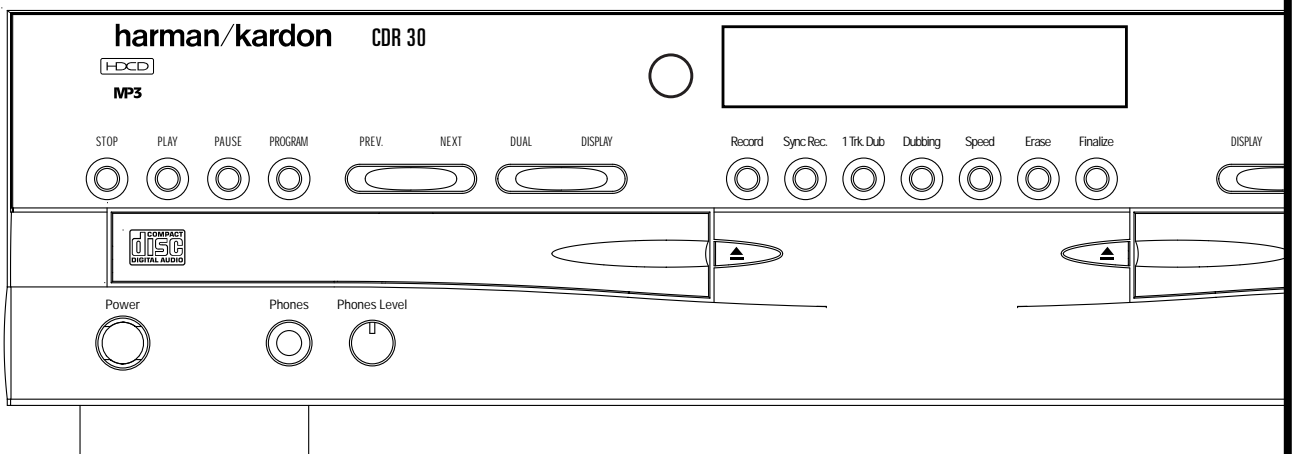


CDR 30 CD Recorder

OWNER'S MANUAL



harman/kardon®

Power for the digital revolution.™

CDR 30 Compact Disc Recorder

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Typographical 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 – (OCR type) indicates a message that is visible on the front panel information display

EXAMPLE – (outlined type) indicates a lit indicator 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

A – (letter in a square) indicates an indicator in the front panel display

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Introduction

Thank you for choosing Harman Kardon.

The CDR 30 CD Player/Recorder is a unique product, designed not only to play back your existing library of compact discs, but also to record compact discs from either analog or digital programs. You may feed signals (for recording) to the CDR 30 from external sources such as an A/V receiver, a tuner, a tape deck or a CD player, or you may simply place a CD in one deck, and make a copy using a recordable CD in the other deck.

Designed and engineered by Harman Kardon, the CDR 30 is among the first audio CD recorders with x4 speed capability. This means that it will take only 15 minutes to copy a 60-minute disc. The CDR 30 is also the first CD-R/RW audio recorder to offer MP3 playback, dubbing of MP3 discs to conventional CD discs, and HDCD® playback.

The CDR 30 not only records with the highest speed and quality available but it is also an audiophile CD player. Through the use of audiophile-grade digital-to-analog converters (DACs), the CDR 30's performance rivals the most sophisticated high-end players. Should you wish to bypass the internal DACs and use an external digital processor, coax and optical digital outputs are available. Thanks to the CDR 30's dual-tray design, you may even play back two separate discs at the same time, for parties or multi-room applications. To make CD playback more enjoyable, the CDR 30 also features a wide range of program and repeat functions.

Since CD recorders and MP3 are relatively new technologies, this may be your first CD-R product. Although CD recorders resemble play-only CD machines in many ways, there are some important differences between a standard CD and a CD-R. In addition, making a CD-R recording is also a different process than what you may be familiar with for making audio tape or cassette recordings. For that reason, we encourage you to read through this manual so that you are fully acquainted with the way CD recording works. This small investment in your time will pay major dividends in the enjoyment that will result from proper use of the CDR 30.

If you have additional questions about this product – its installation or operation – that are not answered in this manual, please contact your dealer, who is your best source of local information. You may also contact Harman Kardon via e-mail through our Web site at www.harmankardon.com.

Special Features

- Dual-Deck CD Player and CD-R/CD-RW Recorder
- X4 Dub Speed for Both CD-R and Erasable CD-RW Discs
- Plays MP3 and HDCD-Encoded Discs
- Audiophile-Grade Digital-to-Analog Converters for Highest Audio Quality
- Dual-Play Capability
- Extensive Playback Programming Capabilities
- Coaxial and Optical Digital Inputs and Outputs
- Front Panel Coaxial and Optical Digital Inputs for Use With Portable Devices
- Sample-Rate Converter Allows Use of DAT Players as Digital Source
- Ergonomic Remote Control

Important Information About CD Recording

In order to get the most enjoyment from your new CD-R recorder, please pay special attention to the following sections of the manual that provide information about the special features and capabilities of CD Recorders.

- The CDR 30 plays all standard CD audio discs, but for recording, the CDR 30 uses special CD-R and CD-RW discs designed only for audio use. CD-R discs designed for computer use will not work in the CDR 30. See page 14 for more information on which types of discs are used with the CDR 30.
- The last step in making a CD-R recording is the finalization process. Unless this step is properly done, the disc will not work in other players. See page 23 for information on finalizing discs.
- Once finalized, CD-R discs will play in any CD player, but CD-RW discs will only play in the CDR 30 and certain other machines. Check the specifications of your CD player if you have questions about compatibility with CD-RW discs.
- As with all CD players, except those designed specifically for portable use, you should never move a CD player while there is a disc inside one of the decks. **NEVER** move the CDR 30 until discs have been removed from both decks.

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: To prevent electric shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.



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.

Safety Information

Important Safety Information

Verify Line Voltage Before Use

Your CDR 30 has been designed for use with 100- to 240-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 CDR 30 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 ensure 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.
- Do not obstruct the ventilation slots on the top of the unit, or place objects directly over them.

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, aerosol cleaners, 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.

IMPORTANT NOTE: To avoid damage to the CDR 30 which may not be covered by the warranty, be certain that all discs are removed from the unit before it is moved. Once the CDR 30 is installed, discs may be left in the unit when it is turned off, but the unit should NEVER be moved with discs left in either deck.

Important Information for the User

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. The limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates,

uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.

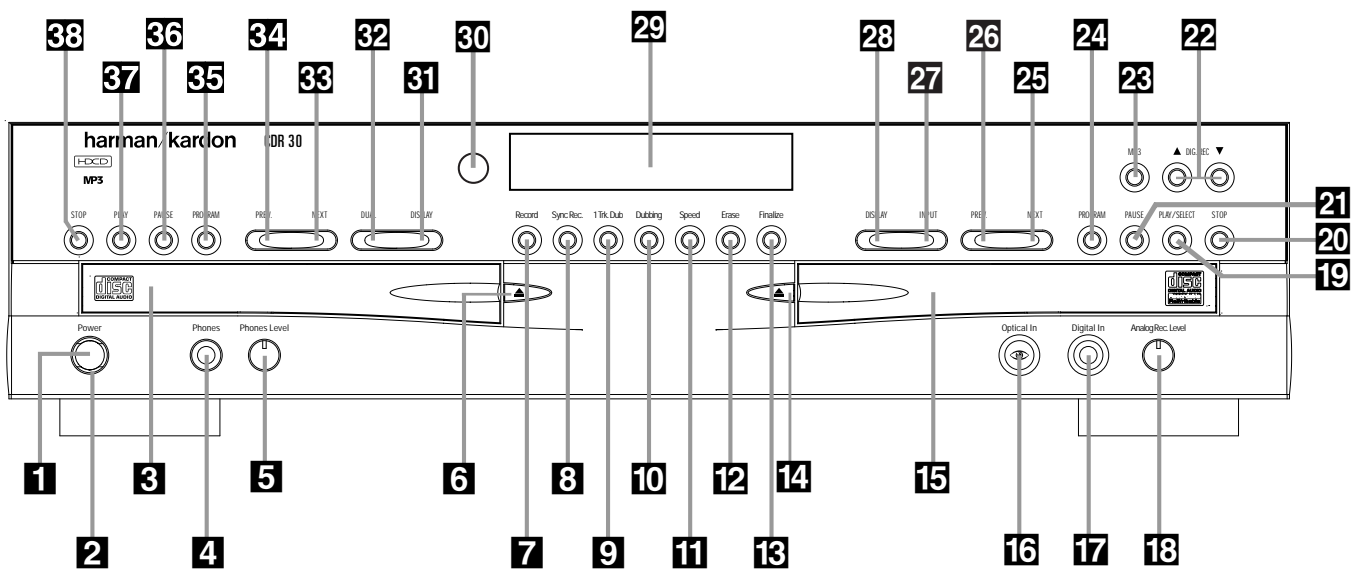
Unpacking

The carton and shipping materials used to protect your new receiver 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** Power Switch
- 2** Standby Mode Indicator
- 3** Play (CDP) Deck
- 4** Headphone Jack
- 5** Headphone Level Control
- 6** Play (CDP) Open/Close
- 7** Record Button
- 8** Sync Record Button
- 9** 1 Track Dub Button
- 10** Dubbing Button
- 11** Speed Select Button
- 12** Erase Button
- 13** Finalize Button

