DVD 49 and DVD 39 DVD Player

OWNER'S MANUAL
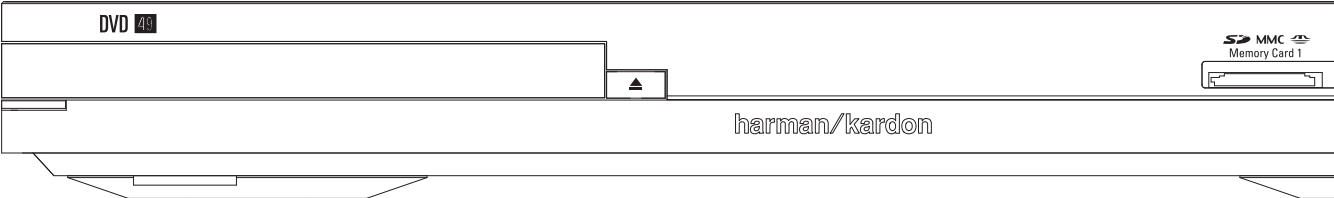
DVD 49

SD MMC
Memory Card 1

harman/kardon

harman/kardon®
Designed to Entertain.™

Table of Contents

Declaration of Conformity

We, Harman Consumer Group, Inc.
2, Route de Tours
72500 Château-du-Loir,
FRANCE

declare in own responsibility, that the product described in this owner's manual is in compliance with technical standards:

EN 55013:2001

EN 55020:2002

EN 61000-3-2:2000

EN 61000-3-3:1995+A1:2001

EN 60065:2002

Jurjen Amsterdam
Harman Consumer Group, Inc.
01/08

NOTE: This player is designed and manufactured for compatibility with Region Management Information that is encoded on most DVD discs. This player is designed only for playback of discs with Region Code 2, or for discs that do not contain Region Code information. If there is any other Region Code on a disc, that disc will not play on the DVD.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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

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

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

Introduction

Thank you for choosing the Harman Kardon DVD

The DVD 49 bridges the gap between your home theater and the digital world of your PC, PDA, digital camera and other devices. With its memory card and USB ports, the DVD 49 makes it possible to play your digital audio and image files through your home theater system without the clutter of messy wiring or complicated network systems.

On top of that, the DVD 49 and DVD 39 are also state-of-the-art optical disc players that can play almost every music, movie and still-image disc in your library with the highest fidelity available today. Along with conventional Video and CD audio discs, the DVD players let you enjoy the latest high-resolution DVD-Audio discs, with HDMI™ (High-Definition Multimedia Interface™) output of pure, uncompressed digital audio and video as well as DivX® and VCD discs.

When used with an HDMI-compatible audio/video receiver and video display, the program quality is preserved.
By passing an uncompressed signal, degradation is virtually nonexistent. And the single-cable connection eliminates the problem of wire management.

If you have not yet upgraded to an HDMI video display, you may still enjoy pristine picture quality with the precision video DACs, which output a Y/Pr/Pb progressive-scan component signal and composite and S-video. Thus, no matter what type of video display used, you will see images that are the closest thing to the original film or performance this side of your local theater. To further fine-tune the video output, a built-in test pattern may be used in conjunction with either the controls on your display, or the video output adjustments on the DVD.

In addition, Harman Kardon's audio heritage continues into the digital video era with audiophile-grade DACs to ensure that the audio quality matches the superb video. Of course, both coaxial and optical digital audio outputs are available for direct connection to A/V receivers or processors so that you may take advantage of Dolby Digital* and DTS® soundtracks. The analog outputs for down-mixed stereo or DVD-Audio and SACD playback use audiophile-grade digital-to-analog converters for crystal-clear outputs. When playing audio CDs, the playback quality is state-of-the-art, matching that of the finest players available.

A wide range of programming features makes it easy to program an evening's worth of entertainment. When playing DVDs, easy-to-understand on-screen menus and icons make it simple to change languages, soundtracks, subtitles or aspect ratio.

If you have additional questions about this product or its installation or operation that are not answered in this manual, please contact your dealer, as he is your best source of local information.

DVD 49

■ Plays a Wide Range of Video and Audio Formats, Including DVD-Video Discs, DVD-Audio discs, SACD, VCD, Standard CD Audio Discs, CD-R/RW, DVD-R/RW, DVD+R/RW, Audio Discs and MP3 Discs

■ DVD playback upscaled to 1080p with HDMI 1.2a output for single-wire connections

■ Front-panel USB input for playing compatible music or image files from portable devices

■ Plays audio and video files from solid-state media cards or USB drives

■ High-quality video reproduction with pixel-by-pixel processing, progressive scan output and 3/2 pull-down reconstruction

■ Complete bass management for DVD-Audio playback

■ High-Quality Video Playback 8-Bit DACs, Progressive Scan and Component Video Outputs

■ Dolby Digital and DTS Data Signal Output Through Both Optical and Coaxial Digital Audio Connections

■ Audiophile-Grade Output DACs for the Finest Audio reproduction

■ Easy-to-Use On-Screen Navigation System

■ Playback of MP3 and Windows® WMA Audio Discs and JPEG image files

■ Parental Lock Controls Prevent Unauthorized Viewing of Restricted Movies

■ Playback of DivX and DivX Ultra compressed video files

■ Extensive Programming Capability for Audio and Video Discs

■ Multiple Options for Language, Soundtrack and Subtitle Selection

■ Multiple-Angle Capabilities With Specially Encoded DVD Discs

■ Backlit, Ergonomically Designed Remote Control

DVD 39

■ Plays a Wide Range of Video and Audio Formats, Including DVD-Video Discs, DVD-Audio discs, VCD, Standard CD Audio Discs, CD-R/RW, DVD-R/RW, DVD+R/RW, Audio Discs and MP3 Discs

■ DVD playback upscaled to 1080p with HDMI 1.2a output for single-wire connections

■ High-quality video reproduction with pixel-by-pixel processing, progressive scan output and 3/2 pull-down reconstruction

■ Complete bass management for DVD-Audio playback

■ High-Quality Video Playback, Progressive Scan and Component Video Outputs

■ Dolby Digital and DTS Data Signal Output Through Both Optical and Coaxial Digital Audio Connections

■ Audiophile-Grade Output DACs for the Finest Audio reproduction

■ Easy-to-Use On-Screen Navigation System

■ Playback of MP3 and Windows® WMA Audio Discs and JPEG image files

■ Parental Lock Controls Prevent Unauthorized Viewing of Restricted Movies

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■ Extensive Programming Capability for Audio and Video Discs

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■ Multiple-Angle Capabilities With Specially Encoded DVD Discs

■ Backlit, Ergonomically Designed Remote Control

Introduction

READ THIS BEFORE OPERATING YOUR UNIT

Install this DVD-Player in a well ventilated, cool, dry, clean place with at least 10 cm on the top, 10 cm on the left and right, and 10 cm at the back – away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold.
Avoid installing this unit where foreign object may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place:

– Burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury.

– Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit.

Do not cover this unit with a newspaper, table-cloth, curtain, etc. in order not to obstruct heat radiation. If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury.

Install this unit near the AC outlet and where the AC power plug can be reached easily.

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

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

Terminology

Terminology

Since they share some of the characteristics and technology of CD players, many of the terms and operational concepts used in a DVD player are similar to what you may be familiar with from CD players and changers, or older video disc formats such as Laser Disc. However, if this is your first DVD product, some of the terms used to describe the features of a DVD player may be unfamiliar. The following explanations should solve some of the mysteries of DVD, and help you to enjoy all the power and flexibility of the DVD format and the DVD.

With the arrival of DVD, disc data capacity has increased dramatically. On a DVD Video disc most of this capacity is taken up by MPEG 2 video and the multichannel movie soundtrack in Dolby Digital and/or DTS. This information is compressed.

Aspect Ratio: This is a description of the width of a video image in relation to its height. A conventional video screen is four units wide for every three units of height, that's why the ratio is called "4:3". Newer wide aspect ratio video displays are 16 units wide for every nine units of height, making them more like the screen in a movie theater. The program material on a DVD may be recorded in either format and, in addition, you may configure the DVD to play back in either format, depending on the features recorded on a disc.

Component Video: This form of video signal eliminates many of the artifacts of traditional composite video signals by splitting the signal into a separate luminance channel (the "Y" signal channel) and two color-difference signals (the Pr and Pb signal channels). With a component video connection, you will see greater picture resolution and eliminate many picture imperfections such as the moiré patterns often seen on check-patterned cloth. However, in order to benefit from component video, you must have a video display with Y/Pr/Pb component video inputs. Do not connect the component video outputs to the standard composite or S-video inputs of a TV or recorder.

Group: The individual tracks on a DVD-Audio disc may be combined into Groups. There may be more than one Group on a disc. Depending on the way a disc's producers create the program, the Groups can contain different program material, or they may repeat the disc's content in different audio formats, such as 5.1 audio or high-resolution stereo.

HDCP (High-Bandwidth Digital Content Protection): HDCP is the specification for protecting digitally encoded content from unauthorized copying when it is transmitted from a DVD player (or other video source) to a video display using HDMI or DVI connections. In order to take advantage of the high-resolution HDMI output, your display must be HDCP-compliant. Virtually all displays with HDMI inputs are HDCP-compliant, but not all DVI-equipped displays are. If you are using the player with an optional HDMI-to-DVI cable or adapter, check the owner's manual for your display to determine whether it is HDCP-compliant.

HDMI™ (High-Definition Multimedia Interface™): HDMI is a serial-bus form of communication between the DVD player and the video display or audio/video receiver. With 5Gbps of bandwidth, it is capable of passing uncompressed digital audio and high-definition digital video using a single cable. With HDMI, the player is capable of outputting high-resolution (720p or 1080p) video and 5.1-channel Dolby Digital or DTS digital audio, with the convenience of just a single cable connection.

JPEG Files: JPEG stands for the Joint Photographic Experts Group, which developed a standard for compressing still images, such as photographs. JPEG files may be created on a personal computer by importing images from a digital camera, or scanning printed photographs. These files may be burned onto a compact disc. The player is capable of recognizing JPEG files and enabling you to view them on your video screen.

Title: For a DVD, a title is defined as an entire movie or program. There can be as many chapters within a title as the producers decide to include. Most discs include only one title, but some may have more than one, to give you a "Double Feature" presentation.

Chapter: DVD programs are divided into chapters and titles. Chapters are the sub-sections programmed into a single title on a disc. Chapters may be compared to the individual tracks on an audio CD.

Terminology

Progressive Scan: Due to the immense data storage capacity of DVD, images are nowadays stored progressively (intact, rather than interlaced). This allow all of the lines in each frame (odd and even) to be shown at the same time. The player comes with true progressive scan video output resulting in a 40% greater light output than a conventional TV and a stunningly detailed, high definition image with absence of visible scanlines and motion artifacts.

WMA Files: WMA (Windows Media® Audio) is an audio compression format that was developed by the Microsoft® Corporation for use with its Windows Media Player. WMA files can be even smaller in size than MP3 files, while maintaining similar quality. The DVD 49 and DVD 39 are among those DVD players capable of playing discs containing WMA files. Note that Windows Media Player uses other file formats; however, the player is only capable of playing files that end in the ".wma" extension. See page 27 for more information on WMA file support.

Multiple Angle: DVDs have the capability to show up to four different views of the same scene in a program. When a disc is encoded with multiple-angle information, pressing the Angle button will enable you to switch between these different views. Note that at present, few discs take advantage of this capability and, when they do, the multiple-angle technology may only be present for short periods of time within the disc. Producers will usually insert some sort of icon or graphic in the picture to alert you to the availability of multiple viewing angles.

Reading: This is a message that you will see after you've loaded the disc and the tray has closed. It refers to the fact that the player must first examine the contents of the disc to see if it is a CD or DVD, and then extract the information about the type of material on the disc, such as languages, aspect ratios, subtitles, number of titles and more. The slight delay while the contents of the disc are read is normal.

Resume: The operation of the Stop Button on the DVD works differently from what you are used to on CD players. On a traditional CD player, when you press the Stop button, the unit does just that: it stops playback. On a CD player, when you press the start button again, the disc starts from the beginning. With the DVD, however, you have two options when playing DVD discs. Pressing Stop once will stop playback, but it actually puts the unit in the Resume mode. This means that you can turn the machine off and, when you press play the next time, the disc will resume or continue from the point on the disc where the Stop button was pressed. This is helpful if you are watching a movie and must interrupt your viewing session but wish to pick up where you left off. Pressing the Stop button twice will stop the machine in a traditional manner and, when the disc is played again, it will start from the beginning.

In resume mode, the cover of the DVD will be displayed, if available. Otherwise, the Harman Kardon screen will appear.

DivX

DivX is the name of a revolutionary new video codec which is based on the MPEG-4 compression standard for video. This DVD player will playback discs created with DivX software. The DVD player's playback functionalities of DivX video discs will vary depending on the DivX software version used for creating your movies. For more information about the different software versions of DivX, please go to www.divx.com.

SACD (Super Audio Compact Disc, DVD 49):
The SACD format is an improvement upon the original compact disc, and was developed by the same companies that originated the CD. Thanks to its high-density format, the SACD disc is capable of storing more than seven times the amount of data as on a standard CD. Engineers realized that if they utilized a much higher sampling frequency in a single-bit format, but eliminated the downsampling required to fit 74 minutes of audio on a standard CD, they could preserve a much higher quality of audio that more closely approximates the original analog signal. In addition, the playback equipment would no longer need to perform an upsampling interpolation to play back the program. Eliminating these two conversion steps minimizes distortion and artifacts, while enabling much higher resolution. Most SACD discs are dual layer, including a conventional CD layer for compatibility with older disc players, as well as the SACD high-density layer. In addition, SACD discs may contain two-channel or multichannel versions of the program, or both.

Features

High quality video

- High Definition Multimedia Interface (HDMI) for a single wire, digital connection to your HD-Ready screen.
- Advanced sophisticated MPEG-2 video decoding circuits.
- Test screen videos available for testing video performance and setup.
- Pure PAL with NTSC disc due to true NTSC/PAL conversion.
- Dual-layer compatibility for extended play DVD.
- Progressive Scan component video ouputs (NTSC and PAL)
- Playback of JPEG image files

High quality digital audio

- Built-in DVD-Audio decoder for improved musical realism.
- By connecting a DTS (Digital Theater Systems) or a Dolby Digital decoder, you can enjoy high quality 5.1 digital surround sound from DTS or Dolby Digital discs.
- With linear PCM audio at 16-24 bits and 44-96 kHz (also on digital output, see table page 16), audio quality exceeding that of CD becomes possible.
- Optical and coaxial digital audio output.

Inputs (DVD 49 only)
- Memory Card Slot 1: SD/MMC, Memory Stick
- Memory Card Slot 2: Compact Flash
- USB: Flash drive, client devices only
- Remote Control IR

Outputs
- Analog Audio: 2-channel and 6-channel
- Remote Control IR
- Digital audio: Coaxial and optical
- Digital Audio/Video: HDMI
- Analog Video: Composite, S-video and component

Memory Cards (DVD 49 only)
- Slot 1 accepts Secure Digital (SD), Multimedia Card (MMC) and Memory Stick (compatible with Magic Gate) cards. Other card types may be used with a compatible adapter, but are not guaranteed to be recognized by the DVD 49.
- Slot 2 accepts Compact Flash I (CF) cards, or cards using a Compact Flash 1-compatible adapter.
- Cards with more than 1GB memory may not work correctly.
- Video formats supported: MPEG-2 digital video files.

Many convenient features

- On-Screen Menu Icons for disc information or player information and access to many major functions of this unit.
- Subtitles may be displayed in one of numerous languages*.
- The multi-angle function allows you to choose the viewing angle of scenes which were shot from a number of different angles (Limited to DVD's recorded with multiple camera angles.)
- Multiple options for dialog language and soundtrack selection (limited to DVD's recorded with multiple dialog languages or soundtracks.)
- Intuitive menu operating system.
- 4 step Zoom (off, x1, x2, x3) play and pause.
- Backlit, ergonomically designed remote control.
- Future software upgrades accessible via Internet. (See information below.)
- *The number of languages recorded depends on the software.*

Compatible with CD as well as DVD

- The player will play any conventional Audio CD or recordable (CD-R) or erasable CD (CD-RW), MP3, WMA (v9) or any DivX or VCD or DVD/Video with the region code 0 or 2.

Disc formats supported by this player

The unit can play the following disc formats (8 cm and 12 cm size):
- DVD-AUDIO
- SACD (DVD 49 only)
- DVD
- DVD-R
- DVD-RW
- DVD+R
- DVD+RW
- CD
- CD-R
- CD-RW
- VCD
- WMA (v9)

NOTE: Due to differences in the format of certain discs, it is possible that some discs may include a mix of features that are not compatible with the player. Similarly, although the player is capable of a wide range of features, not all discs include every capability of the DVD system. For example, although the player is compatible with multi-angle discs, that feature is only possible when the disc is specially encoded for multi-pleangle play. In addition, the player is capable of playing back both Dolby Digital and DTS soundtracks, but the number and types of tracks available will vary from disc to disc. To make certain that a specific feature or soundtrack option is available, please check the options noted on the disc jacket.

■ Playback capability for CD-R, CD-RW, WMA, JPEG, MP3, DivX, VCD/SVCD, DVD-R, DVD+R, DVD-RW and DVD+RW discs may vary due to variations in the quality of the disc and the recorder used to create the disc.

■ The player is compatible with most discs recorded with files encoded using MP3 or Windows Media 8, as well as JPEG still images. However, note that variations in the encoder or codec used and the bit rate of the encoding may affect the ability to play back a specific disc. As a result, we cannot guarantee complete compatibility with all encoders and versions of the codecs. For best results, we recommend that MP3 files be encoded at bit rates ranging between 32kbps and 320kbps. WMA files should be encoded at bit rates between 64kbps and 320kbps. Although the player is capable of playing some WMA 9 files, not all features of version 9 are supported. JPEG files should contain no more than 5 megapixels, and the file size should be no larger than 5Mb.

