LG

HDD/DVD RECORDER

OWNER'S MANUAL

MODEL : RH7900H

Before connecting, operating or adjusting this product, please read this instruction booklet carefully and completely.

HDD HARD DISK DRIVE

DVD VIDEO/RW/R

RW COMPATIBLE

RW DVD+ReWritable

COMPACT disc DIGITAL VIDEO

COMPACT disc DIGITAL AUDIO

DOLBY DIGITAL

dts DIGITAL OUT

3D Surround Sound

MP3 CD-R/RW

Plays Windows Media™

DivX VIDEO

VIDEO plus+
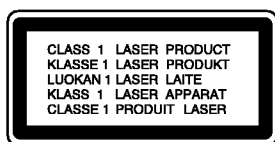
HDMI HIGH DEFINITION MULTIMEDIA INTERFACE

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

Caution: The apparatus should not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, should be placed on the apparatus.

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CLASS 1 LASER PRODUCT
KLASSE 1 LASER PRODUKT
LUOKAN 1 LASER LAITE
KLASS 1 LASER APPARAT
CLASSE 1 PRODUIT LASER
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CAUTION: This product employs a Laser System.

To ensure proper use of this product, please read this owner's manual carefully and retain for future reference. Should the unit require maintenance, contact an authorized service center.

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 when open. DO NOT STARE INTO BEAM.

WARNING: Do not install this equipment in a confined space such as a bookcase or similar unit.

This product is manufactured to comply with the radio interference requirements of EEC DIRECTIVE 89/336/EEC, 93/68/EEC and 73/23/EEC.

POWER: This HDD/DVD Recorder operates on a mains supply of 110-240V~, 50/60Hz.

WIRING: This DVD & HDD Recorder is supplied with a BSI 1363 approved 13 amp mains plug, fused at 5 amp. When replacing the fuse always use a 5 amp BS 1362, BSI or ASTA approved type. Never use this plug with the fuse cover omitted. To obtain a replacement fuse cover contact your dealer. If the type of plug supplied is not suitable for the mains sockets in your home, then the plug should be removed and a suitable type fitted. Please refer to the wiring instructions below:

WARNING: A mains plug removed from the mains lead of this DVD & HDD Recorder must be destroyed. A mains plug with bared wires is hazardous if inserted in a mains socket. Do not connect either wire to the earth pin, marked with the letter E or with the earth symbol ⏚ or coloured green or green and yellow.
If any other plug is fitted, use a 5 amp fuse, either in the plug, or at the distribution board.

IMPORTANT: The wires in this mains lead are coloured in accordance with the following codes:
- BLUE: NEUTRAL, BROWN: LIVE - As the colours of the wires in the mains lead of this DVD & HDD Recorder may not correspond with the coloured marking identifying the terminals in your plug, proceed as follows: The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

CAUTION concerning the Power Cord

Most appliances recommend they be placed upon a dedicated circuit;
That is, a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits. Check the specification page of this owner's manual to be certain.

Do not overload wall outlets. Overloaded wall outlets, loose or damaged wall outlets, extension cords, frayed power cords, or damaged or cracked wire insulation are dangerous. Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance, and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized servicer.

Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

SERIAL NUMBER:
You can find the serial number on the back of the unit. This number is unique to this unit and not available to others. You should record requested information here and retain this guide as a permanent record of your purchase.

Model No. _____

Serial No. _____

VIDEO*plus+*

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

Contents

Introduction

To ensure proper use of this product, please read this owner's manual carefully and retain for future reference.

This manual provides information on the operation and maintenance of your recorder. Should the unit require service, contact an authorized service location.

Symbol Used in this Manual

The lightning flash symbol alerts you to the presence of dangerous voltage within the product enclosure that may constitute a risk of electric shock.

The exclamation point alerts you to the presence of important operating and maintenance / servicing instructions.

Indicates hazards likely to cause harm to the unit itself or other material damage.

Note:
Indicates special notes and operating features.

Tip:
Indicates tips and hints for making the task easier.

A section whose title has one of the following symbols are applicable only to the disc represented by the symbol.

HDD Titles recorded on the HDD
-RWVR DVD-RW with VR recording mode
-RWVideo DVD-RW with Video recording mode
+RW DVD+RW disc
-R DVD-R disc
+R DVD+R disc
DVD DVD-Video disc
VCD Video CDs
ACD Audio CDs
DivX DivX files
MP3 MP3 files
WMA WMA files
JPEG JPEG files

About the ⊘ Symbol Display

" ⊘ " may appear on your TV display during operation and indicates that the function explained in this owner's manual is not available on that specific DVD video disc.

Notes on Discs

Handling Discs
Do not touch the playback side of the disc. Hold the disc by the edges so that fingerprints do not get on the surface. Never stick paper or tape on the disc.

Storing Discs
After playing, store the disc in its case. Do not expose the disc to direct sunlight or sources of heat and never leave it in a parked car exposed to direct sunlight.

Cleaning Discs
Fingerprints and dust on the disc can cause poor picture quality and sound distortion. Before playing, clean the disc with a clean cloth. Wipe the disc from the center out.
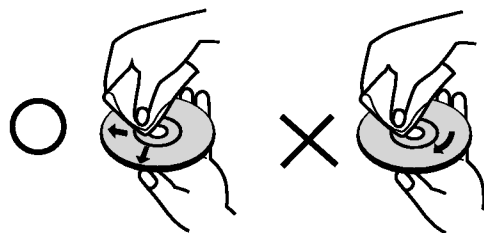
Do not use strong solvents such as alcohol, benzine, thinner, commercially available cleaners, or anti-static spray intended for older vinyl records.

Moisture Condensation

Never operate this product immediately after moving it from a cold location to a warm location. Leave it for two or three hours without operating it. If you use this product in such a situation, it may damage discs/tapes and internal parts.

Recordable and Playable Discs

DVD-RW (Digital Video Disc - ReWritable):
- DVD-RW discs can be formatted for VR mode recording or Video mode recording.
- These Discs can be recorded on repeatedly. Recordings can be erased, then you can record again on the same Disc.

[VR mode]
- Recordings can be extensively edited
- Playable only on VR mode compatible players (after finalization)

[Video mode]
- Playable on regular DVD players (after finalization)
- Limited editing features

DVD-R (Digital Video Disc - Recordable)
- These Discs can be recorded only once. After you finalize a DVD-R, you cannot record on it or edit it.
- DVD-R discs can be only formatted to Video mode.
- Playable on regular DVD players (after finalization)
- Limited editing features

DVD+RW (Digital Video Disc + ReWritable)
- These Discs can be recorded on repeatedly. Recordings can be erased, then you can record again on the same Disc.
- Playable on DVD+RW compatible players (automatically finalization)
- The edited contents are playable on DVD+RW compatible players only after finalization
- Recordings can be edited the title/chapter

DVD+R (Digital Video Disc + Recordable)
- These Discs can be recorded only once. After you finalize a DVD+R, you cannot record on it or edit it any more.
- Playable on DVD+R compatible players (after finalization)
- Any edited contents are not be compatible on DVD+R compatible players. (Hide, chapter combine, added chapter mark, etc.)
- Limited title/chapter editing features.

DVD+R DL (Digital Video Disc + Recordable; Double Layer)
- These Discs can be recorded only once. After you finalize a DVD+R DL, you cannot record on it or edit it any more.
- Storage space is nearly doubled with double layer DVD+R media, allowing consumers to record up to 8.5GB of video on a single DVD+R disc.
- Playable on DVD+R DL compatible players (after finalization)
- Any edited contents are not be compatible on DVD+R DL compatible players. (Hide, chapter combine, added chapter mark, etc.)
- Limited title/chapter editing features.

The recommendable recordable DVD discs

DVD-R	DVD+R	DVD-RW	DVD+RW	DVD+R(DL)
SONY (8x, 16x)	SONY (2.4x, 4x, 8x, 16x)	Victor (1x, 4x)	SONY (2.4x)	Mitsubishi (2.4x)
TDK (4x, 8x)	TDK (4x)	Maxell (1x, 2x, 4x)	TDK (2.4x)	Maxell (2.4x)
Verbatim (4x, 8x)	Mitsubishi (4x, 8x)	TDK (2x)	Philips (4x)	-
Panasonic (2x, 4x)	Ricoh (2x, 4x, 8x)	Mitsubishi (2x)	Ricoh (2.4x)	-
-	-	-	HP (2.4x, 4x)	-

Note:

If a DVD-RW/DVD+RW discs is recorded using a personal computer or other DVD recorder, you cannot format the disc using this recorder. So if you want to use the disc on this recorder, you must format the disc using the original recorder.

Playable Discs

DVD (8 cm / 12 cm disc)
● Discs such as movies that can be purchased or rented

Video CD (VCD) (8 cm / 12 cm disc)
● VIDEO CDs or CD-Rs/CD-RWs in VIDEO CD/Super VIDEO CD format

Audio CD (8 cm / 12 cm disc)
● Music CDs or CD-Rs/CD-RWs in music CD format that can be purchased

CD-R/CD-RW (8 cm / 12 cm disc)
● CD-R/CD-RW discs that contain audio titles, DivX, MP3, WMA, or JPEG files.

Notes:
– Depending on the conditions of the recording equipment or the CD-R/RW (or DVD±R/RW) disc itself, some CD-R/RW (or DVD±R/RW) discs cannot be played on the unit.
– Do not attach any seal or label to either side (the labeled side or the recorded side) of a disc.
– Do not use irregularly shaped CDs (e.g., heart-shaped or octagonal). Doing so may result in malfunctions.
– Depending on the recording software & the finalization, some recorded discs (CD-R/RW or DVD±R/RW) may not be playable.
– DVD-R/RW, DVD+R/RW and CD-R/RW discs recorded using a personal computer or a DVD or CD Recorder may not play if the disc is damaged or dirty, or if there is dirt or condensation on the Recorder's lens.
– If you record a disc using a personal computer, even if it is recorded in a compatible format, there are cases in which it may not play because of the settings of the application software used to create the disc. (Check with the software publisher for more detailed information.)

Regional code of the recorder and DVDs
This recorder is designed and manufactured for playback of Region 2 encoded DVD software. The region code on the labels of some DVD discs indicates which type of the recorder can play those discs. This unit can play only DVD discs labeled 2 or ALL. If you try to play any other discs, the message "Incorrect region code. Can't play back" will appear on the TV screen. Some DVD discs may not have a region code label even though their playback is prohibited by area limits.

Notes on DVDs and Video CDs
Some playback operations of DVDs and Video CDs may be intentionally fixed by software manufacturers. As this unit plays DVDs and Video CDs according to disc content designed by the software manufacturer, some playback features of the unit may not be available or other functions may be added.
Refer also to the instructions supplied with the DVDs and Video CDs. Some DVDs made for business purposes may not be played on the unit.

Remote Control Operation

Point the Remote Control at the remote sensor and press the buttons.

Remote Control Battery Installation
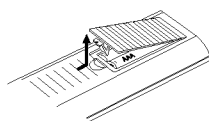
Remove the battery cover on the rear of the Remote Control, and insert two R03 (size AAA) batteries with ⊕ and ⊖ matched correctly.

⚠ **Caution**
Do not mix old and new batteries. Never mix different types of batteries (standard, alkaline, etc.).