- 14** Record (CDR) Deck Open/Close
- 15** Record (CDR) Deck
- 16** Optical Digital Input
- 17** Coaxial Digital Input
- 18** Analog Record Level Control
- 19** CDR Play/Select Button
- 20** CDR Deck Stop
- 21** CDR Deck Pause
- 22** Digital Level Controls
- 23** MP3 Select Button
- 24** CDR Deck Program Button
- 25** CDR Deck Next Track Button
- 26** CDR Deck Previous Track Button

- 27** Input Select
- 28** CDR Deck Display Select
- 29** Information Display
- 30** Remote Sensor
- 31** CDP Deck Display Select
- 32** Dual/Single Play Select
- 33** CDP Next Track
- 34** CDP Deck Previous Track
- 35** CDP Deck Program
- 36** CDP Deck Pause Button
- 37** CDP Deck Play Button
- 38** CDP Deck Stop Button

1 Power Switch: Press this switch to apply power to the CDR 30. When the unit is first turned on, the **Standby Mode Indicator 2** surrounding the switch will turn green. Once the unit has been turned on with this switch, it may be operated from either the front panel or remote control. Press the switch again to turn the unit completely off.

2 Standby Mode Indicator: When the CDR 30 is in the ON mode, this indicator will glow green. When the unit has been placed in the Standby mode by pressing the **Power-Off Button 29** on the remote, the indicator will glow amber, indicating that the unit is still connected to the AC main supply and may be turned on from the remote control.

3 Play (CDP) Deck: This disc drawer is used to play back conventional CD discs, MP3 discs and CD-R or CD-RW discs that have been finalized.

4 Headphone Jack: Connect standard headphones to this jack for private listening.

5 Headphone Level Control: Turn this control to adjust the volume level to the headphones. Note that the use of this control will not change the analog output levels at the rear panel audio outputs **1 2**.

6 Play Deck (CDP) Open/Close: Press this button to open the **Play Deck 3**.

7 Record Button: Press this button to begin the recording process. See pages 21–25 for more information on CD recording.

8 Sync Record Button: Press this button once to begin an automated recording of a single track from an external CD player when a digital connection is used. Press it twice to begin automated recording of an entire disc. See page 22 for more information on CD Sync recording.

9 1 Track Dub Button: Press this button to begin the process of copying a single track from the CDP deck to a CD-R or CD-RW disc in the CDR deck.

10 Dubbing Button: Press this button to begin the process of making a complete copy of the disc in the **Play Deck 3** to a CD-R or CD-RW disc in the **Record Deck 15**. See page 21 for more information on dubbing.

11 Speed Select Button: Press this button to select the recording speed for internal dubs. See page 21 for more information on selecting the proper speed.

12 Erase Button: Press this button to erase one or more tracks or the entire contents of an unfinalized CD-RW disc. When a CD-RW disc has already been finalized you may erase the entire disc or you may “unfinalize” the disc by erasing the **TOC** data. See page 24 for more information on erasing CD-RW discs.

Front Panel Controls

13 Finalize Button: Press this button when a recording is complete to initiate the finalization process. The **Play/Select Button 19** must be pressed within three seconds to activate finalization. Until this button is pressed and the finalization process is complete, CD-R discs may not be played on conventional CD machines. See page 23 for more information on finalization.

14 Record (CDR) Deck Open/Close: Press this button to open the **Record Deck 15**.

15 Record (CDR) Deck: This Disc Deck is used to record or play back CD, MP3, CD-R and CD-RW discs.

16 Optical Digital Input: This jack accepts the digital audio input signal from a compatible digital audio product and should be connected directly to the optical digital audio output on a CD or DVD player or an A/V receiver or processor. To select this input, press the **Input Select Button 27** until **OPTICAL DIGITAL** appears in the **Time/Message Display F**. Note that the cover with the "eye" icon must be removed before the input is used. Save the cover and replace it when the jack is not in use to prevent dust from entering the jack and degrading the input's performance.

17 Coaxial Digital Input: This input may be used to connect a portable digital audio player to the CDR 30 for digital recording. To select this input, press the **Input Select Button 27** until **COAXIAL DIGITAL** appears in the **Time/Message Display F**.

18 Analog Record Level Control: The control is used to adjust the input level when making recordings from analog sources such as cassettes, or when CDs are recorded in an analog mode. See page 23 for more information on record levels.

19 CDR Play/Select Button: This button has two functions. It may be pressed when a standard CD is in the Record Deck to put the machine in play, or it may be used to enter a selection or start certain record functions.

20 CDR Deck Stop: Press this button to stop the CD in the Record Deck.

21 CDR Deck Pause Button: When the Record Deck is in the Play mode, pressing this button will pause the disc. If the disc has previously been paused, pressing this button will restart the playback.

22 Digital Level Controls: These buttons raise or lower the record level when a digital recording is being made. Pressing both buttons briefly and then release them to change from manual to automatic digital recording level control. See page 23 for more information on digital recording levels.

23 MP3 Select Button: When a "Multisession" disc containing both standard CD audio and MP3 tracks is playing, the unit will default to play of the standard CD audio tracks. Press this button to play the MP3 tracks.

24 CDR Deck Program Button: Press this button to begin the programming sequence for a disc in the CDR deck. See page 19 for more information on programmed playback.

25 CDR Deck Next Track: When a disc is playing in the **Record Deck 15**, press and hold this button to play the disc in a fast-forward mode to quickly locate a desired passage. At any time, tapping the button and quickly releasing it will move to the next track on a disc in play.

26 CDR Deck Previous Track: This button has two functions. When a disc is playing in the **Record Deck 15**, press and hold this button to play the disc in a fast reverse mode to quickly locate a desired passage. At any time, tapping the button and quickly releasing it will move to the beginning of the current track, and the next press will move to the previous track. When a disc is stopped, each press will move back one for programming or play when the disc is stopped. Once a track is entered, it may be played by simply pressing the **Play Button 19 10**.

27 Input Select: Press this button to select the input source (coaxial rear, optical rear, coaxial front, optical front and analog) for recording. See page 23 for more information on input selection.

28 CDR Deck Display Select: Press this button to cycle through the time display options for the Record Deck. See page 18 for more information on the time display.

29 Information Display: The indicators in the Information Display provide status reports on the operation of the CDR 30. See page 7 for complete explanations of each indicator.

30 Remote Sensor: The IR sensor that receives the commands from the remote control is behind this area. Do not cover or obscure this part of the front panel to avoid any malfunction with the remote.

31 CDP Deck Display Select: Press this button to cycle through the time display options for the Play Deck. See page 18 for more information on the time display.

32 Dual/Single Play Select: Press this button to enable both CD decks to play at the same time and function as separate, independent CD units or to have the unit play through all the tracks on the disc in one deck and then switch to the other. In the Dual mode it is also possible to record from an external source in the CDR while the CDP Deck is functioning as a standard CD player. See page 18 for more information on dual-play capability.

33 CDP Deck Next Track: When a disc is playing in the **Play Deck 3**, press and hold this button to play the disc in a fast-forward mode to quickly locate a desired passage. At any time, tapping the button and quickly releasing it will move to the next track on a disc in play.

34 CDP Deck Previous Track: This button has two functions. When a disc is playing in the **Play Deck 3**, press and hold this button to play the disc in a fast-reverse mode to quickly locate a desired passage. At any time, tapping the button and quickly releasing it will move to the beginning of the current track, and the next press will move to the previous track. When a disc is stopped, each press will move back one track for programming or play when the disc is stopped. Once a track is entered, it may be played by simply pressing the **Play Button 37 10**.

