- In case the disc includes more than 11 files, you can turn to the next or the previous page. (See page 42.)
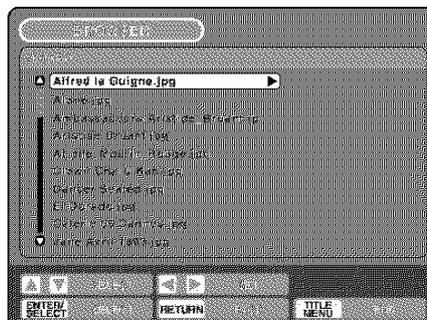
2 Carry out either of the item a or b below.
   a: Press **ENTER**.
   b: Press ▶ to select "PLAY" and press **ENTER**.
   The thumbnail images of the JPEG files stored in the route directory or the folder appear.
   Press ▲, ▼, ◀ or ▶ to select the pages of the thumbnail images, or select the JPEG file to be displayed at first for the slide show.
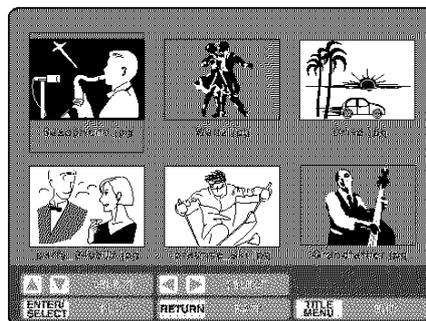
3 Press **ENTER** to play the selected picture.
   If you set the interval time for JPEG slide show, the pictures will be played back one after another automatically. (See page 32.)
   - Press **ZOOM** to enlarge the displayed image.
   - Press **ANGLE** to rotate the image by 90 degrees each time.
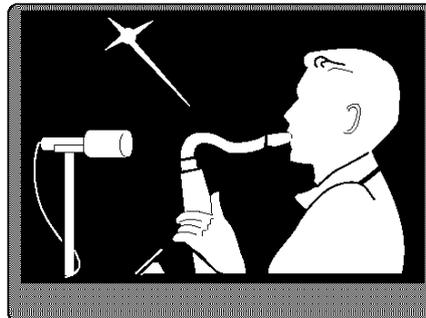
4 To return to the thumbnail screen, press **RETURN**.
   - To stop the slide show, press **TITLE MENU**.

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Progressive scan

The unit supports the progressive scanning system as well as the conventional interlaced scanning system. If your TV is equipped with component jacks which support the progressive video input, you can enjoy high quality picture by making the progressive scanning mode active.
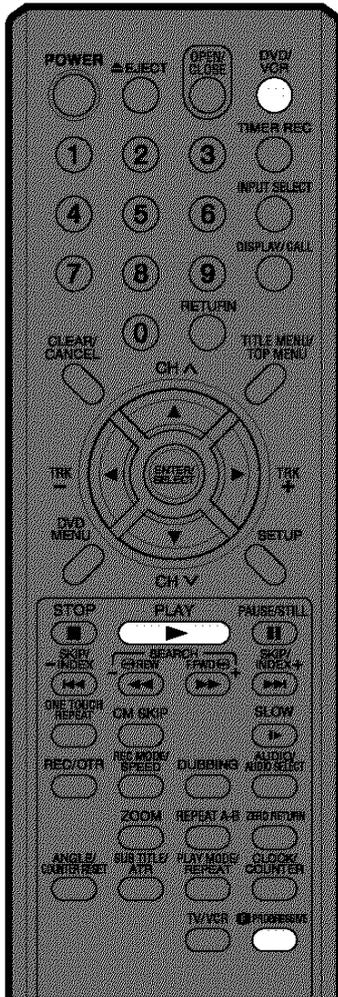
Preparation:
• Connect to a TV equipped with component jacks which support the progressive video input.
• Turn ON the TV and set it to the corresponding video input mode.
• Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

1 Press **PROGRESSIVE** in the stop mode. The PROGRESSIVE indicator "**P**" on the display window will light.
   • The unit recognizes the picture source (film or video) of the current disc according to the disc information.

2 Press **PLAY** to start playback.
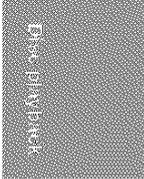
   • To make the progressive scanning mode inactive, press **PROGRESSIVE** in the stop mode. The PROGRESSIVE indicator "**P**" on the display window will go off.

Different scanning modes

Interlaced scan
Technology that alternately displays odd-numbered scanning lines and even-numbered scanning lines. Also called "480i", "i" meaning "interlace".

Progressive scan
Technology that simultaneously displays odd-numbered scanning lines and even-numbered scanning lines from top to bottom. Also called "480p", "p" meaning "progressive".

NOTES:
• Some discs may not be played back with the progressive scanning mode correctly because of the disc characteristics or recording condition.
• There are some progressive TV and High-Definition TV sets that are not fully compatible with the unit, resulting in the unnatural picture when playing back a DVD disc in the progressive scanning mode. In such a case, use the interlaced scanning mode.
• You cannot make the progressive scanning mode active in following cases.
  - The unit is in the VCR mode.
  - The disc is being played in the DVD mode.

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Loading and unloading a cassette tape

VCR

Use only video cassette tapes marked **VHS** and **S VHS** .

SQPB

- Cassettes marked "VHS" (or "S-VHS") can be used with this video cassette recorder However, S-VHS recording is not possible with this model.
- This model is equipped with SQPB (S-VHS QUASI PLAYBACK) that makes it possible to playback S-VHS recordings with regular VHS resolution.
- HQ VHS is compatible with existing VHS equipment.

Loading

Push the center of the tape until it is automatically inserted.

Insert the cassette tape with its labeled side facing up and the erase prevention tab positioned at your left. An inverted cassette tape cannot be inserted.

Erase prevention tab
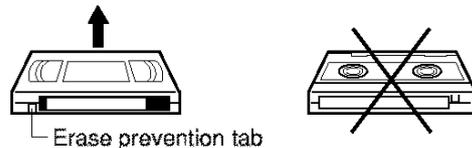
Automatic power ON

When you insert a cassette tape the VCR power will turn ON automatically.

Automatic playback

When loading a cassette tape without an erase prevention tab, playback will start automatically.

Unloading

You can eject the video tape while the unit is turned off.

1 Press **EJECT** on the unit or the remote control.

2 Remove the cassette tape.
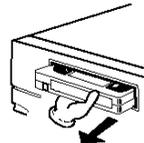
Automatic tape eject

This VCR will automatically rewind the tape when the tape has ended. And when the tape is rewound to its beginning, the cassette tape will be ejected automatically.

To prevent accidental erasure

Remove the erase prevention tab with a screwdriver.

Screwdriver

Erase prevention tab
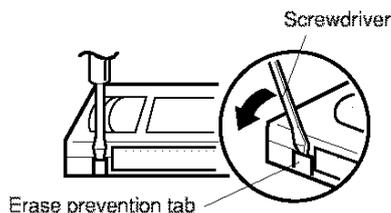
To record again

Cover the hole with a piece of adhesive tape.

Adhesive Tape
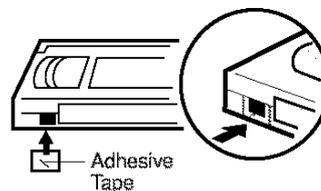
Tape speed and maximum recording time

Tape Speed	Video cassette tape				
	T-160	T-120	T-90	T-60	T-30
SP (Standard Play)	2-2/3 hours	2 hours	1-1/2 hours	1 hour	30 minutes
SLP (Super Long Play)	8 hours	6 hours	4-1/2 hours	3 hours	1-1/2 hours

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Cassette tape playback

[VCR]

NOTES:
- This VCR selects the playback tape speed SP, LP or SLP auto-matically.
- The cassette tape and DVD disc can be played back simultaneously. If you press **DVD/VCR**, the tape playback and DVD playback alter-nate with each other on the screen.
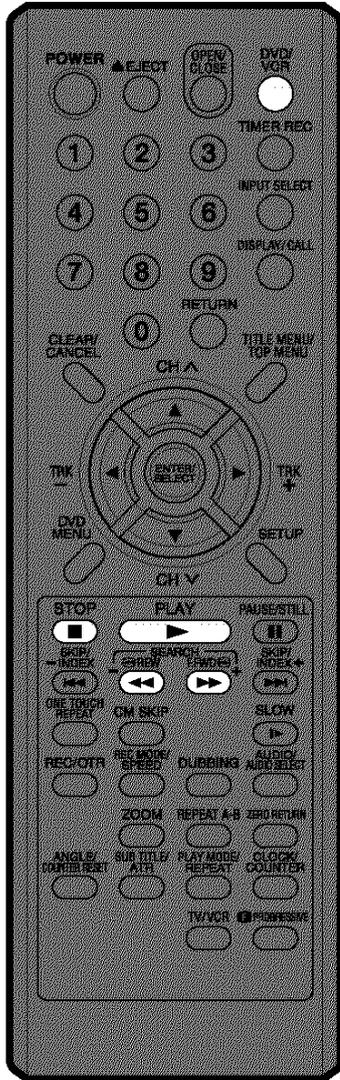
Preparation:
- Turn ON the TV and set to the video input mode.
- Press **DVD/VCR** to select the VCR mode. (The VCR indicator will light.)

1 Load a prerecorded tape
(When loading a cassette tape without the erase prevention tab, playback will start automatically).
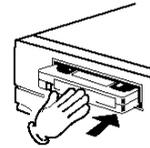
2 **To start playback**
Press **PLAY**.
Playback will start.
" ▶ " will appear on the screen for about 4 seconds.
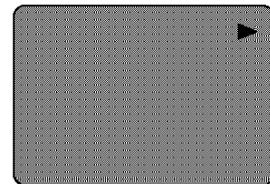
To stop playback
Press **STOP** once.
The tape will stop but remain fully loaded and ready to play.
" ■ " will appear on the screen for about 4 seconds.
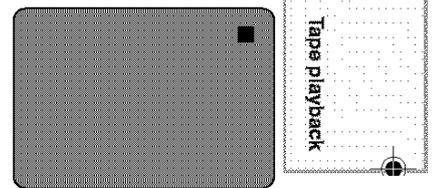
To rewind the tape or forward it rapidly
Press **STOP**.

To rewind the tape:
Press **REW**.
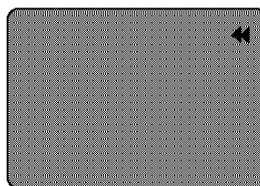
To forward the tape:
Press **F.FWD**.

To stop the tape-winding, press **STOP**. To switch to playback directly (without **STOP**), press **PLAY**.

Forward/Reverse picture search mode
When the tape is being winded, you can switch to picture search mode (see next page). To do this, press **REW** or **F.FWD** and hold it down. The unit will resume the tape winding as soon as the button is released.

Tape playback

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Special playback

VCR

Picture search
Reverse picture search function
Press **REW** x 1 or x 2 during the playback.
Forward picture search function
Press **F.FWD** x 1 or x 2 during the playback.

SPEED SEARCH TIMES

TAPE SPEED	PICTURE SEARCH SPEED	
	PRESS ONCE	PRESS TWICE
SP (Standard Play)	3 X	5 X
LP (Long Play)	7 X	9 X
SLP (Super Long Play)	9 X	15 X

To return to playback: Press **PLAY**.

Still picture
Press **PAUSE** during playback.
To resume normal playback: Press **PLAY** or **PAUSE**.

Slow motion
During playback press **SLOW**.
To return to playback: Press **PLAY** or **SLOW**.

Slow tracking and vertical lock adjustment
If noise bars appear in the picture during slow motion, press the **TRK** + or − to reduce the noise bars.
If the still picture jitters excessively, press **TRK** + or − to stabilize the still picture.

Frame by frame picture
Press **PAUSE** during playback.
Press **SLOW** one by one: The picture advances frame by frame.
To return to playback: Press **PLAY** or **PAUSE**.

Adjusting tracking condition

Automatic tracking adjustment
Whenever you insert a tape and start playback, automatic tracking starts working and continuously analyzes the signal to enable optimum picture quality during playback.

Manual tracking adjustment
If automatic tracking cannot eliminate noises well during playback, press **TRK** +/− to eliminate the noises. "MANUAL TR." will appear. Press it briefly for a fine adjustment, or press and hold for a coarse adjustment.
• Press **ATR** to reactivate automatic tracking again. "AUTO TR." will appear.

NOTES:
• The audio output is muted during SPEED SEARCH, STILL, FRAME ADVANCE and SLOW MOTION.
• During picture search mode there will be noise bars which are caused by the system.
• The Special Playback will automatically change to playback after approx. 5 minutes to protect the video tape against excessive wear.

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Repeat playback
The entire video tape will be played until its end. The tape will then automatically rewind to the beginning and the playback will be repeated.

1 Press **REPEAT** while VCR is played back.

2 By pressing **REPEAT** each time, "REPEAT ON" or "REPEAT OFF" is selected in turn.
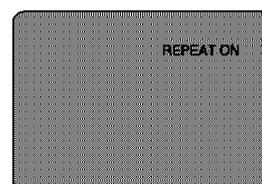
3 When "REPEAT ON" is selected, the tape is played back to the end, and then, it is automatically rewound to the starting point and played back again. The display "REPEAT ON" goes out in about 3 seconds.
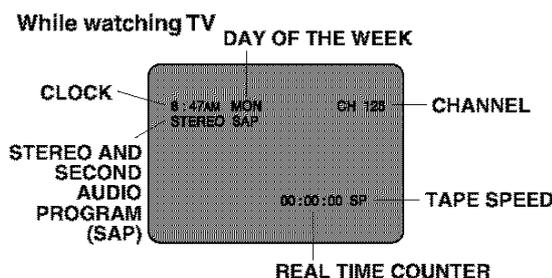To cancel repeat playback: Press **REPEAT** to select "REPEAT OFF".
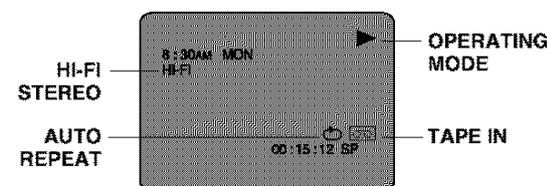
Commercial skip
Press **CM SKIP** during playback.
The video is rapidly forwarded for approx. 30 seconds and playback resumes.
You may press the button up to six times in a row to move 180 seconds ahead.

