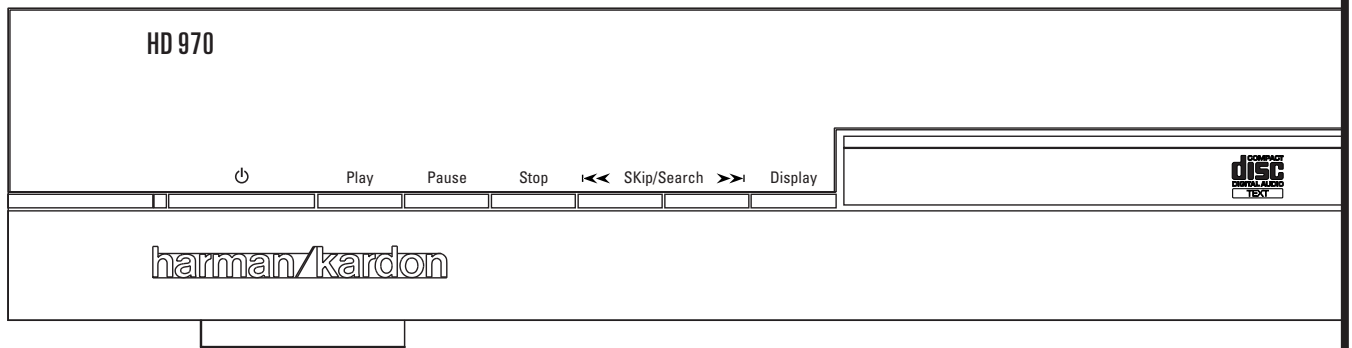


HD 970 CD Player

OWNER'S MANUAL



harman/kardon®

Power for the Digital Revolution®

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Declaration of Conformity



We, Harman Consumer Group International
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+A1:2003

EN 55020:2002+A1:2003

EN 61000-3-2:2000

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

EN 60065:2002

Jurjen Amsterdam
Harman Consumer Group International
01/05

Typographic Conventions

In order to help you use this manual with the remote control, front panel controls and rear panel connections, certain conventions have been used.

EXAMPLE – (bold type) indicates a specific remote control or front panel button, or rear panel connection jack.

EXAMPLE – (bold type) indicates a message in the front panel information display.

1 – (number in a square) indicates a specific front panel control.

1 – (number in an oval) indicates a button or indicator on the remote.

1 – (number in a circle) indicates a rear panel connection.

Introduction

Thank you for choosing Harman Kardon HD 970 CD player.

The HD 970 is an exceptionally well-engineered product that offers high performance and ease of use.

Along with conventional CD audio discs, the HD 970 is also compatible with MP3 data from CDs and most recordable CD formats.

We ask that you take a few minutes to read through this Owner's Manual to familiarize yourself with the controls and functions. This brief investment of time will yield dividends in the form of years of listening pleasure.

If you have any questions about this product, its installation or operation, please contact your dealer, as they are your best source of local information.

Description and Features

Ever since its introduction in 1992, Harman Kardon RLS (Real-time Linear Smoothing) conversion technology has been hailed as an efficient, high performance means of transforming the, at that time 16-bit, digital signal from CD to high quality analog. The short RLS signal path resulted in hitherto unknown clarity and detail, in combination with awesome dynamic resolution of the critical bass frequencies.

RLS-II was a natural, yet radical evolution of the original RLS concept.

Since then, dramatic progress has been made in Digital Signal Processing, allowing the integration of DSP's in a standalone CD Player and the implementation of a very powerful algorithm in the digital domain: the birth of the RLS-III.

Using theoretical roots of the RLS, RLS-III has set new standards for dynamic range and shifted noise to an absolute non-audible frequency range with very high jitter rejection. The result is an astonishing common signal format of 24 bits at a sampling frequency of 384 kHz.

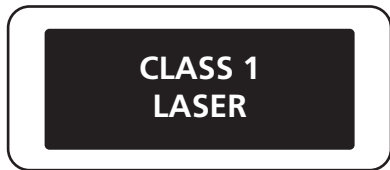
This 24 bits/384 kHz signal format allows Harman Kardon engineers to take a minimalist approach to the subsequent analog filtering, without paying any penalty in the form of the aliasing errors and artifacts.

Harman Kardon's analog processing legacy has been expressed to its optimal level in the output stage of the HD 970 with High Definition, Wide Bandwidth and Low Feedback circuitry in a pure Class A configuration, using only high grade components.

A unique feature of the HD 970 is that it allows other source components to be played back using the high-grade audiophile digital-to-analog convertors inside the CD player. Especially source components using older and less powerful convertors will benefit from this feature.

Important Note: The player will only output 2-channel PCM signals. Neither multi-channel Dolby Digital or DTS nor their 2-channel down-mix signals will be output.

- **Asynchronous Digital Processing for Highest Possible Jitter Rejection based on a 32bit DSP**
- **Real-time Linear Smoothing III**
- **Two Digital Inputs (One Optical and One Coaxial) for Dramatic Sound Quality Improvement of External Devices**
- **CD Playback with CD Text Functionality, MP3 Playback with ID3 Tag Information**
- **Digital Output for Direct Connection to Outboard Digital-to-Analog Converters**
- **Sophisticated Programming Features to Automatically Play Tracks in Preprogrammed or Random Order**
- **Full compatibility with CD-R and CD-RW format to play (finalized) recordable and erasable discs without problems.**



	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.		

Information

Important Safety Information

Verify Line Voltage Before Use

Your HD 970 has been designed for use with 230-volt AC current. Connection to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the unit.

If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact your selling dealer before plugging the unit into a wall outlet.

Do Not Use Extension Cords

We do not recommend that extension cords be used with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately by an authorized service depot with cords meeting factory specifications.