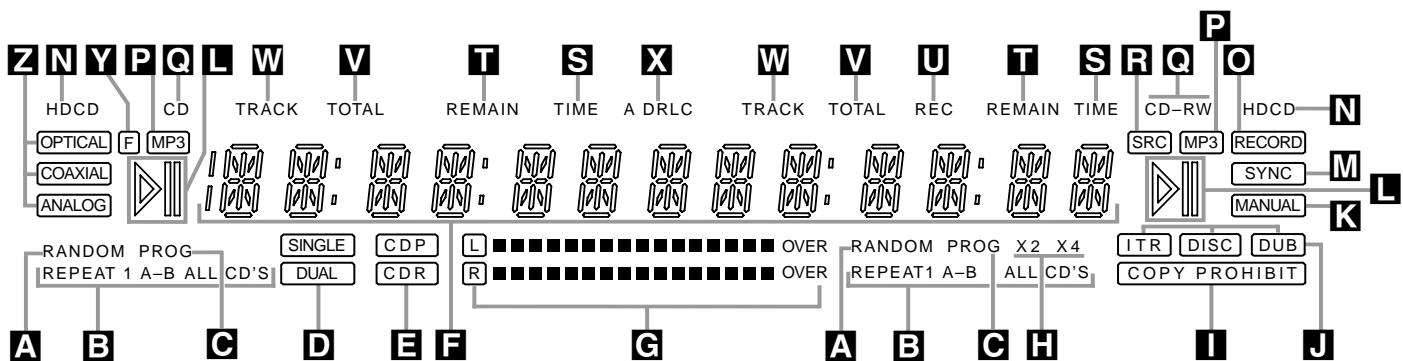
35 CDP Deck Program Button: Press this button to begin the programming sequence for a disc in the CDR deck. See page 19 for more information on programmed playback.

36 CDP Deck Pause: When the CDP Deck is running, pressing this button will pause the disc. If the disc has previously been paused, pressing this button will restart the playback.

37 CDP Deck Play Button: Press this button to begin playback of a CD in the CDP Deck.

38 CDP Deck Stop Button: Press this button to stop the CD in the CDP Deck.

Front Panel Information Display



- A** Random Indicator
- B** Repeat Mode Indicators
- C** Program Indicator
- D** Single/Dual Play Indicators
- E** CDP/CDR Deck Indicator
- F** Time/Message Display
- G** Level Indicators
- H** Dub Speed Indicators
- I** Copy Prohibit Indicator
- J** Dub Mode Indicators
- K** Manual Track Increment Indicator
- L** Play/Pause Indicators
- M** CD Sync Indicator
- N** HDCD Indicators
- O** Record Indicator
- P** MP3 Playback Indicator
- Q** CDR/RW Indicator
- R** Sample-Rate Converter Indicator
- S** Time Indicators
- T** Remaining Time Indicators
- U** Record Time Indicator
- V** Total Time Indicators
- W** Track Time Indicators
- X** Digital Record Level Status Indicator
- Y** Front Input Indicator
- Z** Input Indicators

Important Note: Since the CDR 30 is a dual-deck player/recorder, there are two separate sets of indicators for the Random, Program, Repeat, Repeat Status, Time, Total Time, Track Time, Play/Pause Indicator and CD Indicators for each deck. As the function of these indicators is identical for both decks, they are described in this manual with a common letter. When the CDR 30 is playing or recording a disc, any indicators that light on the left side of the display describe the status of the Play Deck, while those that light on the right side of the display describe the status of the Record Deck. Depending on the activity of the unit and the settings you select, different indicators may light on the two sides at the same time.

A Random Indicators: These indicators light when random playback has been programmed for one of the decks. See page 19 for more information on random play.

B Repeat Mode Indicators: These indicators display the type of repeat function being used. See page 19 for more information on repeat status.

C Program Indicators: These indicators light when one of the decks is being programmed for playback options. See page 19 for more information on programmed play.

D Single/Dual Play Indicators: One of these indicators will light to indicate the unit's playback mode, as selected with the **Dual/Single Play Select Buttons** **32** **7** **24**. When the Dual indicator lights, both decks will play simultaneously to through their respective analog or digital outputs. When the **SINGLE** indicator is lit, only one deck may play at a time, but the unit will automatically switch from one side to the other when a deck is finished playing.

E CDP/CDR Deck Indicator: These indicators show if the **Level Indicators G** are showing the output of the record (CDR) or play (CDP) deck.

F Time/Message Display: This display shows the play or record time for either deck, as noted by the various time and mode indicators **STUVW**. It also displays the CD Text or MP3 information from a disc and displays various information, status and error messages.

G Level Indicators: These LEDs display the input level during a recording, and the output level during playback. See page 23 for more information on record levels.

H Dub Speed Indicators: These indicators show which record speed has been selected for dub recordings. See page 21 for more information on record-speed selection.

Front Panel Information Display

I Copy Prohibit Indicator: This indicator lights when a recording is not possible due to the intervention of the Serial Copy Management System (SCMS). See page 20 for more information on SCMS.

J Dub Mode Indicators: These indicators light when a dub is in progress between the CDP and CDR decks to confirm that either one track (**1 TR**) or the entire disc (**DISC**) is being dubbed.

K Manual Track Increment Indicator: This indicator lights when the automatic track increment system has been turned off. When the indicator is lit, tracks may be incremented during a recording by pressing the **Track Increment Button** **14**.

L Play/Pause Indicators: These indicators show the status of the individual decks. The **▶** lights when the CD is playing, and the **▶||** lights when either deck is in a Pause mode.

M CD Sync Indicator: This indicator lights when the unit has been programmed for a CD Sync recording. See page 22 for more information on CD Sync recordings.

N HDCD Indicators: These indicators will light when either of the decks is playing a disc that contains HDCD encoding.

O Record Indicator: This indicator lights when the unit is making a recording and flashes during the preparations for recording.

P MP3 Playback Indicator: These indicators will light when either of the decks is playing a disc that contains MP3 data.

Q CDR/RW Indicator: This indicator shows which type of recordable disc is present in the **Record Deck** **15**. When a CD-R disc is present, only the R is lit. The RW lights when an erasable CD-RW disc is in use.

R Sample-Rate Converter Indicator: This indicator lights when the Sample-Rate Converter is in use to change the digital sample rate when the incoming signal is not the standard 44.1kHz used by standard CDs. This is an automatic function and does not require any user intervention.

S Time Indicators: These indicators light in conjunction with one of the **Time Indicators** **T V W** to show which of the time status modes is active.

T Remaining Time Indicators: These indicators light when the **Time/Message Display** **F** shows the time remaining on a disc.

U Record Time Indicator: This indicator lights in conjunction with the **REMAIN** **T** or **TOTAL** **V** indicators during a recording to show that the time figure shown in the **Time/Message Display** **F** is either the time remaining on the disc or the time elapsed for the current track.

V Total Time Indicators: These indicators light when the **Time/Message Display** **F** shows the total time of all tracks on a disc.

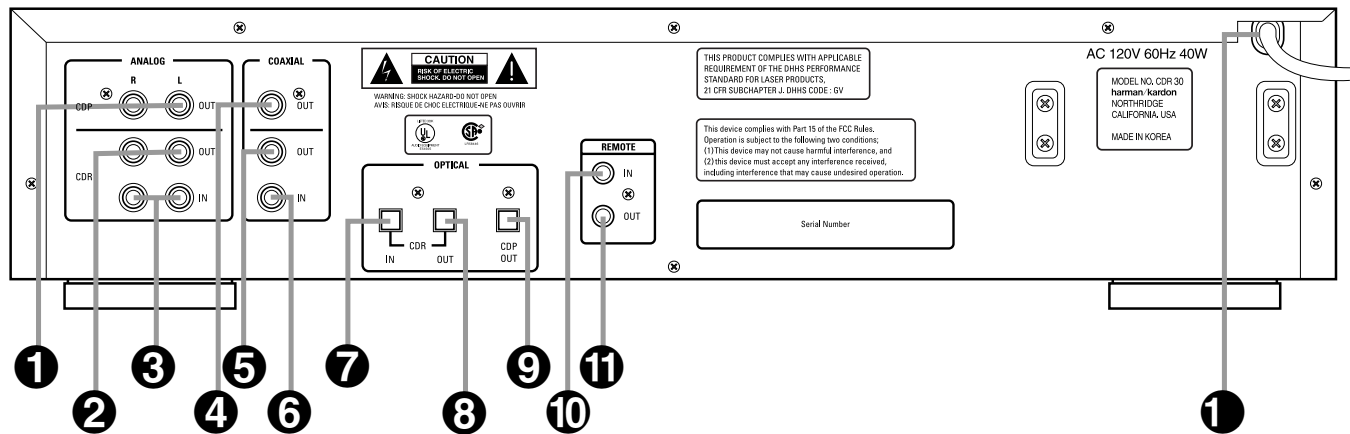
W Track Time Indicators: These indicators light when the **Time/Message Display** **F** shows the running time of the individual track being played.