To display VCR operation status
Press **DISPLAY/CALL**. The clock, day of the week and more information will be indicated.

While watching TV
- DAY OF THE WEEK
- CLOCK
- CHANNEL
- STEREO AND SECOND AUDIO PROGRAM (SAP)
- TAPE SPEED
- REAL TIME COUNTER

While operating a tape
- HI-FI STEREO
- AUTO REPEAT
- OPERATING MODE
- TAPE IN

To cancel the display: Press **DISPLAY/CALL** until all indicators disappear.

ZERO RETURN function / Video index search system

[VCR]

ZERO RETURN function
This function makes tape rewinding stop at the counter "00:00:00" position automatically.
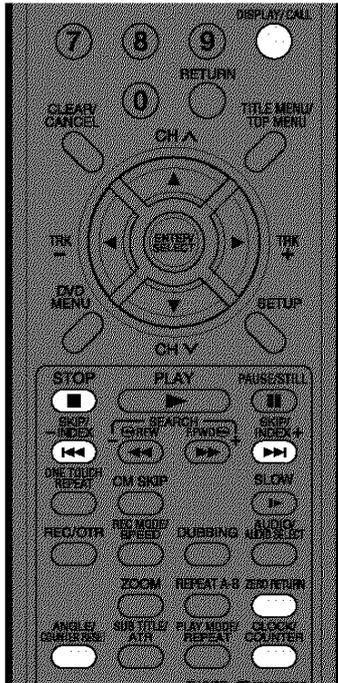
NOTES for Counter Display:
- If you rewind the tape beyond "00:00:00", a minus sign ("–") will be displayed in front of the time.
- When you load a tape, the counter will reset to "00:00:00".
- The counter does not function on nonrecorded (blank) sections of the tape. When you rewind, fast forward or play tapes through blank sections, the counter stops.

NOTES for Video index search system:
- When you record an INDEX mark at the very beginning of the tape, the mark may not be found.
- During INDEX search, the tape may stop and begin to play at a slightly different location.
- INDEX may not function properly with old or worn out video tapes.
- INDEX marks may not be found if it is extremely close to the point where the search began.
- In recording, if you stop recording temporarily, the INDEX mark is not recorded on the tape.

1 Press **DISPLAY/CALL**.
The counter display shows the tape running time during playback or recording.
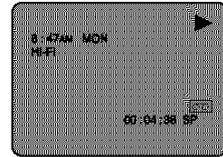
2 Press **COUNTER RESET** at the desired tape position. The counter display will be reset to the "00:00:00" position (e.g. the beginning of recording).
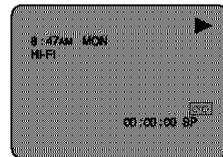
3 Press **STOP** when playback or recording is finished.
Press **ZERO RETURN**.
The tape will be rewound or fast forwarded and automatically stop at the "00:00:00" position.

Switching the display between clock and counter
Press **CLOCK/COUNTER**. The clock and tape counter alternate with each other in the display.
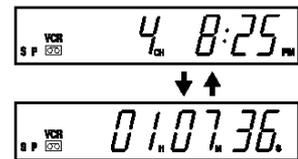
Video index search system
This function enables you to locate the beginning of any recording made on the VCR.

Recording an INDEX MARK
The Index search function automatically records an INDEX mark on the tape whenever a recording is initiated.
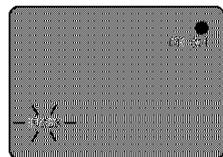
Index search
Press **INDEX ►►I** or **I◄◄** during stop or play mode.
For Succeeding programs: Press **INDEX ►►I**.
For Preceding programs: Press **INDEX I◄◄**.
(Additional press increases the INDEX NO. up to 9.)
When the **INDEX ►►I** or **I◄◄** is pressed, the unit starts searching the INDEX NO. selected and finds the portion, then playback starts automatically.
To stop the Index Search, press **STOP**.
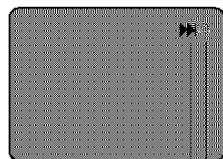
►►I or I◄◄ is displayed

INDEX NO. (up to 9)

51

Read this before recording on disc

This section explains things you must know to record onto a disc. Read it before attempting to record.

NOTE:

Should a power failure occur or should the AC cord plug be disconnected while recording, editing, initialization, finalizing or any other occasions, the program being recorded will be lost or the disc may not be playable. Manufacturer can not guarantee against loss of program or disc should this occur. To start recording again, re-format the disc or use new disc and follow the instruction on recording.

NOTES:

Recording time can change for the following reasons.
* When image quality is poor as during poor TV reception
* When recording on a disc that has been edited before
* When the video is followed with recordings of still images or just audio

Types of disc

You can use DVD-RW and DVD-R discs to record video.

DVD-RW discs
* Ver.1.1 discs can be formatted for recording in one of two modes: the VR mode or the Video mode. Ver.1.0 discs can only be formatted for recording in the VR mode.
* High quality images and sound can be repeatedly recorded about 1,000 times.
* A disc formatted in the VR mode can have as many as 99 original titles and playlist titles each. Discs formatted in the Video mode can have up to 99 original titles.

DVD-R discs
* Discs can only be recorded in the Video mode
* Discs can be recorded only once.
* Up to 99 titles can be created.

For more information on recording format, see "Recording format" (page 10).

Notes on recording in the Video mode
* The Video mode cannot be selected for Ver. 1.0 DVD-RW discs.
* The remaining available area on the disc decreases as recording progresses. Additional contents can be recorded in the remaining time area, but it cannot be overwritten into the recorded area.
* To format a new DVD-RW in the Video mode, set the automatic format feature to the Video mode. (See page 27.)

Recording modes

There are 4 modes for recording on disc. Recording time and quality vary according to mode.

Recording mode	Recording time	Quality
XP	Approx. 60 min	Can record high quality images.
SP	Approx. 120 min	Can record normal quality images.
LP	Approx. 240 min	Quality deteriorates slightly, but recording time is longer.
SLP	Approx. 360 min	Recording time is prioritized over quality.

* Recording time above is based on a 4.7GB disc.

In DVD recording with VBR (Variable Bit Rate), recording time can vary except with some recording modes.
To know the correct recording time, stop recording and check the media information. (See page 35.)

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# Read this before recording on disc

NOTES:

- When using one touch timer recording to record on a DVD disc, it takes some time from when you press **REC/OTR** until recording actually starts.
  Press **REC/OTR** a little before your preferred starting point.
- Even if **STOP** is pressed during recording, recording does not stop instantly.
- Because of characteristics peculiar to digital video compression technology, scenes with fast motion may appear as a matrix of larger blocks.

Disc remaining time

VR mode

- Recording is possible as long as there is available space on the disc. (Finalized discs can be recorded by cancelling the finalization, see "UNDO FINALIZE" on page 28.)
- Erasing unnecessary title frees up available space on the disc. (Finalized discs can be erased the title by cancelling the finalization, see "UNDO FINALIZE" on page 28.)

Video mode

- Up until the disc is finalized, recording is possible as long as there is available space on the disc. (Once the disc has been finalized, additional recording and erasing are not possible.)
- The remaining time cannot be increased, nor can recorded title be overwritten.
- Titles cannot be erased.

Images that cannot be recorded

Some DVD-Video and broadcasts contain copy-restriction signals to protect copyrights. There are 3 types of copy-restriction signals: "Copy Free", "Copy Never" and "Copy Once".

"Copy Free" (unrestricted recording)

Land-based TV broadcasts and images you record yourself with a video camera allow unrestricted recording. There are no restrictions on recording.

"Copy Never" (recording prohibited)

- Images that contain the recording prohibited signal cannot be recorded.
- If the recording prohibited signal appears halfway through an image you are recording, recording is paused at that instant. When the recording prohibited signal ends, recording resumes.
- This unit incorporates a built-in copy guard. It cannot record software or broadcasted programs that contain copy restriction signals designed to protect copyright, etc.

"Copy Once" (one-time recordable)

Programs (images) that contain the one-time recordable signal can be recorded only in the VR mode using a DVD-RW disc that supports CPRM Ver. 1.1.

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Recording a TV program

You can record programs you watch on TV onto video tapes or DVDs.
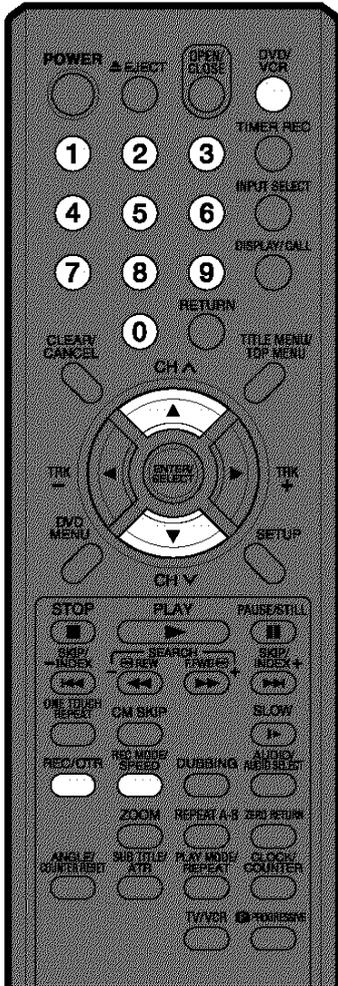
NOTES:

- When recording onto a DVD, it takes some time from when you press **REC/OTR** until recording actually starts.
  Press **REC/OTR** a little before your preferred starting point.
  With a video tape, recording starts almost at the same time you press **REC/OTR**.
- If the erase prevention tab of video tapes is removed, the tape will eject when **REC/OTR** is pressed for recording.

54

Preparation:
- Turn ON the TV and set it to the video input mode.
- Load a recordable DVD or video tape into the unit.
- Press **DVD/VCR** to select the appropriate mode.

1 Press **REC MODE/SPEED** to select the recording mode.
The recording mode will appear on the TV monitor and change every time **REC MODE/SPEED** is pressed.
Video recording modes: SP/SLP
DVD recording modes: XP/SP/LP/SLP

VCR mode

DVD mode
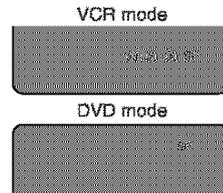
SP is the normal recording mode for video tapes. SLP offers 3 times the recording time as SP. For more information on DVD recording modes, see page 52.

2 Set the TV/CATV option to the appropriate position (page32).

3 Press the **numeric keys** or **CH** ∧/∨ to select the channel to be recorded.

1-9	Press 0 twice and then **1-9** as required. Example: To select 2, Press "**002**".
10-12	Press 0 first and then the remaining 2 digits in order from left to right. Example: Press **012** for "12".
13-99	Press 2 digits in order. Example: Press **22** for "22".
100-125	Press the 3 digits in order. Example: Press **110** for "110".

CH 110
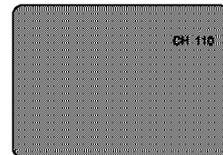
VHF/UHF/CATV CHANNELS

TV	CATV
VHF 2-13	VHF 2-13
UHF 14-69	STD/HRC/IRC 14-36 (A) (W) 37-59 (AA) (WW) 60-85 (AAA) (ZZZ) 86-94 (86) (94) 95-99 (A-5) (A-1) 100-125 (100)(125) 01 (5A)

4 Press **REC/OTR**.

When recording starts, " ● " appears on the screen for about 4 seconds.

VCR mode

DVD mode
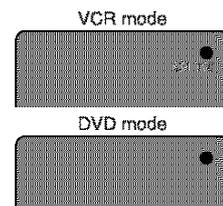
Recording a TV program
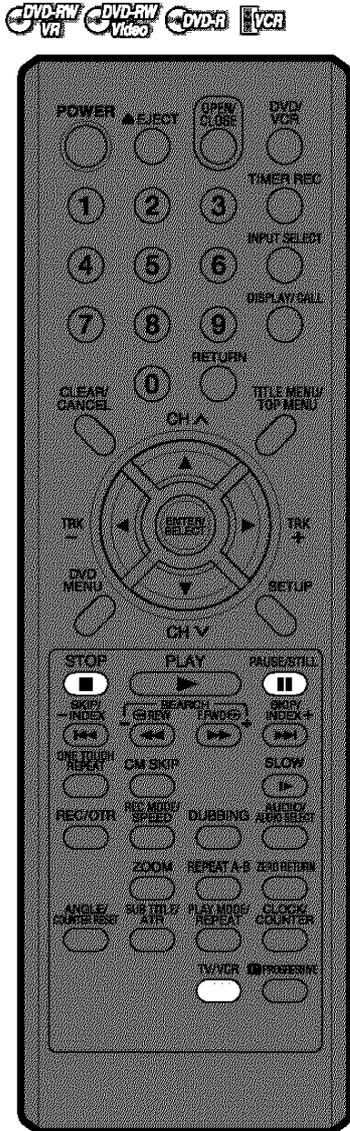
To stop recording

Press **STOP** to stop recording.
" ■ " will appear on the screen for about 4 seconds.
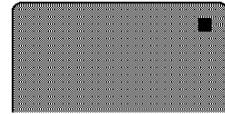
To stop recording temporarily

Press **PAUSE/STILL** to avoid recording unwanted material.
" ●II " will appear on screen for about 4 seconds.
Press again to resume recording.

VCR mode

DVD mode
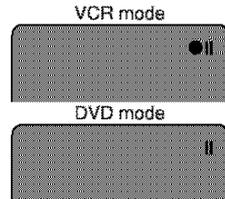
NOTES:

• In video recording, the pause function will be released after 5 minutes to prevent damage the video tape. The unit will change to the STOP mode.
• You can select a recording channel in the recording pause mode.

Recording one program while watching another

While the unit is recording, press **TV/VCR** to select the TV position. The "VCR" will go off and recording will continue.
Select the TV channel you want to watch by using the TV channel selector.

NOTE:

Some CATV hookups do not permit viewing one channel while recording another. See pages 18, 19.

Auto Rewind feature

This VCR will automatically rewind the tape when the tape has ended (except during OTR and TIMER REC). It will also eject the tape.

NOTE:

If the disc space become full, the recording is stopped and "RECORDING INTERRUPTED" will appear on the screen.