■ SACD discs are available in SACD-only and hybrid formats. Hybrid discs contain a conventional CD-DA (red book) layer, in addition to the high-density SACD layer, that enables the disc to be backwards compatible with conventional optical disc players. The DVD 49 is capable of playing both types of SACD discs. When a hybrid disc is loaded, the DVD 49 will default to playing the SACD layer.

■ SACD discs are also available in either two-channel or multichannel formats. The DVD 49 will play either format correctly, with multichannel materials being outputted through the **6-Channel Outputs ❼**.

The Player will NOT play the following:
- DVD discs with a Region Code other than 2
- DVD-ROM data discs
- DVD-RAM discs
- CD-I discs
- CD-G discs
- SVCD discs
- Kodak Photo CD™ discs (Kodak Picture CD discs, available to consumers, may be viewed.
- Discs intended for use in video game consoles.
- Discs recorded in the "VR" mode or at any speed other than "SP".
- High-definition optical discs such as WMVHD, HD-DVD and Blu-ray.

Features

Memory Card Compatibility (DVD 49 only)

The following types of memory cards may be used with the DVD 49:

The DVD 49 will play most recordable memory cards, but we cannot guarantee complete playback compatibility due to the wide variation in recorders and blank media.We cannot guarantee playback compatibility with cards having a memory capacity greater than 1 gigabyte.

• Both Secure Digital (SD) and MMC (Multimedia Card) memory cards may be used in Card Slot 1. The smaller miniSD and microSD cards may be used in Card Slot 1, but require an adapter (not included).

• Memory Stick cards may also be used in Card Slot 1. Original Memory Stick cards are compatible as is, but an adapter (not included) is required for the smaller Memory Stick Duo cards.

• Compact Flash I cards may be used in Card Slot 2. Compact Flash II cards and microdrives are not compatible with the DVD 49.

• Card Slot 1 accepts only SD, MMC and Memory Stick cards. Card Slot 2 accepts only Compact Flash I cards. Do not attempt to install a card in a slot other than the one designated for its card type.

• Cards with memory capacity greater than 1 gigabyte are not recommended for use with the DVD 49.

Card Slot 1
Gently insert an SD, MMC or Memory Stick card, label-side up, pushing it all the way in until it clicks. Remove the card by gently pressing it in again until it unlatches, then you may pull it out of the slot.

Card Slot 2
Gently insert a Compact Flash I card, label-side up, pushing it all the way until it is firmly seated in the slot. Remove the card by pulling it out of the slot.

It is necessary to turn off the DVD 49 before inserting or removing a SD or MMC card, Memory Stick or Compact Flash card.

USB Device Compatibility (DVD 49 only)

Client USB devices, such as flash drives and some portable hard disc drives, may be connected to the DVD 49's USB port. Do not connect your personal computer to the DVD 49. Due to their software design, iPods and any device which also serves as a standalone MP3 or WMA player are not compatible with the DVD 49, even when placed in disc mode.

Gently insert the connector end of your USB device into the USB Port, being careful to align the device's plastic tongue to slide into the gap underneath the port's plastic tongue. Remove the device by pulling it out of the port.

It is necessary to turn off the DVD 49 before inserting or removing a USB device.

Upgradeability via Internet

The "firmware" controlling the functionality of the Harman Kardon player is fully upgradeable. In the event of future improvements to its operations and features, it will be possible to download firmware upgrades from www.harmankardon.com/International/ All you have to do is create a CD-R with the data and insert it in the player for an automatic upgrade.

Packing List

1 Harman Kardon DVD Player

1 Remote control

2 AA batteries

1 A/V cable for stereo analog audio and composite video

1 S-Video cable

1 HDMI cable

1 owner's manual

1 Remote cable.

1 Power cord.

Front Panel Controls
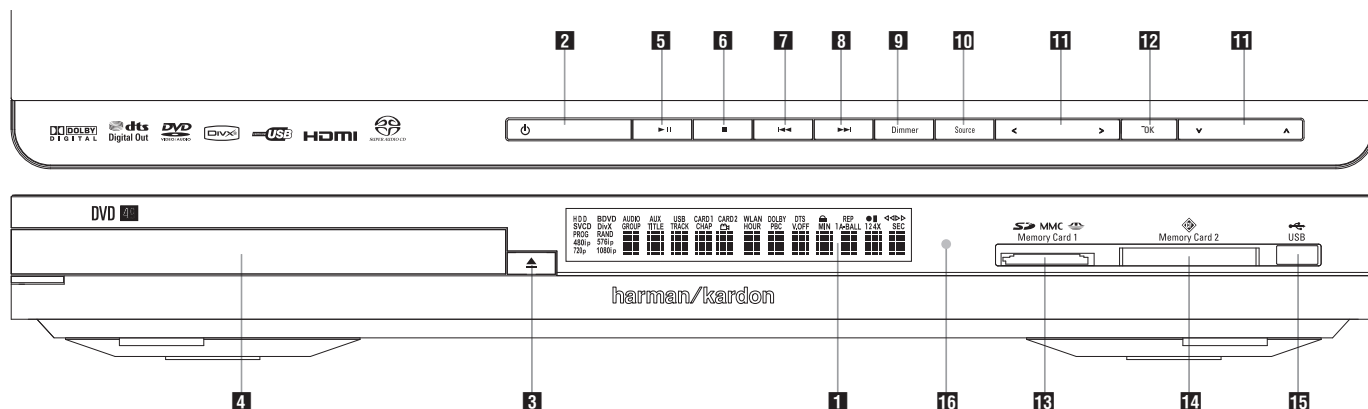
1 Main Information Display
2 Power On/Off (Standby)
3 Open/Close
4 Disc Drawer
5 Play/Pause
6 Stop
7 Skip/Search (Previous)
8 Skip/Search (Next)
9 Dimmer
10 DVD 49: Source Selector
DVD 39: Setup
11 Navigation Buttons
12 OK
13 Card Slot 1 (DVD 49 only)
14 Card Slot 2 (DVD 49 only)
15 USB Port (DVD 49 only)
16 Remote IR Sensor

1 **Main Information Display:** This display delivers messages and status indications to help you operate the player.

2 **Power On/Off (Standby):** Press the button once to turn the player on, press it again to put the unit in the Standby mode.

3 **Open/Close:** Press this button to open or close the Disc Tray.

4 **Disc Drawer**.

5 **Play/Pause:** Press to initiate playback or to resume playback after Pause has been pressed. Press this button to momentarily pause playback. To resume playback, press the button again. If a DVD is playing, action will freeze and a still picture will be displayed when the button is pressed.

6 **Stop:** Press this button once to place the disc in the Resume mode, which means that playback will stop, but as long as the tray is not opened or the disc changed, DVD playback will continue from the same point on the disc when the Play Button is pressed again. Resume will also work if the unit was turned off. To stop a disc and have play start from the beginning, press the button twice.

7 **Skip/Search (Previous):** Press this button to move backward through the music tracks on a CD disc or the chapters on a DVD disc. Keep the button pressed to search backwards at one of the available speeds.

8 **Skip/Search (Next):** Press to move forward through the music tracks on a CD or the chapters on a DVD disc. Keep the button pressed to search forwards at one of the available speeds.

9 **Dimmer:** Press this button to reduce the brightness of the Information Display by 50% or to turn the display off completely in the following order: FULL BRIGHTNESS ➜ HALF BRIGHTNESS ➜ OFF ➜ FULL BRIGHTNESS.

10 **Source Selector (on DVD 49):** Press this button to view the current media source selection. If a media source is available, that is, if media is currently installed, the source icon will appear at normal brightness. If no media is installed in a particular source, e.g. if a card slot is empty, its icon will be dimmed and you will not be able to select it. You may always select the Disc Player or the Auxiliary Analog Audio Inputs, even when no media is present. Use the ◀ / ▶ Buttons to scroll through the available sources, and press the OK Button to select and switch to the highlighted source.

NOTE: It is not possible to select a new source while the current source is playing or even while it is paused. Press the Stop Button before selecting a new source.

10 **Setup (on DVD 39):** Press this button to use the DVD 39's on-screen menu system to adjust the player's configuration settings.

11 **12** ◀ / ▶ / ▲ / ▼ **Navigation and OK Buttons:** Use these buttons to navigate the on-screen menus, and press the OK Button to select an item.
The ◀ / ▶ Buttons may be used to switch between the track or file list on the left side of the screen and the settings on the right side. Press and hold a Navigation Button to scroll at a faster rate.
When a folder is highlighted, press the OK Button to expand it.
Highlight the "Up" line and press the OK Button to close a folder and view the contents of the next higher level of the disc, card or device. When a file or track is highlighted, press the OK Button to begin playback.

13 **Card Slot 1 (DVD 49 only):** Insert an SD, MMC or Memory Stick memory card into this slot by gently pushing it all the way in until it clicks. The slot also accommodates miniSD, microSD and Memory Stick Duo cards when used with the appropriate adapter, available in most electronics and computer stores. Remove a card from this slot by gently pushing it in until it unlatches, then pulling it all the way out of the slot.

14 **Card Slot 2 (DVD 49 only):** Insert a Compact Flash I memory card into this slot by gently pushing it all the way in until it is firmly seated in the slot. Remove it by pulling it all the way out of the slot.

15 **USB Port (DVD 49 only):** Insert a USB client device's connector into this port, being careful to correctly align the device's plastic tongue with the gap. Do not connect a computer to this port.

16 **Remote IR Sensor**.

Front Panel Information Display
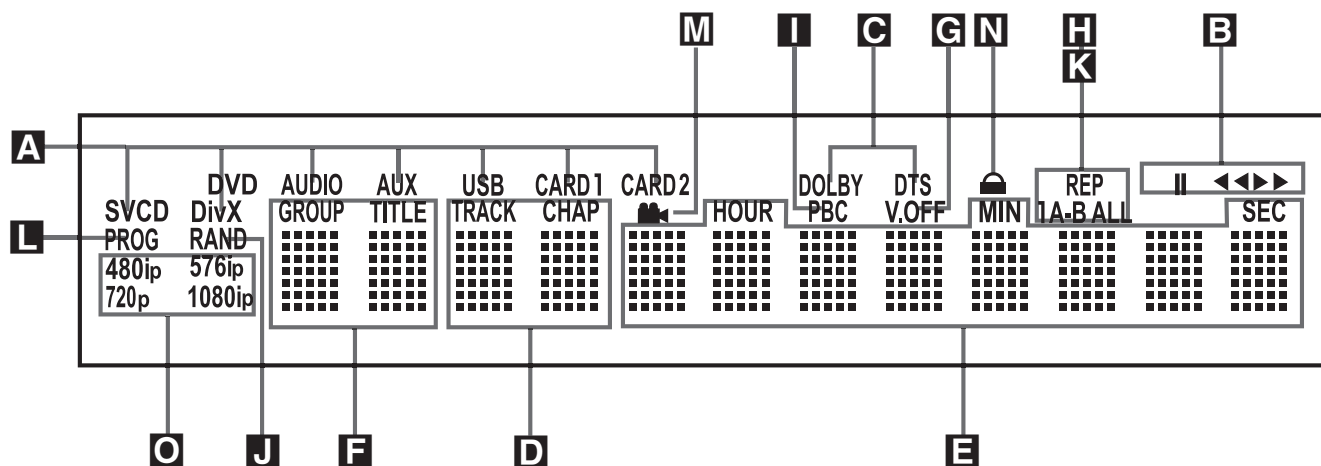
A Source/Disc Type Indicators
B Playback-Mode Indicators
C Audio Bitstream Indicators
D Chapter/Track Number Indicators
E Time Indicators
F Title Indicators

G V-OFF Indicator
H Repeat Indicators
I VCD Playback Control Indicator
J Random Indicator
K A-B Repeat Indicator
L Program Indicator

M Angle Indicator
N Parental Lock Indicator
O Video Output Indicators

A **Source Indicators:** One of the Disc-Type Indicators or the Auxiliary Input, USB, Card 1 or Card 2 Indicator will light to indicate the current media source.
Disc-Type Indicators: The DVD, DVD-Audio, CD, VCD or SVCD indicator will light to show the type of disc currently being played.

B **Playback-Mode Indicators:** These indicators light to show the current playback mode:

► Lights when a disc is playing in the normal mode

►► Lights when the disc is in the Fast Search Forward mode. The on-screen banner display indicates the selected speed (x2, x4, x8, x16)

❚❚ Lights when the disc is paused.

◄◄ Lights when the disc is in the Fast Search Reverse mode. The on-screen banner display indicates the selected speed (x2, x4, x8, x16)

C **Audio Bitstream Indicators:** When a Dolby® Digital, DTS® or linear PCM digital audio signal is present on the disc, one of these indicators will light. DVD-Audio, MP3 and WMA bitstreams will be indicated by the **Disc Type Indicator A**.

D **Chapter/Track Number Indicators:** When a DVD disc is playing, these two positions in the display will show the current chapter. When a CD disc is playing they will show the current track number.

E **Time Indicators:** These positions in the indicator will show the running time of a DVD in play. When a CD is playing, these indicators will show the current track time, time remaining in the current track, or the total remaining time on the disc.

NOTE: The Indicators **D** **E** **F** will also display text messages about the DVD's status, including LOADING when a disc is loading, POWER OFF when the unit is turned off, and DISC ERROR when a disc not compatible with the DVD is put into the play position.

F **Title Indicators:** These two positions in the display will show the current title number when a DVD disc is playing.

G **V-OFF Indicator:** This indicator lights when the unit's video output has been turned off by pressing the V-OFF button on the remote control.

H **Repeat Indicators:** These indicators light when any of the Repeat functions are in use.

I **VCD Playback Control Indicator:** This indicator lights when the playback control function is turned on with VCDs.

J **Random Indicator:** This indicator lights when the unit is in the Random Play mode.

K **A-B Repeat Indicator:** This indicator lights when a specific passage for repeat playback has been selected.

**L** **Program Indicator:** This indicator lights when the programming functions are in use.

M **Angle Indicator:** This indicator blinks when alternative viewing angles are available on the DVD currently playing.

N **Parental Lock Indicator:** This indicator lights when the parental-lock system is engaged in order to prevent anyone from changing the rating level without a code.

O **Video Resolution Indicators:** Either the 576i or 576p indicator will light to indicate whether the Component Video Outputs are in progressive scan mode. When the Composite or S-Video Outputs are in use, this indicator will always indicate the default 576i (interlaced scan) setting, even if you attempt to change the Output Resolution setting in the Video Setup menu to a higher video resolution. When the HDMI Output is in use, its video resolution will be indicated. The HDMI Output will upscale source materials to the higher resolution, as indicated in the VIDEO SETUP menu (explained in the Initial Setup section). You may change the Video Out Resolution setting to a lower resolution to improve picture quality using the VIDEO SETUP menu. As you select a specific HDMI Output video resolution and the player successfully determines that the video display is capable of handling that resolution, its indicator will light and will appear briefly in the Message Display and on screen.

Remote Control Functions

1 POWER ON

2 POWER OFF

3 SUBTITLE

4 TITLE

5 ANGLE

6 AUDIO

7 OK

8 OPEN/CLOSE

9 SETUP

10 ARROWS

11 INFO

12 MENU

13 PAUSE

14 STATUS

15 SKIP/STEP (PREVIOUS)

16 SKIP/STEP (NEXT)

17 PLAY

18 SEARCH/SLOW REVERSE

19 STOP

20 SEARCH/SLOW FORWARD

21 DIMMER

22 RETURN

23 ZOOM

24 SOURCE

25 FIND

26 A-B Repeat

27 V.OFF

28 LIGHT

29 NUMERIC KEYS

30 PLAY MODE

31 CLEAR

32 IR EMITTER

33 HD MODE SELECTOR

34 RANDOM
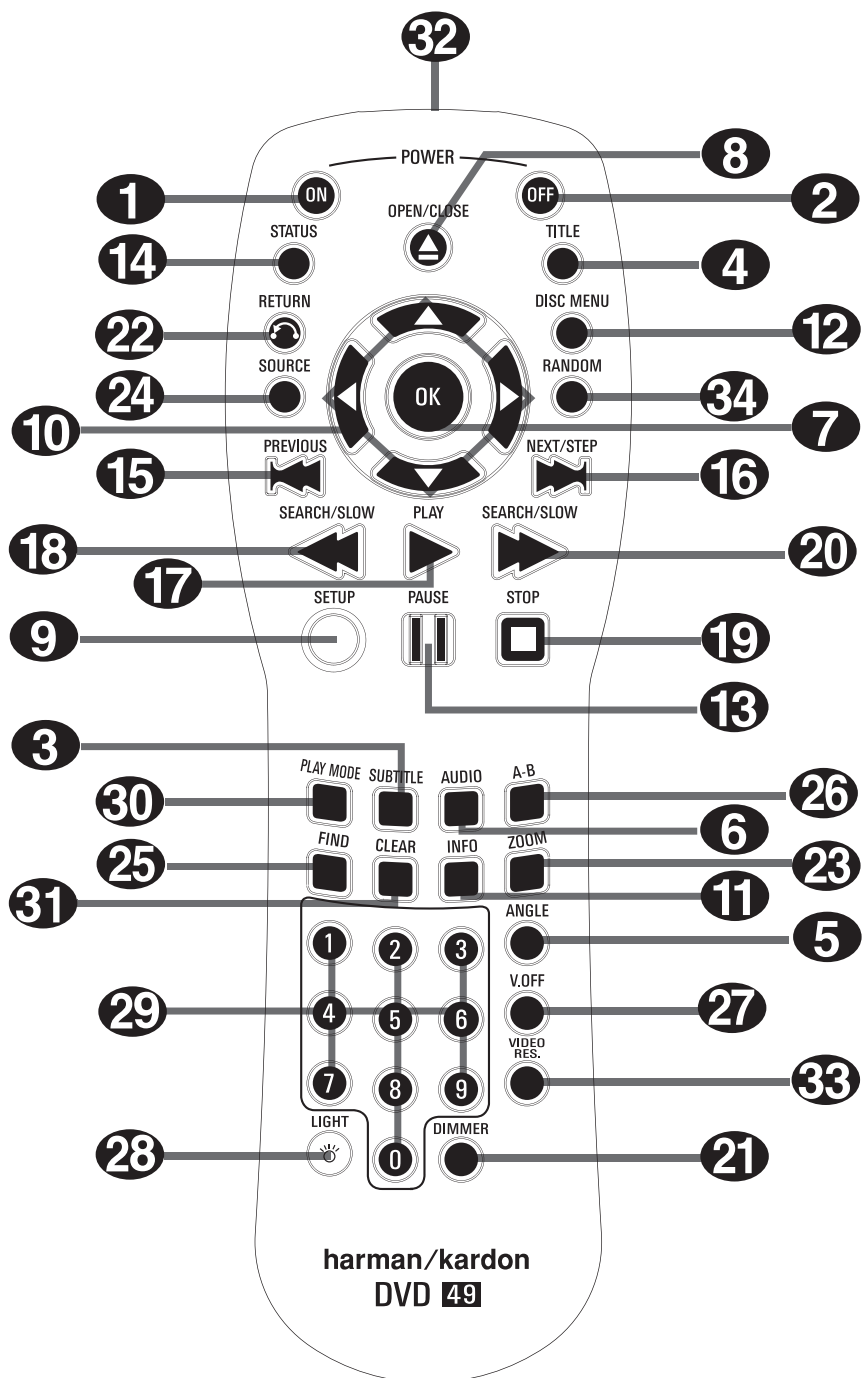
1 POWER ON: Turns on the player when it is in standby mode (Harman Kardon logo appears on screen).