X Digital Record Level Status Indicator: During a digital recording, this indicator shows **ADRLC** when the record level is controlled automatically, and **DRLC** when you may control it manually. See page 23 for more information on record levels.

Y Front Input Indicator: This indicator lights when the front panel **Optical Digital** **16** or **Coaxial Digital** **17** inputs are the source for a recording.

Z Input Indicators: These indicators light to display which input source is in use.

Rear Panel Connections



- 1 Play (CDP)-Deck Analog Output
- 2 Record (CDR)-Deck Analog Output
- 3 Record (CDR)-Deck Analog Input
- 4 Play (CDP)-Deck Coaxial-Digital Output

- 5 Record (CDR)-Deck Coaxial-Digital Output
- 6 Record (CDR)-Deck Coaxial-Digital Input
- 7 Record (CDR)-Deck Optical-Digital Input
- 8 Record (CDR)-Deck Optical-Digital Output

- 9 Play (CDP)-Deck Optical-Digital Output
- 10 Remote IR Input
- 11 Remote IR Output
- 1 AC Power Cord

1 Play (CDP)-Deck Analog Output: These jacks carry the analog audio output signal from the **Play Deck 3**. Connect them to the CD input jacks on a receiver, preamp or processor.

2 Record (CDR)-Deck Analog Output: These jacks carry the output signal from the **Record Deck 15**. Connect them to the Tape Play/In input jacks on a receiver, preamp or processor.

3 Record (CDR)-Deck Analog Input: These jacks accept the analog signals that are used for CD recordings. Connect them to the Tape Rec/Play outputs on a receiver, preamp or processor.

4 Play (CDP)-Deck Coaxial-Digital Output: This jack carries the digital-audio output signal from the **Play Deck 3**. Connect it to a coaxial-digital input on a receiver, processor or digital decoder.

5 Record (CDR)-Deck Coaxial-Digital Output: This jack carries the digital audio output signal from the **Record Deck 15**. Connect it to a coaxial digital input on a receiver, processor or digital decoder.

6 Record (CDR)-Deck Coaxial-Digital Input: This jack accepts the digital-audio input signal from a compatible digital audio product and should be connected directly to a digital player or to a coaxial-digital output on a CD or DVD player or an A/V receiver or processor.

IMPORTANT NOTE: The coaxial digital inputs should only be connected to **digital** input or output jacks. Even though they use the same RCA-type connector as standard analog audio connections, DO NOT connect them to conventional analog input or output jacks.

7 Record (CDR)-Deck Optical-Digital Input: This jack accepts the digital-audio input signal from a compatible digital audio product, and should be connected directly to the optical-digital output on a CD or DVD player or an A/V receiver or processor.

8 Record (CDR)-Deck Optical-Digital Output: This jack carries the digital audio output signal from the **Record Deck 15**. Connect it to an optical digital input on a receiver, processor or digital decoder.

9 Play (CDP)-Deck Optical-Digital Output: This jack carries the digital audio output signal from the **Play Deck 3**. Connect it to an optical-digital input on a receiver, processor or digital decoder.

10 Remote IR 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 30** is blocked. This jack may also be used with compatible IR remote control based automation systems.

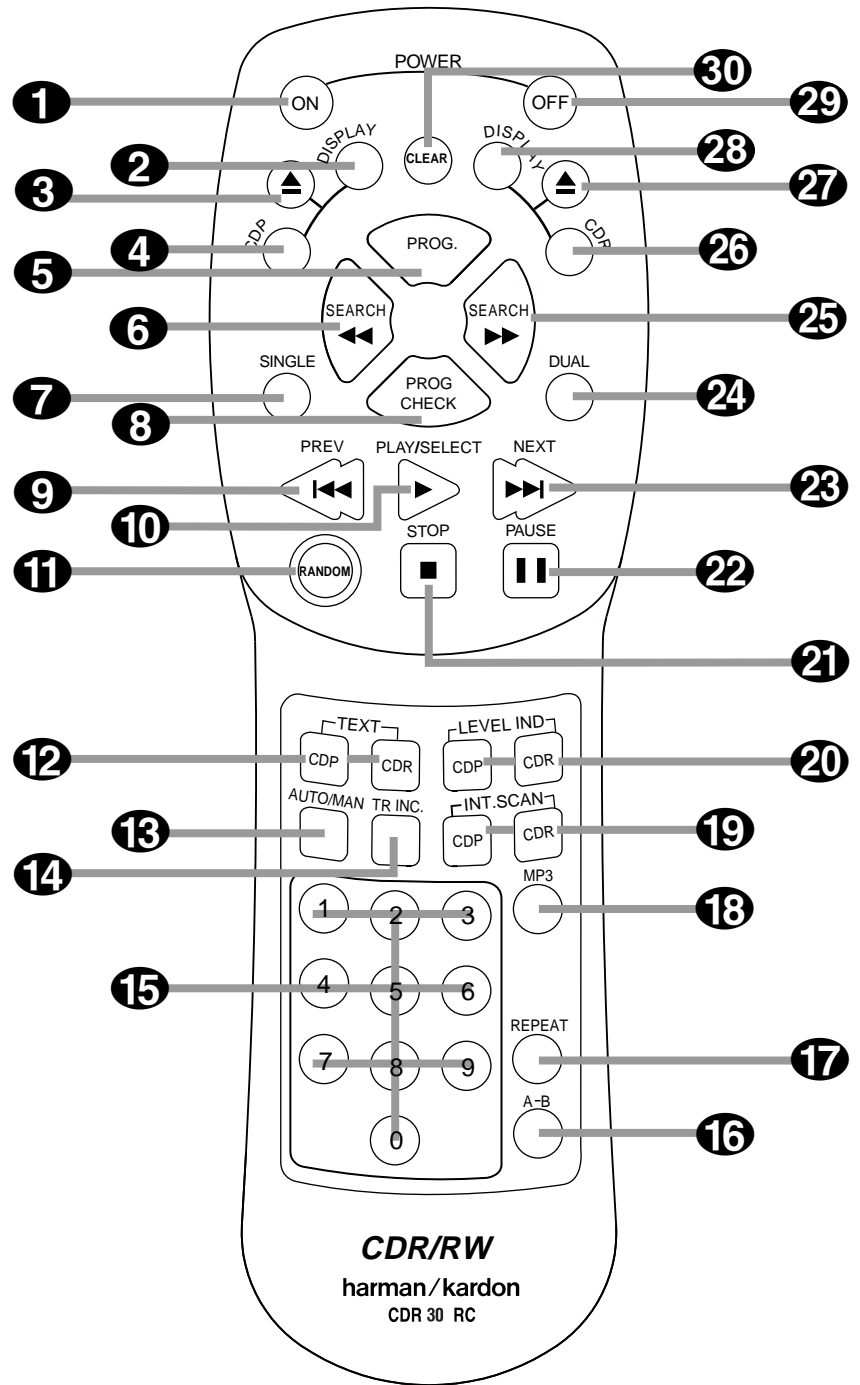
11 Remote IR Output: Connect this jack to the IR input jack of another compatible Harman Kardon remote controlled product to have the built-in **Remote Sensor 30** on the CDR 30 provide IR signals to other compatible products.

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

Remote Control Functions

- 1 Power-On Button
- 2 Play Deck (CDP) Display
- 3 CDP Deck Open/Close
- 4 CDP Deck Select
- 5 Program
- 6 Reverse Search
- 7 Single Play Select
- 8 Program Check
- 9 Previous Track
- 10 Play/Select
- 11 Random Play
- 12 Text Readout Select
- 13 Auto/Manual Track Increment Selector
- 14 Track Increment
- 15 Numeric Keys
- 16 A-B Repeat Select
- 17 Repeat
- 18 MP3 Select
- 19 Intro Scan
- 20 Level Indicator Select
- 21 Stop
- 22 Pause
- 23 Next Track
- 24 Dual Play Playback
- 25 Forward Search
- 26 CDR Deck Select
- 27 CDR Deck Open/Close
- 28 CDR Display Speed
- 29 Power Off
- 30 Clear

IMPORTANT NOTE: Some of the remote's functions, including Play, Pause, Stop, Search, Next and Previous Track, are shared between the two decks. Always remember to press the CDP Select button 4 to use the remote to control the Play Deck, or press the CDR Select button 26 to control the Record Deck. When you press one of these buttons, an indication of CDP or CDR will appear in the Time/Message Display F.