About the internal hard disk drive

The internal hard disk drive (HDD) is a fragile piece of equipment. Please use the recorder following the guidelines below to protect against possible HDD failure.
We recommend that you back up your important recordings onto DVD discs in order to protect against accidental loss.

- Do not move the recorder while it is on.
- Install and use the recorder on a stable, level surface.
- Do not block the rear vent/cooling fan.
- Do not use the recorder in excessively hot or humid places, or in places that may be subject to sudden changes in temperature. Sudden changes in temperature can cause condensation to form inside the recorder. This can be a cause of HDD failure.
- While the recorder is switched on, do not unplug from the wall socket or switch the electricity off from the breaker switch.
- Do not move the recorder immediately after switching it off. If you need to move the recorder, please follow the steps below:
  1. After the message POWER OFF is shown in the display, wait at least two minutes.
  2. Unplug from the wall socket.
  3. Move the recorder.
- If there's a power failure while the recorder is on there is a chance that some data on the HDD will be lost.
- The HDD is very delicate. If used improperly or in an unsuitable environment, it is possible that the HDD will fail after a few years of use. Signs of problems include playback unexpectedly freezing and noticeable block noise (mosaic) in the picture. However, sometimes there will be no warning signs of HDD failure.

  If the HDD fails, no playback of recorded material will be possible. In this case it will be necessary to replace the HDD unit.

Disc-related terms

DVD +R (Double Layer)
Double layer recording technology offers two recordable layers on a single DVD disc, providing nearly double the capacity of 4.7GB single layer DVDs. The greatest, most valuable benefit of double layer recording technology is increased capacity. Storage space is nearly doubled with double layer DVD+R media, allowing consumers to burn up to 8.5GB of video on a single DVD+R disc.

DVD ±R / DVD ±RW
DVD -R and DVD +R are two different standards for recordable DVD drives and discs. This format allows information to be recorded onto the DVD disc only once. DVD +RW and DVD -RW are two standards for re-writable media, meaning the DVD content can be erased and re-recorded. Single-sided discs can hold 4.38 Gigabytes and double-sided discs hold twice as much.

VCD (Video CD)
A VCD holds up to 74 minutes (650 MB disc) or 80 minutes (700 MB disc) of MPEG-1 full-motion video along with quality stereo sound.

MPEG
MPEG is an international standard for video and audio compression. MPEG-1 is used in encoding video for VCD and provides for multichannel surround sound coding such as PCM, Dolby Digital, DTS and MPEG audio.

MP3
MP3 is a popular compression format used for digital audio files that yields very high near-CD quality.

WMA
Windows media audio file. A type of coding / decoding developed by Microsoft Corp.

JPEG
Joint Pictures Expert Group. JPEG is a compressed file format that allows you to save images with no limit on the number of colors.

DivX
DivX is the name of a revolutionary new video codec which is based on the new MPEG-4 compression standard for video.You will be able to play DivX movies using this recorder.

PBC: Playback Control (Video CD only)
Playback control is available for Video CD (VCD) version 2.0 disc formats. PBC allows you to interact with the system via menus, search functions, or other typical computer-like operations. Moreover, still pictures of high resolution can be played if they are included in the disc. Video CDs not equipped with PBC (Version 1.1) operate in the same way as audio CDs.

Title (DVD video discs only)
A title is generally a distinct section of a DVD disc. For example the main feature could be title 1, a documentary describing how the film was made could be title 2, and cast interviews could be title 3. Each title is assigned a reference number enabling you to locate it easily.

Chapter (DVD video discs only)
A chapter is a segment of a title such as a scene in a film or one interview in a series. Each chapter is assigned a chapter number, enabling you to locate the chapter you want. Depending on the disc, chapters may not be recorded.

Scene (VCD)
On a video CD with PBC (playback control) functions, moving pictures and still pictures are divided into sections called "scenes". Each scene is displayed in the menu screen and assigned a scene number, enabling you to locate the scene you want. A scene is composed of one or several tracks.

Track
A distinct element of audiovisual information, such as the picture or sound track for a specific language (DVD), or a musical piece on a video or audio CD. Each track is assigned a track number, enabling you to locate the track you want. DVD discs allow one track of video (with multiple angles) and several tracks of audio.
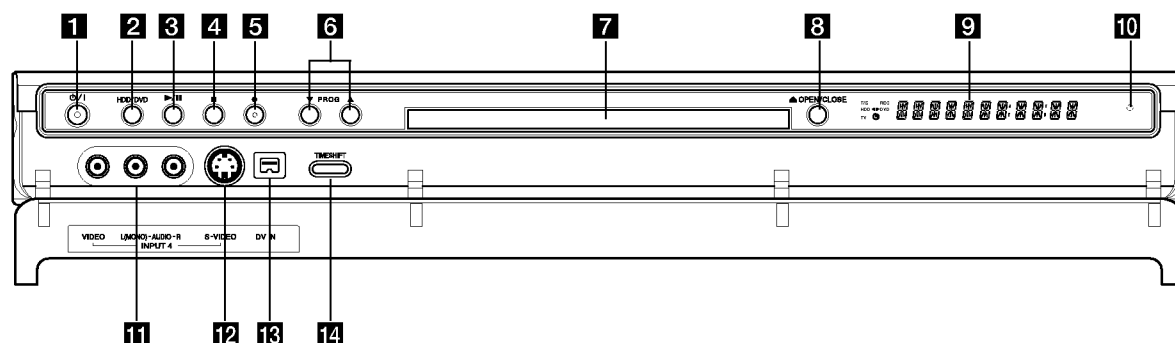
a POWER button and indicator
Switches the recorder ON or OFF.
Lights up red when the recorder is in standby mode.

b HDD/DVD
Set the recorder's mode to HDD or DVD.

c ► / ❚❚ (PLAY / PAUSE)
Starts playback.
Pause playback or recording temporarily, press again to exit pause mode.

d ■ (STOP)
Stops playback or recording.

e ● (REC)
Starts recording. Press repeatedly to set the recording time.

f PROG. (▼/▲)
Scans up or down through memorized channels.

g Disc Tray
Insert a disc here.

h OPEN/CLOSE (▲)
Opens or closes the disc tray.

i Display window
Shows the current status of the recorder.

T/S: Indicates the timeshifting mode.

REC: The recorder is recording.

HDD: The recorder is HDD mode.

DVD: The recorder is DVD mode.

HDD ◄ ► DVD: The recorder is dubbing.

TV: Indicates when the recorder is in TV tuner mode.

⏱ : Indicates when the recorder is in timer recording or a timer recording is programmed.

⦙⦙⦙⦙⦙⦙:⦙⦙:⦙⦙ : Indicates clock, total playing time, elapsed time, title number, chapter/track number, channel, etc.

j Remote Sensor
Point the recorder remote control here.

k INPUT4 (VIDEO IN/AUDIO IN (Left/Right))
Connect the audio/video output of an external source (Audio system, TV/ Monitor, VCR, Camcorder, etc.).

l INPUT 4 (S-VIDEO IN)
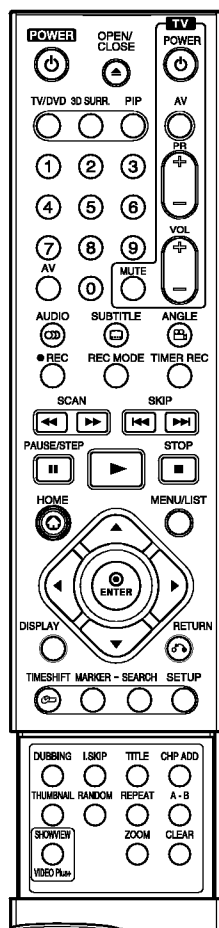Connect the S-Video output of an external source (TV/ Monitor, VCR, Camcorder, etc.).

m DV IN
Connect the DV output of a digital camcorder.

n TIMESHIFT
Activates pause live TV/playback (timeshift) for a live TV program.

Remote Control

0-9 numerical buttons: Selects numbered options in a menu.

3D SURR.: Selects 3D SURROUND during playback.

◄ / ► / ▲ / ▼ (left/right/up/down): Selects an option in the menu.

▲ / ▼ (up/down): Scans up or down through memorized channels.

A-B: Repeat sequence.

ANGLE: Selects a DVD camera angle, if available.

AUDIO: Selects an audio language (DVD) or an audio channel (CD).

AV: Changes the input to use for recording (Tuner, AV1-4, or DV IN).

CHP ADD: Inserts a chapter marker when playing/recording.

CLEAR: Removes a track number on the Program List or a mark on the Marker Search menu.

DISPLAY: Accesses On-Screen Display.

DUBBING: Copies DVD to HDD (or HDD to DVD).

ENTER
- Acknowledges menu selection.
- Displays information while viewing a TV program.

HOME: Accesses or removes the HOME menu.

I.SKIP (INSTANT SKIP): Skips 15 seconds forward on the disc (about the length of a typical TV: commercial).

MARKER: Marks any point during playback.

MENU/LIST: Accesses menu on a DVD disc. Switches between Title List-Original and Title List-Playlist menu.

OPEN/CLOSE (▲): Opens and closes the disc tray.

PAUSE/STEP (II) : Pause playback or recording temporarily, press again to exit pause mode.

PIP: Selects PIP function on or off.

► (PLAY): Starts playback.

POWER: Switches the recorder ON or OFF.

RANDOM: Plays tracks in random order.

REC (●): Starts recording. Press repeatedly to set the recording time.

REC MODE: Selects the recording mode (HQ, SQ, LQ or EQ).

REPEAT: Repeat chapter, track, title, all.

RETURN (♂)
- Removes the menu.
- Displays the menu of a video CD with PBC.

SCAN (◄◄ / ►►): Search backward or forward.

SEARCH: Displays Marker Search menu.

SETUP: Accesses or removes the Setup menu.

VIDEO Plus+: To display the program menu for VIDEO Plus+ System programming.

SKIP (I◄◄ / ►►I): Go to next chapter or track. Returns to beginning of current chapter or track or go to previous chapter or track.

STOP (■): Stops playback or recording.

SUBTITLE: Selects a subtitle language.

THUMBNAIL: Selects a thumbnail picture for the current title and chapter for use in the Original and Playlist menu.

TIMER REC: Displays Timer Record menu.

TIMESHIFT: Activates pause live TV/playback (timeshift) for a live TV program.

TITLE: Displays the disc's Title menu, if available.

TV/DVD: To view channels selected by the recorder tuner or by the TV tuner.

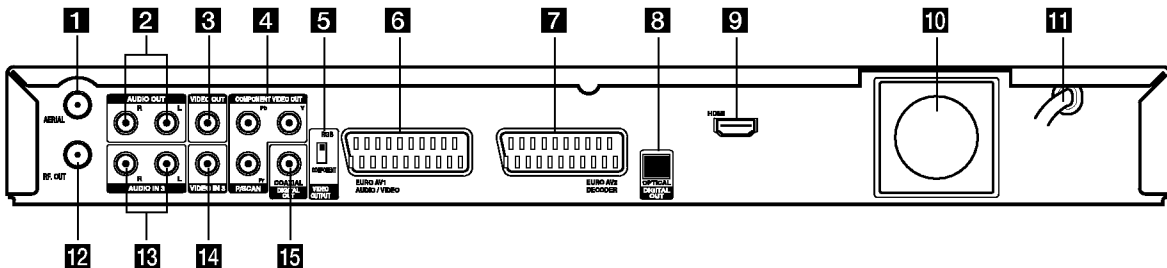**TV Control Buttons**
- POWER: Turns the TV on or off.
- AV: Selects the TV's source.
- PR +/–: Selects TV's channel.
- VOL +/–: Adjusts TV's volume.
- MUTE: Temporarily turns TV sound OFF, press again to restore.