2 POWER OFF: Turns off the player to stand-by mode.

3 SUBTITLE: When a DVD is playing, press to select a subtitle language or to turn subtitles off.

Note: Due to the variations in how DVD discs are authored, the subtitle languages displayed by the player may not accurately reflect the actual languages available on the disc. It is recommended that subtitles be selected using the disc's menu.

4 TITLE: When a disc is playing, press to make the player go back to the first section of the disc. If you are playing a DVD-Audio disc that contains other formats the player is capable of playing, such as linear PCM or Dolby Digital 5.1, pressing this button may enable you to switch playback from one audio format to another.

5 ANGLE: Press to access various camera angles on a DVD (If the DVD contains multiple camera angles) or to rotate JPEG images.

6 AUDIO: Press to access various audio languages on a DVD (If the DVD contains multiple audio streams).

7 OK: Press this button to activate a setting or option

**8 OPEN/CLOSE:** Press to open or close the disc tray.

9 SETUP: Press this button to use the on-screen menu system to adjust the player's configuration settings. Note that the **Info Button 11** must be pressed to access the Player Information menu to obtain detailed disc information, and to configure the playback mode of the disc.

10 ARROW buttons (◀/▶/▲/▼): Use to move the cursor in the OSD.

Remote Control Functions

11 **INFO:** Press for detailed informations on the disc playing (Video/Audio Bit rate, Movie aspect ratio and others), and for current player settings made. Note that the unit doesn't react on any transport button as long as the info menu is displayed. Press again to remove information from screen.

12 **MENU:** Displays the actual DVD Disc Menu on the TV screen in play mode.
When playing discs with JPEG images, pressing this button will access the thumbnails.

13 **PAUSE:** Freezes a picture (with DVD/VCD) and pauses the playback signal (CD) when a disc is playing. Press again for normal playback.

14 **STATUS:** Press while a disc is playing to view banner display. Use the ARROW buttons to move through the different features in the Banner Display. When a symbol is highlighted, press OK on the remote to select it.

15 **SKIP/STEP (Previous):** Press to go to beginning of current track. Press again quickly to go to beginning of previous track. After pressing the **PAUSE** button, each press of this button will move the image in reverse frame by frame.

16 **SKIP/STEP (Next):** Press to go to beginning of next track. After pressing the **PAUSE** button, each press of this button will move the image forwards frame by frame.

17 **PLAY:** Begins to play disc (closes disc tray first, if it is open.)

18 **SEARCH/SLOW (REV):** Allows you to search in reverse through a disc while it is in play mode. Each time you press this button, the search speed changes as indicated by a number of arrows on the right top of your screen. After pressing the **PAUSE** button, each press of this button will change the slow down speed indicated by a number of arrows in the right top of the screen.

19 **STOP:** Stops playing a disc. When a disc is playing, if you press STOP and PLAY, the disc will resume play, i.e. it will start from the same point on the disc where the unit was stopped. If you press STOP twice and the PLAY button, the disc will start play from the beginning.

20 **SEARCH/SLOW (FWD):** Allows you to search forward through a disc while it is in play mode. Each time you press this button, the search speed changes as indicated by a number of arrows on the right top of your screen. After pressing the **PAUSE** button, each press of this button will change the slow down speed as indicated by a number of arrows in the right top of the screen.

21 **DIMMER:** Press to change the brightness of the front panel display or to turn the display off completely in the following order: FULL BRIGHTNESS ❰ HALF BRIGHTNESS ❰ OFF ❰ FULL BRIGHTNESS

22 **Return:** Press this button while viewing the Setup menus or Status Display to exit a drop down menu without making a selection. It has no effect on a disc's menus.

23 **ZOOM:** When a DVD or VCD is playing, press this button to zoom the picture so that it is enlarged. There are 4 steps to the zoom function, each progressively larger. Press through each of the zoom stages to return to a normal picture.

24 **SOURCE:** Press this button to select another media source for playback. A dialog box will appear on screen, with the icons for available media sources visible. Use the ◀/▶ Buttons to highlight the desired media source and press the OK Button to select it. The media sources are the Disc Player, the USB Port, Card Slot 1 (SD/MMC or Memory Stick), Card Slot 2 (Compact Flash I). If no media is present for a source input, e.g. if a card slot is empty, its icon will be dimmed and you will not be able to select it. However, the disc player is always available, even if no disc is loaded.

25 **Find:** This function is available for all disc and file types, but only during playback. Press this button to display a dialog box that allows you to directly select a group, title, track or chapter as appropriate to the disc. With the correct cell in the dialog box highlighted, use the Numeric Keys to enter the section of the disc from which you would like playback to begin (it is not necessary to press the OK Button). The disc will automatically jump to that section. You may also use the function to begin playback from a specific time point in the track, chapter or file, or on the disc (DVDs and CDs), sometimes called Time Search. With the Time cell highlighted, use the Numeric Keys to enter up to six digits that indicate the time from which you would like playback to start. If you enter fewer than six digits, press the OK Button to complete the entry, and the disc will immediately jump to that point.

26 **A-B:** Press to select section A-B and to play repeatedly.

27 **V.OFF:** Press to turn off video output for improved performance from audio-only discs. Press again to restore video output.

28 **LIGHT:** Press to illuminate remote controller.

29 **NUMERIC KEYS:** Select numbers by pressing these buttons.

30 **Play Mode:** Press this button while a DVD is playing to display the Play Mode dialog box, which allows you to program Random or Repeat playback and play lists. This button has no effect for other media, as they use the Contents Menu on-screen display for these functions.

31 **CLEAR:** Press to remove the Banner menu from the screen.
In Stop mode and with all menus and banners removed from the display, press and hold this button for five seconds to reset all settings to their factory defaults.

32 **IR EMITTER:** This small, clear button-like device sends the IR commands from the remote control to the player. To ensure proper performance of the remote control, be sure to point it toward the unit and do not cover it with your fingers when sending remote commands.

33 **HD Mode Selector:** When the player is connected to a video display using the **HDMI Output** ❶, the display sends information to the player indicating the compatible video resolution it is capable of handling, and the player automatically sets the video output to match it. Pressing this button allows you to manually change the output resolution, with your selection indicated by the **Video Output Indicators** **O**.
The player will not allow you to select a resolution beyond the capabilities of your display, and if you try to do so, an on-screen error message will appear to alert you to the selection of an incompatible video format. Changes made with this button remain active until the player or the display is turned off. When either is turned off, and then on again, the player will revert to the default setting transmitted by the display.

34 **RANDOM:** Press for RANDOM playback in random order.

Rear Panel Connections
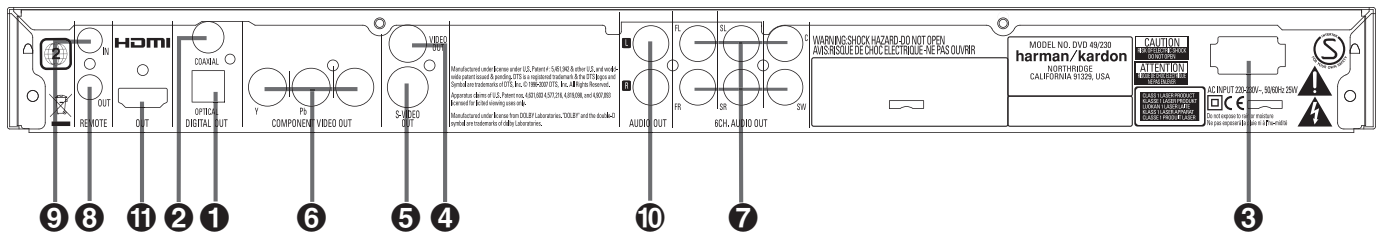
① Optical Digital Output
② Coaxial Digital Output
③ AC Power Cord
④ Composite Video Output

⑤ S-Video Output
⑥ Component Video Outputs
⑦ 6-Channel Audio Outputs
⑧ Remote Control Output

⑨ Remote Control Input
⑩ Analog Audio Output
⑪ HDMI Output

① **Optical Digital Output:** Connect this jack to the optical digital input of an A/V receiver or surround processor for Dolby Digital, DTS or PCM audio playback.

② **Coaxial Digital Output:** Connect this jack to the coaxial digital input of an A/V receiver or surround processor for Dolby Digital, DTS or PCM audio playback.

NOTE: The coaxial digital output should only be connected to a digital input. Even though it is the same RCA-type connector as standard analog audio connections, DO NOT connect it to a conventional analog input jack.

Connect either the **Optical Digital Audio Output ①** or the **Coaxial Digital Audio Output ②** to a corresponding digital audio input on your receiver or processor, but not both.

③ **AC Power Cord:** Connect this plug to an AC outlet. If the outlet is controlled by a switch, make certain that it is in the ON position.

④ **Composite Video Output:** Connect this jack to the video input on a television or video projector, or to a video input on an A/V receiver or processor if you are using that type of device for video input switching.

⑤ **S-Video Output:** Connect this jack to the S-Video input on a television or video projector, or to an S-Video input on an A/V receiver or processor if you are using that type of device for S-Video input switching.

⑥ **Component Video Outputs:** These outputs carry the component video signals for connection to display monitors with component video inputs. For standard analog TV's or projectors with inputs marked Y/Pr/Pb or Y/Cr/Cb, connect these outputs to the corresponding inputs. If you have a high-definition television or projector that is compatible with high scan rate progressive video, connect these jacks to the "HD Component" inputs. Note that if you are using a progressive scan display device, then

"Progressive" must be selected in the Video Set-up Menu in order to take advantage of the progressive scan circuitry. See page 22 for more information on progressive scan video.

IMPORTANT: These jacks should NOT be connected to standard composite video inputs.

⑦ **6-Channel Audio Outputs:** Connect these outputs to the matching 6-channel analog audio inputs on your receiver or surround sound processor. This connection is required to listen to the multichannel tracks on DVD-Audio discs or SACD (DVD 49 only). If the disc also contains a linear PCM, Dolby Digital or DTS track, you may listen to it using the **HDMI ⑪**, **Optical ①** or **Coaxial Dgital Audio Output ②** or the **Analog Audio Outputs ⑩**.

Note: You'll find more details about all Audio/Video connections under Setup and Connections on the following pages.

⑧ **Remote Control Output:** Connect this jack to the infrared (IR) input jack of another compatible Harman Kardon remote controlled product to have the built-in Remote Sensor on the DVD 49 provide IR signals to other compatible products.

⑨ **Remote Control Input:** Connect the output of a remote infrared sensor, or the remote control output of another compatible Harman Kardon product, to this jack. This will enable the remote control to operate even when the front panel **Remote Sensor** on the player is blocked. This jack may also be used with compatible IR remote control-based automation systems.

⑩ **Analog Audio Output:** Connect these jacks to an audio input on an A/V receiver or surround processor for analog audio playback.

⑪ **HDMI Output:** If you have an HDMI-compatible receiver or video display device, connect this output to an HDMI input on the receiver or video display for the highest-quality uncom-

pressed digital audio and video available. Even if your receiver is not capable of processing audio in the HDMI format, you may still experience the superb reproduction of HDMI video.

If your video display has a DVI input, you may use an optional HDMI-to-DVI cable or adapter for the connection to the display. In all cases, the video display must be HDCP-compliant in order to use the HDMI output. For best results, we do not recommend HDMI connections in excess of ten feet.

The following audio formats may be output via the HDMI connection:

Audio CD – 2-Channel PCM or 5.1-channel DTS

DVD-Audio – 2-Channel or 5.1-channel PCM

DVD-Video – Up to 5.1-channel Dolby Digital or DTS

Note: To hear the high-resolution surround sound recorded on DVD-Audio discs or SACD (DVD 49 only), you need to connect the **6-Channel Audio Outputs ⑦** to the corresponding input jacks on your receiver or processor. These formats are not output digitally.

Setup and Connections

Before connecting your player, please:

■ Ensure that the power switch of this unit and other equipment to be connected is set to off before commencing connection.

■ Do not block ventilation holes of any of the equipment and arrange them so that air can circulate freely.

■ Read through the instructions before connecting other equipment.

■ Ensure that you observe the color coding when connecting audio and video cables.

For the best quality, if your receiver or processor and/or video display are HDMI-capable, we recommend using the HDMI output. With a single cable connection between components, HDMI is able to deliver uncompressed high-definition digital video and digital audio programming.

Note: If your video display has a DVI input, you may use an optional HDMI-to-DVI cable or adapter for the connection to the display. In all cases, the video display must be HDCP-compliant in order to use the HDMI output.

If your equipment is not HDMI-ready, we recommend the use of component video for higher quality pictures.

If you are using a television or video display that is compatible with high-resolution 576P video signals, make sure to use the input jacks on the video display marked "HD Component," if available. Also, make sure to configure the display's input settings for use with "576P" video signals. You will also need to change the scan type in the Video Setup menu from "Interlaced" to "Progressive." See page 21.

The Video output (yellow) combines the complete video signal (composite) and sends it to the TV (or to the AV Receiver) by one line only. Use the Video output, when your TV set is equipped with a Video input jack only.

The S (separate) video output connector separates the color (C) and luminance (Y) signals

before transmitting them to the TV set in order to achieve a sharper picture. Use the S-video cable when connecting the player to a TV equipped with an S-video input for improved picture clarity. Never connect both outputs, Video and S-Video, to your TV or AV Receiver, only one of them.

Most European TV´s are equipped with SCART connectors rather than with a normal video input (yellow cinch). In that case an optional Composite or Component Video to SCART cable connection should be used, providing the audio signal too. Separate analog audio connections to TV are needed only if your TV is connected to the video or S-video output.

You may also use the standard S-video or composite video connection if your TV does not have component video inputs. The component and S-video outputs are not available simultaneously.
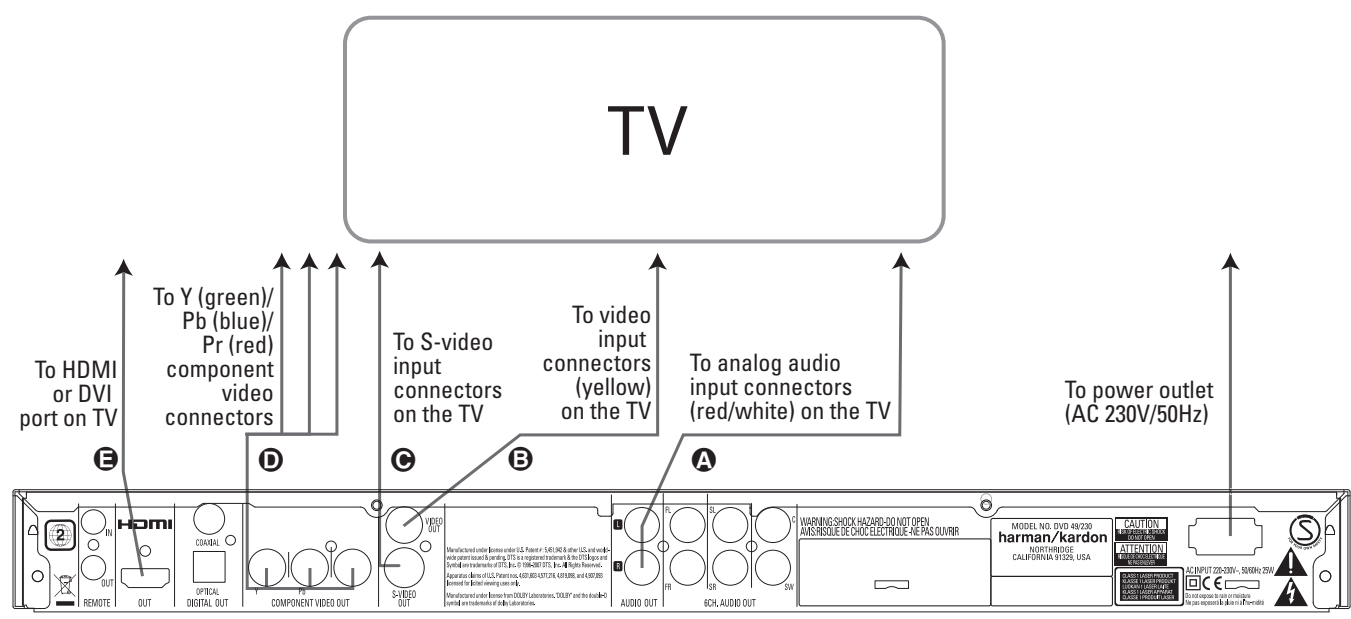
• Modern audio/video receivers are capable of connection to several video source devices, such as the player and a VCR, cable television set-top box, HDTV tuner or other device. The receiver is equipped with video monitor outputs for connection to your television, projector or plasma display. As you select any input source device, the receiver selects the correct video input and routes it to the correct video monitor output to your television. It is recommended that you connect one of the video

outputs from the player to the corresponding input on your receiver to simplify operation of your home entertainment system. Refer to the owner's guide for your receiver for more information.