Remote Control Functions

- 1 Power-On Button:** Press this button to turn the CDR 30 on. Note that in order for this control to function, the **Front Panel Power Switch 1** must first be pressed so that the unit is in the Standby mode.
- 2 Play Deck (CDP) Display Control:** Press this button to cycle through the various time display options for the disc in the **Play Deck 3**. See page 18 for more information on time-display options.
- 3 Play Deck (CDP) Open/Close:** Press this button to open or close the **Play Deck 3**.
- 4 Play Deck (CDP) Select:** Press this button to control or program the functions of the disc in the **Play Deck 3**.
- 5 Program:** Press this button to begin the programming sequence for one of the CD decks. See page 19 for more information on programming the CDR 30.
- 6 Reverse Search:** Press this button to play the selected disc in reverse to locate a desired passage.
- 7 Single Play Select:** When this button is pressed, the CDR 30 will function as a two-disc CD player/ changer. In the Single mode, the audio output will be routed to all output jacks **1 2 4 5 8**, regardless of which CD deck is actually playing. See page 18 for more information on the Single-Play mode.
- 8 Program Check:** Press this button to check or edit a programmed playback sequence. See page 19 for more information on programmed playback.
- 9 Previous-Track Skip:** Press this button to skip backwards to the beginning of the track currently being played. Press it a second time to move back to the beginning of each previous track.
- 10 Play/Select:** This button has two functions. It will most often be used as a standard play button, but when setting up certain record functions, it is also used as an Enter or Select button.
- 11 Random Play:** When the CD deck is stopped, press this button to begin random play of all tracks on a disc.
- 12 Text Readout Select:** Press one of these buttons to view the CD Text or MP3 Text data from the disc playing in either the CDP or CDR decks. If one of the buttons is pressed and the disc playing does not contain text a **NO TEXT** message will be displayed in the **Time/Message Display F**.
- 13 Auto/Manual Track Increment Selector:** Press this button to select between automatic and manual track increments during a recording session. See page 23 for more information on track increments.
- 14 Track Increment:** When the Manual mode for track increments is selected during recording, press this button to increase the track number. **NOTE:** This function does not operate during CD Sync or dub recording.
- 15 Numeric Keys:** Press these buttons to access a specific track for playback or during the programming process. See page 19 for more information on programmed playback.
- 16 A-B Repeat:** Press this button to specify a segment of a disc for repeat play. See page 19 for more information on repeat play.
- 17 Repeat:** Press this button once to repeat the current track. To repeat an entire disc, press the button twice.
- 18 MP3 Select:** When a Multi-session disc with both CD Audio and MP3 data is playing, press this button to select playback of either type of information.
- 19 Intro Scan:** Press one of these buttons to start the Intro Scan feature for either deck. When Intro Scan is in use, the unit will play the first ten seconds of each track on the disc. To play any track in its entirety during the Intro Scan process, press the **Play Button 10**.
- 20 Level Indicator Select:** Press these buttons to select the playback level display for either the play (CDP) or record (CDR) decks.
- 21 Stop:** Press this button to stop playback or recording.
- 22 Pause:** Press this button to momentarily pause playback. Press it again to resume playback.
- 23 Next Track/Skip:** Press this button to skip forward to the next track on a disc.
- 24 Dual Play Playback:** Press this button to enable both CD decks to play back at the same time and function as separate, independent CD units. In this mode it is also possible to record from an external source while the Play Deck is functioning as a standard CD player. See page 18 for more information on dual-play capability.
- 25 Forward Search:** Press this button to play a disc in a fast-forward mode.
- 26 Record Deck (CDR) Select:** Press this button to control or program the functions of the disc in the **Record Deck 15**.
- 27 Record Deck (CDR) Open/Close:** Press this button to open or close the **Record Deck 15**.
- 28 Record Deck (CDR) Display Control:** Press this button to cycle through the various time-display options for the disc in the **Record Deck 15**. See page 18 for more information on time-display options.
- 29 Power Off:** Press this button to place the unit in a Standby mode.
- 30 Clear:** Press this button to clear an item in a program sequence. See page 19 for more information.

Installation and Connections

Important Note: To prevent possible damage to your speakers or other components in your audio system, we strongly recommend that ALL system components, including the CDR 30, be turned off and unplugged from their AC power source when any connections are made or a new component is installed.

Locating the CDR 30

Since the CD transports in the CDR 30 are precision instruments, they are subject to interference from vibration. To minimize the possibility of skipping during playback or recording, it is recommended that the unit be placed on a level, solid, vibration-free surface.

When installing the CDR 30 in a cabinet or tight space, always make certain that there is enough room in front of the unit for the disc drawers to open fully, and that there is enough space above the unit so that discs may easily be inserted in the disc drawers.

In addition to the safety considerations outlined on page 4, it is also recommended that the CDR 30 not be placed in a location that is subject to direct sunlight or extreme heat or cold, as these conditions may damage the discs used in the player, or the player itself. Note that audio amplifiers or high-power receivers, as well as certain other electronic products, may generate significant heat. For that reason, do not place the CDR 30 directly on top of an amplifier, receiver, or other heat source. Always allow at least one inch of free space on all sides of the CDR 30, as well as other electronic products, to allow for proper ventilation.

The unit should also be kept away from sources of water or damp conditions.

Connections to Your Audio System

When connecting the CDR 30, think of the process as if you were connecting a standard CD player and a tape or cassette recorder, with the addition of the digital connections.

Play-Deck Connections

The rear panel connections labeled "CDP" refer to the outputs of the **Play Deck 3**, which functions as a standard CD player. Connect the analog left/right **CDP Outputs 1** to the CD inputs on your receiver, preamp or surround processor. For best playback results, a digital connection is recommended, using the **Coaxial 4** or **Optical 9** Outputs. Connect them to the matching digital inputs of your receiver, preamp, processor or external digital decoder. Note that you may have to change a setting on the receiver or processor to link the digital input to the "CD" button or input selector. Consult the owner's manual on that device for details, as this configuration may vary from unit to unit.

Record-Deck Connections

The rear panel connections labeled "CDR" refer to the inputs and outputs for the **Record Deck 15**. Depending on the capabilities of your receiver, preamp or processor, you may find it convenient to connect the analog inputs and outputs to the jacks marked for a tape recorder. As the CDR 30's functions resemble those of a standard tape recorder, this might make it easier to select it as an input on your receiver or preamp. Connect the analog **CDR-Out Jacks 2** to the Play/In jacks of a Tape or Aux input on your receiver or preamp. Connect the **CDR-In Jacks 3** to the Tape Rec/Out jacks on your receiver or preamp.

To play the output of the Record Deck through the digital decoder in your receiver or an external processor, connect the **CDR Coaxial 5** or **Optical 8** digital outputs jacks to the matching digital-input jacks on your receiver or processor. Note that you may have to change a setting on the receiver or processor to link the digital input to the "Tape" button or the specific input selector associated with the digital inputs. Consult the owner's manual on your receiver or processor for details, as this configuration may vary from unit to unit.

To make recordings from external digital sources, such as a CD, DVD or MD player, connect the **CDR Coax-In Jacks 6/17** or **CDR Optical-In Jacks 7/16** on the CDR to the digital output jacks on your receiver or processor. If your receiver does not have digital-output jacks, you may connect the **CDR Coax-In Jacks 6/17** or **CDR Optical-In Jacks 7/16** on the CDR 30 directly to the digital outputs on your CD player or other digital device.

Connections to a portable digital CD or MD player may also be made by connecting the Coax Digital Output of the player to the front panel **Digital Input Jacks 16/17** on the CDR 30. Note that when both the front and rear panel digital inputs are connected to external sources, the CDR 30 will give priority to the front panel input. If it is impractical to disconnect the front panel input when you need to use the rear panel jack, simply turn off the device connected to the front panel input. This will stop the digital signal, and permit the rear panel jack to be used.

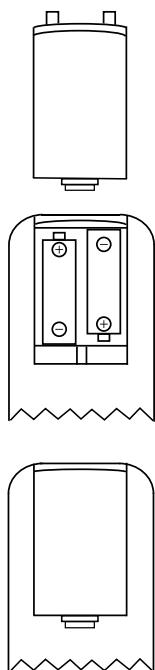
IMPORTANT NOTES ON DIGITAL CONNECTIONS:

Although digital-coax connections use the same type of "RCA" phono jack as standard analog signals, please take special care to connect digital signals only to digital jacks. In many cases, the digital jacks may be identified by an orange-colored insert ring around the center of the jack. When making digital connections, be sure to use coax-interconnect cables, such as the one supplied with the CDR 30 or cables intended for video applications. Even though they have the correct type of RCA connector, do not use audio-interconnect cables that have twisted-pair construction, as they are not appropriate for digital signal use. If you have any questions about the type of cables to use with the CDR 30, consult your dealer.