**ZOOM:** Enlarges DVD video image.

Hookup and Settings

1 AERIAL
Connect the aerial to this terminal.

2 AUDIO OUT (Left/Right)
Connect to a TV with audio inputs.

3 VIDEO OUT
Connect to a TV with video inputs.

4 COMPONENT VIDEO OUT/PROGRESSIVE SCAN (Y Pb Pr)
Connect to a TV with Y Pb Pr inputs.

5 VIDEO OUTPUT Switch
Select either COMPONENT VIDEO OUT or RGB signal of EURO AV1 AUDIO/VIDEO terminal depending on how you connect the recorder to the TV.

6 EURO AV 1 AUDIO/VIDEO
Connect to a TV with SCART jack.

7 EURO AV 2 DECODER
Connect the audio/video output of an external source (Pay-TV decoder, Set Top Box, VCR, etc.).

8 OPTICAL (Digital audio out jack)
Connect to digital (optical) audio equipment.

9 HDMI Connector (Type A)
HDMI output providing a high quality interface for digital audio and video.

10 Cooling fan

11 AC Power Cord
Plug into the power source.

12 RF. OUT
Passes the signal from the AERIAL to your TV/monitor

13 AUDIO IN 3 (Left/Right)
Connect the audio output of an external source (Audio system, TV/Monitor, VCR, Camcorder).

14 VIDEO IN 3
Connect the video output of an external source (Audio system, TV/Monitor, VCR, Camcorder).

15 COAXIAL (Digital audio out jack)
Connect to digital (coaxial) audio equipment.

Connecting to the Aerial

Remove the aerial cable plug from your TV set and insert it into the aerial socket at the back of the recorder. Plug one end of the aerial cable into the TV socket on the recorder and the other end into the aerial input socket on your TV set.

RF coaxial connection
Connect the RF. OUT jack on the recorder to the aerial input jack on the TV using the 75-ohm Coaxial Cable supplied **(R)**. The RF. OUT jack passes the signal through from the AERIAL jack.

Rear of TV

Rear of the recorder
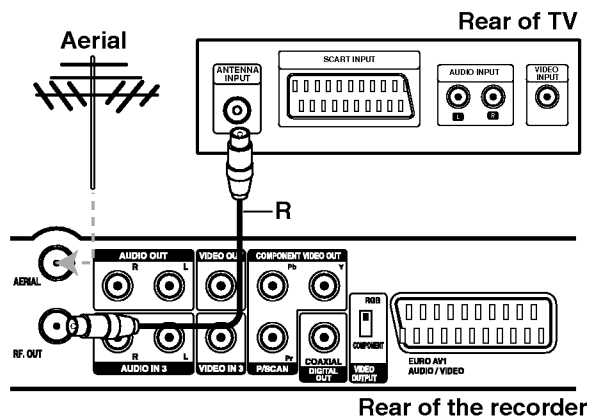
Connections to Your TV

● Make one of the following connections, depending on the capabilities of your existing equipment.
● When using the COMPONENT VIDEO OUT/ PROGRESSIVE SCAN jacks, set the VIDEO OUTPUT switch to COMPONENT. When using the SCART jack, set the VIDEO OUTPUT switch to RGB.

Tips
● Depending on your TV and other equipment you wish to connect, there are various ways you could connect the recorder. Use only one of the connections described below.
● Please refer to the manuals of your TV, VCR, Stereo System or other devices as necessary to make the best connections.

⚠ Caution
– Make sure the recorder is connected directly to the TV. Tune the TV to the correct video input channel.
– Do not connect the recorder's AUDIO OUT jack to the phono in jack (record deck) of your audio system.
– Do not connect your recorder via your VCR. The DVD image could be distorted by the copy protection system.

Rear of TV

Rear of the recorder
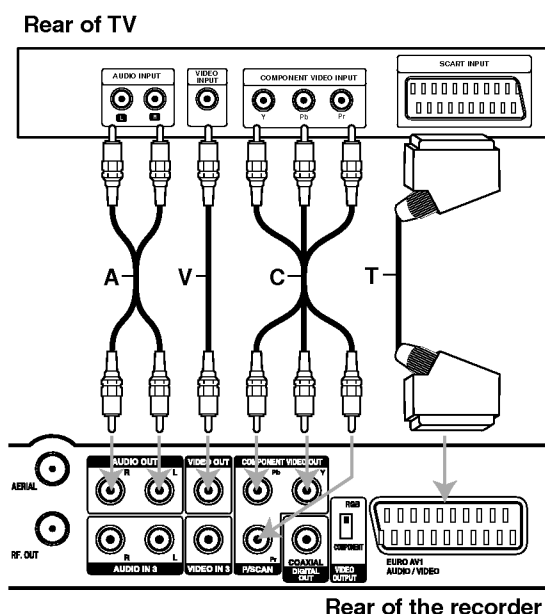
SCART connection
Connect the EURO AV1 AUDIO/VIDEO scart jack on the recorder to the corresponding in jacks on the TV using the scart cable **(T)**.

Video connection
Connect the VIDEO OUT jack on the recorder to the video in jack on the TV using the video cable **(V)**.

Component Video connection
Connect the COMPONENT VIDEO OUT/ PROGRESSIVE SCAN jacks on the recorder to the corresponding input jacks on the TV using an Y Pb Pr cable **(C)**.

Progressive Scan connection
If your television is a high-definition or "digital ready" television, you may take advantage of the recorder's progressive scan output for the highest video resolution possible. If your TV does not accept the Progressive Scan format, the picture will appear scrambled if you try Progressive Scan on the recorder.

Connect the COMPONENT VIDEO OUT/ PROGRESSIVE SCAN jacks on the recorder to the corresponding in jacks on the TV using the Y Pb Pr cable **(C)**.

Notes:
● Set the Progressive to [ON] on the setup menu for progressive signal, see page 20.
● Progressive scan does not work with the analog video connections (yellow VIDEO OUT jack).

⚠ Caution
Once the setting for Progressive Scan output is entered, an image will only be visible on a Progressive Scan compatible TV or monitor. If you set Progressive Scan to [ON] in error, you must reset the recorder. First, remove the disc in the recorder. Next, press STOP (■) and hold it for five seconds before releasing it. The video output will be restored to the standard setting, and a picture will once again be visible on a conventional analog TV or monitor.

Audio (Left/Right) Connection
Connect the left and right AUDIO OUT jacks of the recorder to the audio left and right IN jacks on the TV using the audio cables **(A)**. Do not connect the recorder's AUDIO OUT jack to the phono in jack (record deck) of your audio system.
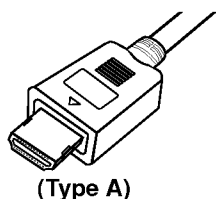
HDMI connection

If you have a HDMI TV or monitor, you can connect it to this recorder using a HDMI cable.

1. Connect the HDMI jack on the recorder to the HDMI jack on a HDMI compatible TV or monitor (H).

2. Set the TV's source to HDMI (refer to TV's Owner's manual).

Notes:

● When you use the HDMI connection, the audio's sampling frequency is outputted only with 48KHz even if you select [96KHz].

● This recorder does not perform internal (2 channel) decoding of a DTS sound track. To enjoy DTS multi channel surround, you must connect this recorder to a DTS compatible receiver via one of this recorder's digital audio outputs.

● **No sound will be outputted from HDMI cable if the [Dolby Digital] or [MPEG] option is not set to [PCM] on the Setup menu (See page 21).**

● The arrow on the cable connector body should face up for correct alignment with the connector on the recorder.

(Type A)

● If there is noise or lines on the screen, please check the HDMI cable.

Tip :

When you use HDMI connection, you can change the resolution (576i, 576p) for the HDMI output by setting the [Progressive Scan] option in the setup menu. (See page 20)
● Progressive Scan ON mode: 576p
● Progressive Scan OFF mode: 576i
● The recorder does not support 720p and 1080i resolutions for HDMI.

⚠ **Caution**

Changing the Progressive Scan mode when the recorder is connected with HDMI connector may result in malfunctions. To solve the problem, turn off the recorder and then turn it on again.

HDMI compatible TV

Rear of the recorder
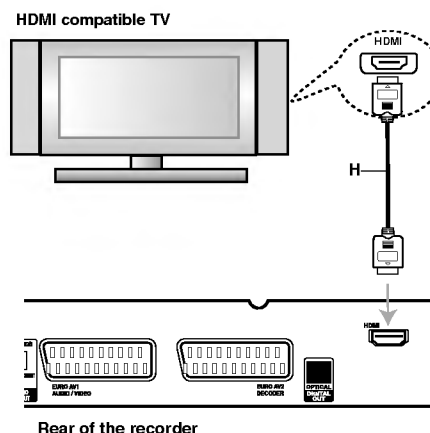
About HDMI

HDMI (High Definition Multimedia Interface) supports both video and audio on a single digital connection for use with DVD Players, Set-Top Boxes, and other AV devices.
HDMI was developed to provide the technologies of HDCP (High Definition Contents Protection). HDCP is used to protect digital content transmitted and received.

HDMI has the capability to support standard, enhanced, or high-definition video plus standard to multi-channel surround-sound audio, HDMI features include uncompressed digital video, a bandwidth of up to 5 gigabytes per second, one connector (instead of several cables and connectors), and communication between the AV source and AV devices such as DTVs.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC.

Additional Information for HDMI

● When you connect a HDMI or DVI compatible device make sure of the followings:

- Try switching off the HDMI/DVI device and this recorder. Next, switch on the HDMI/DVI device and leave it for around 30 seconds, then switch on this recorder.
- The connected device's video input is set correctly for this unit.
- The connected device is compatible with 720(1440)x576i or 720x576 progressive video input.

● Not all HDCP-compatible DVI devices will work with this recorder.

- It's impossible copy protected-DVD title's playback in non-HDCP devices.

Connecting to an Amplifier

Connecting to an amplifier equipped with two channel analog stereo or Dolby Pro Logic II/ Pro Logic

Connect the Left and Right AUDIO OUT jacks on the recorder to the audio left and right in jacks on your amplifier, receiver, or stereo system, using the audio cables **(A)**.

Connecting to an amplifier equipped with two channel digital stereo (PCM) or to an Audio/ Video receiver equipped with a multi-channel decoder (Dolby Digital™, MPEG 2, or DTS)

1. Connect one of the recorder's DIGITAL AUDIO OUT jacks (OPTICAL **O** or COAXIAL **X**) to the corresponding in jack on your amplifier. Use an optional digital (optical **O** or coaxial **X**) audio cable.

2. You will need to activate the recorder's digital output. (See "Audio Settings" on page 21).

Digital Multi-channel sound
A digital multi-channel connection provides the best sound quality. For this you need a multi-channel Audio/Video receiver that supports one or more of the audio formats supported by your recorder (MPEG 2, Dolby Digital and DTS). Check the receiver manual and the logos on the front of the receiver.