Handle The AC Power Cord Gently

When disconnecting the power cord from an AC outlet always pull the plug, never pull the cord. If you do not intend to use the unit for any considerable length of time, disconnect the plug from the AC outlet.

Do Not Open The Cabinet

There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your guarantee. If water or any metal object such as a paper clip, wire or a staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service station.

CAUTION: The HD 970 uses a laser system. To prevent direct exposure to the laser beam, do not open the cabinet enclosure or defeat any of the safety mechanisms provided for your protection. **DO NOT STARE INTO THE LASER BEAM.** To ensure proper use of this product, please read this owner's manual carefully and retain it for future use. Should the unit require maintenance or repair, please contact your local Harman Kardon service station. Refer servicing to qualified personnel only.

Installation Location

- To assure proper operation, and to avoid the potential for safety hazards, place the unit on a firm and level surface. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the product.
- Make certain that proper space is provided both above and below the unit for ventilation. If this product will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet.
- Do not place the unit directly on a carpeted surface.
- Avoid installation in extremely hot or cold locations, or an area that is exposed to direct sunlight or heating equipment.
- Avoid moist or humid locations.

Cleaning

When the unit gets dirty, wipe it with a clean, soft dry cloth. If necessary, wipe it with a soft cloth dampened with mild soapy water, then a fresh cloth with clean water. Wipe dry immediately with a dry cloth. NEVER use benzene, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticide near the unit.

Moving The Unit

Before moving the unit, be certain to disconnect any interconnection cords with other components, and make certain that you disconnect the unit from the AC outlet.

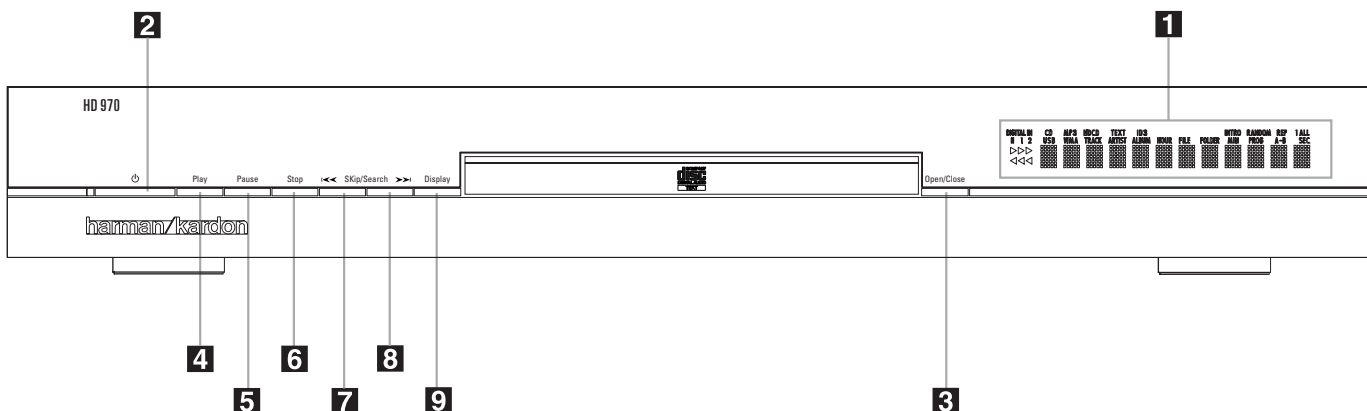
Unpacking

The carton and shipping materials used to protect your new HD 970 during shipment were specially designed to cushion it from shock and vibration. We suggest that you save the carton and packing materials for use in shipping if you move or should the unit ever need repair.

To minimize the size of the carton in storage, you may wish to flatten it. This is done by carefully slitting the tape seams on the bottom and collapsing the carton down to a more two-dimensional appearance. Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

If you do not wish to save the packaging materials, please note that the carton and other sections of the shipping protection are recyclable. Please respect the environment and discard those materials at a local recycling center.

Front-Panel Controls



- 1** Main Information Display
- 2** Power On/Off (Standby)
- 3** Open/Close

- 4** Play
- 5** Pause
- 6** Stop

- 7** Skip/Search (Previous)
- 8** Skip/Search (Next)
- 9** Dimmer

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

2 Power On/Off (Standby): Press the button once to turn the CD 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 Play: Press to initiate playback or to resume playback after Pause has been pressed.

5 Pause: Press this button to momentarily pause playback. To resume playback, press the button again. If a CD is playing, the sound will be muted.

6 Stop: Press this button to stop the disc currently being played or to exit program mode (see page 13 for complete information).