Installation and Connections

Batteries

Insert the two AA batteries supplied with the CDR 30's remote by turning the remote over so that the bottom of the remote is facing towards you. Gently lift the plastic tab on the battery cover up and away from you, and lift the lid off. Insert the batteries in the remote, being careful to follow the + and – polarity indications in the bottom of the compartment. Replace the cover by first seating the two small tabs into the mating holes at the top of the remote, and then gently push the cover down until the latch snaps into place with an audible click.



NOTE: When replacing batteries, it always a good idea to replace both at the same time. When the remote will not be used for an extended period of time, it is also a good idea to remove the batteries to avoid the possibility of damage due to corrosion. Batteries contain chemical substances and we recommend that you dispose of them properly and in compliance with any local regulations.

IR Remote Connections

If the CDR 30 is installed behind a cabinet or other obstruction that may block the path between the front panel **Remote Sensor 30** and the location where you will use the remote, an optional external IR sensor may be used. Connect the sensor to the **Remote IR In Jack 10** 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 CDR 30 to send commands to other compatible remote products. Connect the **Remote IR Out Jack 11** to the input of the other product or system.

Power Connections

Connect the **AC Power Cord 1** to an AC power source. The CDR 30 uses sensitive, high-performance computer-grade CD drives, and to protect them we recommend that you consider the use of a surge protector, just as you would for a computer.

If the rear panel AC outlet on a receiver or other product is used, make certain that it provides at least 28 watts, and that the total power of all products connected does not exceed the maximum rated output of the product containing the outlets. If the CDR 30 is connected to a switched outlet, remember to turn on the outlet or product controlling it in order for the CDR 30 to operate.

CD Recording Basics

CD Recorders (CDRs) are similar to standard CD players, with the addition of the features and controls needed for recording. Functions such as play, search and programming for playback will be familiar, but the recorder will function slightly differently than what you may be used to for magnetic tape recorders.

Disc Types

Unlike a conventional CD player, the CDR 30 uses three types of discs, and it is important to understand how each one plays.



Both decks in the CDR 30 will play back any conventional CD that bears this logo.



Discs that bear this logo may be recorded on one time, and when they are finalized they will play in either deck in the CDR 30 or in any conventional CD player, including home, car and portable models. The **Record Deck 15** on the CDR 30 may also be used to record on these discs, and it will play CD-R/Audio discs even if they have not been finalized.



Discs that bear this logo may be used for recording on the CDR 30, and they may also be erased and reused. They may be recorded on or played on the **Record Deck 15** of the CDR 30 and in other CD-RW recorders or CD-RW compatible players. They will NOT play back in most current CD players unless the player is CD-RW compatible. CD-RW Audio discs will play on most DVD players once they have been finalized.



Discs designed for use in computer CD-R drives **may not** be used for recording in the CDR 30. Only discs specifically designed for use in consumer CD audio recorders may be used. If you attempt to use a blank-computer-type recordable disc for recording on the CDR 30 you will see a **NO AUDIO** message in the **Time/Message Display 16** and recording will not be possible. However, discs that have been recorded in the

CD-R drive of a computer may be played in the CDR 30, provided that they have been properly finalized in accordance with audio standard IEC958.

Note that the CDR 30 is specifically designed for the recording and playback of consumer audio discs, and cannot be used to copy data discs, DVD discs, or other optical discs used by video- or computer-game systems.

Recording Options

Digital Source to CD Audio: Depending on the particular input source used, the CDR 30 will make a CD Audio disc when fed a signal from a digital source such as an external CD or DVD player, MiniDisc or DAT player. When the input signal is not at the 44.1kHz standard used by digital audio discs it will be converted to the proper standard by the CDR 30's built-in sample rate converter. Input signals will be transferred directly to the copy disc as a digital signal, provided that it is an original recording. Digital sources that are copies will first be converted to an analog signal and then back to a digital signal for recording. This is a requirement of the SCMS system, which is part of the CD recording system.

When the dubbing is one using the dual-deck capability of the CDR 30 the copies may be made in real time, or at twice or four times normal.

Analog sources to CD Audio: When the input signal is a conventional line-level analog audio signal, such as the record output of a receiver or processor, it will be converted to digital data and recorded as a standard CD audio disc. These dubs may be made in real time only.

MP3 discs to CD Audio: A unique feature of the CDR 30 is its ability to play discs recorded with MP3 data files. These discs may be copied to conventional CD audio discs using the dual-deck dub capabilities. Note that it is not possible to copy MP3 discs to additional MP3 disc copies.

The CDR 30 is not equipped to accept external MP3 files for direct recording or playback.

CDR Terminology and Display Messages

Compact disc recording has its own special terminology, and some of the messages displayed by the CDR 30 may be new to you. Before using the CDR 30, you may wish to

familiarize yourself with some of the terms used by the CDR 30. Additional error message displays may also appear. Please see page 25 for a complete explanation of error messages.

Finalize: This term refers to the process that completes the recording of a disc by recording a final Table of Contents and preparing the disc so that it may be played on other machines. A CD-R disc may not be played on the CDP deck of other CD players until it is finalized. However, once the finalization process is complete, a CD-R disc may not be recorded on again. Only CD-RW discs may be "Unfinalized," so that additional tracks may be recorded on a disc.

TOC: Stands for Table of Contents and it refers to the data recorded on each CD that tells the player how many tracks are on the disc, the total time of the disc and the running time of each individual track. Each time a disc of any sort is placed in the CDR 30, you will see a **TOC** to indicate that the unit is reading this data from the disc. This is required to copy the track information to any recording.

OPC: Stands for Optical Processing Calibration. When you see this message in the **Time/Message Display 16**, it means that the laser transport inside the unit is making the calibrations and adjustments needed so that the recording process is optimized for the specific disc in use.

BUSY: When you see this message, it means that the Record Deck is completing part of the record operation. When you see this message, do not press any buttons; simply wait until the message clears from the display.

DISC FULL: When there are only four seconds of record time remaining on a blank disc, a **DISC FULL** message will appear in the **Time/Message Display 16**. When you see this message, you will need to stop the recording process and, when a CD-R is being recorded, insert a new blank disc or, when a CD-RW is in use, either use a new disc or erase existing tracks, following the instructions on page 24.

Playback Basics

Playback of CDs on the CDR 30 resembles that for traditional CD players with a few exceptions to accommodate the availability of two separate playback decks. Before using the CDR 30, power-up the unit by pressing in the **Main Power Switch 1**. Note that the **Standby Mode Indicator 2** will turn green, indicating that the unit is on and functioning. At the same time, the **Information Display 29** will light, the **Time/Message Display F** will briefly display **HARMAN KARDON CDR 30** and the legends behind the front panel controls will also light up.

Once the **Main Power Switch 1** has been turned on, the CDR 30 may be powered-on or -off using the remote control. Pressing the **Power-Off Button 29** on the remote will place the unit in a Standby mode, as indicated by the amber color of the **Standby Mode Indicator 2**. To turn the unit on using the remote, simply press the **Power-On Button 1**.

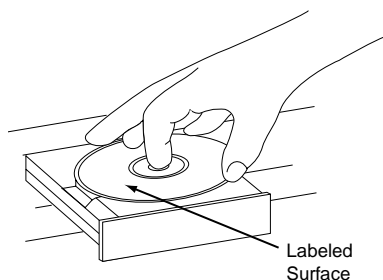
Note that when the unit is in the Standby mode, it is still drawing power from the AC main outlets. To turn the unit completely off, press the **Main Power Switch 1**. When the **Standby Mode Indicator 2** goes out, the CDR 30 is off and not drawing any power. When you will not be using the unit for an extended period of time, such as during a vacation, we recommend using the **Main Power Switch 1** to turn the unit completely off.

Although compact discs are very reliable, rough handling may damage them. Avoid scratching the bottom (nonprinted) side of the discs, as this will affect playback of standard CDs and interfere with the recording of CD-R and CD-RW discs. It is also a good idea to always handle discs by their edges to avoid fingerprints which may also interfere with playback quality and possibly cause damage to the laser and lens assembly.