⚠ Caution:
Due to the DTS Licensing agreement, the digital output will be in DTS digital out when DTS audio stream is selected.

Notes:
– If the audio format of the digital output does not match the capabilities of your receiver, the receiver will produce a strong, distorted sound or no sound at all.
– Six Channel Digital Surround Sound via digital connection can only be obtained if your receiver is equipped with a Digital Multi-channel decoder.
– To see the audio format of the current DVD in the on-screen display, press AUDIO.
– This recorder does not perform internal (2 channel) decoding of a DTS sound track. To enjoy DTS multi channel surround, you must connect this recorder to a DTS compatible receiver via one of this recorder's digital audio outputs.

Rear of the recorder

Amplifier (Receiver)
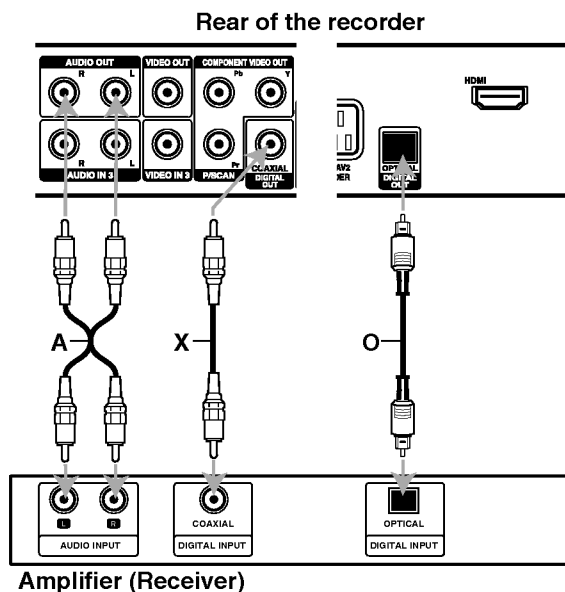
Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

"DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

Accessory Audio/Video (A/V) Connections

Connecting a PAY-TV/Canal Plus Decoder

You can watch or record PAY-TV/Canal Plus programmes if you connect a decoder (not supplied) to the recorder. Disconnect the recorder's mains lead from the mains when connecting the decoder.
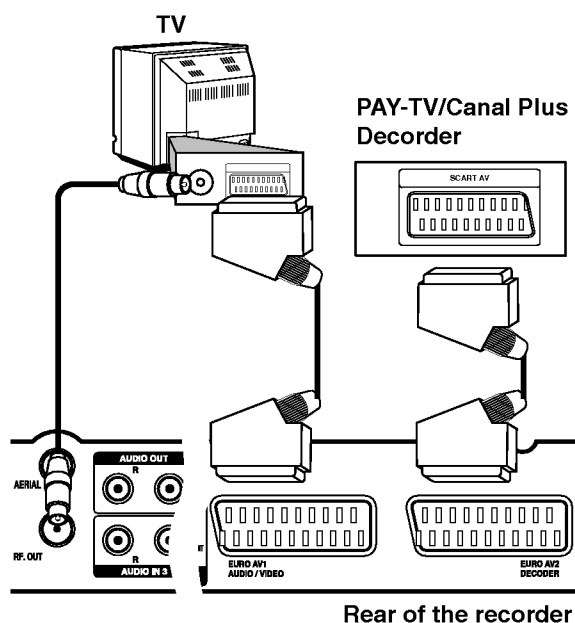
To watch or record PAY-TV/Canal Plus programmes, set the program's [Decoder On/Off] option to [On] on the Setup menu. See "Program Edit" (page 18).

Tip:
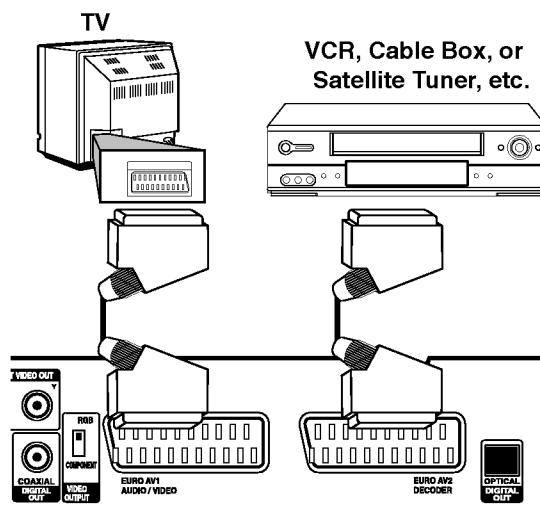You do not need to turn on the recorder to view the signals from the connected tuner on your TV.

Note:
If you disconnect the recorder's mains lead, you will not be able to view the signals from the connected decoder.

Rear of the recorder

Connecting to the EURO AV2 DECODER jack

Connect a VCR or similar recording device to the EURO AV2 DECODER jack of this recorder.

Rear of the recorder

Tip:
You do not need to turn on the recorder to view the signals from the connected tuner on your TV.

Notes:
- Pictures containing copy protection signals that prohibit any copying cannot be recorded.
- If you pass the recorder signals via the VCR, you may not receive a clear image on your TV screen. Be sure to connect your VCR to the recorder and your TV in the order shown below. To watch video tapes, watch the tapes through a second line input on your TV.
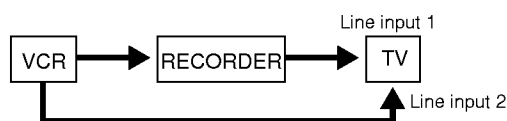
- When you record to a VCR from this recorder, do not switch the input source to TV by pressing the TV/DVD button on the remote.
- If you are using a B Sky B tuner, be sure to connect the tuner's VCR SCART jack to the EURO AV2 DECODER jack.
- If you disconnect the recorder's mains lead, you will not be able to view the signals from the connected VCR or tuner.

Connecting to the INPUT 3 or INPUT 4 Jacks

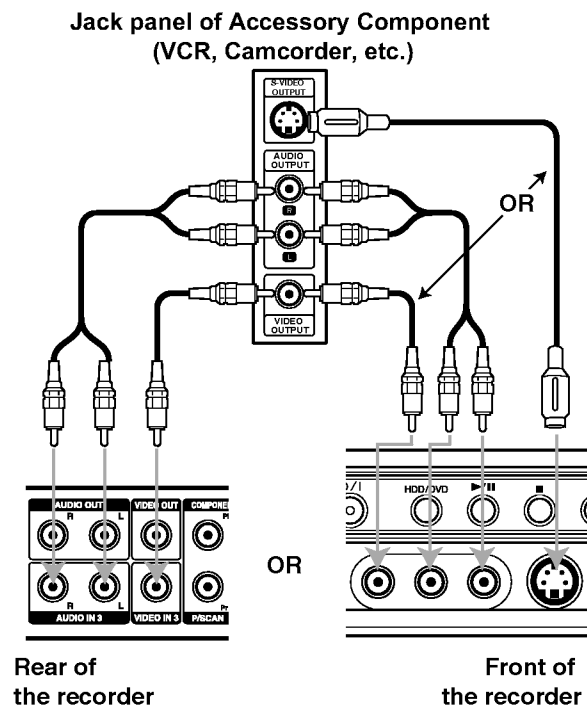Connect the input jacks (AV3, AV4) on the recorder to the audio/video out jacks on your accessory component, using audio/video cables.

Note:
If you use the S-VIDEO IN jack on the front panel, the VIDEO IN jack on the front panel is not available.

Jack panel of Accessory Component (VCR, Camcorder, etc.)

OR

Rear of the recorder

Front of the recorder

Connecting a Digital Camcorder

Using the front panel DV IN jack, it is possible to connect a DV digital camcorder and digitally transfer DV tapes to DVD.

Use a DV cable (not supplied) to connect the DV in/out jack of your DV camcorder to the front panel DV IN jack of this recorder.

Note:
This jack is for connection to DV digital camcorder only. It is not compatible with digital satellite tuners or D-VHS video decks.

DV Digital Camcorder

Front of the recorder
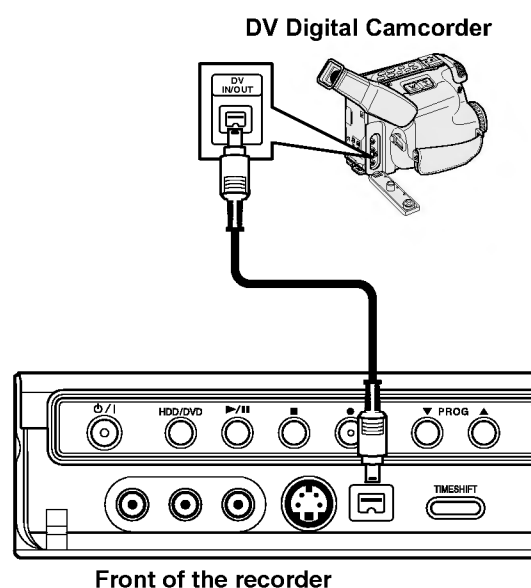
Using the Home Menu

From the Home Menu screen you can access all the Media (HDD, DISC) for playback and recording of the recorder.

1. Press HOME to display the Home Menu screen.
2. Use the ▲ / ▼ and ENTER buttons to select a media you want. Options appears.
3. Use the ▲ / ▼ and ENTER buttons to select the option you want.

4. To exit the HOME menu, press HOME.

● **TV (HDD):** Returns to live TV viewing for HDD recording.

● **TV (DVD):** Returns to live TV viewing for DVD recording.

● **TITLE LIST:** Displays the Title List menu.

● **MOVIE:** Plays back the movie of the DVD-Video, Video CD. Or Displays Movie menu.

● **MUSIC:** Displays Music (or Audio CD) menu.

● **PHOTO:** Displays Photo menu.

Initial Settings

In this menu system, there are several ways to customize the settings provided. Most menus consist of three levels to set up the options, but some require greater depth for the variety of settings.

General Operation

1. Press SETUP and the Setup menu appears.
2. Use ▲ / ▼ to select the desired option.
3. While the desired item is selected, press ▶ to move to the second level.
4. Use ▲ / ▼ to select the second desired option.
5. Press ▶ to move to the third level.

6. Use ▲ / ▼ to select the desired setting then press ENTER to confirm your selection.
   Some items require additional steps.
7. Press SETUP to exit the Setup menu.

Note:
Press ◄ to go back to the previous level.

General Settings

Auto Programming

This recorder is equipped with a frequency synthesized tuner capable of receiving up to 88 TV channels.

Preparation:
● Connect the recorder to the desired type of aerial, as shown in Connecting to the Aerial on page 11.

1. Select the [Auto Programming] option.
2. Press ▶ to move to the third level.
   [Start] icon is highlighted.
3. Press ENTER to begin the channel search.
   The tuner will automatically cycle through all available channels in the area and place them in the tuner's memory.
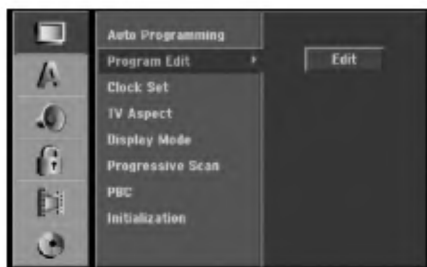
Note:
After you have connected your recorder for the very first time. If you press SETUP for initial setting, you can only set the [Auto Programming] option. Then you can set the other options.