• If your receiver is capable of multiroom operation, it is recommended that you connect both the component (or HDMI) and composite video outputs of the player to the receiver. This enables the highest-quality picture (component video) for viewing in the main listening room, while enabling the multiroom system, if it is video-capable, to distribute the composite video signal to the remote zone. Consult the owner's guide for your receiver to determine whether it has video multiroom capability.

Connecting to a TV Only

When using the player with a television but no audio receiver or processor, connect it as follows. Make the **Analog Audio Connection Ⓐ** and one of the **Video Connections** (**Composite Video Ⓑ**, **S-Video Ⓒ**, **Component Video Ⓓ**). If your television or video display is HDMI-capable, you only need to make the **HDMI Ⓔ** connection, as it handles both audio and video. Remember to plug in the power cord.

TV

To HDMI or DVI port on TV
Ⓔ

To Y (green)/ Pb (blue)/ Pr (red) component video connectors
Ⓓ

To S-video input connectors on the TV
Ⓒ

To video input connectors (yellow) on the TV
Ⓑ

To analog audio input connectors (red/white) on the TV
Ⓐ

To power outlet (AC 230V/50Hz)

Setup and Connections

Connecting to a Receiver/Amplifier With a Dolby Digital or DTS Decoder

One of the major advantages of the DVD format is its ability to use a variety of digital audio formats for the ultimate in sonic performance. However, in order to enjoy the benefits of digital audio, you must use a receiver or processor that has digital audio decoding capabilities and make an optical or coaxial digital audio connection between the player and your home theater system. This simple connection is made as shown below with an optional coax or optical cable. Only one of these connections is required, and both should not be made at the same time.

In order to take advantage of the high-resolution DVD-Audio output or SACD (DVD 49 only), you must connect the **6-Channel Audio Outputs** ❼ to the matching 6-channel inputs on your receiver or processor.

NOTES FOR ANALOG AUDIO:

• If you wish to use the player as the input for a multiroom system, the **Analog Audio Outputs** ❿ should be connected to the standard analog left/right DVD or CD inputs on your digital receiver or processor.

• The connection from the **Analog Audio Outputs** ❿ to the TV is optional.

• When the audio signal is to be fed to an analog receiver rather than to the TV, connect the **Analog Audio Outputs** ❿ to any analog audio inputs on your receiver or processor.

• The analog audio connection should also be made if you wish to play high-resolution 96kHz PCM audio discs where your receiver does not support 96kHz processing.

NOTES ON VIDEO:

■ Note: With multiple video sources, your Audio/Video device can be used for selecting the video signal and routing it to the TV. Connect the video or S-video output of the player (whatever is provided with your device) to the video or S-video input on your device and the video/S-video output of this device to your TV. For more details, see the manual of your Audio/Video amplifier/receiver.

■ Note for Analog Audio: The connection from Audio Out to the TV is optional only. Normally you´ll hear the sound from your AV-system´s speakers, so the TV volume should be completely turned down. If you plan to use your player also without having to turn on your complete system, this connection must exist, then you can turn up the TV´s volume as needed.

Connecting to a Receiver

When using the player with an audio/video receiver or processor, connect it as follows. First, make one of the video connections (**Composite Video** ☺, **S-Video** ☻, **Component Video** ☻ or **HDMI** ☻) to the video input jacks on the A/V receiver, and then connect the receiver's video monitor output to the TV. In addition, to benefit from the high-resolution surround sound formats recorded on DVD-Audio or SACD (DVD 49 only) discs, which are not output via the HDMI connection, you will need to make the **6-Channel Audio Connection** ⒶA to your receiver or processor.

Second, if your receiver or processor is not HDMI-capable, make either the **Optical Digital Audio Connection** ☺ or the **Coaxial Digital Audio Connection** ☻, to the receiver or processor.
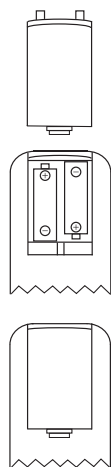
IMPORTANT NOTE: Make certain that any device being connected, including the player, your receiver or processor and your TV or video display, is turned off whenever you make connections between products.
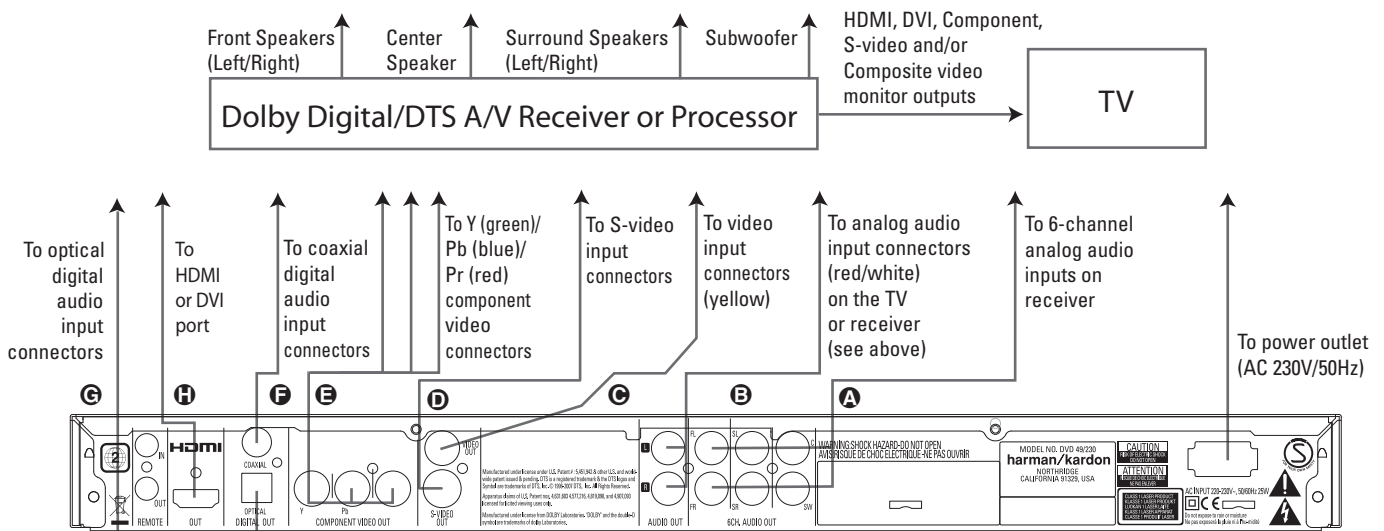
Remote Control

Battery installation

Insert the batteries supplied while observing the correct (+) and (–) polarities.

Service life of batteries

■ The batteries normally last for about one year, although this depends on how often, and for what operations, the remote control is used.

■ If the remote control unit fails to work even when it is operated near the player, replace the batteries.

■ Use size "AA" batteries.

Notes:

■ Do not attempt to recharge, short-circuit, disassemble, heat or throw the batteries into fire.

■ Do not drop, step on or otherwise impact the remote control unit. This may damage the parts or lead to malfunction.

■ Do not mix old and new batteries.

■ Wipe away any leakage inside the remote control unit, and install new batteries.

■ If leakage should come into contact with parts of your body, wash it off thoroughly with water.

■ Batteries contain chemical substances and we recommend that you dispose of them properly and in compliance with any local regulations. Do not simply throw them away but return to your dealer or special battery disposal centers.

Remote control operation range

Point the remote control unit from no more than about 7 m from the remote control sensor and within about 60 degrees of the front of the unit.
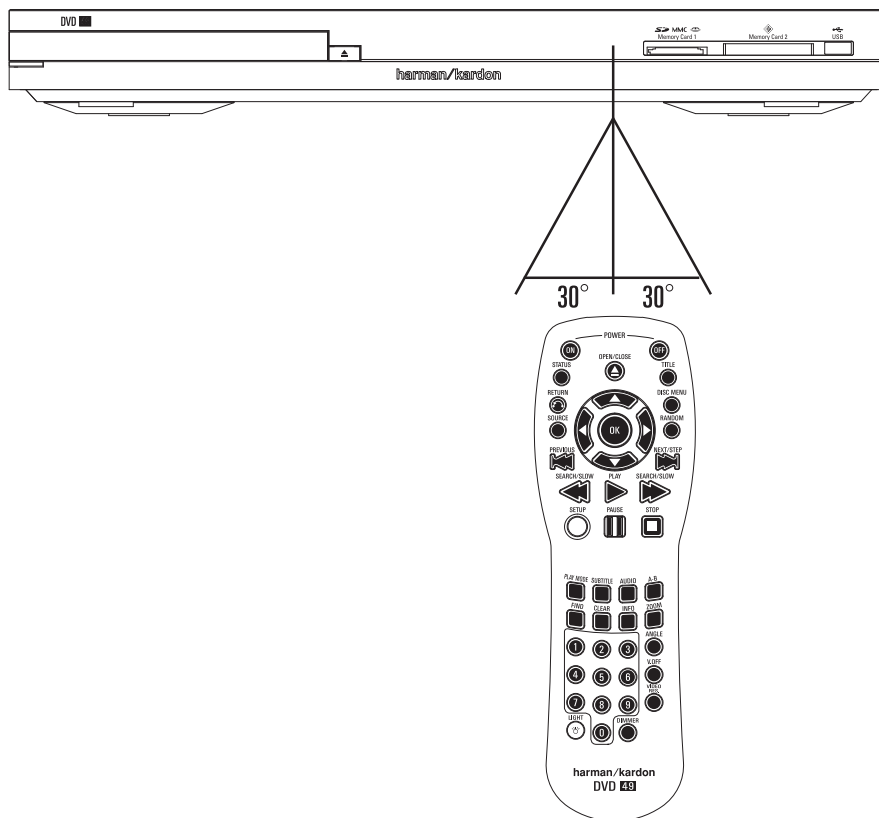
■ The operating distance may vary according to the brightness of the room.

Notes:

■ Do not point bright lights at the remote control sensor.

■ Do not place objects between the remote control unit and the remote control sensor.

■ Do not use this remote control unit while simultaneously operating the remote control unit of any other equipment.

Digital Audio Connections

Audio output from the unit's optical/coaxial digital audio output connector

Gently push the cable plug through the built-in shutter that covers the optical digital audio output and connect the cable firmly so that the configurations of both the cable and the connector match.

Disc	Sound recording format	Optical/coaxial digital audio output
DVD	Dolby Digital	Dolby Digital bitstream (2-5.1ch) or PCM (2ch, 48kHz, 16-bit)††
	Linear PCM (48/96kHz, 16/20/24-bit)	Linear PCM (2ch) (48/96kHz, 16/20/24-bit)
	DTS	Bitstream or no output*
	MPEG (2.0)	MPEG bitstream (2ch) or linear PCM (2ch, 48kHz)
VCD	MPEG-1 CD-DA	Linear PCM*
CD	Linear PCM	Linear PCM (44.1kHz sampling)
	MP3 MPEG-1 Audio Layer 3)	Linear PCM (44.1–48kHz, depending on source, if digital output format selected as "Bitstream"). (48kHz if digital output format selected as "PCM")
	WMA (Windows Media Audio)	Linear PCM (32–48kHz)

* Digital Format must be selected as "BITSTREAM" or "PCM" respectively in Menu

For your reference:

■ Dolby Digital (AC-3) is a digital sound compression technique developed by the Dolby Laboratories Licensing Corporation, supporting 5.1-channel surround sound, as well as stereo (2-channel) sound, this technique enables a large quantity of sound data to be efficiently recorded on a disc.

■ Linear PCM is a signal recording format used in CDs. While CDs are recorded in 44.1kHz/16 bit, DVDs are recorded in 48kHz/16 bit up to 96kHz /24 bit.

■ If you have a Dolby Pro Logic Surround decoder connected to the DVD's analog AUDIO OUT connectors, thanks to the "Downmix" function of the DVD you will obtain the full benefit of Pro Logic from the same DVD movies that provide full 5.1-channel Dolby Digital soundtracks, as well as from titles encoded with Dolby Surround.

■ The DVD is designed to digitally output 96kHz-PCM audio with a 96kHz sampling rate. However, some 96kHz DVD's may include copy protection codes that do not permit digital output. For full 96kHz fidelity from these discs, use the analog outputs of the DVD.

IMPORTANT: If your surround processor/D/A converter does not support 96kHz PCM audio, you must use the DVD analog outputs for full 96kHz fidelity with these discs.

Caution for the optical/coaxial digital audio outputs:

■ When connecting an amplifier (with an optical/coaxial digital input) which does not contain a Dolby Digital (AC-3) or DTS decoder, be sure to select "PCM" as initial setting in the "Digital Output" menu (see also page 19).
Otherwise, any attempt to play a DVD may cause such a high level of noise that it may be harmful to your ears and damage your speakers.

■ CD's can be played as they would normally be played.

Note:

■ Some first generation DTS decoders which do not support DVD-DTS interface may not work properly with the player.

■ Dolby Digital, DTS and PCM signals are passed through the **HDMI Output ⓫**. You can either use this HDMI connection or connect the **6-Channel Audio Outputs ❼** to the corresponding input jacks on your receiver or processor in order to enjoy DVD-Audio or SACD (DVD 49 only) materials.

Notes when connecting the optical digital audio cable (optional)

■ Gently push the cable plug through the built-in shutter that covers the optical digital audio output and connect the cable firmly so that the configurations of both the cable and the connector match.

Dolby Digital and DTS

Both Dolby Digital and DTS are audio formats used to record 5.1-channel audio signals onto the digital track of film. Both of these formats provide six separate channels: left, right, center, left rear, right rear, and common subwoofer. The latest 6.1-formats, Dolby Digital EX and DTS ES, even one (or two) additional "Surround Back" channel for a center between the rears.

Remember, that Dolby Digital or DTS will only play 5.1-channel sound if you've connected the optical or coaxial output of the player to a DTS or Dolby Digital receiver or decoder and if the disc was recorded in the Dolby Digital or DTS format.

DVD-Audio and SACD

The high-resolution output of DVD-Audio and SACD discs is only available as an analog signal. For that reason, it is necessary to make direct analog connections between the **6-Channel Audio Outputs ❼** on the player and the matching 6-channel inputs on your receiver or surround processor.

Playback Basics

Basic Play

Preparation

1. Switch the TV ON and select its video input connected to the player.

2. Press POWER to turn on the unit, the harman/kardon logo should appear now on the screen. If that logo appears distorted on the screen or without any color, change the appropriate settings at the Video Setting Sub-menu according to your TV set and to the connection used between the player and your TV.

3. When you see no video at all, not even the harman/kardon logo, check the setting of the video input used on your TV. When you don´t succeed, connect your TV with different cables to the player, e.g. via Composite (yellow jacks) or S-Video cables, to view the setup menus until all appropriate "Video menu" settings are made properly.

4. Switch on your A/V system's power, if the player has been connected to such a system.

5. Press OPEN/CLOSE to open the disc tray.

6. Place a disc on the disc tray.

Hold the disc without touching either of its surfaces, position it with the side you wish to play facing down, align it with the guides, and place it in its proper position.

■ 3" (8 cm) discs or 5" (12 cm) discs can be used.

7. Press PLAY. The disc tray is automatically closed and play begins.

■ When the disc tray is closed by pressing OPEN/CLOSE, play will start automatically.

■ With most DVD's, a Disc Menu appears on the screen. Select specific menu item by using ARROW buttons on the remote, then press OK.

Disc Playback Features

Skipping tracks or titles/chapters
To move forward or backward through the tracks on a CD or the titles or chapters on a DVD, press skip on the front panel or Previous/Next on the remote.

Fast Motion Playback/Fast Search
1. To move forward or backward through the DVD or CD disc being played at fast speed, press SEARCH on the remote. Once one of these buttons is pressed, the fast search will continue until PLAY is pressed.

There are four fast-play speeds. Each press of the SEARCH Buttons will cycle to the next speed in the following order: x2, x4, x8, x16 indicated by a number of arrow indicators on the right top of the screen.

2. Press PLAY at any time to resume normal playback.

Note that there will be no audio playback during fast-forward or -reverse play of DVD discs. This is normal for DVD, as A/V receivers and surround processors cannot process the digital audio streams during fast-play modes; audio will be heard during fast-play of conventional CD's.

Freeze Frame and Frame Advance (with DVD only)
1. Press PAUSE when a DVD is playing to freeze the picture.

2. Each time you press one of the STEP (FWD or REV) buttons, the picture advances one frame.

3. Press PLAY to resume normal playback.

Slow Motion Playback (with DVD only)
1. When a DVD disc is in pause or freeze frame mode, you may move slowly forward or backward through the program being played at one of the speeds by pressing the Slow Buttons on the remote. Each press of the buttons will move to the next speed, indicated by a number of arrow indicators on the right top of the screen.

2. Press PLAY to resume normal playback.

Note that there will be no audio playback during slow-forward or -reverse play of DVD discs. This is normal for DVD, as A/V receivers and surround processors cannot process the digital audio streams during slow modes. Slow play is not available for CD.

Notes: Playback features may not be available during the opening credits of a movie. This is intended by the disc author and is not a failure of the player.

Playback of a DVD with 96kHz/24-bit audio requires the use of circuitry normally used for other features. Accordingly, Slow Play Reverse and Step Advance features are not available with these discs.