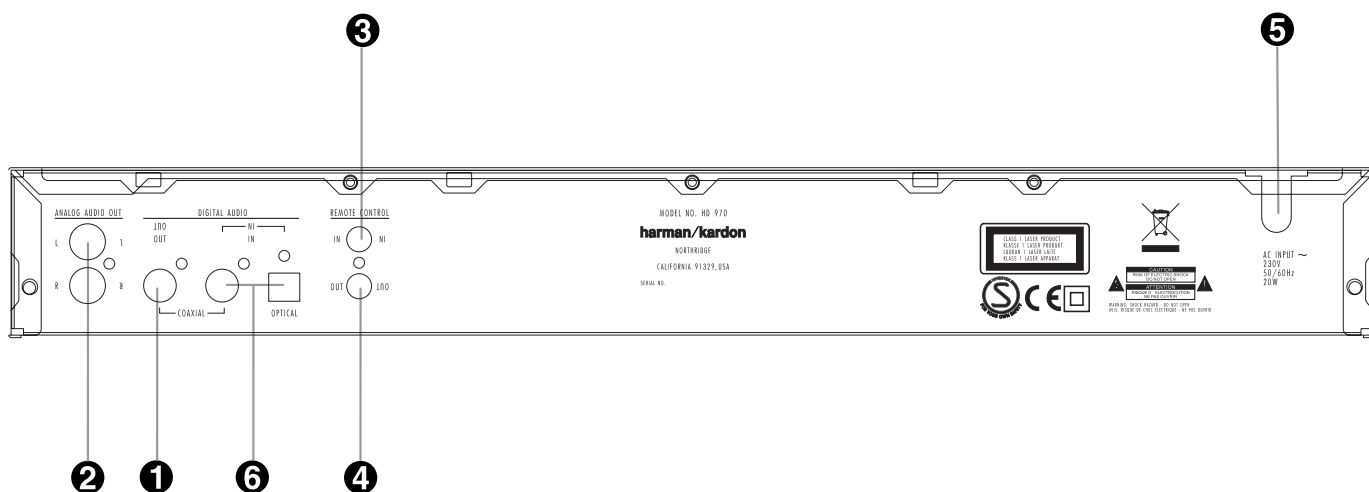
7 Skip/Search (Previous): Press this button to move backward through the music tracks on a CD disc. Keep the button pressed to search backwards at one of the available speeds.

8 Skip/Search (Next): Press to move forward through the music tracks on a CD. 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.

Important Note: When the unit is turned off (to Standby), pressing the **Play** button **4** **10** on the front or on the remote will automatically turn on the player and start playback.

Rear-Panel Connections



- 1 Digital Output
- 2 Audio Outputs

1 Digital Output: Connect this jack to the coaxial digital input of an external digital-to-analog converter for direct access to the digital signals of the CD player or the external digital audio source. DO NOT connect this jack to the standard audio inputs of any device.

2 Audio Outputs: Connect these jacks to the CD audio inputs of your receiver, surround processor or preamplifier.

- 3 Remote Control Input
- 4 Remote Control Output

3 Remote Control Input: Connect the output of a remote infrared sensor or the remote control output of another compatible Harman Kardon product. This will enable the remote control system to operate even when the front panel **Remote Sensor** 3 is blocked. It will also allow use of the CD player with optional, external control systems.

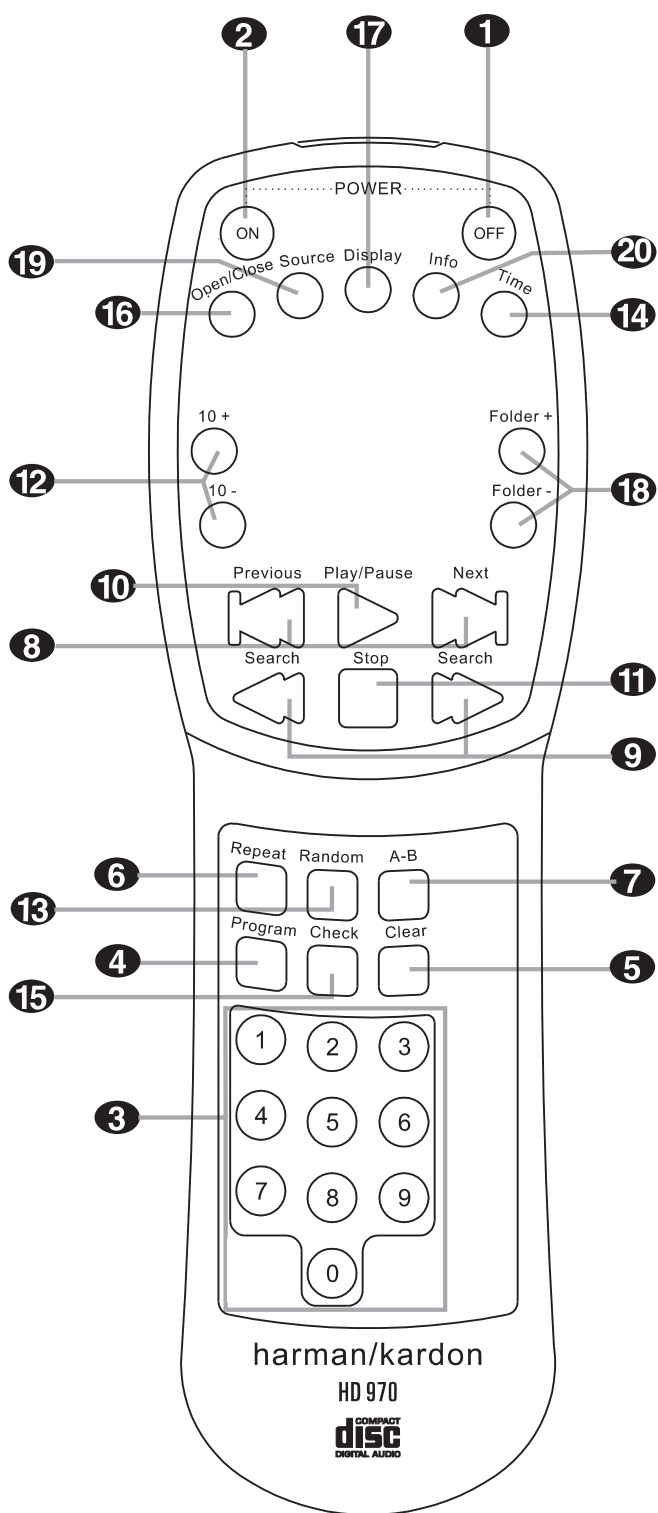
4 Remote Control Output: Connect this jack to the input of another compatible Harman Kardon remote controlled device to have the remote sensor on the CD player provide signals to other products.