Program Edit

You can edit a channel manually (add, delete, name, move, etc.).

1. Select [Program Edit] option then press ▶.

2. Press ENTER while [Edit] is selected.
   The Program List menu appears.

3. Use ▲ / ▼ to select a PR number then press ENTER.

4. Use ▲ / ▼ to select the program option then press ENTER.

   ● [Program Edit] Sets the channel manually. See "Program Edit" on the right.

   ● [Station Rename] Changes the station name. The display for entering characters appears. To enter characters, see page 51.

   ● [Move] Sorts the programme positions on the Program List. Press ▲ / ▼ to move the selected programme position to a new location.

   ● [Delete] Disables a programme position you do not need.

   ● [Decoder On/Off] Sets the channels for the decoder. You need this setting to watch or record PAY-TV/Canal Plus programmes. Press ENTER so [Decoder] appears on the display. Press ENTER again to turn off the setting.

   ● [NICAM Auto/off] Sets the channels for the NICAM broadcast. Normally, [NICAM] is lit on the display. If the sound from NICAM broadcast is not clear, press ENTER so [NICAM] disappears.

5. Press RETURN (♪➔) repeatedly to exit Program List menu.

Program Edit

You can perform a search to select and store TV channels manually.
When you select [Program Edit] in step 4 above, the display for setting channels appears.

1. Use ◀ / ▶ to select the item and press ▲ / ▼ to change the setting.
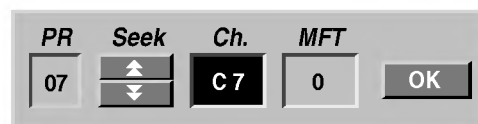
   ● [PR] indicates the selected programme position.

   ● [Seek] Searches for a channel automatically. Searching stops when the recorder tunes in a channel.

   ● [Ch.] Changes the channel number.

   ● [MFT] Fine tunes the channel to obtain a clearer picture.

2. Choose OK then press ENTER to confirm the setting and returns to the Program List menu.

AV1 Decoder

Sets the EURO AV1 AUDIO/VIDEO jack for inputting encoded video signals.

1. Press AV while the Program List menu appears.
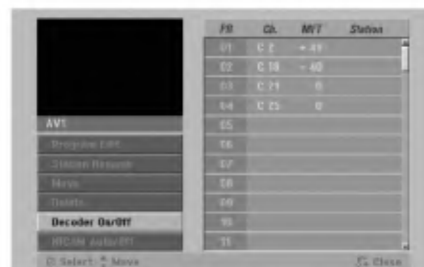
2. Press ENTER to select [On] or [Off]

   ● Off: Inputs the signals from the EURO AV1 AUDIO/VIDEO jack. Normally select this.

   ● On: The encoded video signal input from the EURO AV1 AUDIO/VIDEO jack is output to the EURO AV2 DECODER jack for decoding. The decoded signal is then input back through the EURO AV2 DECODER jack so you can record or view PAY-TV/Canal Plus programmes. In this case, select [AV1] by pressing AV button.

Auto Clock Set

When Channel auto search is completed the actual Time and Date are also set automatically. If the time in the recorder display is not correct, the clock must be set manually.


1. Select [Clock set] option then press ▶.
2. Use ▲ / ▼ to select [Auto] option then press ENTER.

Note:
There are cases where the TV station does not send, or sends wrong date and/or time information and the recorder sets the incorrect time.
If this happens, we recommend that you set the clock manually.

Manual Clock Set

1. Select [Clock set] option then press ▶.
2. Use ▲ / ▼ to select [Manual] option then press ENTER.
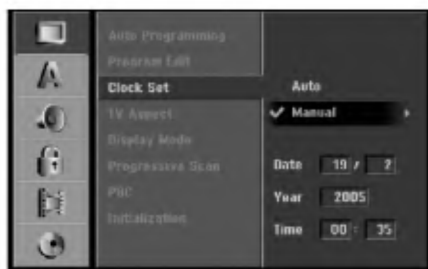
3. Enter the necessary information for date and time.
   ◀ / ▶ (left/right): Moves the cursor to the previous or next column.
   ▲ / ▼ (up/down): Changes the setting at the current cursor position.
4. Press ENTER to confirm your setting, then press SETUP to exit the Setup menu.

TV Aspect

Selects the aspect ratio of the connected TV (4:3 standard or wide).

- [4:3] Select this when connecting to a 4:3 screen TV. When you select [4:3], set [Display Mode] below.
- [16:9] Select this when connecting to a wide-screen TV or TV with a wide mode function.

Display Mode

Selects how to display a wide picture on the screen when [4:3] is selected in [TV Aspect].

- [Letter Box] Displays a wide picture with bands on the upper and lower portions of the screen.
- [Pan Scan] Automatically displays a wide picture on the entire screen and cuts off the portions that do not fit.
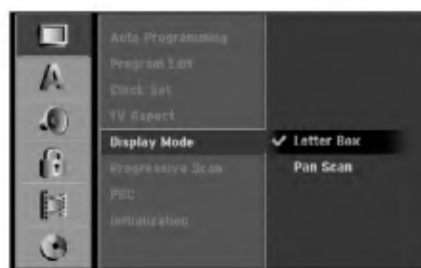
Progressive Scan

Progressive Scan Video provides the highest quality pictures with less flickering.
If you are using the COMPONENT VIDEO OUT/ PROGRESSIVE SCAN or HDMI jacks, but are connecting the recorder to a standard (analog) television, set Progressive Scan to [OFF].
If you are using the COMPONENT VIDEO OUT/ PROGRESSIVE SCAN or HDMI jacks for connection to a TV or monitor that is compatible with a progressive scan signal, set Progressive Scan to [ON].

Note:
Progressive Scan will be disable in the setup menu when the VIDEO OUTPUT switch on the rear panel is set to RGB position.

⚠Caution
Once the setting for Progressive Scan output is entered, an image will only be visible on a Progressive Scan compatible TV or monitor. If you set Progressive Scan to [ON] in error, you must reset the recorder. First, remove the disc in the recorder. Next, press STOP (■) and hold it for five seconds before releasing it. The video output will be restored to the standard setting, and a picture will once again be visible on a conventional analog TV or monitor.

PBC

PBC stands for Playback Control and refers to special menus and navigation features that are available on some Video CDs.
● [ON] Video CDs are played according to the PBC, if available.
● [OFF] Video CDs are played the same way as Audio CDs.

Initialization

You can reset the recorder to its original factory settings and initialize the HDD.
● [Factory Set] If you need to, you can reset the recorder to all its factory settings. Some options cannot be reset. (Rating, Password, and Area Code)
● [HDD format] Initializes the HDD (Hard Disk Drive): everything recorded on the HDD will be erased.
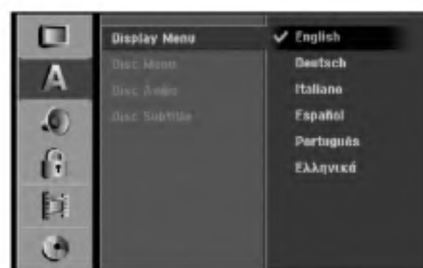
1. Select [Initialize] option then press ▶.

2. Press ▲ / ▼ to select the desired option then press ENTER.
   The confirm message will appear.
3. Use ◄ / ► to select [Yes] or [No] then press ENTER.

Language Settings

Display Menu

Select a language for the Setup menu and on-screen display.

Disc Menu/Audio/Subtitle

- [Original]Refers to the original language in which the disc was recorded.
- [Other] To select another language, press number buttons then ENTER to enter the corresponding 4-digit number according to the language code list in the reference chapter (see page 58). If you enter the wrong language code, press CLEAR.
- [Off](for Disc Subtitle) : Turn off Subtitle.

Audio Settings

Each DVD disc has a variety of audio output options. Set the recorder's Audio Output according to the type of audio system you use.

Dolby Digital / DTS / MPEG

- [Bitstream]: Select "Bitstream" if you connect the recorder's DIGITAL AUDIO OUT jack to an amplifier or other equipment with a Dolby Digital, DTS or MPEG decoder.
- [PCM] (for Dolby Digital / MPEG): Select when connected to a two-channel digital stereo amplifier. DVDs encoded in Dolby Digital or MPEG will be automatically downmixed to two-channel PCM audio.
- [Off] (for DTS): If you select "Off", the DTS signal is not output through the DIGITAL AUDIO OUT jack.

Sampling Frequency

If your receiver or amplifier is NOT capable of handling 96 kHz signals, select [48 kHz]. When this choice is made, this unit will automatically convert any 96 kHz signals to 48 kHz so your system can decode them.
If your receiver or amplifier is capable of handling 96 kHz signals, select [96 kHz]. When this choice is made, this unit will pass each type of signal through without any further processing.
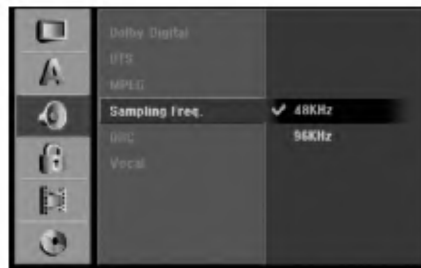
DRC (Dynamic Range Control)

With the DVD format, you can hear a program's soundtrack in the most accurate and realistic presentation possible, thanks to digital audio technology. However, you may wish to compress the dynamic range of the audio output (the difference between the loudest sounds and the quietest ones). Then, you may listen to a movie at a lower volume without losing clarity of sound. Set DRC to [ON] for this effect.
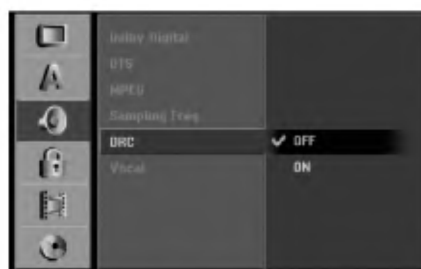
Vocal

Set Vocal to [ON] only when a multi-channel karaoke DVD is playing. The karaoke channels on the disc will mix into normal stereo sound.

Lock (Parental Control) Settings

Rating

Some movies contain scenes that may not be suitable for children to view. Many of these discs contain parental control information that applies to the complete disc or to certain scenes on the disc. Movies and scenes are rated from 1 to 8, depending on the area. DVD video discs may or may not respond to the parental control setting if the Area code of the disc is set wrongly. Some discs offer more suitable scenes as an alternative. Ratings are area dependent. The parental control feature allows you to block access to scenes below the rating you input, thereby preventing your children from being able to view material you believe is unsuitable.

1. Select [Rating] option then press ▶.
2. To access the Rating, Password and Area Code features, you must input the 4-digit security code you created.
    If you have not yet entered a security code you are prompted to do so. Input a 4-digit code and press ENTER. Enter it again and press ENTER to verify. If you make a mistake before pressing ENTER, press CLEAR.
3. Select a rating using the ▲ / ▼ buttons.

    [1] - [8]: Rating one (1) has the most restrictions and rating eight (8) is the least restrictive.

    [No Limit]: If you select [No Limit], parental control is not active and the disc plays in full.

4. Press ENTER to confirm your rating selection, then press SETUP to exit the menu.

Note:
If you set a rating for the recorder, all disc scenes with the same rating or lower are played. Higher rated scenes are not played unless an alternate scene is available on the disc. The alternative must have the same rating or a lower one. If no suitable alternative is found, playback stops. You must enter the 4-digit password or change the rating level in order to play the disc.