Depending on the structure of a VCD disc, the functions Slow Reverse and Step Reverse may be prohibited or have no function and Fast Playback (Search) may not function.

About DivX and DivX Ultra Movie Files

The DivX disc compatibility of the player is limited by the following:

● the available resolution size of the DivX file should be below 720x576 (W x H) pixels.

● the total number of files and folders on the disc should be less than 999.

● the number of screen frames per second should be below 29.97 frames per second.

● the video and audio structure of recorded file should be interleaved.

The player is capable of playing DivX files with the extensions ".avi".

The player is capable of playing subtitle files with the extensions ".smi", ".srt", ".sub (Micro DVD format only)" or "ssa". Other subtitle files won't be displayed. Subtitle files need to carry the same name as the movie file (but with either one of the above extensions) and should be located in the same directory.

Playing a DivX Movie Disc
Before playing DivX movie discs, please note the following:

● multi session DVD containing Windows Media Audio files may not be supported.

● open session discs are not supported.

● the player does not support PC data.

● the player does not support an unfinalized disc with a closed session.

1. Insert a disc and close the tray.

2. Press the OSD button of the remote control and select a folder by pressing the up/down cursor buttons and press OK. 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 up/down buttons on the remote to highlight and press OK.

3. If you want to view a particular file, press the up/down buttons to highlight a file and press PLAY.

When playing back a DivX movie you can use variable playback functions like fast and slow backward and forward, as well as step forward and step backward.

4. Press STOP to stop the playback.

The playback functionalities of DivX video discs will vary depending on the DivX version used for creating your movies.

System Setup

System Defaults

The final step of the installation is to establish the system's defaults. It is helpful to take a few minutes to familiarize yourself with these settings, as they may require change before the first use and later from time to time.

General Functionality of the OSD Menu
The complete setup and control of the player takes place in an advanced user-guided On Screen Display (OSD) menu system. The OSD can be activated by pressing the SETUP button on the remote control. Pressing this button again deactivates the OSD.

The main menu consists of a PLAYER INFORMATION Menu and a SET-UP Menu. The PLAYER INFORMATION Menu will show all information and options available for the disc currently playing. The SET-UP Menu will help you configure all audio and video settings which are normally only made once.

Each Main Menu contains Submenus. These sub-menus are shown as icons on the left side of the menu. They can be highlighted by a white square around the icon by moving the cursor with the ARROW buttons. Icons can be activated by pressing OK as soon as an icon is highlighted. When OK has been pressed, the color of the icon will change to dark blue and you will see that the current settings of this submenu will appear on the right side of the menu.

Although each Menu has various Submenus and Settings, navigating through menus, submenus and settings goes the same way. All submenus, settings and options can be accessed with the help of the ARROW (▲ ▼ ▶ ◀) and OK Buttons on the remote control.

To change a setting, simply move the cursor to the setting you wish to change. This setting will be highlighted in light blue, and a brief explanation will appear in the Instruction Line on the bottom of your screen.
Next, press the **OK Button** ❼ and a dropdown menu will appear that contains the available options for that setting. Press the ▲ ▼ **Navigation Buttons** ❿ until the desired option is highlighted, then press the **OK Button** ❼ to select that option.
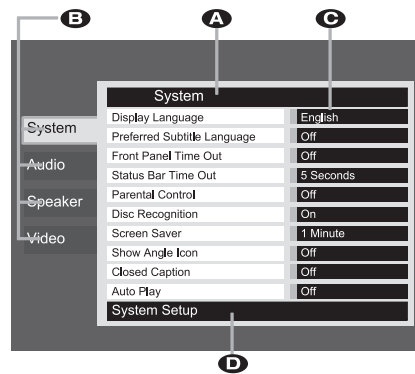

Figure 1

Ⓐ Main Menu Line

Ⓑ Submenus

Ⓒ Current Settings

Ⓓ Instruction Line

Most DVDs are created to allow setup menus to be displayed while the disc is playing, super-imposed over the video playback. However, some discs are authored in a way that does not allow this. If you see the ⊘ icon displayed on the screen after pressing the **Setup Button** ❾ or the **Info Button** ⓫, press the **Stop Button** ⓳ and then press the **Setup** or **Info Button** ❾⓫ again.

Set Up Menu

The first step in checking or changing the system defaults is to access the Setup Menu. First, make certain that the player is properly connected to a video display, and that power is connected. For this process, however, you do not need to load any discs into the unit.

During STOP, PAUSE or PLAY mode, if you press SETUP on the remote, the Set Up Menu appears on the screen.

This Main Menu and all menus in the following section may look different, listing the settings with different languages, depending on the settings made previously. With the factory default setting all languages are set to "English", that´s why with all menus the English version is shown in the manual.

In the SET-UP Menu you will find submenus for making or changing all settings and adjustments for both Audio and Video handling of your player.
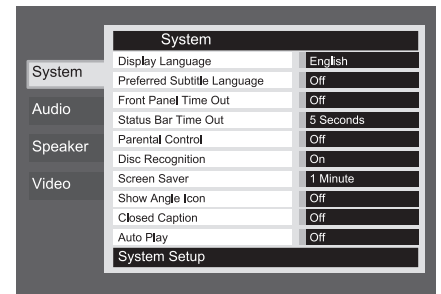
System Settings

Figure 2

The Setup menu screens follow the same basic format.
Select a menu by highlighting its tab on the left side of the screen. The menu's settings will be previewed, but you will not be able to make any changes. See Figure 2. Press the OK Button to make adjustments to the menu.
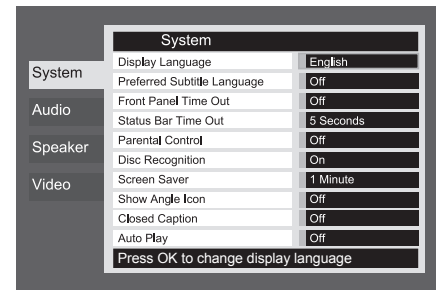

Figure 2a

The first setting in the menu will automatically be selected. If you wish to change its value, press the OK Button to view the available options in a dropdown menu, as shown in Figure 2b.
Use the ▲ ▼ Buttons to highlight the desired option, and press the OK Button to select it.
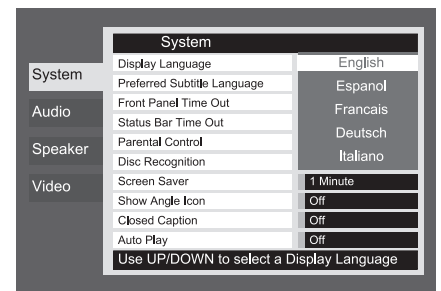

Figure 2b

If you wish to close the dropdown menu without changing the setting, press the Return Button.

The System Setting Submenu contains the following settings. Follow the explanations in the Instruction Line on the bottom of your screen to change the settings.

Display Language: Sets the language in which the OSD menus are shown on your screen.

Preferred Subtitle Language: Defines your preferred subtitle language. Every time a disc will be played that contains this subtitle language, it will be shown automatically. If you do not find

System Setup

your preferred language in the list of options, you can select your preferred language by highlighting OTHER. Press OK and use the Navigation Buttons to select your preferred language from the list shown on the screen. Note that only those languages will be available that are actually on the DVD you would like to play. You can also set the preferred subtitle language to OFF. In that case no subtitles will be shown.

Panel Time-Out: Sets the time-out interval for the Front Panel Information Display. After the selected time, the display will dim completely.

Status Bar Time-Out: Sets the time-out interval for the Status Bar, after which the Status Bar will disappear from the screen.

Parental Control: Defines a password used to control viewing of restricted programs. The default password is 1234. After pressing the default password, either the parental control setting can be chosen, or a new password. The five standard US rating symbols are "G" (General, level 2), "PG" (Parental Guidance, level 4), "PG13" (Parental Guidance and 13 years old, level 4), "R" (Restricted, level 6) and "NC 17" (from 17 years old, level 7). The DVD will accommodate a total of eight rating steps, as set by the DVD creators. These additional steps allow for more critical control of program playback for all audiences. Level 8: All DVDs can be played. Levels 7 to 2: DVDs for general audiences/ children can be played. Level 1: DVDs for children can be played; DVDs for adults/general audiences are prohibited. Follow the explanations on the screen to set a new password.

Disc Recognition: This setting controls the Disc Recognition feature. When turned on, it allows you to pause a DVD, remove it from the player, play another disc, and then resume playback of the original disc at a later time from the point at which you paused. Note that even when the setting is activated, you must pause playback, rather than bring it to a full stop, and the unit must not be turned off between discs. The player is capable of storing the information for up to five DVDs at a time.

Screen Saver: Activates a Screen Saver to prevent an image to "burn" into a video display device. If you connect the player to a LCD or plasma screen or video projector, we recommend you activate the screen saver at all times.

Show Angle Icon: Determines whether the Angle Icon will appear on the screen when there are different angles available on a DVD disc.

Closed Caption: This setting enables viewing of closed caption messages, if they have been encoded in the video material. Closed captions are text displays of the program's dialogue, normally hidden from view, that are made available for the hearing-impaired or others.

Select the O N setting to activate the closed captioning decoder so that these messages may be viewed.

Auto Play: Change this setting to On to play any loaded disc automatically when the player is turned on. At the default Off setting, you will have to begin playback manually.
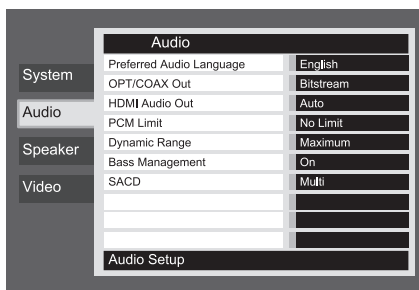
Audio Settings

Figure 3

The Audio Setting Submenu contains the following settings. Follow the explanations in the Instruction Line on the bottom of your screen to change the settings. In case the audio settings have been changed, they will take effect after the next time the player goes through STOP mode.

Preferred Audio Language: Defines your preferred audio language. Every time a disc is played that contains this audio language, it will be activated automatically. If you do not find your preferred language in the list of options, you can select your preferred language by highlighting OTHER. Press OK and use the Navigation Buttons to select your preferred language from the list shown on the screen. Note that only those languages will be available that are actually on the DVD you would like to play.

Digital Output: If your system includes 5.1 digital audio surround decoding (Dolby Digital and/or DTS), select BITSTREAM as the digital output. In that case all audio signals will be output with their original format. If your system only includes stereo and/or Dolby Pro Logic, select PCM. Then all audio signals will be output in PCM format only (DTS will output no signal).

HDMI Audio Out: This setting determines the format of the audio output via the HDMI Output. It is dependent upon the capabilities of your receiver or video display (if the player is connected directly to a display). We recommend that you leave it at the Auto setting, in which case the player will communicate with the device it's connected to and automatically select a setting that is compatible with that device.

• **Auto:** This is the default setting, and it is recommended that you leave the HDMI Audio Out line at this setting. The player will automatically select the correct setting, based on the capabilities of your receiver or video display.

• **PCM:** At this setting, all digital audio is decoded and output as PCM streams. For example, a DVD with a Dolby Digital soundtrack will be decoded, and 5.1 PCM streams

(one per channel) will be output through the HDMI Output for playback by your receiver.

• **Bitstream:** This setting may be used with receivers that are capable of decoding digital multichannel formats from the HDMI stream.

• **Off:** Use this setting if your receiver is not capable of processing the audio portion of the HDMI stream and you have made a separate digital audio connection from the player to the receiver. No audio will be passed to the HDMI Output.

PCM Limit: This setting affects playback of high-resolution (96kHz or greater) audio materials. If your receiver is capable of handling signals greater than 48kHz, select the No Limit setting. If your receiver is not capable of resolving these signals, or if you aren't sure of your receiver's capabilities, select the 48kHz setting. At the 48kHz setting, high-resolution materials will be downsampled to 48kHz. If you select the No Limit setting when your receiver is not capable of processing high-resolution signals, you will not hear any audio when these materials are played. **Note:** Due to copyright restrictions, the player will not output an uncompressed signal in the PCM format from a disc recorded with 96kHz/24-bit resolution, such as some DTS audio CDs. If the Digital Output setting in the Audio Setup submenu is set to PCM, the player will always output the original DTS 96/24 signal. Changing the PCM Limit setting to 48kHz will have no effect.

Dynamic Range: This setting allows you to take advantage of the programming present on some Dolby Digital recordings to reduce the volume of louder passages while maintaining intelligibility of quieter passages. This means that you may listen to programs at a level that allows the full impact of a soundtrack to be heard at a volume that is lower than you might otherwise use to avoid disturbing others. The player accomplishes this by compressing the audio to a greater or lesser degree, depending on which setting you choose. Three options are available:

• M A X I M U M does not make any changes to the original playback, and should be used when the volume setting in the listening room may be as loud as you desire.

• M E D I U M applies a moderate amount of compression so that louder passages are a little bit quieter.

• M I N I M U M applies more compression so that louder passages are much softer.

Feel free to experiment with the settings at any time. Note that if your receiver or processor also allows you to program the dynamic range setting, also known as the "Night Mode," you do not need to make any adjustments on the player and should leave the setting at M A X I M U M.

System Setup

While DVD-Audio also is output only in analog form, many discs also contain PCM, Dolby Digital or DTS digital tracks and may be played through the **Digital Audio Outputs ❶❷**.

Bass Management: This setting activates the SPEAKER menu's bass management settings, to optimize playback of DVD-Audio discs through the **Analog Audio Outputs ❿❼**. Three settings are available:

• Bypass: This is the default setting. If your receiver or processor is equipped with 6-channel inputs and is capable of adjusting the bass management settings (speaker size, output levels and delay times) for its 6-channel analog inputs, then Harman Kardon recommends that you leave this setting to Bypass, and adjust the bass management settings on your receiver.

• On: If your receiver or processor is equipped with "direct" 6-channel inputs and the receiver is not capable of performing bass management on these inputs, then change this setting on the player at the default of ON, and proceed to the AUDIO ADJUSTMENTS menu to program the bass management settings.

• STEREO: If your system consists of just a pair of stereo loudspeakers, or a stereo system with a subwoofer and a pair of satellite loudspeakers, then change this setting to STEREO.

Speaker Settings

This menu allows you to adjust bass management settings that control the audio output of the **6-Channel Audio Outputs ❼** for speaker size, output level and delay times. The proper adjustment of these settings is key to optimal reproduction of DVD-Audio discs, when the player is used with a receiver or processor that does not have audio adjustment capabilities for the direct inputs.

Important Note: In order to avoid audio problems, when the player is connected to a receiver or processor that does have the capability to adjust bass management parameters for its multichannel inputs, you have the option to either use that capability or adjust the settings in the player. The preferred method of operation is to use the receiver for these adjustments. In that case, remember to set the Bass Management setting in the AUDIO SETUP menu to Bypass. If you make the adjustments using the player's settings, it is important that the receiver's settings for the multichannel direct inputs be disabled, or set to "Large" for the speaker sizes and "0" for the level adjustments and delay times, unless these settings are also used for the receiver's other source inputs, in which case they should be left the way you set them when you configured your receiver. If you have any questions about the capabilities of your receiver or processor, we recommend that you consult its owner's manual or the manufacturer's Web site for further information.

If your receiver or processor does not have 6-channel analog inputs, make sure to select Stereo for the Bass Management setting in the AUDIO SETUP menu. Then connect the **Analog Audio Outputs ❿** to any 2-channel analog inputs on your receiver.

Before proceeding with the audio setup adjustments, we recommend that you first use the menu system in your receiver or processor to ascertain the settings already established for "Speaker Size," "Output Level" and "Delay Time," which may be set as a distance. Write these settings down to refer to during the configuration process.

Press the **Setup Button ❾** to activate the Setup menu; then use the **▲▼ Navigation Buttons ❿** until the SPEAKER submenu is highlighted within a blue outline box, and press the **OK Button ❼**.

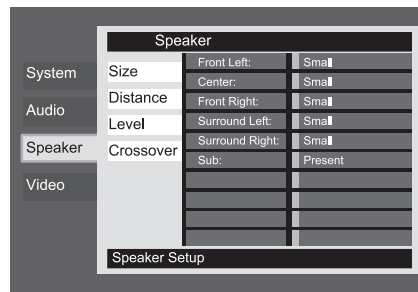*Figure 4*

The following adjustments are available on the SPEAKER menu for each speaker position. It is recommended that you cycle through the adjustments for each speaker position using the **▲▼◀▶ Navigation Buttons ❿** to enter the settings that are appropriate for your system. Pressing the **OK Button ❼** displays a drop-down menu with the selections available for that setting. Use the **▲▼ Navigation Buttons ❿** to highlight the appropriate setting, and then press the **OK Button ❼** to select it.

You will notice that the adjustments for speaker size and distance (used to calculate delay times) are set in tandem for the front left and right speaker pair, and for the surround left and right speaker pair. Changing the settings for either speaker in these pairs also affects that setting for the other speaker in that pair. For this reason, it is important to select the same brand and model for both speakers in each pair, and also to place them at about the same distance from the listening position.
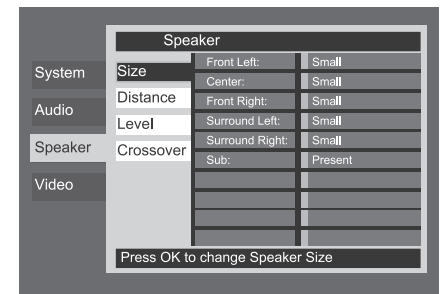
Speaker Size

Figure 4a

Speaker size is part of the bass management system which determines which frequencies are sent to the specific speaker position, and which are sent to the subwoofer. The designation of "size" does not refer to the speaker's physical size, but rather to the lowest frequency a speaker can handle. For this purpose, "full-range" speakers are considered "large," while those not capable of reproduction below 100Hz are considered "small." In general, if you are using a packaged speaker system with smaller satellite-type speakers and a subwoofer, you should select Small for all five speakers. Large should only be selected if you are certain that your speakers are capable of handling extreme low-frequency sounds.