- 5 AC Power Cord
- 6 Coaxial and Optical Digital Inputs

5 AC Power Cord: Connect this plug to an AC outlet. If the outlet is switch controlled, make certain that the switch is in the ON position.

6 Coaxial and Optical Digital Inputs: Connect these jacks to the coaxial or optical digital output of an external audio source. This will enable you to have the digital-to-analog conversion of that source done by the high-grade audiophile digital-to-analog converters in the HD 970 rather than the (older ones) in the external source, for better audio quality.

Remote Control Functions



- 1** Power Off
- 2** Power On
- 3** Numeric Controls
- 4** Program Button
- 5** Clear Button
- 6** Repeat Button
- 7** Repeat A ▶ B Button
- 8** Skip Buttons
- 9** Search Buttons
- 10** Play/Pause Button
- 11** Stop Button
- 12** +10/-10 Buttons
- 13** Random Button
- 14** Time Button
- 15** Check Button
- 16** Open/Close Button
- 17** Display Button
- 18** Folder Buttons
- 19** Source Button
- 20** Info Button

Remote Control Functions

- 1 Power Off:** Press this button to put the unit in the Standby mode.
- 2 Power On:** Press this button to turn on the CD player. Note that in order for the Power On button to operate, AC power must be applied to the unit, and the **Status Mode Indicator 2** should glow orange (See page 11 for more information). The unit will also turn on when the Play **4 10** or Open/Close **6 12** button is pressed.
- 3 Numeric Controls:** Press these buttons to select a specific track on a disc. The unit will immediately search for the track and begin to play it. For tracks 1 through 9 on a disc, you need only press the desired number. For tracks 10 and above, the second and third digit of the number must be entered within two seconds of the first digit. (See page 10 for more information.) These buttons are also used to enter track numbers into the memory for pre-programmed play lists. (See page 13 for complete information on programming the CD player.)
- 4 Program Button:** Press this button to begin the process of programming the CD player to play the tracks on a disc in a specific order. Once the button is pressed, enter each of the desired track numbers in quick succession using the **Numeric Controls 3**. When you have entered the tracks to be played, press the **Play button 10** to begin the programmed sequence. (See page 13 for complete information on programming the CD player.)
- 5 Clear Button:** Press this button to remove selected or all tracks from the programmed sequence. (See page 13 for complete information on programming the CD player.)
- 6 Repeat Button:** Press this button once to repeat only the track that is currently being played, and note that the **REPEAT** and **ONE** indicators will light in the **Information Display**. Press the button a second time so that the **REPEAT** and **ALL** indicators are illuminated to repeat all tracks on the disc. (See page 14 for more information on Repeat Play.)
- 7 Repeat A ▶ B Button:** Press this button to repeat a segment of the disc. Press the button once to mark the start of the portion to be repeated. Press it again at the end of the desired sequence. The marked passage will play continuously until the **Stop button 11** is pressed. (See page 14 for more information on Repeat Play.)
- 8 Skip Buttons:** Press one of these buttons to move to the next track **▶▶**, or to move back to the previous track **◀◀** (See page 12).
- 9 Search Buttons:** Press one of these buttons to search forward **▶▶** or backwards **◀◀** through a disc to locate a particular portion of the selection being played. Holding the buttons pressed for some seconds will increase the search speed (see page 12).
- 10 Play/Pause Button:** Press this button to start the playback of a CD. If the CD drawer is open, pressing this button will automatically close the drawer. Press this button once during playback to momentarily stop a disc. When the button is pressed again, the disc will resume play at the point it was stopped.
- 11 Stop:** Press this button to stop the disc currently being played or to escape from the program mode (see page 13 for complete information).
- 12 +10/-10 Buttons:** Press the +10 button to move to the 10th track after the current track playing. Press the -10 button to move to the 10th track before the track currently playing.
- 13 Random Button:** Press this button to have all of the tracks played in a random order. (See page 10 for more information.)
- 14 Time Button:** Press this button to select the time display. In normal operation, the display will show the running time of a track being played. Press the button once to check the time remaining for the track in play. Press the button a third time to view the elapsed time for the CD being played, and a last time for the total play time remaining for the disc in play (See page 11).
- 15 Check Button:** Press this button to check the order of tracks programmed into the CD player's memory. (See page 13 for complete information on programming the CD player.)
- 16 Open/Close:** Press this button to open or close the disc drawer. The drawer may also be closed by pressing the **Play button 4 10**, or by gently pressing the edge of the drawer. However, we do not recommend pushing the drawer, as damage to the transport mechanism may result.
- 17 Display Button:** Press this button once to dim the front panel display to half brightness. Press it again to turn the display lights off completely. Another press will return the display to normal brightness.
- 18 Folder Buttons:** Press the Folder + button to move to the next folder with MP3 data, and the Folder - button to move to the previous folder with MP3 data.
- 19 Source Button:** Press this button to switch between the CD player's output and the output of other sources connected to one of the digital inputs **6** (See page 12 for more information).
- 20 Info Button:** Pressing this button consecutive times shows the different CD Text information available on a CD, or ID3 and other information available on a disc with MP3 data. To return to normal Track number / Time indication press the **Time button 14**. (See page 11 for more).

Installation

To prevent possible damage to your speakers and other components in your audio system, it is important that ALL components, including the HD 970 and your receiver or preamp and amplifiers, are turned off and unplugged from their AC power source when installing any new component.

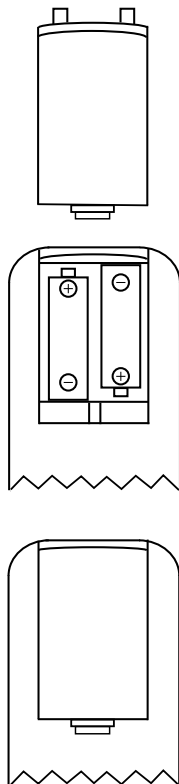
Connecting the HD 970 to your audio system is simple. Using standard RCA-to-RCA interconnect cords, connect the left and right **Audio Output** jacks ② on the rear panel to the CD input jacks on your receiver, surround processor or preamplifier.