Set Password

1. Select [Set Password] option then press ▶.
2. Follow step 2 as shown "Rating".
    To change the password, select the [Change], press ENTER and input the new 4-digit code then press ENTER. Input it again to verify.
    To delete the password, select [Delete] then press ENTER.

If you forget your 4-digit code
If you forget your password, to clear the current password, follow the procedure below.

1. Press SETUP to display the Setup menu.
2. Use the Number buttons to enter the 6-digit number "210499".
3. Select [Yes] then press ENTER. The 4-digit password is cleared. Enter a new code.

Area Code

Enter the code of an area whose standards were used to rate the DVD video disc, referring to the list (See "Area Codes", page 58.).


1. Select [Area Code] option then press ▶.
2. Follow step 2 as shown "Rating".
3. Select the first character using the ▲ / ▼ buttons.
4. Shift the cursor using ▶ buttons and select the second character using ▲ / ▼ buttons.
5. Press ENTER to confirm your area code selection, then press SETUP to exit the menu.

DivX Registration Code `DivX`

We provide you the DivX® VOD (Video On Demand) registration code that allows you to rent and purchase videos using the DivX® VOD service. For more information, visit www.divx.com/vod.

1. Select [DivX Reg. Code] option then press ▶.
2. Press ENTER while [View] is selected and the registration code will appear.
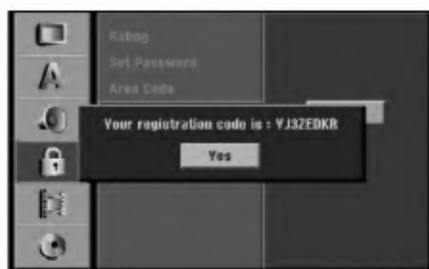
3. Use the registration code to purchase or rent the videos from Divx® VOD service at www.divx.com/vod. Follow the instructions and download the video onto a disc for playback on this unit.

Note:
All the downloaded videos from DivX® VOD can only be played back on this unit.

Recording Settings

Record Mode Set

You can set the picture quality for recording; HQ (High Quality), SQ (Standard Quality), LQ (Low Quality), EQ (Extend Quality).

1. Select [Rec Mode Set] option then press ▶.
2. Use ▲ / ▼ to select a desired Record Mode (HQ, SQ, LQ or EQ).
3. Press ENTER to confirm your selection, then press SETUP to exit the menu.

Record Aspect

When DVD recording, you can set the recording aspect ratio to suit the material you're recording (16:9 or 4:3).
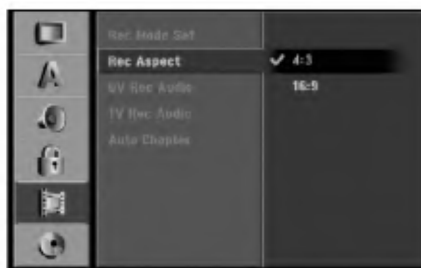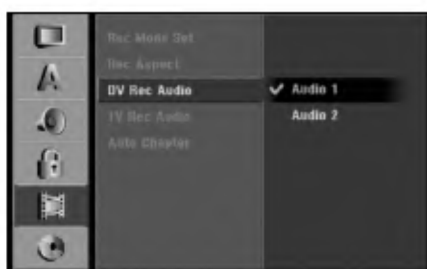
DV Recording Audio

You need to set this if you have a camcorder using 32kHz/12-bit sound connected to the front panel DV IN jack.
Some digital camcorders have two stereo tracks for audio. One is recorded at the time of shooting; the other is for overdubbing after shooting.
On the Audio 1 setting, the sound that was recorded while shooting is used.
On the Audio 2 setting, the overdubbed sound is used.

TV Recording Audio

When TV recording with bilingual, you can choose audio channel to record.
[Main+Sub] Main language and Sub language
[Main] Main language only
[Sub] Sub language only

Auto Chapter

When recording in Video mode, chapter markers are put in specified setting. You can change this interval to 5 minutes, 10 minutes or 15 minutes. If you select [None], switch off automatic chapter marking altogether with the [None] setting.
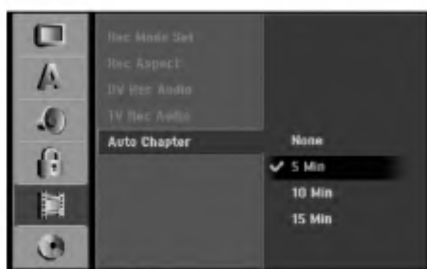
Disc Settings

Disc Format

If you load a completely blank disc, the recorder will initialize the disc.
  DVD-R: The recorder initialize the disc to Video mode. The recording mode will always be Video mode.
  DVD-RW: The recorder initialize the disc to VR mode.
  DVD+R (DL): The Initialize menu will appears. Select "Yes" then press ENTER.
  DVD+RW: The recorder initialize the disc to DVD+RW mode.
Also, you can reformat the DVD-RW/DVD+RW from the Setup menu as below.
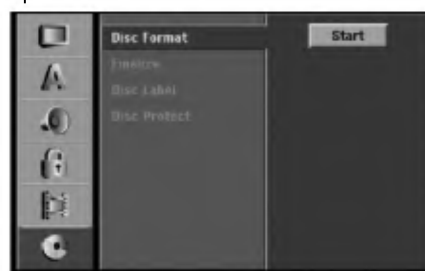
1. Select [Disc Format] option then press ▶.
2. Press ENTER while [Start] is selected. Format Disc menu appears.

3. Use ◄ / ▶ to select a desired mode (VR Mode or Video Mode) then press ENTER.
   Confirm message will appear.
   For DVD+RWs, go to step 4.
4. Use ◄ / ▶ to select [Ok] then press ENTER.
   It takes a few moments to initialize the disc.

⚠Caution

If you want to change the disc format, everything recorded on the disc will be erased.

Finalize

Finalizing 'fixes' the recordings in place so that the disc can be played on a regular DVD player or computer equipped with a suitable DVD-ROM drive. Finalizing a Video mode disc creates a menu screen for navigating the disc. This is accessed by pressing MENU/LIST or TITLE.

⚠ Caution

Once you have finalized a DVD-R and DVD+R disc, you cannot edit or record anything else on that disc except DVD+RW. However, you can record and edit a DVD-RW disc by choosing [Unfinalize] option.

1. Select [Finalize] option then press ▶.
2. Press ENTER while [Finalize] is selected.
   Finalize menu appears.

3. Select [Ok] then press ENTER.
   The recorder starts finalizing the disc.

Note:
● How long finalization takes depends on the type of disc, how much is recorded on the disc, and the number of titles on the disc.
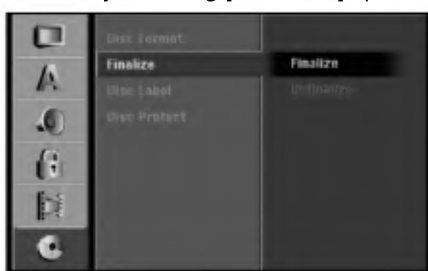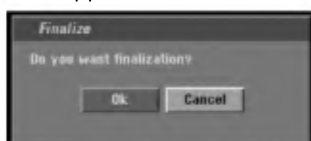● DVD+R DL disc can take up to 30 minutes to finalize.

Tips
● If you load a DVD-RW that has already been finalized, you can 'Unfinalize' it by choosing Unfinalize from the Finalize menu. After doing this, you can edit and re-record onto the disc.

● You cannot unfinalize a DVD-R and DVD+R disc.

● If [Disc Protect] option is set to [ON], the finalize is not available. To finalize, set [Disc Protect] option to [OFF].

Disc Label

Use this to enter a name for the disc. This name appears when you load the disc and when you display disc information on-screen.
● The disc name can be up to 32 characters long.
● For discs formatted on a different recorder, you will see only a limited character set.

1. Select [Disc Label] option then press ▶.
2. Press ENTER while [Edit] is selected.
   Keyboard menu appears.
   To enter characters, see page 51.

Disc Protect

When recording in DVD+RW / +R disc or VR mode formatted DVD-RW disc, set to [ON] to prevent accidental recording, editing or deleting of the disc loaded. If you need to unlock the disc to make edits, select [OFF].

General Explanation of On-Screen Display

This manual gives basic instructions for operating the recorder. Some DVDs require specific operation or allow only limited operation during playback. When this occurs, the symbol ⊘ appears on the TV screen, indicating that the operation is not permitted by the recorder or is not available on the disc.

Displaying Information While Watching TV

During viewing the TV, press ENTER or DISPLAY to display/remove the information displayed on-screen.

e.g., when DVD-RW in VR mode is inserted.

Indicates channel number, station name, and audio signal (STEREO, MONO) received by the tuner.

Indicates operational mode of the recorder. (HDD, DVD, VCD, etc.)

Indicates the record mode, free space, and elapsed time progress bar.

Indicates disc name and format.

Indicates current date and time.

Displaying Disc Information on-screen

You can display various information about the disc loaded on-screen.

1. Press DISPLAY once to show current status.
   Example: DVD-RW in VR mode
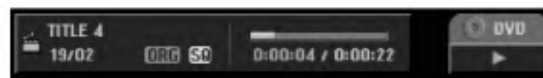
2. Press DISPLAY once again to show various playback information.
   The items displayed differ depending on the disc type or playing status.

3. You can select an item by pressing ▲ / ▼ and change or select the setting by pressing ◄ / ►. For details about each item, see the pages in parentheses.
   - [Title]: Current title (or track) number/total number of titles (or tracks) (page 27)
   - [Chapter]: Current chapter number/total number of chapters (page 27)
   - [Time]: Elapsed playing time (page 28)
   - [Audio]: Selected audio language (DVD VIDEO only) or audio channel (page 29)
   - [Subtitle]: Selected subtitle (page 30)
   - [Angle]: Selected angle/total number of angles (page 29)
   - [Sound]: Selected sound mode (page 30)

Note:
If no button is pressed for 10 seconds, the on-screen display disappears.

Playback

Playing a HDD, DVD, DivX file or Video CD

Playback Setup
● Turn the TV on and select the video input source connected to the recorder.
● Audio system: Turn the audio system on and select the input source connected to the recorder.

1. Load your chosen disc in the tray, with the playback side down.
2. Starts playback using HOME menu (see page 17).

If a menu screen is displayed
The menu screen may be displayed first after loading a DVD or Video CD which contains a menu.

DVD
Use the ◄ / ► / ▲ / ▼ buttons to select the title/chapter you want to view, then press ENTER to start playback.
Press TITLE or MENU/LIST to return to the menu screen.

VCD
● Use the number buttons to select the track you want to view.
Press RETURN (♂⌐) to return to the menu screen.
● Menu setting and the exact operating procedures for using the menu may differ depending on the disc. Follow the instructions on the each menu screen. You may also set PBC to [OFF] under Setup menu. See page 20.

3. To stop the playback, press STOP ■.
The unit records the stopped point, depending on the disc. "II■" appears on the screen briefly. Press ► (PLAY) to resume playback (from the scene point). If you press STOP (■) again or unload the disc ("■" appears on the screen.), the unit will clear the stopped point.
Press OPEN/CLOSE (▲) to remove the disc.
Press OPEN/CLOSE (▲) to close disc tray or press POWER (⏻), the disc tray closes automatically and unit turns off.