At the subwoofer setting, you can select whether or not a subwoofer is present in your loudspeaker setup.
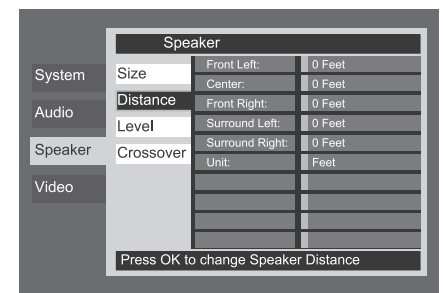
Distance

Figure 4b

Due the different distances between the listening position for the front channel speakers and the surround speakers, the amount of time it takes for sound to reach your ears from the front or surround speakers is different. You may compensate for this difference through the use of the delay settings to adjust the timing for the specific speaker placement and acoustic conditions in your listening room or home theater. Measure the distance from the listening position to each of the individual loudspeakers. Once done, select per loudspeaker the distance that is closest to the one measured.
Before making any changes to the distance settings, first move the blue bar down to the UNIT-line, press OK ❼ and select the unit for distances you prefer to enter, feet or meter with the use of the **▲▼ Buttons ❿**.
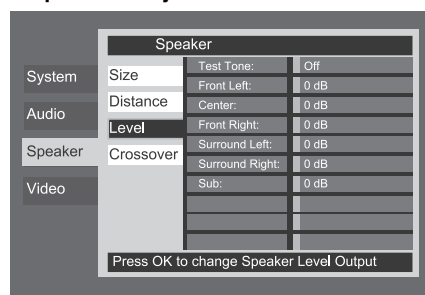
System Setup

Output level adjustment

Figure 4c

Output level adjustment is a key part of the configuration process for any surround sound product. It is particularly important for DVD-Audio, as correct outputs will ensure that you hear sound tracks with the proper directionality and intensity.

NOTE: Listeners are often confused about the operation of the surround channels. While some assume that sound should always be coming from each speaker, most of the time there will be little or no sound in the surround channels. This is because they are only used when a movie director or sound mixer specifically places sound there to create ambiance, a special effect or to continue action from the front of the room to the rear. When the output levels are properly set it is normal for surround speakers to operate only occasionally. Artificially increasing the volume to the rear speakers may destroy the illusion of an enveloping sound field that duplicates the way you hear sound in a movie theater or concert hall.

The default settings of the player is 0dB for all channels. In case you feel adjustments are necessary in your setup, we advise you to copy the settings currently in use with 5.1 surround modes (for instance Dolby Prol Logic II) of your AV receiver to the DVD player.

When the SPEAKER LEVEL Adjust menu first appears, the test tone is off. Use the ▲/▼ **Navigation Button** ❿ and the **OK Button** ❼ to select any channel for adjustment using an external source, such as a test disc, from which to judge the output levels. When the channel to be adjusted, is highlighted in blue, press the **OK Button** ❼ followed by the ▲/▼ **Navigation Button** ❿ to raise or lower the output level. However, before proceeding with any manual adjustment we recommend that you first use the DVD's internal test tone generator and automatic sequencer to send a tone to each channel so that you may verify that all speaker connections have been properly made.

To turn the test tone on and have it automatically circulate among the channels, press the ▲▼ **Navigation Button** ❿ until the Test Tone -line is highlighted in blue. Next, press the **OK Button** ❼, followed by the ▲▼ **Navigation Button** ❿ until AUTOMATIC is shown. At this time the test tone will immediately begin to circulate clockwise

around the room, playing for two seconds in each speaker before switching to the next speaker position. The text presenting the active speaker will highlight in blue to indicate which speaker the sound should be coming from.

IMPORTANT NOTE: Because this test noise will have a much lower level than normal music, the volume must be lowered after the adjustment for all channels is made, but BEFORE you return to the main menu and the test tone turns off.

After checking for speaker placement, let the test noise circulate again, and listen to see which channels sound louder than the others. Using the front left speaker as a reference, press the ▲ ▼ **Navigation Button** ❿ on the remote when the text of the loudspeaker to be adjusted is lit in blue, to bring all speakers to the same volume level. When one of the ▲ ▼ buttons is pushed, the test noise circulation will pause on the channel being adjusted to give you time to make the adjustment. When you release the button, the circulation will resume after five seconds. The on-screen cursor-bar and the test noise can also be moved directly to the speaker to be adjusted by pressing the ▲ ▼ buttons ❿ on the remote.

Continue to adjust the individual channels until the volume level sounds the same from each speaker. Note that adjustments should be made with the ▲ ▼ **Navigation Button** ❿ on the remote only, and should be confirmed by pressing the **OK Button** ❼ before continuing adjusting the next channel.

If you are using a sound-pressure level (SPL) meter for precise level adjustment with the test tone, set the individual output level for each channel so that the meter reads 75dB, C-Weighted Slow. After all settings are made turn the main volume down.

You may also make these same adjustments with complete manual control over the channel being adjusted by pressing the ▲ ▼ **Navigation Button** ❿ until the blue cursor-bar is highlighting the Test Tone -line on the menu, pressing the **OK Button** ❼ and then using the ▲ ▼ **Navigation Button** ❿ to select MANUAL. In the MANUAL mode, the test tone will also start immediately, but the tone will only be moved to another channel by pressing the ▲ ▼ **Navigation Button** ❿. When the manual sequencing mode is active, the tone is turned off by pressing the ▲ ▼ **Navigation Button** ❿ until the blue cursor-bar is highlighting the Test Tone -line, followed by pressing the **OK Button** ❼ and the ◄/► **Navigation Button** ❿ is then pressed to select OFF in the highlighted video.

If you find that the output levels are either uncomfortably low or high, you may repeat the procedure. Return to Step 2 and adjust the master volume either slightly higher or lower to accommodate your particular room layout and your tastes. You may repeat this procedure as many times as necessary to achieve a desired

result. In order to prevent possible damage to your hearing or your equipment, we emphasize that you should avoid setting the master volume above 0dB.

When all channels have an equal volume level, the adjustment is complete. Use the ▲ ▼ **Navigation Button** ❿ to highlight the Test Tone -line in blue, pressing **OK Button** ❼ followed by the ◄/► **Navigation Button** ❿ until the word OFF appears to stop the test tone.
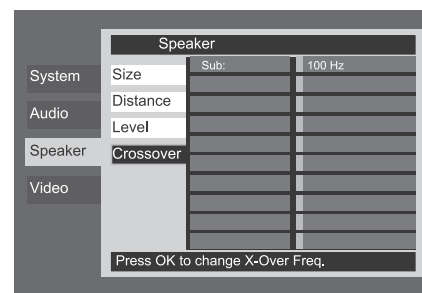
Crossover

Figure 4d

The second setting for the subwoofer is the crossover. This determines which sounds will be sent to the subwoofer, and which to the main speakers when Small is selected as the speaker size for any of the speakers. Select the frequency from those shown that is closest to the lowest frequency your main (left/center/right/surround left/surround right) speakers are able to reproduce. The output level should be set the same way as for the other speakers. When you have finished making any necessary adjustments to the SPEAKER SETUP menu, move the cursor to the left until the SPEAKER -menu item is highlighted in blue, to return to the SYSTEM SETUP menu tabs.
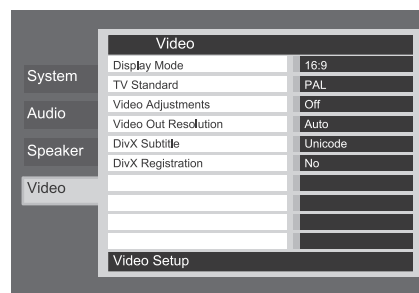
Video Settings

Figure 5 (DVD 49 shown)

The Video Setting Submenu contains the following settings. Follow the explanations in the Instruction Line on the bottom of your screen to change the settings.

Display Mode: This step selects the TV aspect ratio, depending on your TV, between conventional screen shape (4:3) or widescreen (16:9).

System Setup

When the **HDMI Output ⓫** is used, the aspect ratio will automatically be set appropriately for the specific display. However, you may select an alternate view.

TV Standard: Sets the output video format i.e. NTSC, PAL or SECAM, of the player. If you have a multi standard TV, we recommend the AUTO setting for optimal picture quality.

Video Adjustment: The Video Adjustment Submenu contains access to the Test Screen. First adjust the video display device (TV) with the help of the Test Screen. After that the output settings of the player can be fine-tuned with the Brightness, Sharpness and Black Level settings. In order to change the settings, move the cursor to the "+" or "-" icon on the same line as the setting. Once one of the icons is highlighted, pressing OK will increase or decrease the value of the setting, as will be shown in the bar behind the setting. To exit the Video Adjustment Menu, move the cursor to DONE, and press OK.
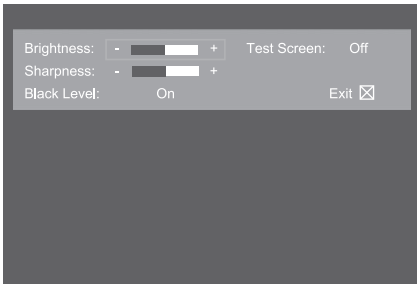

Brightness:	- ▓▓▓▓ +	Test Screen:	Off
Sharpness:	- ▓▓ +		
Black Level:	On		Exit ☒

Figure 5a

Video Out Resolution: This setting may be used to change the video output resolution. It affects the Component Video Outputs and the HDMI Output, but with different allowed settings depending upon whether the HDMI Output is in use. This setting may also be changed by pressing the Video Mode Button on the remote repeatedly to cycle through the available settings options.

• **HDMI Output In Use:** With the HDMI Output connected to another device, this setting defaults to Auto, but you may change it to 576p, 720p, 1080i or 1080p. We recommend leaving the setting at Auto, in which the player sets the video output based on the capabilities of the device it is connected to. If you attempt to select a video output resolution that your video display is not capable of handling, such as 1080p for a display that is only 1080i-capable, you will not see a picture.

• **HDMI Output Not In Use:** When no device is connected to the HDMI Output, this setting only applies to the Component Video Outputs. Only two values are available: 576i (the default) and 576p. Select 576p only if your video display's component video inputs are capable of handling a progressive scan signal. If it isn't, you will see no picture or a distorted picture when this setting is changed to 576p. In that case, press the Video Mode Button on the remote to correct it.

DivX Subtitle: This setting selects the desired subtitle language for DivX movies.

DivX Registration: This setting shows your personal DivX Video On Demand (VOD) code.

This code allows you to rent and purchase videos using the DivX VOD service. For more information, visit www.divx.com/vod. Follow the instructions and download the video onto a disc for playback on this unit. Note that all the downloaded videos from DivX VOD can only be played back on this unit.

Once the DivX icon is highlighted, press OK to access your personal DivX VOD code.

Test Screen

Test Screen

When you activate the Test Screen via the OSD you can activate a still image to test all settings and the video performance of your TV. With the vertical color bars you can test the following:

■ proper color intensity setting on your TV,

■ the proper color of each bar, showing if the proper video standard is turned on: the colors should be (left to right): black, white, yellow, cyan (turquoise), green, magenta (purple), red, blue, black.

■ proper color transition, seen as sharp separation of the bars, S-Video will be better than Video, RGB best of all.

■ the performance of the color filter in your TV (with "Video" signals), bar edges should show no vertical crawling dots. Here S-Video and RGB formats usually give no problems.

With the grey scale and the black/white fields below the color bars the brightness and contrast of your screen can be adjusted optimally, see chapter "TV Picture Adjustment" below.

Color Bars

Grey Scale

100% Black/White fields
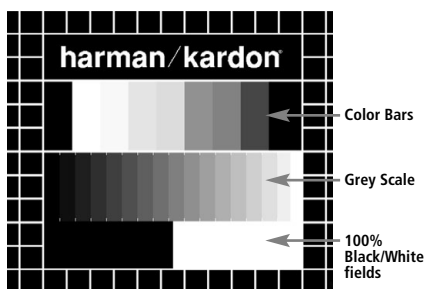
TV Picture Adjustment with Test Screen

These adjustments may be done now, but you can also make them after setup has been finalized.

Brightness adjustment:
1. Turn down the color control on your TV until the color bars are visible in black and white.

2. Adjust the contrast to the lowest level where you still can see all bars within the grey scale in the test picture separately and clearly.

3. Adjust the Brightness so that the bars in the grey scale are all visible. The bar farthest to the left has to be as black as possible rather than grey but the next one must be clearly differentiated. All the bars in the grey scale should gradually and evenly change from black to whiter, going from left to right.

Contrast adjustment:
1. Adjust the contrast on your TV until you see a bright white bar in the bottom right corner of the screen and a deep dark black bar at the left. The optimal contrast setting will depend on your preference and the surrounding light in the TV room.

2. If the brightness of the white bar no longer increases while turning up the contrast or when the borders of the white "harman/kardon" text letters on top bloom (overlight) into the black areas, drastically reducing the sharpness of the script, then the Contrast has been turned up too much. Reduce the contrast until these effects disappear and the video still looks realistic.

3. If you are watching TV in normal ambient daylight, adjust the Contrast so that a normal video picture has about the same look as the surroundings in your room. This helps the eyes relax when watching the TV picture. This contrast setting may be reduced when the surrounding light is dimmed, usually improving the sharpness of a video a lot.

4. The grey scale in the middle line needs to have the same clear difference between each bar as before the contrast adjustment. If not, go back to the brightness adjustment and repeat step 3 and then the contrast adjustments, making only minor adjustments each time for optimisation.

Color adjustment.
1. When the Brightness and the Contrast are set optimally, turn up the color control to the level of your perference. Adjust to the level where the colors look strong but still natural, not overdone. If the color level is too high, depending on the TV, some of the bars will seem wider or the color intensity will not increase as the control is turned up. Then the color control must be reduced again. At the end you should test the color intensity also with a video, e.g. pictures of natural faces, flowers, fruit and vegetables and other well known natural articles of our life most useful for an optimal setting of the color intensity.

2. If your TV has a Tint option (with most European TVs this is available or effective only with NTSC signals, not with PAL), use the large white bar below the Greyscale to tweak the warmth of the picture. Every viewer has a difference in preference of how the glow of the picture should be. Some prefer a little colder picture, some a warmer glow. The Tint function on your TV and the white bar can be used to control this. Adjust the Tint to the level where you feel the white color has the tone you prefer.

Sharpness Adjustment

Contrary to intuition, the picture will appear sharper and clearer with the sharpness, or Edges, setting backed off from the maximum setting. Reduce the sharpness setting on your television, and the Edges setting on the video adjustments menu if necessary, to minimize the appearance of any white lines between the bars in the gray scale portion of the test screen.

Convergence and Edge Focus
The crosshatch pattern that surrounds the test screen may be used to evaluate edge focus and convergence in front- or rear-projection video displays. However, the controls used to adjust these parameters are often not user-accessible. In any event, these adjustments are extremely complex, and require proper training and experience to avoid worsening the situation. Therefore, it is recommended that if you are unable to improve the picture using the available controls, contact the video display manufacturer's authorized service representative for assistance.

When all desired setup and configuration entries have been made, use the ▲ ▼ **Navigation Buttons** ❿ until "Done" is highlighted at the bottom of the Video Adjustments submenu. Press the **OK Button** ❼ to select it to return to the on-screen menu system. Then, press the **Setup Button** ❾ to remove the menu displays from the screen. The unit will return to normal operation and you are ready to enjoy the finest in DVD or CD playback!

Player Menu

Using the Player Information Menu

Press the Info Button to view the Info Display (see Figure 6). This display differs from the other Status Displays in that it is informational only, although in some cases you may notice changes in the display as you enter some commands. The Info Display is only available for DVDs. It is also available for VCDs and JPEGs, but in a different format which is described in the sections pertaining to those types of discs.
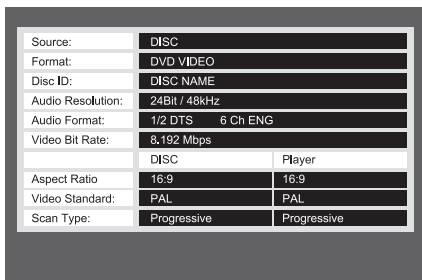
Source:	DISC	
Format:	DVD VIDEO	
Disc ID:	DISC NAME	
Audio Resolution:	24Bit / 48kHz	
Audio Format:	1/2 DTS 6 Ch ENG	
Video Bit Rate:	8.192 Mbps	
	DISC	Player
Aspect Ratio	16:9	16:9
Video Standard:	PAL	PAL
Scan Type:	Progressive	Progressive

Figure 6

Source: This line indicates the media source you have selected.

Format: This line indicates the disc format, i.e. DVD Video or DVD Audio.

Disc ID: If the disc is encoded with an identification label, it will appear here.

Audio Resolution: This line displays the sample rate and bit rate for the current audio format.

Audio Format: This line displays the current audio track, such as Dolby Digital 5.1 or linear PCM.

Video Bit Rate: This line displays the video bit rate up to the limit of 10 Mbps. This indication will vary as a disc is played in response to changes in the amount of compression that was applied to the video signal when the disc was created. Thus, when the disc is stopped or paused, this line will remain blank.

Aspect Ratio: This line displays the aspect ratio of the video content on the disc, and the format in which it is being played back according to the setting established in the VIDEO SETUP submenu as shown on page 21. Some discs may contain two versions of the same program with a widescreen aspect ratio on one side of the disc, and a standard aspect ratio on the other.

Video Standard: The disc's format is shown here. For Region 2 players, this will normally be PAL, although some DVDs that are open region (playable in all regions) may be in the NTSC format.

Scan Type: This line displays whether the video program on the DVD was recorded with a progressive or interlaced scan rate. It also displays how the program is being played back, based on the setting established in the VIDEO SETUP submenu as shown on page 21.

When you have finished viewing the Player menus, press the **Info Button** ⓫ to remove the displays from the screen and return to normal play.