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One-touch Timer Recording (OTR)

(DVD-RW/VR) (DVD-RW/Video) (DVD-R) (VCR)

The One-touch Timer Recording feature provides a simple and convenient way to make a timed recording.
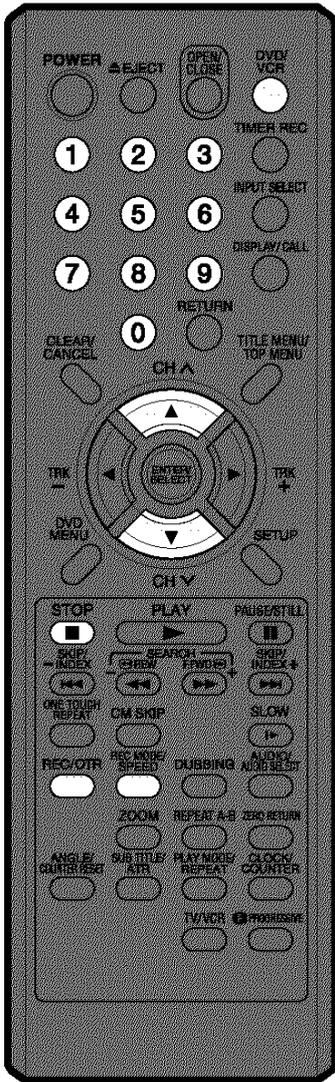
NOTE:
If you wish to watch the DVD playback during the VCR OTR, press **DVD/VCR** to change to DVD mode and perform the DVD playback. You can also playback the VCR during DVD OTR.

Preparation:
- Turn ON the TV and set to the video input mode.
- Load a recordable DVD or video tape into the unit.
- Press **DVD/VCR** to select the appropriate mode.

Example: One-touch Timer Recording for 30 minutes.

1 Press **REC MODE/SPEED** to select the recording mode.
For the recording mode, see the step 1 on page 54.

VCR mode

DVD mode

2 Set the TV/CATV option to the appropriate position (See page 32).

3 Press **numeric keys** or **CH** ∧/∨ to select the channel to be recorded.

4 Press **REC/OTR**. Each additional press of **REC/OTR** will increase recording time as shown in the chart below, up to a maximum of 6 hours. The OTR and recording time will appear on the screen for about 4 seconds.

Press	Recording time	Press	Recording time
once	NORMAL REC	7 times	OTR 3:00
twice	OTR - : - -	8 times	OTR 4:00
3 times	OTR 0:30	9 times	OTR 5:00
4 times	OTR 1:00	10 times	OTR 6:00
5 times	OTR 1:30	11 times	NORMAL REC
6 times	OTR 2:00		

VCR mode

DVD mode

To cancel OTR
Press **STOP** or turn off the power.
" ■ " will appear on screen for about 4 seconds.

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Timer recording

CRW-RW CRW-RW CDVD-R VCR

The timer recording system allows you to select the date, time and channel and record the desired programs. Up to 8 timer programs within a month can be stored in this unit.
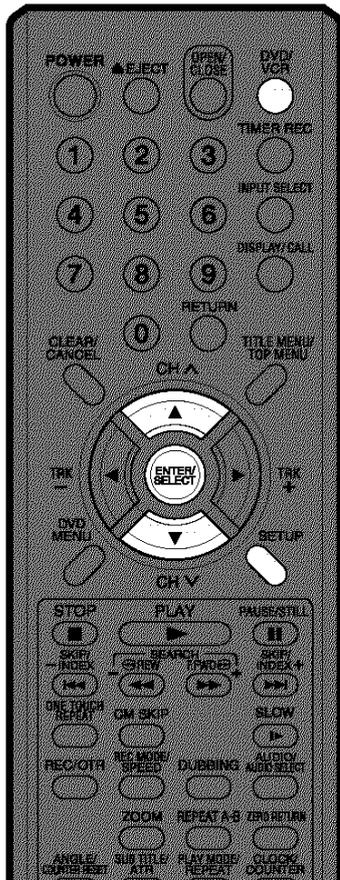
NOTE:
If a tape is unavailable or no disc space is available, the timer indicator " ⊡ " flashes. Replace it with an available one.

Setting timer recording

Preparation:
- Turn ON the TV and set to the video input mode.
- Load a recordable DVD or video tape.
- Press **DVD/VCR** to select the appropriate mode.
- Confirm that the clock is indicating the correct time.

Example: Set the recording mode to LP; the TV program is on channel 12 starting at 8:00 PM and stopping at 9:30 PM on a date of 20th.

1 Press **SETUP**.
   The SETUP MENU screen appears.
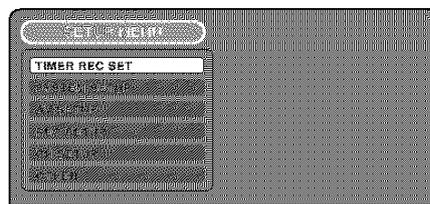
2 Press ▲ or ▼ to select "TIMER REC SET" and press **ENTER**.
   The TIMER REC SET screen will appear.
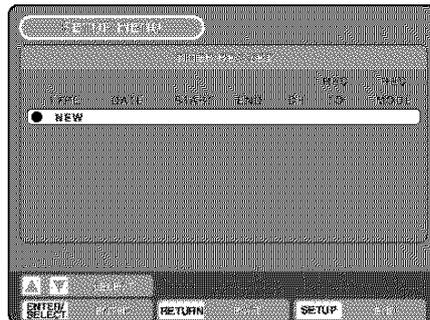
3 Press ▲ or ▼ to select "NEW" and press **ENTER**.
   The program screen will appear.

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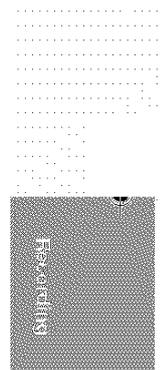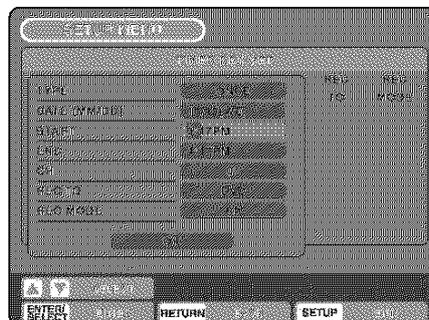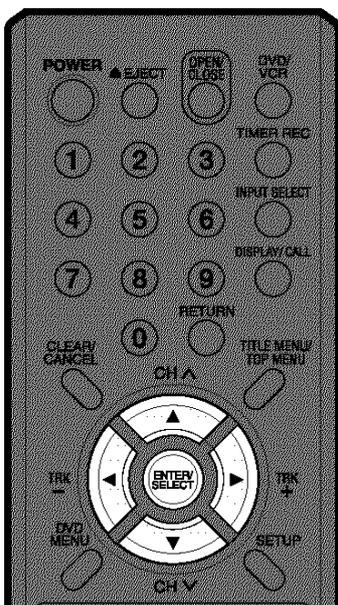
Timer recording

NOTES:

* If you select timer recording on a specified date only one time, select "ONCE" in the "TYPE" for recording. You can record same days of every week or from Monday to Friday using the item "TYPE". The items you can select are as follows:

  ONCE: Recording on the selected "DATE"

  EVERY SUN: Recording every Sun.

  EVERY MON: Recording every Mon.

  EVERY TUE: Recording every Tue.

  EVERY WED: Recording every Wed.

  EVERY THU: Recording every Thu.

  EVERY FRI: Recording every Fri.

  EVERY SAT: Recording every Sat.

  MON-FRI: Recording from Mon. to Fri.

  MON-SAT: Recording from Mon. to Sat.

  EVERYDAY: Recording everyday.

* The starting and stopping times for the recording are displayed on the 12-hour (am/pm) clock. Twelve o'clock midnight is displayed as "12:00AM", whereas twelve o'clock noon is displayed as "12:00PM".

* The initial setting of "REC TO" and "REC MODE" can be changed using "Setting the recording". (See page 31.)

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4 Press ▲ or ▼ to select "TYPE" and press **ENTER**.
Press ▲ or ▼ to select "ONCE" from the list and press **ENTER**.
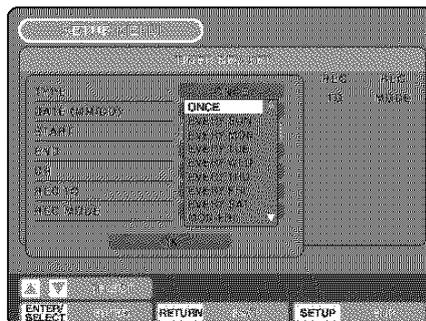
5 Press ▲ or ▼ to select "DATE" and press **ENTER**.
Press ▲ or ▼ to select the date to be recorded from the list and press **ENTER**.

6 Press ▲ or ▼ to select "START" and press **ENTER**.
Set the time when the recording is started.
  * To switch over the selection item (hour or minute), press ◄ or ►, then press **ENTER**.
  * Press ▲ or ▼ to adjust the time.
  * After setting the time, press **ENTER**.
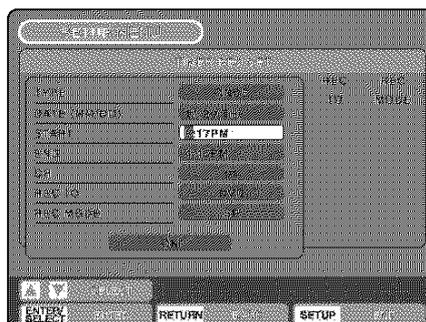
7 Press ▲ or ▼ to select "END" and press **ENTER**.
Set the stopping time in the same manner for setting the starting time of timer recording.

8 Press ▲ or ▼ to select "CH" and press **ENTER**.
  * Press ▲ or ▼ to select the channel to be recorded.
  * You can select the external input (L1 or L2) by pressing ◄ or ►.

9 Press ▲ or ▼ to select "REC TO" and press **ENTER**.
Select the media (DVD or VCR) to be recorded from the list and press **ENTER**.

10 Press ▲ or ▼ to select "REC MODE" and press **ENTER**.
The recording modes for the media selected in "REC TO" item are listed up.
Select the recording mode and press **ENTER**.
For the recording modes in VCR, see page 48, and for the recording modes in DVD, see page 52.

Timer recording

NOTES:
* Recording starts a few seconds before the preset starting time.
* You cannot use the timer recording for the both DVD and VCR at the same time.
* You can playback the DVD during the VCR timer recording, and you can playback the VCR during the DVD timer recording.
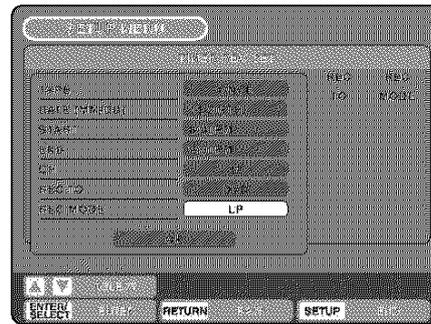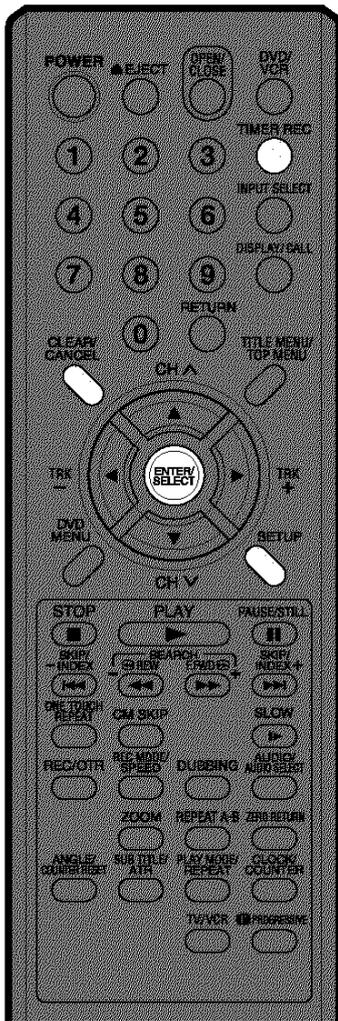
11 Se lect "OK" and press **ENTER**.
The timer program is determined and the TIMER REC SET screen appears again.

12 When you enter the other program for the timer recording, repeat the steps **3** to **11**.

13 Press **SETUP**.
The TIMER REC SET screen disappears and the display will return to the normal screen.

14 Press **TIMER REC**. The timer indicator " ⬛ " will appear on the display and the unit stands by for recording.
* If the program is DVD recording only, the unit will change to VCR mode automatically. (The DVD mode cannot be selected.)
* If the program is VCR recording only, the unit will change to DVD mode automatically. (The VCR mode cannot be selected.)
* If the programs are DVD and VCR recording, the unit will turn off. If you want to use the unit, press **TIMER REC** again to deactivate the timer.

Checking or changing the timer recording
When you want to check the selected timer recording, follow the steps **1** and **2** of "Setting timer recording" and display the TIMER REC SET screen. To change the timer recording, select the program to be changed and press **ENTER**. The changing method is the same as that for the recording a program for the first time.

Cancelling the timer recording
Display the TIMER REC SET screen.
Select the program you want to cancel and press **CLEAR/CANCEL**, then the selected program will be erased from the timer recording list.

In case Timer programs-overlap
Do not overlap timer programs as portions of the conflicting programs will be lost. The first recording time has priority over the next recording time as shown in the diagram below.
In this case, the next recording time is dalayed a maximum of about 1 minute.
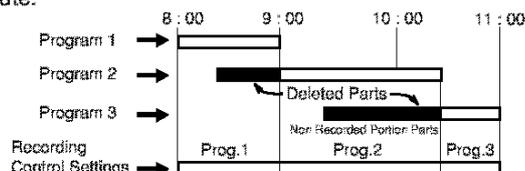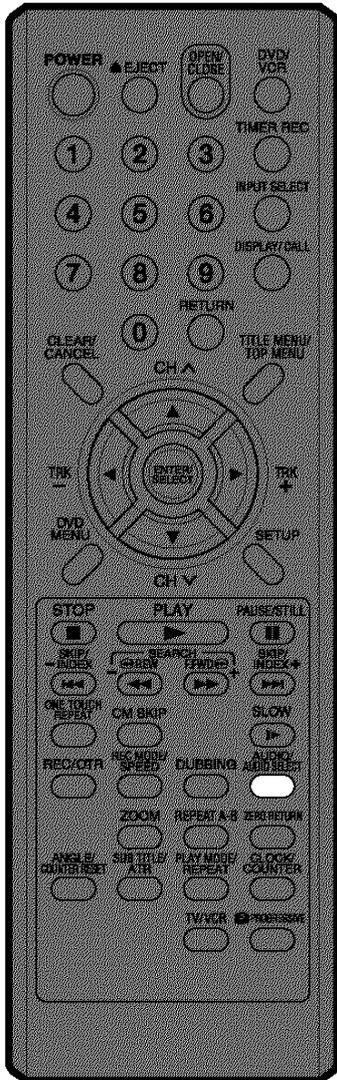
	8 : 00	9 : 00	10 : 00	11 : 00
Program 1 →				
Program 2 →		Deleted Parts		
Program 3 →			Non Recorded Portion Parts	
Recording Control Settings →	Prog.1	Prog.2		Prog.3

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Stereo recording and playback

The VHS Hi-Fi audio system per-
mits high fidelity recording of MTS
STEREO TV broadcasts.