Notes:
● If Parental Control is set and the disc is not within the Rating settings (not authorized), the 4-digit code must be entered and/or the disc must be authorized (see "Rating", on page 22).
● DVDs may have a Region Code.
Your recorder will not play discs that have a region code different from your recorder. The region code for this recorder is 2 (two).

● Unless stated otherwise, all operations described use the remote control. Some features may also be available on the Setup menu.

Moving to another TITLE `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `DivX`

When a disc has more than one title, you can move to another title as follows:
● Press DISPLAY twice then use ▲ / ▼ to select the title icon. Then, press the appropriate numbered button (0-9) or ◄ / ► to select a title number.

Moving to another CHAPTER/TRACK `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `VCD`

When a title on a disc has more than one chapter or a disc has more than one track, you can move to another chapter/track as follows:
● Press SKIP I◄◄ or ►►I briefly during playback to select the next chapter/track or to return to the beginning of the current chapter/track.
● Press SKIP I◄◄ twice briefly to step back to the previous chapter/track.
● To go directly to any chapter during DVD playback, press DISPLAY twice and press ▲ / ▼ to select the chapter/track icon. Then, input the chapter/track number or use ◄ / ►.

Search `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `VCD`

1. Press SCAN (◄◄ or ►►) during playback.
2. Press SCAN (◄◄ or ►►) repeatedly to select the required speed.
   HDD, DVD ; 5 steps (forward and backward)
   Video CD; 3 steps (forward and backward)
3. To exit SEARCH mode, press PLAY.

Still Picture and Frame-by-Frame Playback

1. Press PAUSE/STEP (II) during playback. Advance the picture frame-by-frame by pressing PAUSE/STEP (II) repeatedly.
2. To exit still motion mode, press PLAY.

Tip:
You can advance or back up the picture frame-by-frame by pressing ◄ / ► repeatedly during PAUSE mode.
The picture frame-by-frame in reverse is not available for Video CD.

Slow Motion `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `VCD`

1. Press PAUSE/STEP (❚❚) during playback.
   The DVD player will now go into PAUSE mode.

2. Use the SCAN (◀◀ or ▶▶) to select the required speed.
   DVD, HDD; 4 steps (forward and backward)
   Video CD; 3 steps (forward only)

3. To exit Slow Motion mode, press PLAY (▶).

Random `Karaoke DVD` `VCD`

1. Press RANDOM during playback.
   The unit automatically begins Random Playback and "RANDOM" appears on the TV screen.

2. To return to normal playback, press RANDOM until "NORMAL" appears on the TV screen.

Tip:
By pressing SKIP ▶▶❙ during Random playback, the unit selects another title (track) and resumes Random playback.

Notes:
- This function only works with DVD Karaoke discs or video CDs without PBC.
- On a Video CD with PBC, you must set PBC to [OFF] in the Setup menu to use the Random function. See page 20.

Repeat `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `VCD`

Press REPEAT to select a desired repeat mode.
- [Chapter] repeats the current chapter. (DVD only)
- [Title] repeats the current title. (DVD, HDD only)
- [All] repeats the all titles/tracks on the VR mode DVD-RW, or Video CD.
- [Track]: repeats the current track. (Video CD only)
- [OFF] does not play repeatedly.

Note:
On a Video CD with PBC, you must set PBC to [OFF] in the Setup menu to use the Repeat function. See page 20.

Repeat A-B `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `VCD`

To repeat a sequence.

1. Press A-B at your chosen starting point. " A * " appears briefly on the TV screen.

2. Press A-B again at your chosen end point.
   "A B" appears briefly on the TV screen and the repeat sequence begins.

3. Press A-B again to cancel.

Note:
During HDD playback, you cannot select a sequence less than 5 seconds.

Time Search `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `DivX`

To start playing at any chosen time on the disc:

1. Press DISPLAY twice during playback. The time search box shows the elapsed playing time.

2. Press ▲ / ▼ to select the time clock icon and "0:00:00" appears.

3. Input the required start time in hours, minutes, and seconds from left to right.
   If you enter the wrong numbers, press ◀ / ▶ to move the under bar (_) to the wrong number. Then enter the correct numbers.

4. Press ENTER to confirm. Playback starts from the selected time.

Zoom `HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R` `DVD` `VCD`

The Zoom function allows you to enlarge the video image and to move through the enlarged image.

1. Press ZOOM during playback or still playback to activate the Zoom function.
   Each press of the ZOOM button changes the TV screen in the sequence shown below.
   x1 size → x2 size → x4 size → x1 size (normal size)

2. Use the ◀ / ▶ / ▲ / ▼ buttons to move through the zoomed picture.

3. To resume normal playback, press CLEAR or press ZOOM repeatedly until the normal picture appears.

Note:
The zoom function may not work for some DVDs.

Marker Search ⊐   1/6

`HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R`
`DVD` `VCD`

To enter a Marker

You can start playback from up to six memorized points. To enter a marker, press MARKER at the desired point on the disc. The Marker icon appears on the TV screen briefly. Repeat to enter up to six markers.

To Recall or Clear a Marked Scene

1. During disc playback, press SEARCH. The marker search menu appears on the screen.

2. Use ◄ / ► / ▲ / ▼ to select a marked scene that you want to recall or clear.

3. Press ENTER and playback starts from the marked scene. Or, press CLEAR and the marked scene is erased from the marker search menu.

Checking the Contents of DVD Video Discs: Menus

DVDs may contain menus that allow you to access special features. To open the disc menu, press MENU/LIST. Then, press the appropriate number button to select an option. Or, use the ◄ / ► / ▲ / ▼ buttons to highlight your selection, then press ENTER.

Title Menu `DVD`

1. Press TITLE.
   If the current title has a menu, the menu will appear on the TV screen. Otherwise, the disc menu may not appear.

2. The menu may contain camera angles, spoken language and subtitle options, and chapters for the title.

Disc Menu `DVD`

1. Press MENU/LIST.
   The disc menu is displayed.

2. To remove the disc menu, press MENU/LIST again.

Camera Angle `DVD`

If the disc contains scenes recorded at different camera angles, you can change to a different camera angle during playback.
● Press ANGLE then press ◄ / ► repeatedly during playback to select a desired angle.
   The number of the current angle appears on the TV screen.

Tip:
The ANGLE indicator will blink on the TV screen at scenes recorded at different angles to indicate that angle switching is possible.

Changing the Audio Soundtrack `DVD`

Press AUDIO then press ◄ / ► repeatedly during playback to hear a different audio language or audio soundtrack if available.

Note:
Some discs feature both Dolby Digital and DTS soundtracks. There is no analog audio output when DTS is selected. To listen to the DTS soundtrack, connect this recorder to a DTS decoder via one of the digital outputs. See page 14 for connection details.

Changing the Audio Channel

`HDD` `-RWVR` `-RWVideo` `+RW` `-R` `+R`
`VCD` `DivX`

Press AUDIO then press ◄ / ► repeatedly during playback to hear a different audio channel (STEREO, LEFT or RIGHT).
With DVD-RW discs recorded in VR mode and HDD that have both a main and a Bilingual audio channel, you can switch among Main (L), Sub (R), or Main+sub (L+R) by pressing AUDIO.

3D Surround -RWvr -RWvideo +RW -R +R DVD VCD DivX

This unit can produce a 3D Surround effect, which simulates multi-channel audio playback from two conventional stereo speakers, instead of the five or more speakers normally required to listen to multi-channel audio from a home theater system.

1. Press 3D SURR. then press ◄ / ► repeatedly during playback to select [3D SUR.].
2. To turn off the 3D Surround effect, select [NORMAL].

Subtitles DVD DivX

Press SUBTITLE then press ◄ / ► repeatedly during playback to see the different subtitle languages.

Instant Skip HDD -RWvr -RWvideo +RW -R +R DVD

Each press I.SKIP skips forward 15 seconds.

In HDD playback or Timeshift mode, each press ◄ / ► skips forward or reverse 5 minutes.

Note:

If ⊘ appears, the feature is not available on the disc.

Finding Locations on a Disc VCD

You can directly access any point on a video CD using this function. Use this function only while a video CD is playing. Playback jumps to the point specified.

1. Press SEARCH during playback.
   The progress bar appears on the TV screen.
2. Use ◄ / ► to find a start position for playback.
3. Press ENTER to confirm the selected position. Playback starts from the selected position.

Note:

This function works only when no marker is memorized.

Last Condition Memory DVD

This recorder memorizes the user settings for the last disc that you have viewed. Settings remain in memory even if you remove the disc from the recorder or switch off the recorder. If you load a disc that had its settings memorized, the latest stop position is automatically recalled.

Notes:

– Settings are stored in memory for use any time.
– This recorder does not memorize settings of a disc if you switch off the recorder before commencing to play it.

PIP (Picture in Picture) HDD -RWvr -RWvideo +RW -R +R DVD VCD

This function enables you to view the stored stations in sub picture during playback.
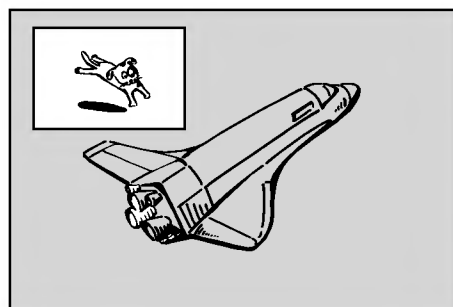
On and off
Press PIP to switch on the sub picture, press this button again to switch it off.

Input mode selection for sub picture
Press AV to select the input mode for the sub picture. Each time this button is pressed, each input mode for the sub picture is displayed as shown below.
Tuner → AV1 → AV2 → AV3 → AV4

Program selection for sub picture
Use ▲ / ▼ to change the program when sub picture's input is set to tuner. The selected program number is displayed on the TV screen. You can view the selected program by pressing STOP (■).

Sub picture position change
Press ◄ / ► repeatedly until desired position is achieved. The sub picture moves clockwise or counterclockwise.

Zoom Sub picture
Press ZOOM repeatedly to enlarge the sub picture, the magnification level increases up to three steps.

Playing a DivX Movie File

The recorder can play Divx files on HDD, CD-R/RW or DVD±R/RW discs. Before playing DivX files, read "About DivX movie files" on page 32.

1. Press HOME.
2. Select a media that contains DivX file(s) then press ENTER.
3. Select [MOVIE] option then press ENTER. The Movie menu appears on the TV screen.

4. Press ▲ / ▼ to select a folder, and press ENTER. A list of files in the folder appears. If you are in a file list and want to return to the Folder list, use the ▲ / ▼ buttons on the remote to highlight 🖿 .. and press ENTER.
5. If you want to view a particular file, press ▲ / ▼ to highlight a file and press PLAY. You can use variable playback functions. Refer to pages 27-30.
6. Press STOP to stop the playback. The Movie menu appears.

Notice for displaying the DivX subtitle

Please refer to following notice when the DivX subtitle does not display properly.
1. Find a suitable language for the DivX subtitle on the figure below.