Loading and Unloading Discs

To load a disc, first open the desired CD deck by pressing the appropriate **Open/Close Button 6 14 3 27**. The word **OPEN** will appear in the **Time/Message Display F**. Always make certain that there is sufficient room in front of the unit for the disc drawers to open. Note that if either disc drawer is blocked, the drawer will stop at the blocked position and an **ERROR** message will appear. Press the appropriate **Open/Close Button 6 14 3 27** to reopen the drawer.

Load a disc in the tray with the printed (label) side facing up. Once the disc is seated, make certain that it is properly centered within the tray. When using 3" discs, take extra care to make certain that the disc is carefully centered within the smaller ridges in the disc tray.



To close the drawer, press the appropriate **Open/Close Button 6 14 3 27** or gently press on the outside of the front cover of the disc tray. When the drawer is closed the word **CLOSE** will appear momentarily in the **Time/Message Display F**, and the letters **TOC** will begin to flash in the display once the drawer is completely closed.

If the disc is a standard CD or a finalized CD-R or CD-RW disc, **TOC** will flash while the unit reads the disc's Table of Contents information. Once that data is read, the **Time/Message Display F** will show the total number of tracks and the total time of all tracks on the disc. The **CD Indicator Q** will also light to indicate that a standard CD is in use.

When an unfinalized CD-R or CD-RW disc is placed in the **Record Deck 15**, the letters **OPC** will flash once the Table of Contents has been read. This indicates that the unit is optimizing its circuits for maximum compatibility with the specific recordable disc in use. The number and total running time of any tracks that have already been recorded will appear in the **Time/Message Display F**, and the appropriate indicator **Q** will light to tell you if a CD-R or CD-RW disc is in use.

If a computer data disc is placed in the CDR 30, a **DATA DISC** or **DISC ERROR** message will appear, depending on whether or not the data disc is finalized. Data discs will not play and cannot be recorded or dubbed on the CDR 30.

Using the Remote

The CDR 30's infrared remote control is designed to operate both CD decks, as well as control the playback programming and record functions. To allow for efficient use of the remote, its operation is different from standard CD players. Some buttons are dedicated to one specific CD deck, while others are shared between the two decks.

No matter which deck is playing, the **Play Deck (CDP)** and **Record Deck (CDR) Display 2 28** and **Open/Close Buttons 3 27** will always send a command to their respective deck. The other transport and programming functions, however, are shared. To use any of the transport controls, such as **Play 10**, **Stop 21**, **Pause 22** or the **Search and Skip Buttons 6 9 23 25**, the **Numeric Keys 15** or the **Programming Keys 5 7 8 11 16**, first press either the **CDP Button 4** to command the **Play Deck 3** or the **CDR Button 26** to command the **Record Deck 15**. When the button is pressed, a message reading CDP or CDR will appear in the appropriate **Time/Message Display F** to confirm the selection.

To switch the remote from controlling one deck to controlling the other, simply press the **Select Button 4 26** for the deck you wish to control at any time.

Playback Basics

Normal Play

To play a disc, first make certain that the unit is properly installed and that the **Main Power Switch 1** is turned on. Turn the CDR 30 on by pressing the **Power-On Button 1** on the remote and note that the front panel display will light.

Insert a disc following the instructions shown on the previous page. To start the playback, press the Play button on the front panel for the appropriate deck **19 37** or press the **Select Button** on the remote for the desired deck **4 26** and then press the **Play Button** on the remote **10**. The **Play/Pause Indicator L** will show a right-pointing triangle ▶ and the **Time/Message Display F** will show the track number being played and the running time of the track. As each new track begins to play, the track time will reset to **00:00** and begin to count up for the new track.

NOTE: Remember that unfinalized CD-R or CD-RW discs will only play in the **Record Deck 15**. If you attempt to play an unfinalized disc in the **Play Deck 3**, a **DISC ERROR** message will appear to remind you to play the disc in the other deck.

To go directly to a specific track on a disc, enter the track number using the **Numeric Keys 15**. Note that when selecting a two digit track number, the second digit must be entered within three seconds after the first Numeric Key is pressed.

When a disc is stopped after it has been loaded and the Table Of Contents (TOC) data read, the following information will be shown in the Time/Message Display F:

For CD Audio Discs, or mixed/multisession discs when the MP3 Indicator P is NOT lit: The number tracks on the disc and the total time of the disc.

For MP3-only discs, or mixed/multisession discs when the MP3 Indicator P is lit: The total number of tracks.

Note that when there is an MP3 disc in BOTH decks, both **MP3 Indicators P** will flash. Also, if an MP3 disc is placed in one of the decks when the other is already playing an MP3 disc, an **MP3 BUSY** message will appear in the disc of the **Time/Message Display F** where the second disc has been inserted.

To play all of the tracks on a disc in random order, press the **Select Button 4 26** for the desired deck, and then press the **Random Button 11**. The unit will briefly examine all of the tracks on the disc and the **Random Indicator A** will light. Each track will be played in a random order until all tracks on the disc have been played. Note that there will be a brief pause in between each track as the unit searches for the next track to play.

To momentarily stop the disc at any time, press the **Pause Button 22 21 36**. When a disc is paused, the **Play/Pause Indicator L** will add two vertical lines to indicate a paused disc. Press either the **Play Button 10 19 37** or the **Pause Button 22 21 36** to resume playback at the point where the disc was paused.

When there is only one disc in the unit, it will automatically stop when all tracks on a disc have played through. To stop playback at any time, press the **Stop Button 21 20 38** for the deck in use.

When there is a disc in each deck, the player will respond in one of two ways, depending on which way the dual-play setting is activated. In normal operation, when the disc in one drawer finishes, the disc in the other drawer will begin to play. When the **Dual Button 24 32** is pressed so that the **Dual-Play Indicator D** is lit, each deck will operate as a separate, single-play CD unit without regard to the status of the other deck. For complete information on Dual-Deck and Dual-Play operation, see page 18.

At the end of a listening session, remove the discs from the decks by following the instructions shown on the previous page. Do not leave the disc drawers open when the unit is not in use to prevent dust and dirt from entering the unit and to prevent damage to the disc-drawer tray.

To place the unit in the **Standby** mode at the end of a listening session, press the **Power-Off Button 30**. The **POWER OFF** message will appear briefly in the **Time/Message Display F**, any open disc trays will automatically close, and the **Standby Mode Indicator 2** will turn amber.

MP3 Playback

The CDR 30 is unique among consumer audio CDR/RW recorders in that it plays discs recorded with MP3 data. It may also make conventional CD Audio copies of these discs when they are dubbed using the CDR 30's dual-deck capabilities. Since MP3 discs may appear in two different forms, their playback may require different operation.

When a disc has been recorded ONLY with MP3 data, simply insert the disc in the CDR 30 as you would for any CD. After the disc's Table of Contents (TOC) data has been read, the **MP3 Indicator P** will light to indicate that an MP3 disc is in use.

When discs are recorded on a computer, it is possible to place both standard CD Audio and MP3 tracks on the same disc. These are known as "Mixed Session" or "Multisession" discs. When they are used in the CDR 30, the default mode is to play ONLY the standard CD audio tracks. To play the MP3 data tracks, wait until the disc's Table of Contents is read and the **Time/Message Display F** shows the data for the standard audio tracks. Then, press the **MP3 Button 18 23** and note that the **MP3 Indicator P** lights above the appropriate deck.

- If the **MP3 Button 18 23** is pressed while the CD Audio tracks of a Multisession disc is playing, an **MP3 ON** message will flash three times in the **Time/Message Display F** and then playback will stop. Press the **Play Button 10 19 37** to play back the MP3 tracks.
- If the **MP3 Button 18 23** is pressed while the MP3 tracks of a Multisession disc is playing, an **MP3 OFF** message will flash three times in the **Time/Message Display F** and then playback will stop. Press the **Play Button 10 19 37** to play back the standard CD Audio tracks.

When an MP3 disc is inserted into the CDR 30, the displays are somewhat different than what you may be used to for standard CD Audio discs or from traditional CD players. After the Table of Contents (TOC) is read, the **Time/Message Display F** will display the total number of tracks on the disc. During playback of an MP3 disc, the default display will show the running time for the track being played, but not the track number, as is the case for normal CD playback.

Playback Basics

During normal playback of MP3 discs, pressing the CDP or CDR Display Button **2 23** will show the following information, in order:

Elapsed time of current track → Remaining Time of current track → Current Track Number → File name of Current Track (Up to the first six digits)

To read the total time of all tracks recorded on an MP3 disc, the disc must be stopped. Then, press the CDP or CDR Display Button **2 23** (as appropriate) for three seconds, until a **TTL TIME ON** message appears in the Time/Message Display **F**. Then press the CDP or CDR Display Button **2 23** again to alternate between a display of the total number of tracks and the total time of the disc. Press and hold the CDP or CDR Display Button **2 23** again for three seconds until a **TTL TIME OFF** message appears in the Time/Message Display **F** to return to standard display.