When a MTS STEREO broadcast is re-
ceived, the word "STEREO" will appear on
the screen and the program can be viewed
or recorded in stereo.
The Hi-Fi STEREO recording procedure is
the same as for normal recordings.
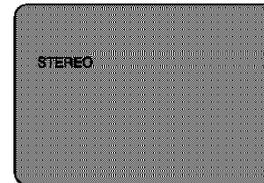
NOTE:
When using a CATV system, stereo TV programs may be transmitted
over a mono cable channel. In this case the word "STEREO" will not
appear and the sound will be in mono.

Output selection
When viewing an MTS STEREO TV program, or playing a prerecorded
Hi-Fi STEREO on video tape or disc, press **AUDIO SELECT** to select
how the audio will be heard through the speakers. Normally set to the
Hi-Fi STEREO position, this button can be set to the MONO position if
the stereo audio is of poor quality. The "R" and "L" positions allow the
audio from the Right or Left Hi-Fi channel to be heard over both TV
speakers. This button has no effect when viewing a monaural audio
program. Each time when you press the button, output selection dis-
play appears on the screen for several seconds. Refer to the chart
below.

OUTPUT SELECTION	SOUND HEARD ON BOTH SPEAKERS
STEREO	STEREO
L ch	LEFT CHANNEL AUDIO
R ch	RIGHT CHANNEL AUDIO
MONO	MONO

NOTES:
• When playing back a video tape
or disc that is not recorded in Hi-Fi
stereo mode, the audio will auto-
matically be monaural.
• When listening to a Hi-Fi video
tape, disc or MTS broadcast
through the RF OUT (UHF/VHF)
jack (Audio/Video cord not con-
nected), the sound will be monau-
ral.

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Editing the disc

This section explains how to edit the recorded contents on DVD-RWs. However, the items that you can edit vary with the recording formats. In VR mode, you can edit various title menus, whereas in Video mode, you can edit only a few items.

Title menu

For the disc in VR mode, when the content is recorded, a title name that includes the date, time, channel number and other information is created automatically.

For the disc in Video mode, when you record a content first time on the disc where nothing is recorded, the recorded content is automatically set to Title1. Then, the second recorded content is set to Title2, and so on. Therefore, the title is numbered according to the recording order. The title is created max. 99. The title menu lists up these titles.

The title menu can be used when you playback after confirming the contents (see page 34), or when you check the contents recorded on the disc.

Original title

The titles explained above are called original title, which will be added every recording and can be edited later. You can do various editing operations i.e., you can rename the titles, or add the chapter marks. In addition, you can erase the unnecessary titles to increase the disc space.

Playlist

You can create the playlist based on the original title.

You can combine the titles or erase the unnecessary scenes.

The playlist is created in regardless of the original titles and the list won't affect the original title. If you erase the playlist, the original titles remain. It is recommended to create and edit the playlist to prevent the important titles from being erased accidentally.

If you create the playlist, both the original title and playlist will be displayed on the title menu.

Editable items

The items that can be edited are different between original title and playlist. For the disc in Video mode, only the title name can be edited. The items can be edited in each are as follows:

Editing items	VR mode		Video mode
	Original	Playlist	Original
Playback	O	O	O
Adding chapter mark	O	X	X
Combining chapters	O	X	X
Erasing scenes	O	O	X
Erasing titles	O	O	X
Renaming titles	O	O	O
Creating playlist	O	X	X
Combining titles	X	O	X

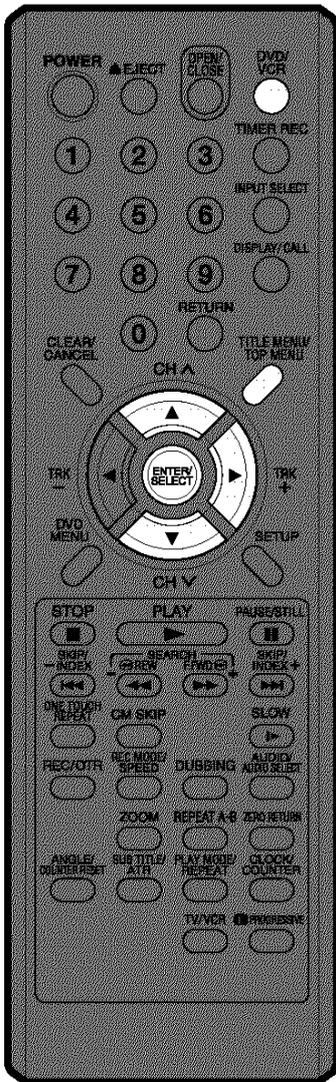If you finalize the disc in Video mode, the title list will be created and you cannot use the title menu.

NOTES:
- This unit cannot record or edit the disc which was recorded or edited using another DVD recorder.
- You cannot edit or record the disc on which disc protection is set. In such a case, be sure to cancel the disc protection (see page 28) before starting the operation.
- When a scene was erased, the selected position for erasing may be a little different from the actual erased position.

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Editing a playlist

You can create and edit the playlist based on the original title.

NOTES:
- The playlist can be created only in the DVD-RW (VR). The DVD-RW (Video) and the DVD-R cannot create a playlist.
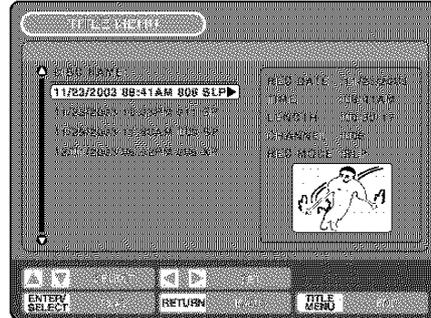- In case the disc includes more than 10 titles, you can turn to the next or the previous page. (See page 34.)

Preparation:
- Turn ON the TV and set to the video input mode.
- Load the recorded DVD-RW (VR).
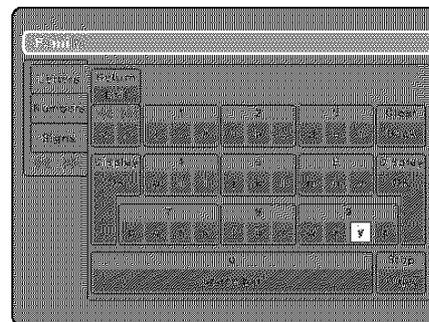- Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

Creating a playlist

1   Press **TITLE MENU**.
The title menu will appear.

2   Press ▲ or ▼ to select the original title which will be used as the base of a playlist.

3   Press ▶.
The editing menu of original title will appear.

4   Press ▲ or ▼ to select "NEW PLAYLIST".
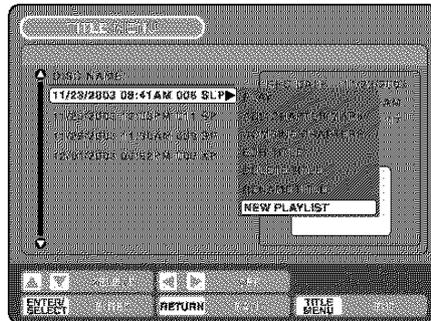
5   Press **ENTER**.
The editing menu closes and the created playlist appears at the bottom of the list.   Created playlist

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Editing a playlist

NOTES:
- The number of the characters which can be used for the title name is a maximum 64. Long file names will be shortened in the title menu.
- For using the keyboard screen, see "Changing a disc name" (page 74).

Changing a title name

1 Press **TITLE MENU** to display the title menu.

2 Select the playlist where you want to change the title name.
- Press ▲ or ▼ to select the playlist.
- Press ▶ to display the editing menu of the playlist.
- Press ▲ or ▼ to select "RENAME TITLE".
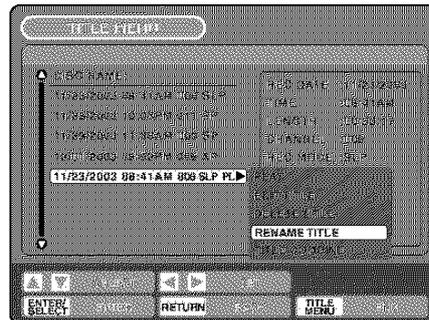
3 Press **ENTER**.
The keyboard screen will appear.

4 Use the keyboard screen to enter the title name.

5 Press **DISPLAY/CALL** to return the title menu.

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Editing a playlist
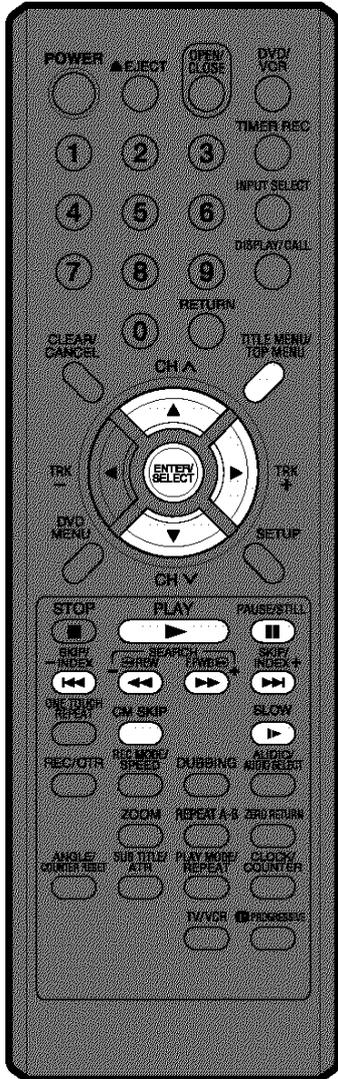
Erasing a scene (Edit title)

You can erase an unnecessary scene from the created playlist.
When you erase the scene from the playlist, the scene is not erased from the original title.

1 Press **TITLE MENU** to display the title menu.

2 Select the playlist where a scene you want to erase is included.
  - Press ▲ or ▼ to select the playlist.
  - Press ▶ to display the editing menu of the playlist.
  - Press ▲ or ▼ to select "EDIT TITLE".
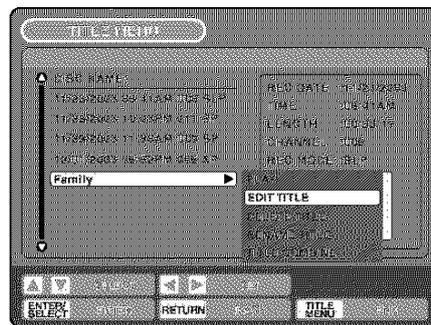
3 Press **ENTER**.
  The EDIT TITLE screen appears.
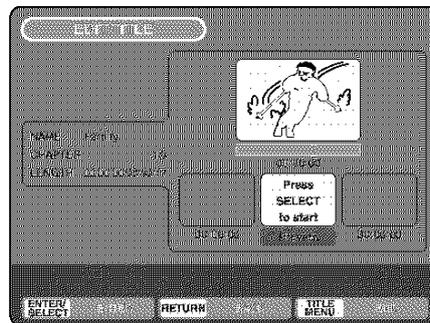
4 Press **ENTER** to playback the playlist on the EDIT TITLE screen.
  - Use each operation button (**F.FWD, REW, SKIP +, SKIP -, PLAY, PAUSE/STILL, SLOW, CM SKIP**) for the playback to search the starting point of the scene you want to erase.

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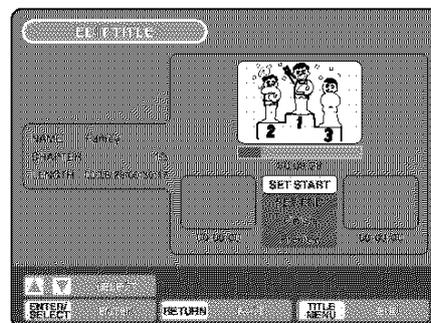
Editing a playlist
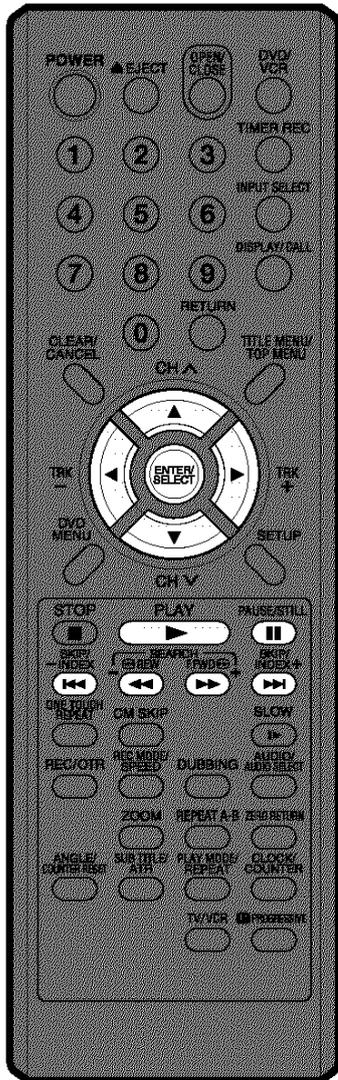
**NOTE:**
It is no problem to omit the procedures for confirming the scene or adjusting start and end points.