Disc Subtitle Language	Available DivX Subtitle
Original, English	English
French, German, Italian, Spanish, Portuguese	French, German, Italian, Spanish, Portuguese Dutch, Swedish
Russian	Russian
Other 6976	Greek
Other 7665	Polish, Hungarian, Czech

2. Press SETUP. The Setup menu appears. Press SETUP ➜ [LANGUAGE] ➜ [Disc Subtitle] then select the language you have found. Refer to "Disc Menu/Audio/Subtitle" on page 21.

Tip:

If the subtitle still does not display properly after the steps 1-2 proceeded, press and hold SUBTITLE about 3 seconds then press ◄ / ► to select another language code during playback until the subtitle is displayed properly.

Movie menu options

1. Press ▲ / ▼ to select a folder/file on the Movie menu then press ENTER. Movie menu options appear.

2. Press ▲ / ▼ / ◄ / ► to select an option, and press ENTER.
   - [Play] Start playback the selected title.
   - [Open] Opens the folder and a list of files in the folder appears
   - [Delete] Deletes the file(s) or folder(s) from the media. (HDD only)
   - [Rename] Edits the file name. (HDD only) (page 38)
   - [Move] Moves the file(s) to another folder or media. (HDD only) (page 39)
   - [Copy] Copies the file(s) to another folder or media. (page 39)

About DivX movie files

DivX disc compatibility with this recorder is limited as follows:

● Available resolution size of the DivX file is under 720x576 (W x H) pixel.

● The file name of the DivX subtitle is limited to characters.

● The total number of files and folders on the disc should be less than 1999.

● **If the number of the screen frame is over 29.97 frames per second, this unit may not operate normally.**

● **If the video and audio structure of recorded file is not interleaved, returns to the menu screen.**

● **If the file is recorded with GMC, the unit supports only 1-point of the record level.**
  * GMC?
  GMC is the acronym for Global Motion Compensation. It is an encoding tool specified in MPEG4 standard. Some MPEG4 encoders, like DivX or Xvid, have this option.
  There are different levels of GMC encoding, usually called 1-point, 2-point, or 3-point GMC.

Playable DivX file
".avi", ".divx"

Playable DivX subtitle
".smi", ".srt",
".sub (Micro DVD format only)",
".txt (Micro DVD format only)"
● Divx subtitle except those listed above is not displayed on the TV screen.

Playable Codec format
"DIV3", "MP43", "DIVX", "XVID", "DX50"

Playable Audio format
"AC3", "PCM", "MP2", "MP3", "WMA"
● Sampling frequency: within 8 - 48 kHz (MP3), within 32 - 48kHz (WMA)
● Bit rate: within 8 - 320kbps (MP3), 32 - 192kbps (WMA)

Playing an Audio CD or MP3/WMA file

The recorder can play audio CDs and MP3/WMA files on HDD, CD-ROM, CD-R/RW or DVD±R/RW discs. Before playing MP3/WMA files, read "About MP3/WMA audio files" on page 34.

1. Press HOME.
   The HOME menu appears.

2. Select a media that contains MP3/WMA or audio title then press ENTER.

3. Select [MUSIC] option then press ENTER.
   The Audio CD or Music menu appears on the TV screen.

| Audio CD Menu | Music Menu |

4. Use ▲/▼ to select a track then press ► (PLAY).
   Playback starts.
   During playback, the current track's elapsed playing time will appear on the front panel display and menu. Playback will stop at the end of the disc.

   ### Tips:
   - Press DISPLAY to view ID3-Tag information for the MP3 file. If ID3-Tag information is not present, "Not Checked" will appear. If you select a folder, the number of subfolders and number of MP3/WMA files in the folder are displayed. Press DISPLAY again to remove the information screen.
   - If you want to move to the upper directory, use the ▲ / ▼ to highlight 🖿 .. and press ENTER.
   - You can also display HOME menu to select another media by pressing RETURN (♻).

5. To stop playback at any time, press STOP.

Tip:
You can create new folder. Select [New Album] option on the Music-HDD menu then press ENTER. "NONAME##" folder is created.

Audio CD and Music menu options

1. Press ▲ / ▼ to select a folder/file on the Audio CD or Music menu then press ENTER.
   The menu options appear.

2. Press ▲ / ▼ / ◄ / ► to select an option, and press ENTER.
   - [Play] Start playback the selected title.
   - [Open] Opens the folder and a list of files in the folder appears
   - [Delete] Deletes the file(s) from the media.
   - [Rename] Edits the file name. (page 38)
   - [Move] Moves the file(s) to another folder or media. (page 39)
   - [Copy] Copies the file(s) to another folder or media. (page 39)
   - [Program Add] Adds the track(s) to Program List. (page 35)

Pause

1. Press PAUSE/STEP (❚❚) during playback.
2. To return to playback, press ► (PLAY) or press PAUSE/STEP (❚❚) again.

Moving to Another Track

- Press SKIP ❙◄◄ or ►►❙ briefly during playback to go to the next track or to return to the beginning of the current track.
- Press SKIP ❙◄◄ twice briefly to step back to the previous track.
- On an Audio CD, to go directly to any track, enter the track number using the numbered buttons (0-9) during playback.

Repeat

Audio CDs - Repeat Track/All/Off

Press REPEAT to select a desired repeat mode.
● TRACK: repeats the current track.
● ALL: repeats the all tracks on the disc.
● OFF (No display): does not play repeatedly.

MP3/WMA - Repeat Track/Folder/Off

Press REPEAT to select a desired repeat mode.
● TRACK: repeats the current track.
● FOLDER: repeats the all tracks in the current folder.
● OFF (No display): does not play repeatedly.

Random

1. Press RANDOM during playback or in stop mode. The unit automatically begins Random Playback and "RANDOM" appears on the menu screen.
2. To return to normal playback, press RANDOM repeatedly until "RANDOM" disappears from the menu screen.

Tip:
By pressing SKIP ▶▶I during Random playback, the unit selects another track and resumes Random playback.

3D Surround

This unit can produce a 3D Surround effect, which simulates multi-channel audio playback from two conventional stereo speakers, instead of the five or more speakers normally required to listen to multi-channel audio from a home theater system.

1. Press 3D SURR. during playback to select [3D SUR].
2. To turn off the 3D Surround effect, press 3D SURR. until "3D SUR" disappears from the menu screen.

Changing the Audio Channel

Press AUDIO repeatedly to hear a different audio channel (stereo, left or right).

Search (Audio CD only)

1. Press SCAN (◀◀ or ▶▶) during playback. The recorder will now go into SEARCH mode.
2. Press SCAN (◀◀ or ▶▶) repeatedly to select the required speed (3 steps).
3. To exit SEARCH mode, press ▶ (PLAY).

Repeat A-B (Audio CD only)

To repeat a sequence in a track:

1. Press A-B at your chosen start point. Repeat icon and 'A' appears on the menu screen.
2. Press A-B again at your chosen end point. The Repeat icon and 'A - B' appears on the menu screen, and the repeat sequence begins.
3. To exit the sequence and return to normal play, press A-B again. The Repeat icon disappears from the menu screen.

About MP3/WMA audio files

MP3 / WMA file compatibility with this recorder is limited as follows:

● Sampling frequency: within 8 - 48 kHz (MP3), within 32 - 48kHz (WMA)

● Bit rate: within 8 - 320kbps (MP3), 32 - 192kbps (WMA)

● The recorder cannot read an MP3/WMA file that has a file extension other than ".mp3" / ".wma".

● CD-R physical format should be "ISO 9660" and "JOLIET".

● DVD±R/RW physical format should be "ISO 9660 (UDF Bridge format)".

● If you record MP3 / WMA files using software that cannot create a file system (eg. Direct-CD) it is impossible to playback MP3 / WMA files. We recommend that you use Easy-CD Creator, which creates an ISO 9660 file system.

● File names should have a maximum of 8 letters and must incorporate an .mp3 or .wma extension.

● They should not contain special letters such as / ? * : " < > l etc.

● The total number of files and folders on the disc should be less than 1999.

This recorder requires discs and recordings to meet certain technical standards in order to achieve optimal playback quality. Pre-recorded DVDs are automatically set to these standards. There are many different types of recordable disc formats (including CD-R containing MP3 or WMA files) and these require certain pre-existing conditions (see above) to ensure compatible playback.

Customers should note that permission is required in order to download MP3 / WMA files and music from the Internet. Our company has no right to grant such permission. Permission should always be sought from the copyright owner.

Program Playback with Audio CD and MP3/WMA file

Program Playback enables you to make custom playlists of Audio CD or MP3/WMA tracks. Programs can contain up to 99 Audio CD tracks or 256 MP3/WMA files.

1. Use ▲ / ▼ to select a track/file (or folder) on the Audio CD or Music menu.
   You can select all files and folders on the Music menu by pressing CLEAR button. To cancel the selections, press CLEAR again.

   ### Selecting multiple files/tracks (folders)
   1. *Press MARKER.*
      A check mark appears on the file/track or folder. Press MARKER again to cancel the marked file/track or folder.
   2. *Repeat step 1 to mark additional file/track (folders).*

2. Press ENTER.
   The options appear on the left side of the menu.

3. Use ▲ / ▼ to select the [Program Add] option then press ENTER.

4. Repeat steps 1-3 to mark additional tracks.

Note:
If you select a folder for Programmed Playback, all tracks/files in the folder are added to the Program List.
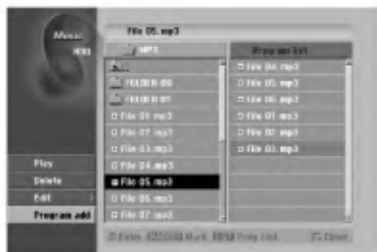
5. Use ► to move to the Program list.
   The programmed track you selected last is highlighted on the program list.

6. Use ▲ / ▼ to select the track you want to start playing.

7. Press ► (PLAY) to start.
   Playback stops after playing the last programmed track in the program list.

8. To exit Program Playback and resume normal playback, select a track on the List and press ► (PLAY).

Tip:
You can access or remove the Program List screen by pressing MENU/LIST.

Program List menu options

1. Press ▲ / ▼ to select a track/file on the Program List then press ENTER.
   The menu options appear.

2. Use ▲ / ▼ to select an option then press ENTER to confirm your selection.
   - [Play] Playback begins in the order in which you programmed the tracks from the selected track.
   - [Delete] Deletes the track(s) from the Program List menu.
   - [Move] Moves the track(s) to change the program order.
   - [Save] Memorizes the program list. (HDD only)

Repeat Programmed Tracks

Press REPEAT to select the desired Repeat mode.
- [TRACK] Repeats the current track.
- [ALL] Repeats all tracks on the Program List.
- [OFF] Cancels Repeat mode (no display).

Erasing a Track from the Program List

1. Select the track you wish to erase from the Program List. Use MARKER button to select multiple tracks.
2. Press ENTER. The menu options appears
3. Select [Delete] option then press ENTER.

Changing Track Order in the Program List

1. Select the track you wish to move on the Program List. Use MARKER button to select multiple tracks.
2. Press ENTER. The menu options appears
3. Select [Move] option then press ENTER.
4. Use ▲ / ▼ to move the yellow bar to the desired location, then press ENTER.

Save Your Program List (HDD only)
This recorder memorizes the user program list that you have programmed.

1. Select a track on the Program List.
   The menu options appear.

2. Select [Save] option then press ENTER.
   The Program List is saved in the HDD's PROGRAM folder.