If your system includes an optional external digital-to-analog converter, or if you are using a receiver or other processor that has the capability to decode PCM digital input signals, connect the **Digital Output** jack ① to the Coaxial Digital input on the decoder. Make certain to use a coaxial-style interconnect cable, as standard audio cables will not perform as well.

If you have additional external audio sources, you might want to connect their coaxial or optical digital output to the **Coaxial or Optical Digital Inputs** ⑥ on the rear panel of the CD player. This will enable you to use the audiophile high-grade digital-to-analog convertors and processing power in the HD 970 rather than the (older and less-powerful) convertors of your external source.

Note that in order to hear the sound from the external source when connected like this, the input of your amplifier or receiver should be the one to which the HD 970 is connected.

Install two AA batteries by turning the remote over so that you are holding the bottom side up. Press lightly on the embossed arrow on the cover and gently slide the cover towards you in the direction of the arrow. Insert the batteries inside the compartment, being careful to follow the + and – polarity indications at the bottom of the compartment. Replace the cover by placing it on the remote and sliding it back towards the top of the remote.



NOTE: When replacing batteries, always replace both at the same time. When the unit will not be used for an extended period of time, it is also a good idea to remove the batteries so that the potential for corrosion or damage is avoided.

If the HD 970 is installed behind a cabinet or other obstruction that may block the path between the front-panel **Remote Sensor** and the location of the remote, an optional external IR sensor may be used. Connect the sensor to the **Remote IR-In Jack** ③ on the rear panel. This jack may also be connected to the IR-Output jack of another compatible Harman Kardon component or a compatible IR-system-remote product.

You may also use the IR Sensor in the HD 970 to send commands to other compatible remote controlled products. Connect the **Remote IR-Out jack** ④ to the input of the other product or system.

Connect the power to a nonswitched AC wall outlet or to the accessory outlet on the rear of another audio device in your system and you are ready to go!

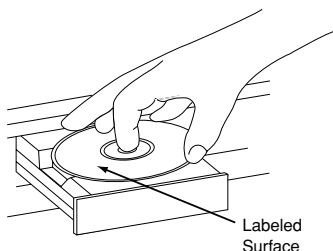
NOTE: When using the accessory outlet on another product to power the HD 970 make certain that it has the compatibility to power a device that draws at least 14 watts of current in addition to being able to handle the requirements of the other devices that may be plugged into the accessory outlets. If you use a "switched" outlet, it is important to remember that the host product must be turned on in order for the HD 970 to operate.

Operation

Loading and Unloading Discs

To load a disc, first turn the unit on (if not so already) by pressing the **Power Switch** **2** on the front panel or the **Power On** button **2** on the remote, then press the **Open/Close** button **3** **16** taking care to make certain that the space in front of the drawer is not obstructed. When the unit is turned off (to Standby), pressing the **Play** button **4** **10** on the front or on the remote will automatically turn on the CD player and start playback.

Load the disc in the tray with the printed (label) side facing up. Make certain that the disc is centered in the tray. Either 12cm (5") or 8cm (3") discs may be used. When an 8cm disc is played, it should be carefully centered within the smaller ridges inside the cassette drawer.



To retract the drawer back into the player after loading a disc, press the **Open/Close** button **3** **16**. When the drawer is closed the display will indicate the total number of tracks on the disc and the total running time of the disc.

The drawer will also close when the **Play** button **4** **10** is pressed. The drawer will close and the disc will start playing the first track.

To remove a disc from the player, press the **Open/Close** button **3** **16**. The drawer will open, allowing the disc to be removed.

Disc Handling Notes

When loading or unloading discs, it is best to hold them by the edges.

While Compact Discs are very reliable, rough handling may damage them. Avoid scratching the bottom (non-printed) side of discs, or any handling which will leave fingerprints.

To avoid damage to the disc and player, always seat discs so that they are centered in the tray.

Do not lift the player while the disc tray is opening or closing, as this may cause the disc to unseat from the tray and possibly jam.

Normal Play

To play a disc, first turn the HD 970 on using the **Power Switch** **2** on the front panel or the **Power On** button **2** on the remote control. When the unit is turned off (to Standby), pressing the **Play** button **4** **10** on the front or on the remote will automatically turn on the CD player and start playback.

To load or change a disc open the disc drawer by pressing the **Open/Close** button **3** **16**. Place a disc in the tray following the instructions shown above.

Pressing the Open/Close button once a disc has been carefully seated will close the disc drawer while the message **CLOSING** will appear in the information display. As soon as the tray is closed the display will show the message **READING** while the table of content (TOC) of the disc is read. Note that particularly with CD-RW discs this tracking may take some time due to the reflectibility and data structure different from normal discs. Afterwards the Information Display will show the total number of tracks on a disc and the total running time of the disc. Note that with MP3-CDs the total running time will not be shown.



The drawer will also close when the **Play** button **4** **10** is pressed. The drawer will close and the disc will start playing the first track.

To play all of the tracks on the disc in order, press the **Play** button **4** **10**. A play indication **▶** will appear in the **Information Display** **1**.

To play all of the tracks in random order, press the **Random** button **13**. The **RANDOM** indicator will light when that mode is in use. Random can be activated also while a track is playing. When Random is activated while programmed play is in use (see page 13), all programmed tracks will be played in random order.