5 Press ▲ or ▼ to select "SET START" at the start point of the scene that you want to erase and press **ENTER**. (To set the start point easily, search the start point while "SET START" is selected) The still image at the start point appears at the left small screen.
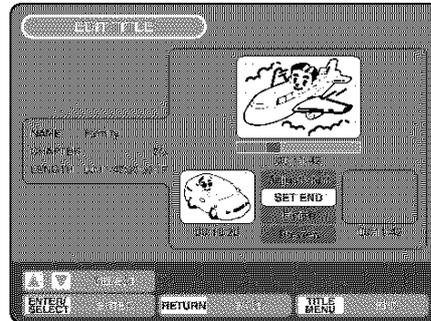
6 Press ▲ or ▼ to select "SET END" at the end point of the scene you want to erase and press **ENTER**.
The still image at the end point appears at the right small screen.
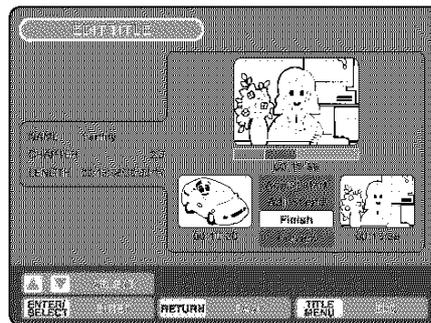
7 Check the erased scenes.
• Select "Preview" and press **ENTER**. Then the video where the scenes between the start and end points are erased is played back.
• Each operation button (**F.FWD**, **REW**, **SKIP +**, **SKIP -**, **PLAY**, **PAUSE/STILL**) for playback also can be used.

8 Adjust the start and end points.
• To adjust the start point, select "Adjust start" and press **ENTER**. You can change the start point every one frame by pressing ◄ or ►.
• To adjust the end point, select "Adjust end" and press **ENTER**. You can change the end point in the same way as the start point.

9 If you determine the scene to be erased, press ▲ or ▼ to select "Finish" and press **ENTER**.

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Editing a playlist
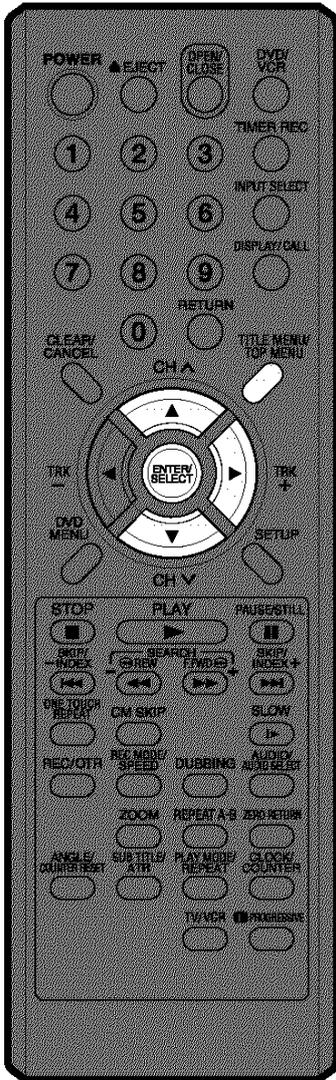
Combining the title

You can create a playlist by combining the several original titles or playlists. To combine the titles, it is necessary to create a playlist at first. By combining the titles in the playlist, a playlist where several titles are combined is created.

1 Press **TITLE MENU** to display the title menu.

2 Select the playlist where you want to combine the titles.
- Press ▲ or ▼ to select the playlist.
- Press ▶ to display the editing menu of the playlist.
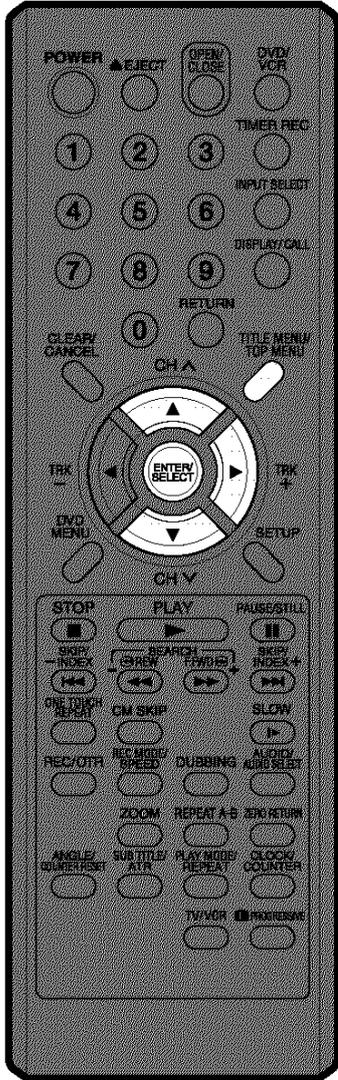- Press ▲ or ▼ to select "TITLE COMBINE".
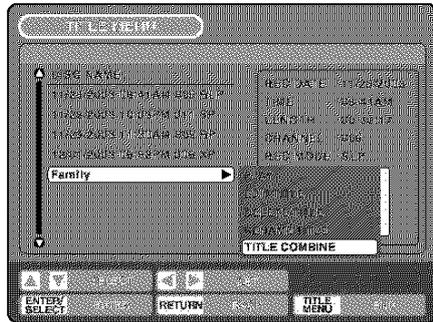
3 Select the title that you want to combine from the title menu.
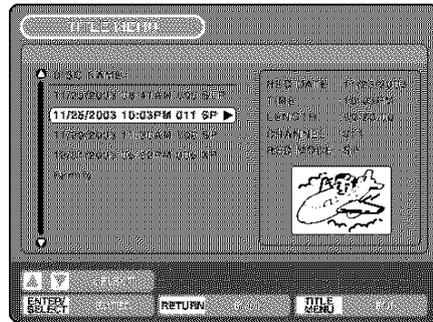
4 Press **ENTER**.
Following the playlist, the selected title is combined.
The several titles were combined so that the total recording time is displayed.
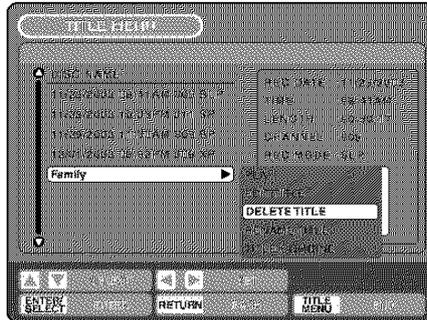
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Editing a playlist

Erasing a playlist

You can erase the created playlist. Even if you erase the playlist, the original title will not be erased.

1 Press **TITLE MENU** to display the title menu.

2 Select the playlist that you want to erase.
- Press ▲ or ▼ to select the playlist.
- Press ▶ to display the editing menu of the playlist.
- Press ▲ or ▼ to select "DELETE TITLE".
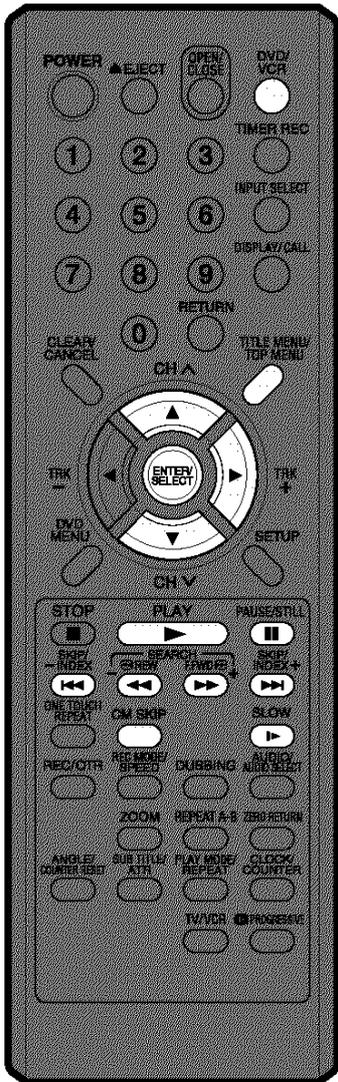

3 Press **ENTER**.
The selected playlist will be erased.

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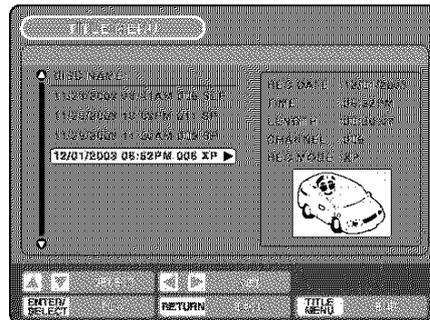
Editing an original title

In VR mode, you can edit various items, whereas in Video mode, you can edit the title names only.

NOTES:
* You can automatically add a chapter mark in recording. For more information, see page 67.
* In case the disc includes more than 10 titles, you can turn to the next or the previous page. (See page 34.)

Preparation:
* Turn ON the TV and set to the video input mode.
* Load the recorded disc.
* Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

Adding a chapter mark
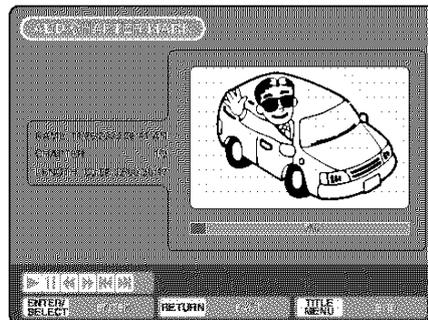You can add a chapter mark to the original title. You can add up to 999 chapter marks to one disc.

1 Press **TITLE MENU** to display the title menu.

2 Select the original title where a chapter mark is added.
* Press ▲ or ▼ to select the original title.
* Press ▶ to display the editing menu of the original title.
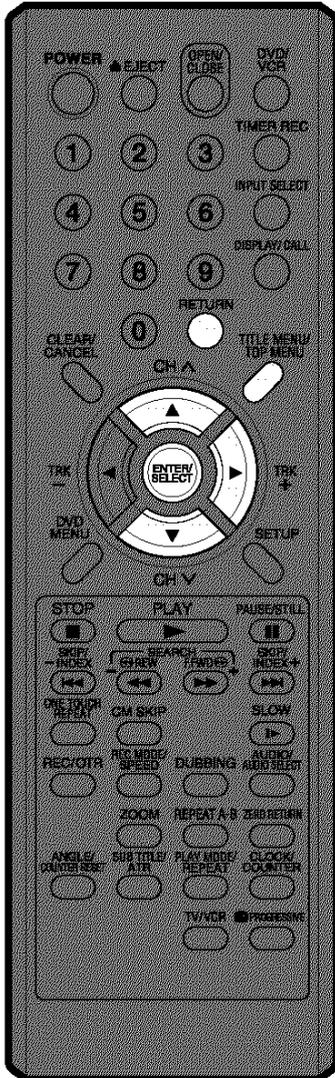* Press ▲ or ▼ to select "ADD CHAPTER MARK".
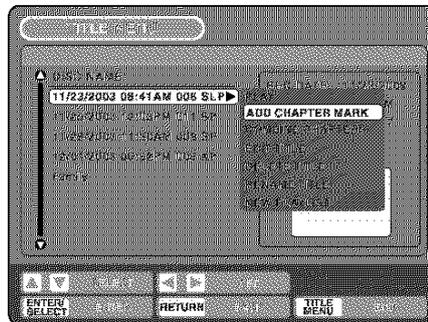
3 Press **ENTER**.
The ADD CHAPTER MARK screen will appear.
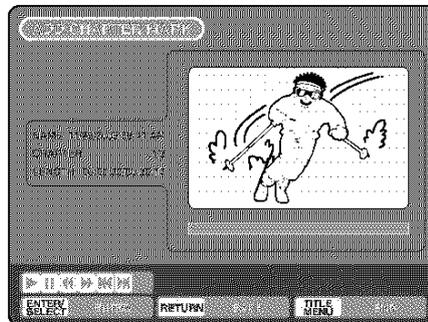
4 Press **PLAY** to search a scene where you want to add the chapter mark.
* Search the scene by using each operation button (**F.FWD, REW, SKIP +, SKIP -, PAUSE/STILL, SLOW, CM SKIP**) for the playback.

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Editing an original title

5 When the scene you want to add a chapter mark, press **ENTER**. The playback is paused and the position of the added chapter mark appears yellow.
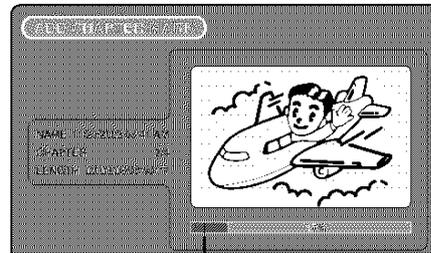

The added chapter mark

6 If you continue to add a chapter mark, repeat step **5**.

7 Adding chapter marks is finished.
   • To display the title menu, press **RETURN**.
   • To return to the normal screen, press **TITLE MENU**.

Combining chapters

By erasing the added chapter marks, the chapters can be combined.

1 Press **TITLE MENU** to display the title menu.

2 Select the original titles where you want to combine the chapters.
   • Press ▲ or ▼ to select the original title.
   • Press ▶ to display the editing menu of original title.
   • Press ▲ or ▼ to select "COMBINE CHAPTERS".
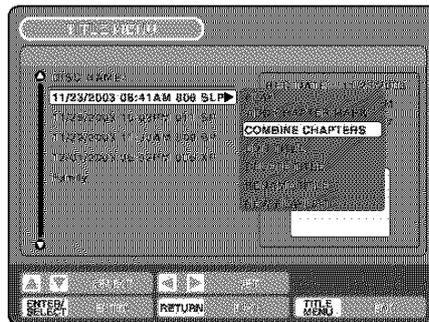
3 Press **ENTER**.
The COMBINE CHAPTERS screen will appear. At the beginning, the top still image in the chapter 2 is displayed.

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Editing an original title

4 Press **SKIP +** or **SKIP -** to select the chapter marks to be erased.

5 Press **ENTER**.
The chapter marks are erased and 2 chapters are combined into 1 chapter.

6 To continue erasing the chapter marks, repeat steps **4** and **5**.

7 The combining chapters will completed.
• To display the title menu, press **RETURN**.
• To return to the normal screen, press **TITLE MENU**.