Using the On-Screen Status Display

When a DVD is playing, you may press the **Status Button** ⓮ at any time to view a quick summary of the disc's playback status. The Status Bar not only gives you a snapshot of the unit's current state; it also provides an easy way to select a different title, chapter or track, or use the time search feature.

Title:	1	Chapter:	3
Title Elapsed:			00:18:04

- **Title:** This displays the current title on the left, and the total number of titles on the disc on the right.

- **Chapter:** This displays the current chapter on the left, and the total number of chapters on the disc on the right.

- **Time Display:** This section of the display shows the time corresponding to the type of display indicated in the **Time Display Type**. The Time Search function enables you to start playback at any point in the program. Use the ◀ ▶ **Navigation Buttons** ⓾ to highlight this display, and the numbers will change to dashes. You may then use the **Numeric Keys** to enter the numbers corresponding to the time on the disc at which you wish play to commence. Press the **OK Button** ➐, and play will immediately begin at the selected time position.

- **Time Bar:** This display is a graphic representation of the time elapsed for the title being played. As the disc plays, the number of bars will increase to reflect approximately what percentage of the title has been played thus far.

CD Playback

Many functions operate the same way for CD playback as for DVD play; however, there are some important differences. When a CD is loaded, the player will automatically display the Contents menu. Status banners are not available during CD play.

A greater variety of playback options are available during CD play, including Random play and programmed playlists.

These and other features unique to CD play are described in this section.

CD Playback

Many functions operate the same way for CD playback as for DVD play; however, there are some important differences. When a CD is loaded, the player will automatically begin playing. The Contents Menu will appear on screen (see Figure 7 - CD Contents Menu).
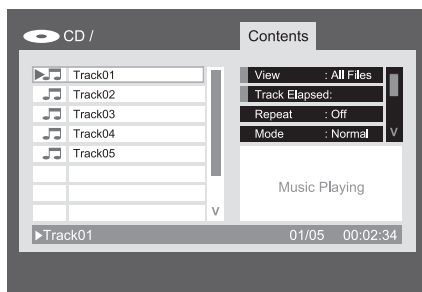
Figure 7 – CD Contents Menu

The disc type is indicated in the upper left corner. For discs containing file folders, such as compressed-audio or image files you create on your PC, the hierarchy of folders is listed here as well.

The main display area is divided into two columns. The left column lists the tracks, highlighting the current track. For discs containing more than eight tracks, the list scrolls. The current track is also listed at the bottom of the screen. A play mode icon indicates the current playback status (the disc is stopped in this case).

Tracks

Select a track for playback in one of several ways:

1. Use the Navigation Buttons to highlight the desired track and press the OK Button to begin play.

2. Use the Numeric Keys to enter the desired track number. Play will begin immediately.

3. Press the Find Button to display the Find Menu (see Figure 7a Find Menu (CD Playing)). With the Track cell highlighted, use the Numeric Keys to enter the desired track number, and play will begin immediately.
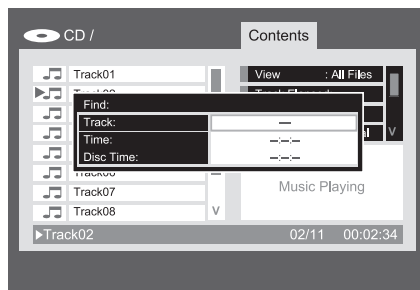
Figure 7a – Find Menu (CD Playing)

4. During playback, you may move one by one through the tracks at any time by pressing the Skip Reverse (Previous)/Skip Forward (Next) Buttons. When you press the Previous or Skip Reverse Button once, the player will return to the start of the current track. Additional presses of either button will step back through the available tracks, one at a time.

View: This setting allows you to select which files stored on a disc you wish to access. For commercial audio CDs, this command is not available, as only audio tracks are stored on the disc.

Time Display: This setting controls the time display that appears in the lower right corner of the screen and on the DVD 49's front panel. Select from:

• **Track Elapsed:** Displays the elapsed time of the current track.

• **Track Remain:** Counts down the remaining time for the current track.

• **Disc Elapsed:** Displays the elapsed time for all tracks played thus far on the disc.

• **Disc Remain:** Counts down the remaining time to play the rest of the tracks on the disc.

Repeat Play: This setting controls whether the tracks are repeated.

• **Track:** Repeats the track currently playing until play is manually stopped. The "Repeat" Indicators will light in the front-panel display.

• **All:** Repeats all tracks on the disc until play is manually stopped.
The "Repeat" and "All" Indicators will light in the front-panel display.

• **Off:** Normal playback of the current track followed by all remaining tracks on the disc, unless the Random or Programmed play functions have been selected.

Mode: This setting controls the Random play and Intro Scan playback options.

• **Random:** In Random play mode the player selects the order in which the tracks will play until all tracks on the disc have been played.

• **Intro:** This setting activates the Intro Scan play mode. The player plays the first ten seconds of each track before skipping to the next track, continuing until all tracks on the disc have been played.

• **Normal:** Tracks are played normally, unless Repeat or Programmed play has been activated.

Edit Mode: This setting allows you to program play lists. The Control Commands following it are not available unless the Edit Mode line is set to On. When Edit Mode is On, playback is stopped. To resume playback, set Edit Mode to Off.

Program/Browser View: The Browser View displays the disc's contents as shown in Figure 7b (Source Selection Button). If a play list has been programmed, you may select the Program View to see the list by pressing the OK Button with the Program View line highlighted.

Select All: This setting is used to select all tracks in the current view. When you press the OK Button, a check mark will appear to the right of each track and this command will change to De-Select All, which may be used to reverse the Select All command and removes the check marks. This command is not available unless play has been stopped and the Edit Mode line has been set to "On".

Add to Program/Clear Program: The Add to Program command is used to add tracks to a programmed play list. It is not available unless play has been stopped, the Edit Mode line has been set to "On" and one or more tracks have been selected by highlighting them and pressing the OK Button, or using the Select All command. Selected tracks are indicated with a check mark on screen. The Add to Program command is only visible in the Browser View. When the Program View is activated, the Add to Program command is replaced by the Clear Program command, which removes selected tracks from the programmed play list.

Delete: This command is used with the solid-state media only to permanently remove selected tracks or folders from the media. Its requirements are that play has been stopped, the Edit Mode line has been set to "On", and tracks have been selected by highlighting them and pressing the OK Button or using the Select All command. Selected tracks are indicated with a check mark on screen. Use caution when deleting items from media, as they are not recoverable.

CD Playback

Format: This command is not used for CDs. Its purpose is to reformat the other media, memory cards or a USB flash drive. Reformatting a memory card or flash drive will destroy any contents on the media.

Selecting a Media Source (DVD 49 only)
The DVD 49 has four media source inputs: the Disc Player, Card Slot 1 (for SD and Memory Stick cards), Card Slot 2 (for Compact Flash I cards), the USB Port (for USB flash drives).

The Disc Player is always available for selection as the media source, even when no disc is loaded. The card slots and the USB Port are only available when media has been installed.

By default, the Disc Player is always selected as the media source upon powering up the DVD 49. To select a new media source, press the Source Button on either the top panel or remote.

A menu similar to the one shown in Figure 7b will appear. It is not possible to select any of the solid-state media sources when no card or drive is present, and when that is the case, those icons will appear dimmed in the source selection menu and it will not be possible to highlight them for selection.
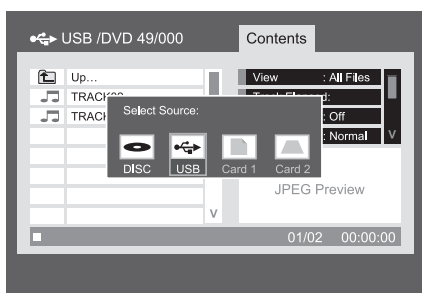

Figure 7b – Source Selection Menu

Use the ◀ ▶ Buttons to highlight the desired media source, and press the OK Button to select it. The DVD 49 will switch to that media source. For the Disc Player, play will begin immediately. For the solid-state media, or a data CD containing compressed files, a special Contents Menu will appear that allows you to select items for playback. See the section on MP3, WMA and JPEG file playback for more information.

A-B Repeat Play

The Repeat A-B function allows you to select any portion of a CD and have it repeat continually until the unit is manually stopped.

To initiate a Repeat A-B playback sequence, follow these steps while a disc is playing:

1. Press the **A-B Repeat Button ㉖** on the remote when you want to choose the beginning point; the Repeat icon appears in the upper right corner of the screen, followed by A - to indicate the beginning of the passage to be repeated.

2. Press the **A-B Repeat Button ㉖** again to choose the end point. Repeat A-B has been set, and the A-B section will be played continuously.

3. Press the **A-B Repeat Button ㉖** on the remote again to cancel Repeat A-B mode.

Video Off Feature

During CD playback, some listeners may prefer to turn off the video circuitry. Although the video section is electrically isolated from the audio section, some users may prefer to turn the video displays off during audio playback to prevent any possibility of interference between audio and video. You may also wish to turn the video display off if you find the menu system distracting or unnecessary during CD playback.

IMPORTANT NOTE: It is strongly recommended that plasma video display owners use the Video Off feature to avoid burn-in.

To turn the video displays off while a CD is playing, simply press the **Video Off Button ㉗**. Press the button again to restore the video output. The **V-Off Indicator 🄶** will light to remind you that the video displays have been turned off. Note that the video output will automatically be restored each time the player is turned on.

SACD Discs (DVD 49 only)

SACD discs are a vast improvement in sound quality over the original compact disc. Due to improvements in laser technology, SACDs allow information to be packed more densely on the disc, which in turn means that more information than ever may be stored on a single disc. The benefit to the audiophile listener is improved resolution and quality of 2-channel recordings, and a whole new world of multichannel audio recordings.

Some earlier SACD discs contain only a two-channel program. Newer discs may contain both a 2-channel and a multichannel version of the same materials. As described on page 22, a setting in the `Audio Setup` submenu is used to select between 2-channel and multichannel SACD playback, or to select the CD layer of the disc. Check the jacket of your disc to ascertain which formats are available.

Note that this setting needs to be made with either no disc in the drawer, or with the drawer open.

SACD playback requires the use of the **6-Channel Audio Outputs ❼** or the **Analog Audio Outputs ❿** (for 2-channel playback only). If only the **Optical ❶** or **Coaxial Digital Audio Outputs ❷** are used, no sound will be heard.

Random play and programmed playlists are not supported for SACD discs. Also, it is not possible to clear the Player Information screens from the display, although you may press the **Video Off Button ㉗** to turn off the video display altogether.

MP3, Windows Media and JPEG Playback

MP3, Windows Media and JPEG Playback

The player will recognize data from CD-ROM discs recorded in the MP3, Windows Media 8 (WMA) or JPEG formats, including images stored on Kodak Picture CDs. You may also play discs with more than one of the three formats.

The Specific File Types That May be Played Are:

• **MP3 Files:** MP3 is a popular audio compression format that was developed by the Motion Picture Experts Group as part of the MPEG-1 video compression format. Depending on the specific MP3 encoder used, file size is greatly reduced so that you store many more songs on one compact disc than in the standard audio CD format. MP3 is also used to download audio files to computers for home use. Note, however, that in order to play an MP3 file, the disc may not contain any encryption or coding that prevents playback. Always be certain that you have, or have purchased, the proper rights or authorization before creating a CD-ROM with MP3 or any other codec format. Due to variations in the different encoders and variations of the MP3 codec and the different bit rates used to record MP3 discs, the player may not be able to play all discs with MP3 files. We cannot guarantee complete compatibility with MP3 discs, even though they may play on a computer. This is normal and does not indicate a problem with the player. Note, also, that when a multisession disc with both standard CD audio and MP3 (or WMA) content is used, the player will only play the CD audio sections of the disc.

• **WMA Files:** WMA (Windows Media Audio) is an audio compression format developed by the Microsoft® Corporation for use with its Windows Media Player. WMA files may be created with greater compression than MP3 without sacrificing audio quality so that even more songs may be recorded on a disc. Note that there have been a number of versions of Windows Media, and the player is compatible only with files that end in the "wma" extension and that were recorded using the Windows Media Series 8 encoding.

• **JPEG Files:** "JPEG" is the acronym used to identify image files recorded according to specifications established by Joint Photographic Experts Group for compressing still images. Identified by the file extension "jpg" when they are recorded on most computers, JPEG files may be created by a digital still camera and then edited and "burned" to a disc in your personal computer, recorded on a CD-ROM disc from film images by a photo processor, or scanned from printed photos into your personal computer and then burned onto a CD-ROM.

• **MPEG 2 Files:** MPEG stands for the Motion Pictures Expert Group, which defines digital audio/video standards. The MPEG 2 format is a method of compressing video presentations, and is the standard generally used for television broadcasting and DVD, with some minor modifications appropriate to each type of use. It is possible to create MPEG files from home movies using your PC and video conversion software, and to store them on media as individual raw MPEG files.
The player is capable of recognizing and playing these files, which are selected for playback using the Contents Menu, the same as for other data files.

Discs containing MP3, WMA, MPEG or JPEG files are navigated and controlled differently from standard DVDs and CDs. When a disc containing one or more of these types of files is loaded in the player, the Contents menu screen will appear.
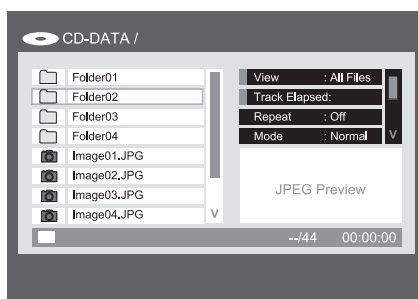

Figure 8 – Data File Contents Menu

This Contents Menu is similar to the one used for CDs. However, it displays data files and is capable of displaying a hierarchy of folders, if the media is structured as such.

Files are listed by name, including the file extension that identifies their type, such as ".JPG" in the examples in (Figure 8 - VCD Info Menu) for JPEG files. In addition, an icon to the left of the file name indicates the type of file.

A camera indicates an image file, musical notes indicate MP3 and WMA files, and a screen indicates a raw MPEG video file.

Play will not begin immediately; select an item for playback by navigating to it and pressing the OK or Play Button. You may also select an item by using the Numeric Keys to enter its order in the current view, for example, referring to Figure 8, entering the number "2" will display the second JPEG file.

• To expand a folder (if any), press the Navigation Buttons until the desired folder name is highlighted, then press the OK Button.

• To collapse a folder (so that you can select another folder on the disc), use the Navigation Buttons to highlight the folder icon at the top of the track list and press the OK Button.

• To select a track, press the Navigation Buttons until the desired track name is highlighted. To start play of the selected track, press the OK or Play Button.

MP3, Windows Media and JPEG Playback

MP3 or WMA Disc Playback

MP3 and WMA discs may contain 200 tracks or even more. To get the best overview about all tracks on the disc and their names and to select them comfortably, use the on-screen display rather than the front-panel display. The front-panel display will only show the number and the elapsed time of the track being played for WMA files.

The supported bit rate for WMA files is between 64k bits and 320k bits. The supported bit rate for MP3 files is between 32k bits and 320k bits.

- To select a folder (if any), press the ▲ ▼ **Navigation Buttons ❿** until the desired folder name is high-lighted, then press the **OK Button ❼**.

- To select a track, press the ▲ ▼ **Navigation Buttons ❿** until the desired track name is highlighted. To start play of the track selected on the list, press the **OK Button ❼** or Play Button **❺⓱**.

During MP3/WMA playback, some of the standard CD/DVD playback controls operate in their normal fashion:

- You may skip forward to the next track on the disc by pressing the **Skip/Next Button ❽⓰**.

- You may skip back to the previous track on the disc by pressing the **Skip/Prev Button ❼⓯**.

- Press the **Pause Button ❺⓭** to momentarily stop playback. Press the **Play Button ❺⓱** to resume play. Press the **Stop Button ❻⓳** to enter stop mode.

- Press the **Search Forward ❽⓰** or **Search Reverse ❼⓯** buttons, for fast search of a track. Press the **Play ❺⓱**, **Pause ❺⓭** or **Stop Button ❻⓳** to end fast play.

- Slow-play is not available during MP3/WMA playback.

- You may play an MP3 or WMA disc in random mode like a normal CD. You may also access the Random function while an MP3 or WMA disc is playing by change the MODE line in the menu.

- The Repeat function may be activated during playback of MP3 or WMA disc in the REPEAT line on the menu.
The repeat menu scrolls through the option's of off,Track (repeat one file), All (repeat all files).
The Repeat A-B is available during MP3/WMA playback.

NOTES ON MP3 AND WMA PLAYBACK

- The player is only compatible with standard MP3- and WMA-encoded discs. Other compressed audio formats used for Internet audio downloads will not play.

- Due to the differences in various versions of the MP3 and WMA formats, and the many differences between the CD-R machines used to record discs on a computer, it is possible that some discs, memory cards or other blank media may not play, even though they will work on a computer. This is normal and does not indicate a fault with the unit.

- If a disc containing MP3, WMA and/or JPEG files is created in more than one session, the player may not recognize files added during the later sessions, especially if the disc was finalized after the first session.

- When a disc with multiple folders is playing, only tracks from one folder can be displayed and played at a time. Select the desired folder and press the **Play Button ❺⓱** or **OK Button ❼** to start the first track. To see and play tracks from other folders, you must first select the root folder using the ▲ ▼ **Navigation Buttons ❿**, and press the **OK Button ❼** to open or close that folder. You may then navigate an open folder and select the desired folder. Press the **OK Button ❼** to open the folder, and select the desired track. Then press the **Play Button ❺⓱**.

- Only stereo audio playback is available for MP3 and WMA discs.

JPEG Playback

The player is capable of recognizing JPEG still-image files and displaying them. When a disc or folder containing JPEG files is loaded, the **JPEG Disc-Type Indicator** will light in the **Main Information Display ❶**. The Contents menu will appear, and you may be able to select files in the same way as CD tracks, MP3 and WMA files.