You may also select a specific track by pressing the **Skip** buttons **7** **8** until the desired track number is displayed (see page 12). The track may also be selected directly by entering the track number via the **Numeric Controls** **3**, simply enter the track number by pressing the buttons that correspond to the desired track. Note that when a two- or three-digit track number is being entered, the second and third digit of the number must be pressed within two seconds of the first digit. After the track is selected, press the **Play** button **4** **10**.

Operation

While the disc is playing, the track being played will show as a number in the middle of the display just below the word **TRACK**. The elapsed time of the track being played will also appear in the display (see figure page 10). As a disc plays, the track numbers will change, and the time will reset to $\square\square:\square\square$ at the start of each new track.

To momentarily pause the play of a disc, press the **Pause** button **5** **10**. Note that a Pause indication **||** will appear in the display to remind you that the disc is paused. Press either the **Play** button **4** **10** or the **Pause** button **5** **10** to resume normal play.

To stop the disc, press the **Stop** button **6** **11**. When the Stop button is pressed the display again will show the total number of tracks and total running time of the disc.

To remove a disc from the player, press the **Open/Close** button **3** **16**. To prevent dirt and dust from entering the unit, do not leave the disc tray open.

To place the unit in a Standby mode, press the **Power Switch** **2** on the front panel or the **Power Off** button **1** on the remote. The display will show a **STANDBY** message for a moment and the **Status Mode Indicator** will glow orange, indicating that the unit is off, but ready to accept a Power On command from the remote. If the disc drawer is open, it will automatically close when the unit is placed in the Standby mode. This ensures that the unit will not be harmed from dust, dirt or inadvertent damage to the drawer mechanism.

Note that the unit is not removed from AC main power when it is in the Standby mode but its power consumption is reduced to a low value. To remove the AC power completely from the unit its **Power Cord** **5** must be plugged into a switch controlled AC outlet that is turned off. We recommend to use the switched AC outlet on the rear side of a receiver or amplifier. When that AC outlet will be turned on, the HD 970 will always turn to the Standby mode even if it was on before the AC power was removed.

Display Dim

In some situations, it may be desirable to reduce the brightness of the display or to turn it off completely. To do this, press the **Display** button **17** on the remote once to dim the display to half brightness. Press it again to turn the display off. A third press will return the display to normal level.

Time Display

The CD player's time display is capable of showing a wide range of information about a CD.

In normal operation the display will show the total running time of a CD after the disc is first put in the unit. When the disc is played, the display will show the running time of a track in play. Each time the track changes, the time display will reset to $\square\square:\square\square$ and begin to increase again as the new track plays.

To view the time remaining on an individual track, press the **Time** button **14** on the remote once. The display will now show the time left in the track in play, and a "-" will light in front of the time display as a reminder of the display's status.

To view the elapsed time of the disc currently playing, press the **Time** button **14** again.

To view the total time remaining to play on the disc, press the **Time** button again, a number greater than the formerly shown track remaining time (except the last track of the disc is played) will appear in the display, again with a "-" in front.

When the Time button is pressed again the display will return to show the running time of the track in play.

Note: When a program is played (see page 13), all time modes are selectable too except the total time remaining on the disc.

The time mode is not available when playing back discs containing compressed MP3 data.

Disc Info

The HD 970 is able to show CD-Text information from CD discs, as well as ID3 tag and other information from discs containing MP3 data. Please note that not all CD's contain CD-Text. In that case, the Main Information Display will show NO CD-TEXT and will return to the time mode previously selected.

If you play back a CD that contains CD-Text information the **TEXT** indicator will light in the **Information display 1**. During play, the Artist name, Track name and Album name can be made visible on the **Main Information Display 1** by pressing the **Info** button **20** several consecutive times. Each press of the **Info** button **20** will show the next line of information. If the text is longer than 12 characters, the text will scroll continuously from right to left on the **Main Information Display 1**.

If you play a disc with MP3 data, the File name, the Data Rate (Constant Bit Rate CBR and Variable Bit Rate VBR) and Folder/Root name can be made visible on the **Main Information Display 1** by pressing the **Info** button **20** several consecutive times. If ID3 tag information is included in the MP3 data, the Artist name, Track name and Album name can also be made visible. Each press of the **Info** button **20** will show the next line of information. If the text is longer than 12 characters, the text will scroll continuously from right to left on the **Main Information Display 1**. To return to the normal Track/Time indication press the **Time** button **14**.

Operation

Search

If you wish to quickly scan through a disc to locate a particular passage or track, press and hold the **Search** buttons. The **Forward Search** button **▶▶ 8 9** plays the disc forward in high speed, while the **Reverse Search** button **◀◀ 7 9** plays the disc backwards in high speed. Holding the buttons pressed will triple the search speed after 3 seconds. When the desired part of the disc is heard, release the **Search** button to resume normal play speed.

Skip

To move from one track on the disc to another during play mode, press one of the **Skip** buttons. Pressing the **Forward Skip** button **▶▶ 8 8** will move you forwards through the disc, one track at a time, while pressing the **Reverse Skip** button **◀◀ 7 8** once will move you back to the start of the actual track (as long as >3 second of the track have elapsed) and pressing it multiple times will move you back one track at a time. Holding any Skip button pressed will scan quickly through all tracks on the disc, as described in the previous paragraph.

The **Skip** buttons may be used when the CD player is either playing or stopped. If the unit is stopped, the Skip buttons may be used to locate the first track to be played. The **Play** button **4 10** must be pressed to begin play. If the Skip buttons are used while the unit is already playing (as described above), the audio output will stop while the new track is located, and play will automatically resume with the new track.

If the **Skip** buttons are pressed when program play is in use (see page 13), the unit will move from one programmed track to another.