Changing an original title name
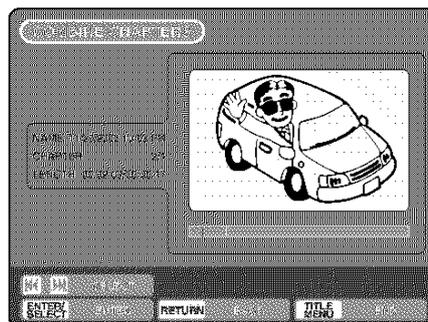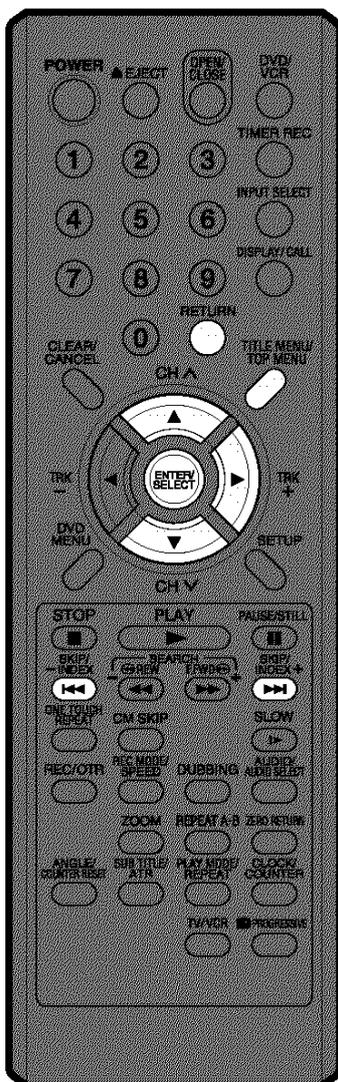
1 Press **TITLE MENU** to display the title menu.

2 Select the original title that you want to rename.
• Press ▲ or ▼ to select the original title.
• Press ▶ to display the editing menu of original title.
• Press ▲ or ▼ to select "RENAME TITLE".

3 Press **ENTER**.
The keyboard screen will appear.
The entering method of the title name is the same as for the playlist.
See the steps **4** and **5** of "Changing a title name" in "Editing a playlist" (page 63) and enter the title name.

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Editing an original title

Erasing a scene (Edit title)

You can erase an unnecessary scene from the original title.
Erase the scene after checking the title. You cannot restore the erased scene.
When you erase the scene, you can increase the disc space.

1 Press **TITLE MENU** to display the title menu.

2 Select the original title where a scene you want to erase is included.
  - Press ▲ or ▼ to select the original title.
  - Press ▶ to display the editing menu of original title.
  - Press ▲ or ▼ to select "EDIT TITLE".

3 By pressing **ENTER**, the following message screen will appear.

ARE YOU SURE YOU WANT TO
EDIT THIS TITLE?
IF PLAYLISTS EXIST,
THEY WILL BE DELETED.

| YES | NO |
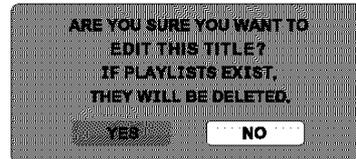
4 Press ◀ or ▶ to select "YES" and press **ENTER**, then the EDIT TITLE screen will appear.
  - By selecting "NO", the title menu appears.

5 The method for erasing a scene is the same as for the playlist. See the steps 4 to 9 of "Erasing scenes (Edit title)" in "Editing a playlist" (page 64).

NOTES:
- If the scene is erased from the original title, the created playlist is erased.
- In the case of increasing the disc space, erase the scene that continues for at least a few minutes.

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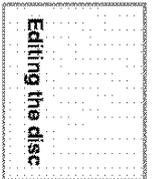
Editing an original title
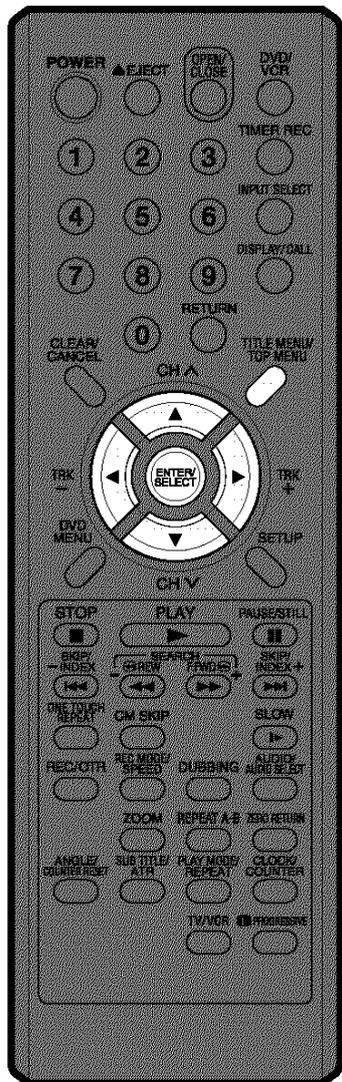
Erasing an original title

You can erase the original title.
Erase the original title after checking its title. The erased title cannot be restored.
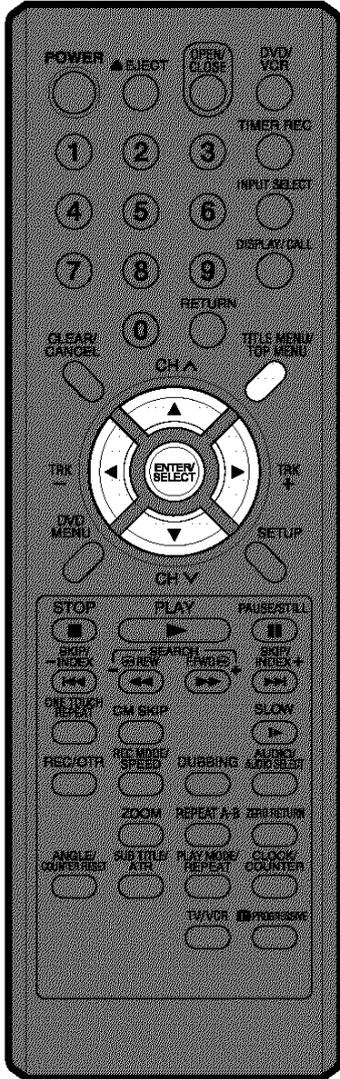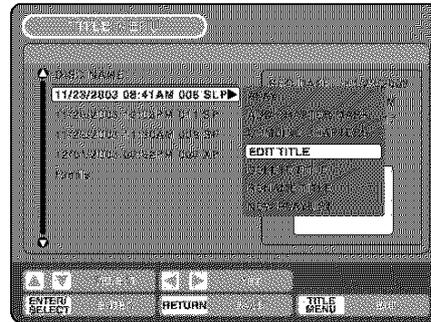When you erase the titles, you can increase the disc space.

1 Press **TITLE MENU** to display the title menu.

2 Select the original title you want to erase.
  • Press ▲ or ▼ to select the original title.
  • Press ▶ to display the editing menu of original title.
  • Press ▲ or ▼ to select "DELETE TITLE".

3 By pressing **ENTER**, the following message screen will appear.

ARE YOU SURE YOU WANT TO
DELETE THIS TITLE?
IF PLAYLISTS EXIST,
THEY WILL BE DELETED.

YES   NO
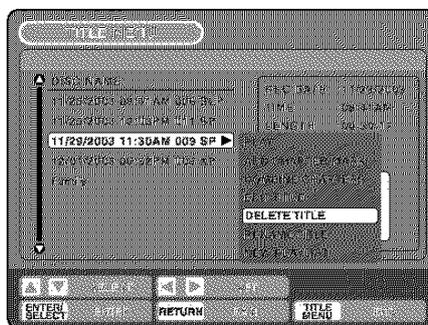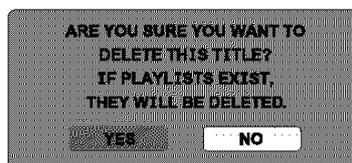
4 Press ◀ or ▶ to select "YES" and press **ENTER**, then the original title will be erased.
  • Erasing the title will be cancelled by selecting "NO".

NOTE:
If the original title is erased the created playlist is also erased.

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Changing a disc name

You can change a disc name from the title menu.

NOTES:
- The number of the characters which can be used for the disc name is a maximum 64. Long file names will be shortened in the title menu.
- For using the keyboard screen, see "Using the keyboard screen" (page 74).
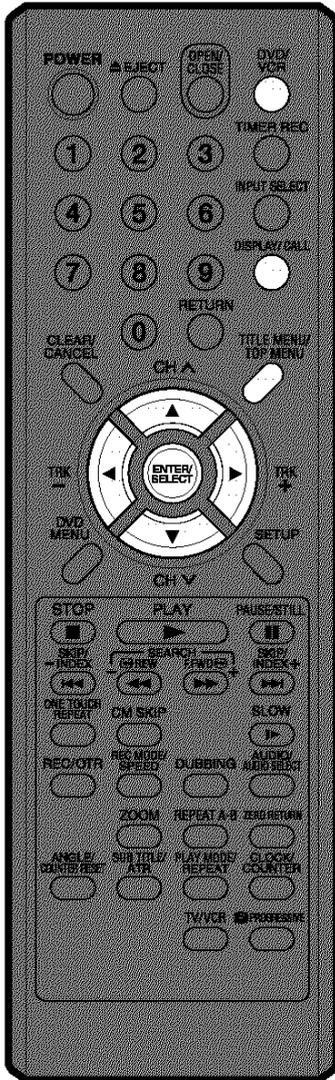
Preparation:
- Turn ON the TV and set to the video input mode.
- Load the recorded DVD disc.
- Press **DVD/VCR** to select the DVD mode. (The DVD indicator will light.)

Changing a disc name

1 Press **TITLE MENU** to display the title menu.

2
- Press ▲ or ▼ to select "DISC NAME".
- Press ▶ to display the editing menu.
- Press ▲ or ▼ to select "RENAME DISC".
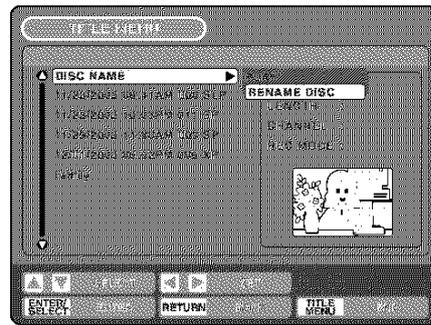
3 Press **ENTER**.
The keyboard screen will appear.

4 Use the keyboard screen to enter the disc name.

5 Press **DISPLAY/CALL** to return the title menu.

Editing the disc

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Changing a disc name

Using the keyboard screen

This section explains the function of the keyboard screen and how to input characters. The disc name and the title name can be changed using the keyboard screen.

Keyboard screen types

The keyboard screen has three types of "Letters", "Numbers" and "Signs". The type can be switched over by pressing **REW** or **F.FWD**.

Letters: This is mainly used for inputting alphabetical letters.
For the keyboard screen of Letters, see the previous page.

Numbers: This is used for inputting numbers.
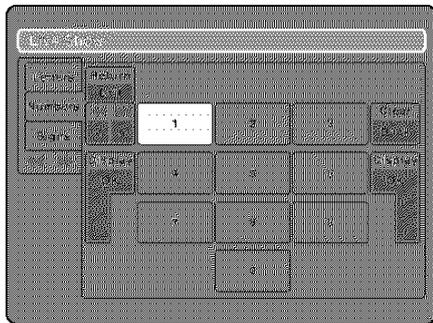
Signs: This is used for inputting symbols.
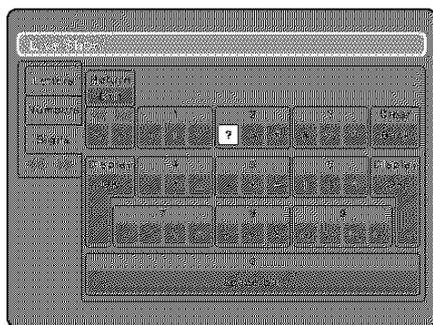
Inputting characters

There are two methods for inputting characters.

Character input 1

1 Press ▲, ▼, ◀ or ▶ to select the character to be input.

2 Press **ENTER**.
The selected character will be input.
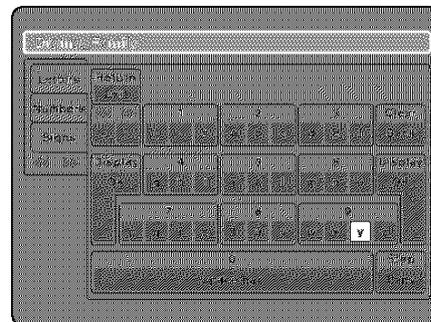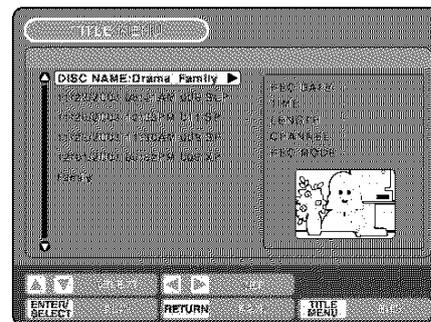
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Character input 2
Example: Explained here is the procedure when you input "F" and "J".

1 Press the **numeric keys** where a character you want to input is assigned.
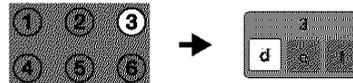
2 Press the **numeric keys** continuously and select the character to be input.

To input F, press 3 twice.
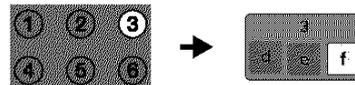
NOTE:
When the interval between the pressing **numeric keys** is 2 seconds or more in selecting the input character, the selected character will automatically be input.

3 Stop the key operation when you select the character to be input.
The selected character will automatically be input.
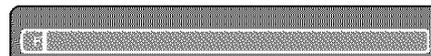
4 Press the **numeric keys** where the following character is assigned.
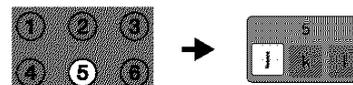
5 When the character to be input is selected, stop the key operation.
The selected character is automatically input.
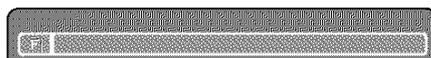
Changing a disc name

Erasing a character
You can erase the input character.

Erasing method 1

1 Press ▲, ▼, ◀ or ▶ to select "Back".

2 Press **ENTER**.
The last input character will be erased.

3 To erase the characters continuously, press **ENTER**.
The input characters will be erased from the last to the top one by one.

Erasing method 2

1 Press **CLEAR**.
The last input character is erased.

2 To erase the characters continuously, press **CLEAR**.
The input characters will be erased from the last to the top one by one.

Erasing method 3
Use the cursor to select the character and erase it.