The following functions unique to JPEG files are available:

Zoom: While an image is displayed, press the Zoom Button to enlarge it up to 3x. Each press cycles through the options of 2x, 3x and normal size.

Rotation: While an image is displayed, press any of the NavigationButtons to rotate the image. Each button applies a fixed number ofdegrees of rotation:

- ▶ **Button:** Applies 90 degrees of rotation (one-quarter circle).
- ▼ **Button:** Applies 180 degrees of rotation (one-half circle).
- ◀ **Button:** Applies 270 degrees of rotation (three-quarters of a circle).
- ▲ **Button:** Applies 360 degrees of rotation (full circle).

Transitions: While an image is displayed, and when more than one image file is included in the current folder view, you may select from a variety of transition effects to add interest to your slide show. Each press of the Angle Button cycles through the transition effects as follows: wipe down, wipe up, center in, center out, blind down, blind up, random and no transition effects.

Thumbnail Menu: At any time you may press the Title Button to view a menu of thumbnails of the images in the current folder view. Use the Navigation Buttons to highlight a desired image, and press the OK Button to view it full-size, followed by the subsequent images in the current folder view. You may scroll down past the first nine images shown on screen. Press the Stop Button to return to the Contents Menu.
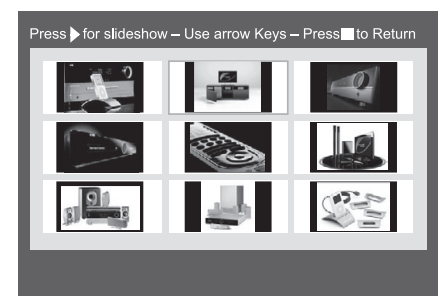

Figure 9 – Thumbnail Image Menu

MP3, Windows Media and JPEG Playback

Simultaneous Audio/Photo Playback: If both audio and JPEG photo files are stored in the same folder on the media, you may create a multimedia presentation with simultaneous play of the audio behind a slide show of the images. First, select the audio file for playback and begin play. Then navigate to the first image file you wish to display and select it for play. The audio file will restart from the beginning. All audio and image files in the current folder view will play until manually stopped.

Status Bar: Press the Status Button to display the Status Bar, which indicates the current file number and the total number of files in the current folder view. Use the Numeric Keys to enter a new file number, and the player will immediately display that file.

Info Menu: While a JPEG image file is playing, you may press the Info Button to display an Info Menu containing more information (see Figure 9a - Info Menu).
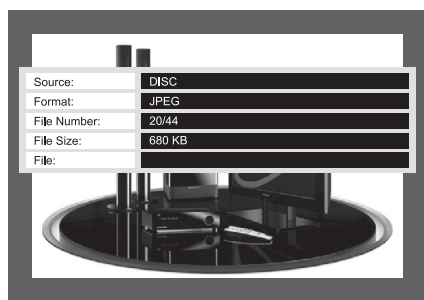
Figure 9a – Info Menu

While similar in format to the DVD Info Menu, the JPEG Info Menu contains less information.

Source: This line indicates the media source you have selected.

Format: This line indicates the disc format, i.e. JPEG.

File Number: This line indicates the order within the current folder view of the current image, followed by the total number of files of all types in the current folder.

File Size: This line indicates the size of the image file. Larger files may take longer for the player to process, but the higher-quality results may be worth it.

File: This line indicates the file name of the image file.

Programming

Programming a Playlist

Programmed play allows you to select chapters, up to 99 tracks or files on a disc, memory card (DVD 49 only) or USB drive (DVD 49 only) for playback in a specific order, skipping selections you don't wish to hear and reordering others to suit your tastes.

The method for programming a play list differs depending on the media type. For DVDs and VCDs, the Play Mode Menu is used. For audio CDs and data files, the Control Commands section of the Contents Menu is used.

Programming a Playlist From a DVD or VCD
You may program a play list from a DVD Audio or Video disc, or from a Video CD, by following these steps:

Step One: Making sure that the Disc Player has been selected as the media source and with the disc loaded, press the Stop Button to make sure the disc is stopped.

Step Two: Press the Play Mode Button to display the Play Mode Menu (see Figure 11 - Play Mode Menu).
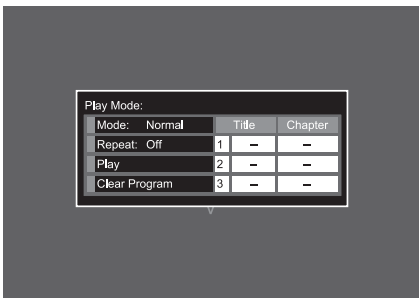
Figure 11 – Play Mode Menu (disc stopped)

Step Three: The Mode line will be highlighted. If it isn't, use the ▲ ▼ **Buttons** to highlight it. Press the **OK Button** repeatedly until the Mode setting changes to Program.

Step Four: Now use the Navigation Buttons to move the on-screen cursor to the first step in the play list on the right side of the Play Mode Menu.

Step Five: Use the Numeric Keys to enter the title number containing the first selection, and press the ▶ Button to move the cursor to the Chapter column. It is not necessary to use the OK Button.

Step Six: Use the Numeric Keys to enter the number of the first chapter you would like to program into your play list.

NOTE: For DVD Audio and SACD (DVD 49 only) discs, the Title and Chapter column headings will be replaced by Group and Track headings. For VCDs, a single column labeled Track will appear.

Step Seven: Use the Navigation Buttons to move the cursor to the Title column of the second step in the play list, and program the second selection as you did in Steps Five and Six.

Step Eight: When you have finished programming all steps in your play list, use the Navigation Buttons to highlight the cell labeled "Play ▶" on the left side of the Play Mode Menu. Press either the OK Button or the Play Button to begin play of your play list.

During playback of a programmed list you may use the Previous and Next Buttons to move through the tracks in the play list in programmed order.

If you wish to play the disc in its native order, press the Play Mode Button and change the Mode setting to Normal.

To clear the program:

1. Press the Play Mode Button and use the ▲ ▼ **Buttons** to highlight the Clear Program cell. Press the OK Button.

2. Alternatively, open the disc drawer.

Programming a Playlist From an Audio CD or Data Source
When an audio or data (MP3, WMA, JPEG, MPEG) CD, or a memory card (DVD 49 only) or USB drive (DVD 49 only) containing data files, is loaded, the Contents Menu appears. Play lists may be programmed using the Control Commands section of the Contents Menu, as follows:

Step One: Since play will automatically stop when you begin programming the play list, it is not necessary to stop play. Use the Navigation Buttons to move the on-screen cursor to the Control Commands side of the screen. See Figure 11a (CD Control Commands).
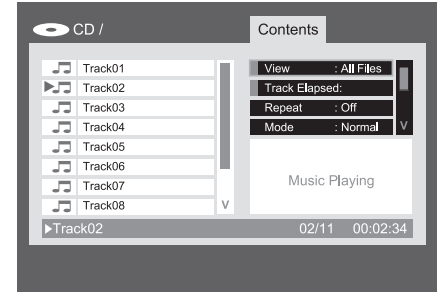

Figure 11a – CD Control Commands

Step Two: Use the ▼ Button to scroll down to the Edit Mode line, and press the OK Button to change the Edit Mode setting to On. See Figure 11b (Edit Mode Setting).
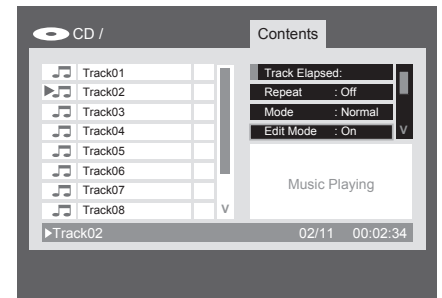

Figure 11b – Edit Mode Setting

NOTE: With Edit Mode turned on, you will not be able to navigate through a hierarchy of folders on a data disc, other than scrolling through items in the current folder view. To resume navigation, for example if you wish to add items from different folders to your play list, remember to change the Edit Mode setting to Off, and then return it to On when you are ready to select tracks or files.

Programming

Step Three: You may now select items to be added to your play list.

Use the Navigation Buttons to return to the Contents listing on the left side of the screen and to highlight each desired selection. Press the OK Button to select it, and a check mark will appear to the right. See Figure 11c (Selecting a Track).
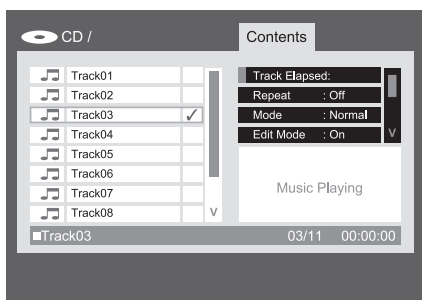

Figure 11c – Selecting a Track

NOTE: If more than one track is selected, they will be added to the play list in the disc's native order. If you wish to order them differently, select each track one at a time and add them to the program individually in the desired order.

Step Four: You may select all items in the current view to add to the play list by moving the cursor to the Select All line of the Control Commands and pressing the OK Button. See Figures 11d and 11e (Select All Command and All Tracks Selected). This command is particularly useful for programming data files, where you wish to select all files in a folder.
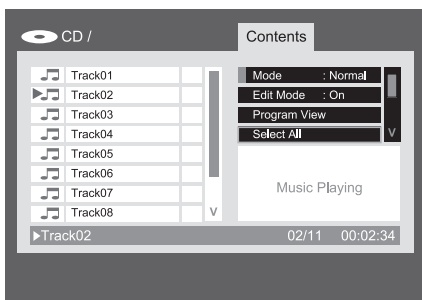

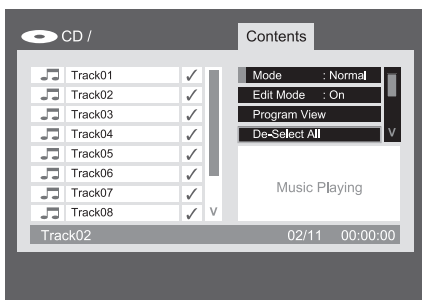*Figure 11d – Select All Command*

Figure 11e – All Tracks Selected

Step Five: When you have selected the desired tracks, scroll to the Add to Program line of the Control Commands, and press the OK Button. All of the selected items will be copied to the play list, and the check marks will disappear.

Step Six: To view the play list, scroll up to the Program View line and press the OK Button. The screen will change to display the contents of your programmed play list. See Figure 11f (Programmed Play List).
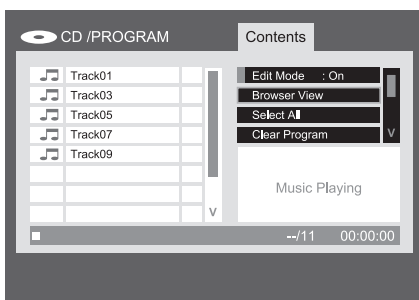

Figure 11f – Programmed Play List

Step Seven: Scroll to the Edit Mode line and change the setting to Off. You may now play the programmed list as you would the main list.

To remove individual tracks from the play list, make sure the Program View is on screen. Use the Navigation Buttons to highlight the track and press the OK Button to select it, and a check mark will appear. Then navigate to the Clear Program command and press the OK Button to remove the selected track from the program.

To remove all tracks from the programmed play list, highlight the Select All line of the Control Commands and press the OK Button to select all tracks. Then scroll down to the Clear Program command and press the OK Button to clear the entire program. The program will also be cleared if you open the disc drawer or remove the solid-state media, as appropriate.

To return to the main Contents Menu, use the Navigation Buttons to highlight the Browser View command and press the OK Button.

Troubleshooting Guide

TroubleShooting Guide

Symptom	Possible Cause	Solution
Unit does not turn on	• No AC power	• Check AC power plug and make certain any switched outlet is turned on.
Disc does not play	• Disc loaded improperly	• Load disc label-side up; align the disc with the guides and place it in its proper position.
	• Incorrect disc type	• Check to see that disc is CD, CD-R, CD-RW, DivX, VCD, MP3, WMA, JPEG, DVD-R, DVD-RW, DVD+R, DVD+RW (standard conforming), DVD-Audio, SACD or DVD-Video; other types will not play.
	• Invalid Region Code	• Use Region 2 or Open Region (0) disc only.
	• Rating is above parental preset	• Enter password to override or change rating settings.
No picture	• Intermittent connections	• Check all video connections.
	• Wrong input	• Check input selection of TV or receiver.
	• Progressive Scan output selected	• Use Progressive Scan mode only with compatible TV. If needed, press the **Progressive Scan/Interlaced Button ㉒** to toggle to the correct mode.
	• Video Off feature active	• Press **Video Off Button ㉗** to reactivate video circuitry (see page 26)
	• **HDMI Output ⓫** is connected to a video display that is not HDCP-compliant.	• The **HDMI Output ⓫** may not be used with video displays that are not HDCP-compliant. Unplug the cable and select another audio and video connection (see pages 13 through 14).
No sound	• Intermittent connections	• Check all audio connections.
	• Incorrect digital audio selection	• Check digital audio settings.
	• DVD disc is in fast or slow mode	• There is no audio playback on DVD discs during fast or slow modes.
	• Surround receiver not compatible with 96kHz PCM audio	• Use analog audio outputs.
	• DVD Audio or SACD disc is loaded without using analog audio connection	• Use **6-Channel Audio Outputs ❼** or **Analog Audio Outputs ❿**.
Picture is distorted or jumps during fast forward or reverse play	• MPEG-2 decoding	• It is a normal artifact of DVD playback for pictures to jump or show some distortion during rapid play.
Some remote buttons do not operate during DVD play; prohibited symbol ⊘ appears (see below)	• Function not permitted at this time	• With most discs, some functions are not permitted at certain times (e.g., Track Skip) or at all (e.g., direct audio track selection).
The OSD menu is in a foreign language	• Incorrect OSD language	• Change the display language selection.
The ⊘ symbol appears	• Requested function not available at this time	• Certain functions may be disabled by the DVD itself during passages of a disc.
Picture is displayed in the wrong aspect ratio	• Incorrect match of aspect ratio settings to disc	• Change aspect ratio settings.
Remote control inoperative	• Weak batteries	• Change both batteries.
	• Sensor is blocked	• Clear path to sensor or use optional outboard remote sensor.
Disc will not copy to VCR	• Copy protection	• Many DVDs are encoded with copy protection to prevent copying to VCR.
Password not accepted.	• Incorrect password being used or password has been forgotten.	• Factory default password "1234" always remains active.
Cannot program playlist	• The player must be in Stop mode to program a playlist	• Stop play of disc before programming a playlist.
	• Edit Mode is turned off	• Select the Edit Mode line in the Control Commands and press the OK Button to turn it on
Cannot navigate through hierarchy	• Edit Mode is turned on, disabling navigation of folders	• Select the Edit Mode line in the Control Commands and press the OK Button to turn it off
Unable to select desired media (DVD 49 only)	• No media is present	• Insert the appropriate memory card into one of the card source slots, or a USB flash drive into the USB Port
	• Wrong type of USB drive was inserted in USB Port	• Only USB flash drives that do not function as stand alone MP3 players are compatible
	• Media was not inserted correctly	• Remove media and carefully insert according to the instructions on page 7

Technical Specifications

Applicable Disc:	Disc formats: 5 inch (12 cm) or 3 inch (8 cm) DVD Video, DVD-Audio, SACD (DVD 49 only),Standard conforming DVD+RW, DVD+R, DVD-R, DVD-RW, DivX, VCD, CD, CD-R, MP3, WMA, JPEG or CD-RW discs, Region code: DVD Movie disc with Code 2 or 0 only. DVD-Layers: Single Side/Single Layer, Single Side/Dual Layer, Dual Side/Single Layer, Dual Side/Dual Layer Audio formats: DVD-Audio MLP lossless, Linear PCM, MPEG, Windows Media® 9, Dolby Digital or DTS Audio discs Still-image format: JPEG
Memory cards (DVD 49 only):	Slot 1: Secure Digital (SD), Multimedia Card (MMC) and Memory Stick (compatible with Magic Gate) cards. Other card types may be used with a compatible adapter, but are not guaranteed to be recognized by the DVD 49 Slot 2: Compact Flash I (CF) cards, or cards using a Compact Flash 1-compatible adapter Card Capacity: Up to 1 GB
USB Port (DVD 49 only):	Up to USB 2.0-compatible solid-state flash drives
Video Signal System:	PAL / NTSC
HDMI™ Output:	Video: 576p, 720p, 1080i, 1080p HDMI Version 1.2a-compliant HDCP Version 1.1-compliant
Composite Video Output:	1 $V_{p\text{-}p}$/75 Ohms, sync negative polarity
S Video Output:	Y/Luminance: 1 $V_{p\text{-}p}$/75 Ohms, sync negative polarity C/Chrominance: 0.286 $V_{p\text{-}p}$
Component Video Output:	Y: 1 $V_{p\text{-}p}$/75 Ohms, sync negative polarity Cr: 0.7 $V_{p\text{-}p}$/75 Ohms Cb: 0.7 $V_{p\text{-}p}$/75 Ohms
Analog Audio Output:	2 Vrms max
Frequency Response:	DVD (Linear PCM): 2Hz - 22kHz (48kHz sampling) 2Hz - 44kHz (96kHz sampling) CD: 2Hz - 20kHz
Signal/Noise Ratio (SNR):	105 dB (A-weighted)
Dynamic Range:	DVD: 100dB (18 Bit) / 105dB (20 Bit) CD/DVD: 96dB (16 Bit)
THD/1kHz:	DVD/CD: 0.0025 %
Wow & Flutter:	Below Measurable Limits
AC Power:	100 - 240 V/50 ~ 60 Hz
Power Consumption:	1 Watts (Standby)/25 Watts (Max)
Dimensions (WxHxD):	440 x 50 x 385 mm
Weight:	4.0 kg

Depth measurement includes knobs and connectors.

Height measurement includes feet and chassis.

All specifications subject to change without notice.

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