Folder

Discs containing compressed MP3 data often contain several directories and folders with data. To show the name of the current directory or folder playing, press one of the **Folder +/-** buttons **18** once. To change to the next directory or folder, press the **Folder +** button **18** again within three seconds after the first press. For the previous directory or folder, press the **Folder -** button **18**.

The CD player counts each directory and folder as one folder. The player starts to count in the main directory, and pressing the **Folder +** button **18** will start playback of the first folder in this directory. Pressing the **Folder +** button **18** again will start playback of the second folder in the directory. Continue pressing the **Folder +** button **18** until the last folder in the directory has been played. At this time, pressing the **Folder +** button **18** will start playing the next directory.

Note that the Folder +/- buttons do not function when the CD player is playing the tracks of a disc containing MP3 data in random order.

+10/-10

Due to the compressed format of MP3 data, discs can contain several hundred audio tracks. In order to find the right track within these hundreds of tracks, the CD player lets you skip through the contents of your disc in steps of 10 tracks. Press the **+10** button **12** to change to the 10th track after the track currently playing. If there are less than 10 tracks remaining on the disc, the last track will be played. Press the **-10** button **12** to change to the 10th track before the track currently playing. If there are less than 10 tracks since the beginning of the disc, the first track will be played.

Input/Source Selection

A unique feature of the HD 970 is that it allows other source components to be played back using the high-grade audiophile digital-to-analog converters inside the CD player. Especially source components using older and less powerful converters will benefit from this feature.

Connect the coaxial or optical digital output of the external source component to the **Coaxial** or **Optical Digital Inputs 6** on the rear panel of the CD player.

In order to select the external source component for playback, press the **Source Button 19**. The first press of this button will show the input currently played, indicated by **PLAYER** for the CD player, **COAXIAL IN** (Digital in 1) or **OPTICAL IN** (Digital in 2). Within 2 seconds, press the **Source Button 19** again until the requested source has been selected.

Note that in order to hear the sound from the external source when connected via the HD 970, the input of your amplifier or receiver should be the one to which the HD 970 is connected.

Important Note: The player will only output 2-channel PCM signals. Neither multi-channel Dolby Digital or DTS nor their 2-channel down-mix signals will be.

Programmed Play Operation

The HD 970's advanced programming capability enables you to select certain tracks, to preset the order in which these tracks play, and to clear specific programmed tracks after the program was made.

Programmed Play

Programmed play allows you to program up to 32 tracks into the HD 970's memory. To begin programming the CD player, make sure that the unit is in Stop mode, then press the **Program** button **4**. The **PROGRAM** indicator will light in the **Information Display 1**, the number **001** will blink below the Program indicator, showing the track number selected, and **PR0G-01: 001** will appear in the Information Display, replacing the track time. This indicates that you are about to program the first track.

You may now begin to enter the tracks in the order in which you wish to have them play. To select a track on the disc, press the **Numeric** buttons **3** corresponding to the desired track, be certain to enter the second and/or third number of two- or three-digit numbers within two seconds after the first number was entered. You may also use the **Skip** buttons **7 8 8** to select a track. When the track is selected, press the **Program** button **4**. Note that the program-step indication on the right side of the Information Display will change to **PR0G-02: 001**.

You may now select another track for the next program step, following the instruction shown above. When the track is selected, press the **Program** button **4** again. Repeat this procedure for each program step until you have completed the desired programming. Press the **Stop** button **6 11** once to complete a program sequence, or press **Play 4 10** to begin immediate play of a program sequence. If the maximum of 99 program steps is reached, the program-step indication at the right side of the Information Display will go out, and the disc and track that have been programmed as the first program step will be shown.

Once a program list has been entered, press the **Play** button **4 10** to begin listening to the sequence. After the entire program has been played, the CD player will stop. As long as the **Stop** button **6 11** has not been pressed twice and the **PROGRAM** indicator remains lit, you may repeat the programmed-play sequence again by pressing the **Play** button **4 10**.

Editing a Program

A program can be edited even after it was completed by pressing the **Stop** button **6 11** once: Each time you press the **Program** button **4** the track number and program step number will be displayed in the programmed order, but with steady tracks numbers (not blinking) in contrast to the programming mode. As soon as the track number starts blinking (this will take 1 second), the appropriate program step number shown at the left side is not programmed yet; now you can change the track number with the **Skip** buttons **7 8 8** or the **Numeric** buttons **3** as described above and add it to the program list by pressing the **Program** button **4**.

Pressing the **Stop** button **6 11** twice will return to normal mode and the **PROGRAM** indicator will go out, but the program will stay in memory and can be recalled easily by pressing the **Program** button. But pressing the **Clear** button **5** (see below) or opening the disc drawer by pressing **Open/Close 3 16**, will erase the program information from the unit's memory.

Checking Program Contents

To check the contents of a program while the unit is stopped at first note that the **PROGRAM** indicator is lit (otherwise press **Program**) and the program step indication **PR0G-01:** is not lit (otherwise press **Stop** once). Each time the **Check** button **15** is pressed now, the Information Display will step through each of the programmed tracks. To cancel the check mode press the **Stop** button twice.

Clearing Programs

To clear a single track from the program list, press the **Program** button **4** until the track to be deleted from the program sequence appears in the **Information Display 1**. When the track number appears, press the **Clear** **5** once, the track selected will be deleted and the track number will be replaced by the next programmed one. Now you can delete that track too with the **Clear** button or press the **Stop** button **6 11** and again the **Program** **4** button to select lower track numbers to be deleted.

When the unit is stopped and the program step indication **PR0G-01: 001** is not lit (otherwise press **Stop** once), but the **PROGRAM** indicator is still lit (otherwise press **Program 4**) you may clear the entire contents of a program by pressing the **Clear** button **5**.