1 Press **SKIP** - or **SKIP** + to move the cursor after the character you want to erase.

2 Press **CLEAR**.
Erase the character before the cursor position.

Selecting between uppercase and lowercase letters
You can select the alphabets between uppercase and lowercase letters, which can be input on the keyboard screen of "Letter".

1 Press **STOP**.
(Or, press ▲, ▼, ◀ or ▶ to select "Caps", then press **ENTER**.)
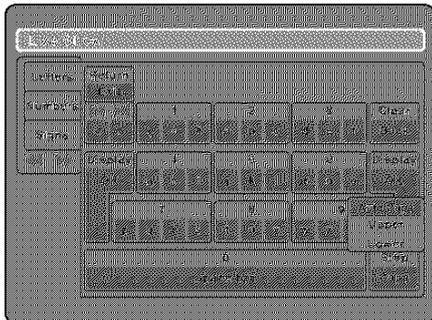
2 Press ▲ or ▼ to select the type of letters in the list below and press **ENTER**.

Auto Caps: Determines uppercase and lowercase automatically.
Upper: Inputs all with uppercase letters.
Lower: Inputs all with lowercase letters.

Determining a name
To determine the entered disc name and title name, press **DISPLAY/CALL**. Or, press ▲, ▼, ◀ or ▶ to select "Ok", then press **ENTER**.

The keyboard screen disappears and the display will return to the title menu.
The entered disc name and title name are displayed in the title menu.

Cancelling character input
When you want to cancel the input and changed characters, press **RETURN**. Or, press ▲, ▼, ◀ or ▶ to select "Exit", then press **ENTER**.
The input and changed characters are cancelled and the title menu will appear.

Editing the disc

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Dubbing a tape onto a disc

You can record video or audio on a video tape onto a disc.

NOTES:
* Dubbing cannot be carried out when
  - a copy guard supporting tape is used.
  - disc protection is set.
  - disc has no recording space.
* Dubbing stops when
  - the video tape is played back to the end and stops.
  - recording space becomes full.
* The videos recorded from TV programs or movies can be used only for your personal enjoyment without permission of the copyright holder.

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Preparation:
* Turn ON the TV and set to the video input mode.
* Load a source video tape and a disc for recording.
* Remove the erase protection tab of the source video tape to prevent the data from accidentally being erased.
* Confirm the disc space before operation.

1 Press **DVD/VCR** to set this unit to DVD mode. The DVD indicator will light.

2 Press **REC MODE/SPEED** and select the recording mode.
* When **REC MODE/SPEED** is pressed each time, "SP", "LP", "SLP" or "XP" is selected in this order.
* The recording mode is indicated on both the TV screen and the display window.
* For the details of the recording mode, see page 52.

3 Press **DVD/VCR** and set the unit to VCR mode.

NOTE:
Confirm that the VCR indicator lights.

4 Press **DUBBING**.
* The unit is changed to DVD mode automatically.
* The VCR is waiting for playback and the DVD is waiting for recording. Then the following message will appear.

5 Press ◀ or ▶ to select "YES" and press **ENTER**. Dubbing starts.
* To cancel dubbing, select "NO" and press **ENTER**.

In dubbing, VCR playback, DVD recording and "dub" (dubbing) indicator appear on the display window.

Video playback   DVD recording

6 To stop dubbing, press **STOP**.

Dubbing a disc onto a tape

![DVD-RW VR] ![DVD-RW Video] ![DVD-R] ![VCR]

You can record video or audio on a disc onto a video tape. When a disc with a copy guard function is used, a disordered image is recorded on the video tape.

Preparation:
- Turn ON the TV and set to the video input mode.
- Load a source disc and a video tape for recording.
- Confirm the remaining tape for recording before operation.

1 Press **DVD/VCR** to set this unit to VCR mode.
The VCR indicator will light.

2 Press **REC MODE/SPEED** and select the recording mode.
- When **REC MODE/SPEED** is pressed each time, "SP" or "SLP" is selected.
- The recording mode is indicated on both the TV screen and the display window.
- For the details of the recording mode, see page 48.

3 Press **DVD/VCR** and set the unit to DVD mode.

DVD

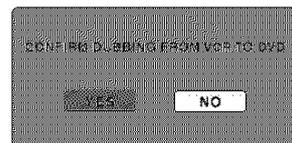**NOTE:**
Confirm that the DVD indicator lights.

4 Press **DUBBING**.
- The DVD is waiting for playback and the VCR is waiting for recording. Then the following message appears.

NOTES:
- Dubbing cannot be carried out when
  - a copy guard supporting disc is used.
  - the erase prevention tab of video tape is removed.
- Dubbing stops when
  - the disc is played back to the end and stops.
  - no recording space in Video tape becomes remained.
- In dubbing, the unit is changed to interlaced scanning mode automatically if the progressive scanning mode is set.
- The videos recorded from the TV programs or movies can be used only for your personal enjoyment without permission of the copyright holder.

5 Press ◀ or ▶ to select "YES" and press **ENTER**.
Dubbing starts.
- To cancel dubbing, select "NO" and press **ENTER**.

In dubbing, DVD playback, VCR recording and "dub" (dubbing) indicator appear on the display window.

DVD
-RW VR
VCR

$$\mathcal{d}\ u\mathcal{b}$$

Video recording   DVD playback
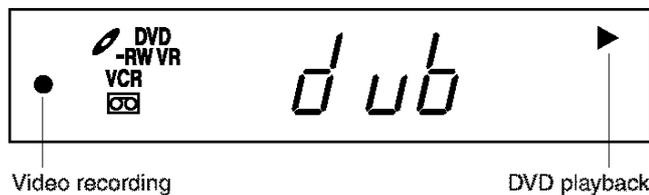
6 To stop dubbing, press **STOP**.

Dubbing only the specified titles or the playlist

When you want to dub only specified titles or the playlist recorded on the disc, playback the title or the playlist you want to dub using the title menu, and immediately press one of **DUBBING**, **STOP** or **PAUSE/STILL**. When you press **DUBBING**, proceed the steps **5** and after above, and when you press **STOP** or **PAUSE/STILL**, proceed the steps **4** and after above. However, a few seconds at the first part of the title may not be recorded. When playback of the title or the playlist selected is completed, the dubbing stops.

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Dubbing using other equipment

You can connect another VCR or camcorder to dubbing.
Typical connection: When using this unit as a recording device

Playback VCR

To Video OUT — To Audio (R) OUT
To Audio (L) OUT
AUDIO/VIDEO cord (supplied)
Recording VCR

To Video IN — To Audio (R) IN
To Audio (L) IN

Playback Camcorder

To AV jack

Recording VCR

To Video IN — To Audio (R) IN
To Audio (L) IN
AUDIO/VIDEO cord (not supplied)
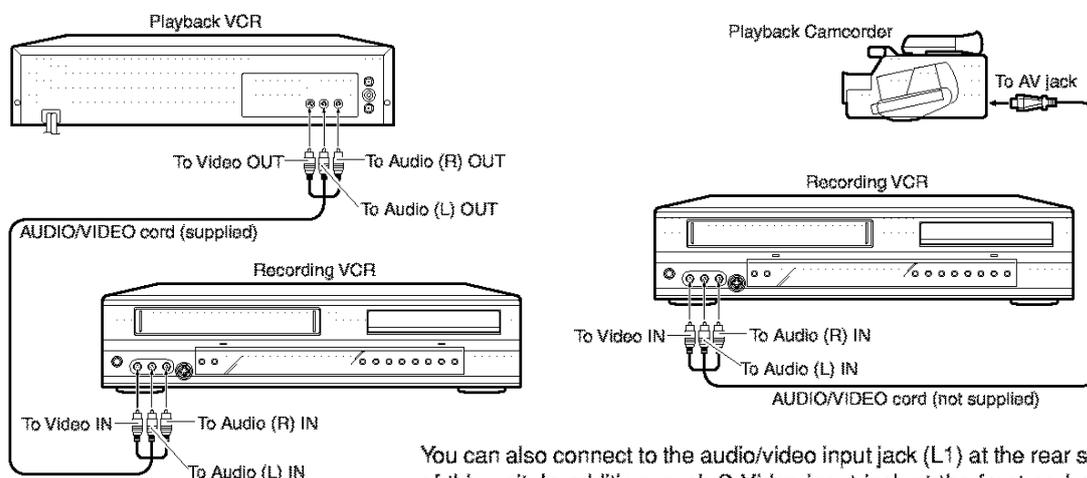
You can also connect to the audio/video input jack (L1) at the rear side of this unit. In addition, each S-Video input jack at the front and rear sides can be used for recording on the disc. (The S-Video input jack cannot be used for recording on the video tape.)

When a video is recorded using this unit

Preparation:
* Turn ON the TV and set the unit to the video input mode.
* Load a video tape where the erase-protection tab is not activated or a disc with enough recording space.
* To record onto a video tape, set the unit to VCR mode, whereas to record onto a disc, set it to DVD mode.

1 Press **INPUT SELECT** and set the channel to L2 (or L1).
L1 (LINE 1): on the rear panel
L2 (LINE 2): on the front panel
Confirm that L2 (or L1) appears on the display window.

$$L2$$

NOTES:
* When this unit is used as a playback device, a mark or a character displayed on the screen is also dubbed as an image. When the screen display is set to OFF, see "DISPLAY/CALL" on page 28.
* The videos recorded from the TV programs or movies can be used only for your personal enjoyment without permission of the copyright holder.
* The copy guard contents cannot be used for dubbing.
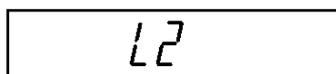
2 Press **REC MODE/SPEED** and select the recording mode.
VCR: SP or SLP (See page 48)
DVD: SP, LP, SLP or XP (See page 52)

3 Press **REC/OTR** on this unit, then press **PAUSE/STILL**.

4 Press the **PLAY** button on the playback device, then press the **PAUSE/STILL** button.

5 Release the recording pause and the playback still simultaneously to begin the duplicating process.

6 To stop dubbing, press **STOP**.

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Glossary

A-B Repeat Playback
Playback that repeats between two set points, A and B.

angle
Recorded onto some DVD discs are scenes which have been simultaneously shot from a number of different angles (the same scene is shot from the front, from the left side, from the right side, etc.). With such discs you can select the angle to view the scene from different angles.

auto chapter
Feature that automatically makes chapter marks on a DVD disc during recording.

auto clock
Feature that automatically sets the internal clock.

blue background
Feature that automatically changes unpleasant noise images to a blue screen when a channel without a broadcast or a channel on which the broadcast has ended has been selected.

BROWSER screen
Screen that appears when TITLE MENU is pressed during MP3, WMA or JPEG CD is inserted.

CATV
Cable television.

chapter
A section within a title is called a "chapter".

CM Skip
When pressed during playback, playback jumps 30 sec ahead and resumes.

copy guard
Copyright protection signal. Software and broadcasts that contain this signal cannot be recorded.

dolby digital
A sound system developed by Dolby Laboratories Inc. that gives movie theater ambience to audio output when the product is connected to a Dolby Digital 5.1 channel processor or amplifier.

DTS
This is a digital sound system developed by Digital Theater Systems for use in cinemas. This system uses 6 audio channels and provides accurate sound field positioning and realistic acoustics. (By connecting a DTS Digital Surround decoder, you can also listen to DTS Digital Surround sound.)

DVD menu
Menu recorded on a DVD-Video that enables the user to select subtitles language, dubbing, etc.

finalize
Operation that enables discs recorded or edited with this unit to be played back on other DVD players.

interlaced scanning
Technology that alternately displays odd-numbered scanning lines and even-numbered scanning lines. Also called "480i", "i" meaning "interlace".

letter box
Feature that displays black bands above and below the playback images during playback of a disc recorded in wide (16:9) format on a 4:3 TV connected to this unit.

MP3
One type of audio compression that uses MPEG1. This format compresses sound to about 1/10, without inpairing the original sound quality.

one touch repeat
If ONE TOUCH REPEAT is pressed during playback, playback returns to a point 10 sec earlier and resumes.

original title
An image of title cerated when they are recorded the disc is called "original title".

OTR
One-touch Timer Recording. Start a timed recording by pushing just one button (up to 6 hours).

pan scan
Feature that cuts the left and right edges of playback images to a 4:3 size during playback of a disc recorded in wide (16:9) format on a 4:3 TV connected to this unit.

parental control
Some discs control viewing according to the age of the viewer. A control level can be set for those types of discs.

parental control settings
Level 1: Adult discs and general discs (R-rated discs included) cannot be played back.
Level 2 to 3: Adult discs and R-rated discs cannot be played back.
Level 4 to 7: Adult discs cannot be played back. (Level 4 to 7 discs contain content children age 15 and younger may not see.)
Level 8: All discs can be played back without restriction.

PBS
Acronym for Public Broadcast System. The PBS channel transmits data for auto clock setting.

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Glossary

playlist
User-created titles based on each original title.

progressive scanning
Technology that simultaneously displays odd-numbered scanning lines and even-numbered scanning lines from top to bottom. Also called "480p", "p" meaning "progressive".

region number
There is software that enables DVD playback in differing countries. The number of that kind of disc is called the "region number".

SETUP MENU
Menu that contains settings for various features of this unit, such as recording and playback. Timer recording is also set from the SETUP MENU.

slide show
Technique for flipping through and viewing many images (JPEG files).

subtitle language
Language used for subtitles of movies, etc. Viewers can watch in a language of their choosing.

title
A program recorded on a disc is called a "title".

title menu
Menu that lists titles and tracks recorded on the disc. It is used for playback and disc editing.

top menu
Menu on a DVD-Video for selecting chapters for playback, subtitle language, etc. Some DVD-Video call this top menu "Title".

track
A song on a music CD is called a "track".

TRACK INFO screen
Screen that appears when TITLE MENU is pressed during a music CD is inserted.

Video mode
This recording format is compatible with commercially available DVD players.

virtual surround
Technology that converts audio that is not recorded in surround sound into audio that assimilates surround sound.

VR mode
This recording format is the basic DVD-RW recording format, and lets you enjoy the various editing functions available with this unit.

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Language code list

Enter the appropriate code number for the initial settings "DVD MENU", "AUDIO" and/or "SUBTITLE" (see page 24).

Language Name	Code	Language Name	Code	Language Name	Code	Language Name	Code
Abkhazian	1112	Fiji	1620	Lingala	2224	Singhalese	2919
Afar	1111	Finnish	1619	Lithuanian	2230	Slovak	2921
Afrikaans	1116	French	1628	Macedonian	2321	Slovenian	2922
Albanian	2927	Frisian	1635	Malagasy	2317	Somali	2925
Amharic	1123	Galician	1722	Malay	2329	Spanish	1529
Arabic	1128	Georgian	2111	Malayalam	2322	Sundanese	2931
Armenian	1835	German	1415	Maltese	2330	Swahili	2933
Assamese	1129	Greek	1522	Maori	2319	Swedish	2932
Aymara	1135	Greenlandic	2122	Marathi	2328	Tagalog	3022
Azerbaijani	1136	Guarani	1724	Moldavian	2325	Tajik	3017
Bashkir	1211	Gujarati	1731	Mongolian	2324	Tamil	3011
Basque	1531	Hausa	1811	Nauru	2411	Tatar	3030
Bengali; Bangla	1224	Hebrew	1933	Nepali	2415	Telugu	3015
Bhutani	1436	Hindi	1819	Norwegian	2425	Thai	3018
Bihari	1218	Hungarian	1831	Oriya	2528	Tibetan	1225
Breton	1228	Icelandic	1929	Panjabi	2611	Tigrinya	3019
Bulgarian	1217	Indonesian	1924	Pashto, Pushto	2629	Tonga	3025
Burmese	2335	Interlingua	1911	Persian	1611	Turkish	3028
Byelorussian	1215	Irish	1711	Polish	2622	Turkmen	3021
Cambodian	2123	Italian	1930	Portuguese	2630	Twi	3033
Catalan	1311	Japanese	2011	Quechua	2731	Ukrainian	3121
Chinese	3618	Javanese	2033	Rhaeto-Romance	2823	Urdu	3128
Corsican	1325	Kannada	2124	Romanian	2825	Uzbek	3136
Croatian	1828	Kashmiri	2129	Russian	2831	Vietnamese	3219
Czech	1329	Kazakh	2121	Samoan	2923	Volapük	3225
Danish	1411	Kirghiz	2135	Sanskrit	2911	Welsh	1335
Dutch	2422	Korean	2125	Scots Gaelic	1714	Wolof	3325
English	1524	Kurdish	2131	Serbian	2928	Xhosa	3418
Esperanto	1525	Laothian	2225	Serbo-Croatian	2918	Yiddish	2019
Estonian	1530	Latin	2211	Shona	2924	Yoruba	3525
Faroese	1625	Latvian, Lettish	2232	Sindhi	2914	Zulu	3631

Additional information

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Error/Warning message list

	ERROR/WARNING MESSAGE	CAUSE	POSSIBLE SOLUTIONS	PAGE
Power ON	SYSTEM ERROR PLEASE WAIT	The power supply was shut down without termination process due to a power failure or disconnection of the AC cord plug. (Abnormal termination)	Wait until the message disappears.	--
	SYSTEM ERROR PLEASE WAIT DISC CHECKING	The power was abruptly turned off before writing onto the disc was completed.	The data is now restoring.	--
	SYSTEM ERROR DISC MIGHT BE FAILED PRESS ENTER/SELECT	The data restoration was completed.	Press **ENTER/SELECT**, then the screen returns to the normal display. The data might not be restored even if the restoration process is performed.	52
Playback	NO DISC	When a disc was not loaded into the unit, **PLAY** was pressed.	Load a disc.	33
	REGION CODE ERROR	A disc specified other than "Region 1" or "Region ALL" was loaded.	A disc specified other than "Region 1" or "Region ALL" cannot be played back.	9
	INCORRECT DISC - C1##	The disc cannot be identified.	Check the disc and load a proper disc.	9
Recording	NO DISC	When a disc was not loaded into the unit, **REC/OTR** was pressed.	Load a disc.	54
	PROCESSING PLEASE WAIT	The recording termination is processing.	Wait until the process is completed.	--
	RECORDING INTERRUPTED - C204	Disc space became full in recording.	Erase unnecessary titles or load another disc and restart recording.	72
	CANNOT RECORD - C2##	· Recording was tried onto the disc having no space. · Recording was tried onto the disc which does not support recording. · Disc erase-protection is applied. · Recording was tried onto the finalized DVD-RW (Video Format) · Adding data was tried onto the disc recorded in the other unit. · Adding data was tried to the disc where PC data was recorded.	· Check the disc space. · Load a recordable disc. · Set "Protect disc" to "OFF". · Undo finalization. · Load another disc for recording.	35 10 28 28 --
	DISC ERROR - C2##	A scratch or contamination was found on the disc.	Check the disc and reload it, or use another disc for recording.	--
	CANNOT RECORD, EXCEEDS LIMITED NUMBER OF TITLES.	99 titles were recorded on the disc.	Erase unnecessary titles or load another disc.	72
	CANNOT RECORD, EXCEEDS LIMITED NUMBER OF CHAPTER.	999 chapters were existed on the disc.	Erase unnecessary chapters or load another disc.	69
	CANNOT RECORD PROTECTED IMAGE	You tried to record a copy-guard video.	You cannot record the video containing copy-guard signal.	53
	RECORDING INTERRUPTED PROTECTED IMAGE	The video was changed to a copy-guard format in recording.	You cannot record the video containing copy-guard signal.	53
	CANNOT RECORD IN VIDEO MODE. COPY IMAGE ONCE ONLY.	You tried to record the "Copy Once" program onto a disc (Video mode).	Load a DVD-RW Ver. 1.1 or later (VR mode) with CPRM.	53
	CANNOT RECORD ON DISC. THIS IS NOT CPRM DISC.	You tried to record the "Copy Once" program onto a disc without CPRM.	Load a DVD-RW Ver. 1.2 or later (VR mode) with CPRM.	53
Dubbing	SWITCHING TO INTERLACE OUTPUT FOR COPYING	You started dubbing from a disc to a video tape in the progressive mode.	The mode is automatically changed to interlaced mode if dubbing from a disc to a video is started.	77
	CANNOT COPY DATA - C251	No video tape nor disc where dubbing is available is loaded.	Load a video tape and disc where dubbing is available.	76, 77
	CANNOT COPY DATA - C254(C255)	You tried to dub a video containing the copy-guard signal.	You cannot dub the video containing copy-guard signal.	53
	COPYING INTERRUPTED	The video tape or the disc became full in dubbing.	Load another video tape or disc for recording and restart dubbing.	76, 77
Disc setup	DISC ERROR - C3##	You could not perform "Format"/"Finalize"/ "Undo finalize"/"Protect disc ON/OFF" due to a scratch or contamination on the disc.	Check the disc and reload it, or use another disc for recording.	--
Title Menu	CANNOT EDIT	Editing cannot be performed due to a scratch or contamination on the disc.	Check the disc and reload it, or use another disc for recording.	--
	PROCESSING PLEASE WAIT	A process taking longer time such as editing was performed.	Wait until the process is completed.	--

NOTE: Any error/warning message other than those above might appear. Take measures against such a message by seeing the possible solutions above.

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Problems and troubleshooting

Use the following check list for troubleshooting when you have problems with your unit. Consult your local dealer or service outlet if problems persist.
Be sure all connections are properly made when using with other units.

| SYMPTOMS	POSSIBLE SOLUTIONS	PAGE
DVD/VCR		
DVD/VCR does not operate.	• Make sure the power cord is plugged in. • Try another AC outlet. • Power is off, check fuse or circuit breaker. • Unplug unit, then plug it back in. • Select the DVD or VCR mode before operating.	15 – – 15 22
No picture.	• Antenna connection is not correct or antenna cable is disconnected. • The video channel is not in the correct position or the TV is not set to the video channel 3 or 4. • Check the unit is connected correctly. • The video input selector of the TV is not set to VIDEO. Set to VIDEO (or equivalent). • Channel is set to the external mode.	16~19 22 16~21 – –
No sound.	• Check the unit is connected correctly. • Check the input selector of the amplifier is set properly. • The unit is in the Special playback mode.	16~21 – 36, 50
The remote control does not function.	• Aim at the remote control at the remote sensor. • Operate within Approx. 5 Meters or reduce the light in the room. • Clear the path of the beam. • The batteries are weak. Replace the batteries. • Check the batteries are inserted correctly.	15
No CATV reception	• Check all CATV connections. • Station or CATV system problems, try another station.	18, 19
DVD		
Display is not shown in your language.	• Select proper language in the SETUP MENU.	24
Playback doesn't start.	• No disc is inserted. • The disc may be dirty. Clean up the disc. • The unit cannot play DVD-ROMs, etc.	33 9 9
Stopping playback, search, slow-motion play, repeat play, or program play, etc. cannot be performed.	• Some discs may not do some of the functions.	–
Recording does not work.	• Check the disc space, using the disc information. • Check the disc for protection. • Check if the video to be recorded is not the copy guard supporting tape. • Check the number of the recorded titles is 99, using the disc information. • Check the number of the total chapters for the recorded titles is 999, using the disc information. • In a DVD-RW of Ver.1.0, recording in video mode does not work. Check the disc type.	35 28 53 35, 52 35, 52 10

Additional information

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Problems and troubleshooting / Video head cleaning

| SYMPTOMS	POSSIBLE SOLUTIONS	PAGE
VCR		
TV recording does not work.	• The erase prevention tab of the video cassette is broken off. • The unit is in the external input mode.	48, 54
Timer recording does not work.	• The time is not set correctly. • The recording start/end time is not set correctly. • TIMER REC has not been pressed (🅔 is not lit).	26 57 57
Noise bars on screen.	• Tracking adjustment beyond range of automatic tracking circuit. Try Manual tracking adjustment. • Video heads are dirty. • The tape is worn or damaged.	50 84 —
OTHER		
No picture, or the screen is blurred or divided into two parts.	• The progressive scanning mode is active through the unit is connected to a TV via the VIDEO OUT jack.	47
No 4:3 (16:9) picture	• The setup does not match your TV.	29
No on-screen display	• Select Display "ON".	28
Nothing appears in the display window	• Check the DIMMER setting for SETUP.	28
No surround sound	• The setup does not match your stereo system.	21
The unit or remote operation key is not functioning.	• Turn off the unit and unplug the AC power cord for several minutes, then replug it.	—
Playback does not start when the title is selected.	• Check the Parental setup.	25
Audio soundtrack and/or subtitle language is not changed when you playback a DVD.	• Multilingual language is not recorded on the DVD disc.	24
No subtitles	• Some discs have no subtitles. • Subtitles are cleared. Press SUB TITLE.	41, 24
Angle cannot be changed.	• Multi-angles are not recorded on the DVD disc.	—
"👆" appears on the screen.	• The function is prohibited with the unit or the disc.	—

Video head cleaning

Video head clogging
The video heads are the means by which the DVD/VCR reads the picture from the tape during playback. In the unlikely event that the heads become dirty enough to be clogged, no picture will be played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy). If this is the case, have the DVD/VCR checked by qualified service personnel.
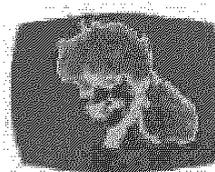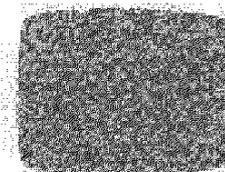
Good Picture   Snowy Picture

NOTES: • DO NOT ATTEMPT TO CLEAN THE VIDEO HEADS OR SERVICE THE UNIT BY REMOVING THE REAR COVER.
• Video heads may eventually wear out and should be replaced when they fail to produce clear pictures.
• To help prevent video head clogging, use only good quality VHS tapes. Discard worn out tapes.

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Specifications

GENERAL

Power supply:	AC 120V 60Hz
Power consumption:	Operation: 32W
	Standby: 2.5W (if display window is off.)
Weight:	12.1 lbs (5.5 kg)
Dimensions:	Width : 16-15/16 inches (430 mm)
	Height : 3-7/8 inches (99 mm)
	Depth : 12-1/4 inches (311.5 mm)
Operating temperature:	41°F to 95°F (5°C to 35°C)
Operating humidity:	Less than 80% RH
Inputs/Outputs:	
Video:	In: 1Vp-p/75 ohm
	Out: 1Vp-p/75 ohm
Audio:	In: –8dBm/50k ohm
	Out: –8dBm/1k ohm
Antenna:	UHF/VHF IN/OUT: 75 ohm coaxial
Hi-Fi frequency response:	20Hz to 20,000Hz
Hi-Fi dynamic range:	More than 90dB

VCR section

|	
Video head:	4 Rotary Heads
Audio track:	Hi-Fi Sound - 2 Tracks / MONO Sound - 1 Track
Tuner:	181 Channel Freq. Synthesized

VHF   2-13
UHF   14-69
CATV   14-36 (A)-(W)   37-59 (AA)-(WW)
         60-85 (AAA)-(ZZZ)   86-94 (86)-(94)
         95-99 (A-5)-(A-1)   100-125 (100)-(125)
         01 (5A)

RF channel output:	Channel 3 or 4, Switchable
F.FWD/REW Time:	Approx. 1minute and 48 seconds (with T-120 Cassette Tape)(at+25°C)

DVD section

Signal system:	NTSC
Applicable disc:	DVD (12cm, 8cm), CD (12cm, 8cm)
Recording format:	DVD-Video Recording (VR mode)
	DVD-VIDEO (Video mode)
Recording discs:	DVD-RW, DVD-R
Recording time:	XP: Approx. 60 min
(based on a 4.7GB disc)	SP: Approx. 120 min
	LP: Approx. 240 min
	SLP: Approx. 360 min
Audio characteristics	
frequency response:	DVD: 4Hz - 22kHz
	CD: 4Hz - 20kHz
S/N Ratio:	90dB
Harmonic distortion:	0.02%
Wow and flutter:	Less than 0.01% Wrms
Dynamic range:	More than 90dB
Output:	Video : (RCA) 1 Vp-p/75 ohm
	Audio : (RCA) –8 dBm/1k ohm
	Digital Audio : 0.5Vp-p/75 ohm
Pickup:	CD : Wavelength: 784 nm
	Maximum output power: 200 mW
	DVD : Wavelength: 658 nm
	Maximum output power: 100 mW

ACCESSORIES:	Remote control x 1
	75 ohm Coaxial Cable x 1
	AUDIO/VIDEO Cable x 1
	Battery UM4 x 2
	BLANK DVD-RW Disc (4.7GB) x 1

Additional Information

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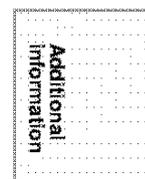
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