Important Note: When you've pressed the **Program** button **4** (once or several times) and the track number on the right starts blinking, the appropriate program step number (e.g. **PR0G-02: 008**) shown at the left display side is not programmed yet. Do not continue to press the Program button now, otherwise the track selected will be memorized too. If you're in doubt, press **Stop** button **6 11** and start the procedure again with **Program 4**.

IMPORTANT NOTE: Tracks programmed as described above in chapter "Programmed Play" can be played repeatedly too: When you press **Repeat 6** once after a program is created (the **PROGRAM** indicator must be lit, (otherwise press **Program**) and the program is played, the **REPEAT 1** indicator will light and the track currently playing will be repeated continuously. If **Repeat** is pressed twice **REPEAT ALL** will be displayed, all programmed tracks will be played subsequently and the sequence will be repeated continuously until the Stop button is pressed.

Repeat Play Operation

Repeat Play

The HD 970's programming system enables you to repeat either a single track, the entire disc (respectively all programmed tracks) or a specially programmed passage that you select.

Repeat One Track

To repeat the track in play, press the **Repeat** button **6** once. The **REPEAT** and **1** indicators will light and the track will continue to play over and over again continuously. If the track is changed by pressing the **Skip** buttons **7 8** **8** while the Repeat function is in use, the newly selected track will be played normally. To stop the repeat play, press the **Stop** button **6** **11** or press the **Repeat** button **6** until the **REPEAT** indicator goes out.

Repeat All Tracks

To repeat all of the tracks on a disc during play mode, press the **Repeat** button **6** until the **REPEAT** and **ALL** indicators light up. When you see these indicators, the entire disc or all programmed tracks will play through to the end, and then start again from the beginning. The disc will play continually until the **Stop** button **6** **11** is pressed.

Repeat A-B

The CD player may be programmed to repeat any section within a track, or a complete passage or program that includes material in a series of tracks.

To program the unit for A-B play, first locate the point on the disc where you wish to begin the repeated section. At that point, press the **Repeat A-B** button **7**. The **REPEAT** indicators will light in the **Information Display** and an **A-** indicator to show that the program process has started. Let the disc continue to play or press the **Search** **▶▶** button **7 8 9** or **Skip** **▶▶|** button **7 8 8** on the front or remote until you have reached the end of the section to be repeated. When the end point is reached, press the **Repeat A-B** button **7** again. Note that the **REPEAT** and **A-B** indicators will now be illuminated.

Once the **Repeat A-B** button **7** is pressed for the second time to complete the programming, the CD player will automatically go to the beginning of the selected passage and continue to play the section over and over.

To resume normal play press the **Repeat A-B** button **7** again. The **REPEAT** and **A-B** indicators will go out, and the rest of the disc will play normally.

IMPORTANT Note: Tracks programmed as described before in chapter "Programmed Play" can be repeated too: When you press **Repeat** **6** once after a program is created (the **PROGRAM** indicator must be lit, otherwise press **Program**) and the program is played, the **REPEAT 1** indicator will light and the track currently playing will be repeated continuously. If **Repeat** is pressed twice **REPEAT ALL** will be displayed, all programmed tracks will be played subsequently and the sequence will be repeated continuously until **Stop** is pressed.

Troubleshooting Guide

TROUBLE SHOOTING GUIDE

SYMPTOM	CAUSE	SOLUTION
No lights on Front Panel	<ul style="list-style-type: none">• No AC power	<ul style="list-style-type: none">• Make certain AC power cord is plugged into a live outlet.
Remote does not appear to operate	<ul style="list-style-type: none">• Power Switch turned off• Weak batteries• Blocked sensor	<ul style="list-style-type: none">• Turn on Power Switch.• Install fresh batteries, observing polarity indications.• Remove obstructions from the front panel sensor or connect a remote sensor to the Remote In jack on the rear panel.
Front panel lights, but CD does not play	<ul style="list-style-type: none">• Disc upside down	<ul style="list-style-type: none">• Reload disc with label side facing up.
Play indicator lights, but no sound is heard	<ul style="list-style-type: none">• Poor connections• Wrong source connected	<ul style="list-style-type: none">• Make certain connections are secure and made to the correct (e.g., CD) input.• Select CD source on receiver or preamp.
Sound skips or stutters during play	<ul style="list-style-type: none">• Disc may be damaged• Surface vibrations	<ul style="list-style-type: none">• Try another disc.• Isolate the unit from vibration by placing it on a firm surface or move it further away from speakers.
Sound is continually distorted	<ul style="list-style-type: none">• Incorrect input	<ul style="list-style-type: none">• Make certain that the analog Audio Outputs ② of the CD player are connected to a line level audio input, NOT to a digital audio or phono input.
ERROR lights up continuously in the display	<ul style="list-style-type: none">• Various	<ul style="list-style-type: none">• Turn the unit off and on again. If the problem persists, turn the AC power to the CD player off and on.

Technical Specifications

Signal Format

Sampling Frequency	32 kHz to 96 kHz
D/A Conversion	Multi-Level Delta-Sigma
Oversampling	24 Bits/384 kHz Asynchronous Sample Rate Converter

Discrete Analog Output Section

Error Correction	CIRC System
Frequency Response	20 Hz – 20 kHz +0/-0.5dB
Total Harmonic Distortion (THD)	<0.0009% @1kHz
Dynamic Range	> 116 dB
Signal-to-Noise Ratio	116 dB
Channel Separation	> 115 dB
Line-Output Level	2.0 V

General

Power Requirement	230V/50 Hz
Power Consumption	<10 Watts (On)
Dimensions	
Height	63mm
Width	440mm
Depth	332mm
Weight	4.6 kg

Depth measurement includes knobs, buttons and connection jacks.

Height measurement includes feet and chassis.

All features and specifications are subject to change without notice.

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