While MP3 playback is possible from both the CDP and CDR decks, only one MP3 disc may be played at a time. If you load two MP3 discs at the same time, both MP3 Indicators **P** will flash. Press the Play Button **10 19 37** for the deck you wish to play first, and the MP3 Indicator **P** above that deck will continue to flash to indicate active MP3 playback.

If a disc with MP3 data is in both decks, either in the form of an MP3-only disc, Multisession discs, or one of each, an **MP3 ON** message will flash three times in the center of the Message Display **F**. Press the MP3 Button **18 23** to select **MP3 ON** or **MP3 OFF** as desired for the deck with the Multisession disc, and then press the Play Button **10 19 37** to proceed.

Notes About MP3 Playback:

- When an MP3 disc is played, only the **Analog Audio Outputs 1 2** are available. There is no signal at the **Digital Audio Outputs 4 5 8 9** during MP3 playback. To ensure that the MP3 output is heard, make certain that the correct analog input is selected on your receiver, processor or preamp.
- The forward and reverse “fast play” or **Search Controls 6 25** do not operate during MP3 playback. However, the standard **Play 10 19 37**, **Pause 21 36 22** and **Stop 20 38 21** Controls operate as they do for normal play. The **Next Track 23 25 33** and **Previous Track 9 26 34** Controls also work normally during MP3 playback.
- The CDR 30 will play only standard MP3 discs recorded in the MPEG 1/Layer 3 format. Other compressed digital audio formats will not be

played back, and any non-MP3 tracks will be skipped.

- When an MP3 disc is dubbed in the CDR 30, the copy disc will be recorded in the standard “Red Book” CD Audio format. It is not possible to make an MP3 copy of an MP3 disc.

HDCD Playback

HDCD, which stands for High Definition Compatible Digital, is a special recording process that enables the CDR 30 to deliver the ultimate in CD audio playback. The CDR 30's circuitry takes advantage of the special HDCD recording process when HDCD-encoded discs are used, and it is also completely compatible with non-HDCD discs, which benefit from the unit's advanced digital-to-analog converters.

No special adjustment is needed to play HDCD encoded discs. Simply use the disc as you would any other CD. Although these discs also play on conventional CD players, when played on the CDR 30 the special HDCD decoding circuitry is automatically activated, delivering extraordinary fidelity and the highest possible overall quality.

The CDR 30 will play back and internally decode HDCD discs from either the CDP or CDR decks. However, when the HDCD decoding is done in an external receiver or processor using a digital output connection from the CDR 30, playback of HDCD or DTS®-encoded discs must be made from the **Play/CDP Deck 3** only.

When an HDCD disc is playing, the appropriate **HDCD Indicator N** will light above the deck in use.

CD Text Playback

An increasing number of CD discs are recorded with CD Text information that may display the disc's title, the name of the artists, the title of specific individual tracks, and the artist for specific individual tracks, depending on how the disc's producers program the information.

When a disc's Table of Contents (TOC) has been read, but the disc is stopped, press the **CD Text Button 12** for the deck in use (either the left side, Play/CDP deck or the right side, Record/CDR deck) to view the title of the disc followed by the disc's artist.

When a disc with CD Text information is playing, press the **CD Text Button 12** for the deck in use (either the left side, Play/CDP deck or the right side, Record/CDR deck) to view the name of the track that is playing and the artist for that track.

Notes on CD Text Display:

- If the CD Text buttons are pressed when the disc playing does not contain CD Text information, a **NO TEXT** message will flash three times in the **Time/Message Display F**.
- CD Text displays will appear only in English.
- Only capital letters will be displayed, and lower case letters will be capitalized.
- Blank spaces may occasionally appear in place of invalid text characters.

Search

You may quickly scan through the contents of a disc while listening to the playback at high speed in forward or reverse. To move forward through a disc, press the **Forward Search Button 25** on the remote or press and hold the **Next Button 25 33** on the front panel that is appropriate for the deck in use. To move backwards through a disc, press the **Reverse Search Button 6** on the remote, or press and hold the **Previous Button 26 34** on the front panel that is appropriate for the deck in use. When using the remote, always remember to make certain that you have selected the deck you wish to control by pressing the appropriate **Selector Button 4 26** before entering the desired remote command.

Track Skip

To move from one track on a disc directly to another, enter the number for the desired track with the **Numeric Keys 15**. The disc will pause briefly to locate the track, and then immediately play it. When entering a two digit track number, the second digit must be entered within three seconds of the first digit.

To move to the next track on a disc by cycling through the individual tracks, press the **Next Button 23** on the remote, or the appropriate front panel **Next Button 25 33** for the deck in use. Additional presses of the button will move forward through the tracks on the disc.

When a disc is playing, press the **Previous Button 9 26 34** to return to the beginning of the track being played. Additional presses of the Previous button will move backwards through the tracks on the disc.

When a disc is stopped, you may press the Next or Previous buttons to locate a specific track that you wish to play. When the desired track number appears at the left side of the appropriate **Time/Message Display F**, press the **Play Button 10 19 37** to hear that track.

Playback Basics

Dual-Play Mode

Since the CDR 30 has more than one CD deck, you may play a disc in either drawer. When only one deck is playing, the unit is in the Single mode. In the Single mode, the audio output will be fed to all digital and analog jacks for both decks. This means you may select the input on your receiver, preamp or processor for either deck. For example, if you have the Play Deck connected to "CD" and the Record Deck connected to "Tape," when only one deck is playing, either input may be selected.

It is also possible to play two discs at once, using the Dual mode. To initiate dual-mode playback, press the **Dual Play Select** **24** button on the remote or the **Dual/Single Play Select** **32** button on the front panel. When the **Dual-Play Indicator** **D** is lit, you may play a different disc in both decks at the same time. The output of each deck will be sent to the appropriate output jacks, and you will need to select the deck you wish to listen to using the input selectors on your receiver, preamp or processor. You may also use the output of one deck to feed your main-room system, while the second deck is used to feed a remote room.

As long as the **Dual-Play Indicator** **D** is lit, each deck functions as a separate CD player, and will respond to its own set of controls on the front panel for either the **Record Deck** **19 20 21 24 25 26 28** or **Play Deck** **31 33 34 35 36 37 38**. To control the transports using the remote, remember to first press the Selector button for either the **Play/CDP Deck** **4** or the **Record/CDR Deck** **26**, and then press the desired command function.

NOTE: When in the Dual mode, you may return to Single play mode by pressing the **Single Play Select Button** **7** on the remote or the **Dual/Single Play Select Button** **32** on the front panel. However, pressing the **Single Button** **7** **32** while both decks are playing will automatically stop playback of the disc in the **Record Deck** **15** while the disc in the **Play Deck** **3** continues to play. The output of the play deck will be sent to both sets of output jacks.

NOTE: When using the dual-play function with MP3 or HDCD-encoded discs, start the play for either of those discs first before playing a conventional CD Audio disc.

Dual-Deck Operation

Since the CDR 30 has two separate CD decks, it may be used as a two-disc changer, so that you can continually play two discs.

When the CDR 30 is in the Single-Play mode, as shown by the **Single Play Indicator** **D** being lit, when the disc in one deck has played through to the end, the disc in the other deck will automatically begin to play. Each disc will play through, and when one deck is finished the other will start. To stop playback, press the **Stop Button** **21 20 38** for the deck that is currently playing.

To have the CDR 30 function as two separate CD players, where the deck in use stops at the end of a disc, press the **Dual Button** **32 24** until the **Dual-Play Indicator** **D** lights. In the Dual mode, each deck acts independently of the other and when the disc in one deck finishes, it stops unless one of the Repeat functions has been activated.

NOTE: Remember that only one MP3 disc may play at a time, even when the Dual Play mode is in use. If two discs containing MP3 selections are loaded in the CDR 30, one must be removed and replaced with a standard CD Audio disc for the dual play mode to operate.

Time Display

The CDR 30's time display is capable of showing a wide range of information about the contents of a CD.

For Standard CD Audio discs, once the disc's Table of Contents or TOC data has been read, the **Time/Message Display** **F** will show the number of tracks on the disc in the two left digits of the display, and the total running time of the disc in the remainder of the display. When the disc is playing, the tracks will count up as each new track is reached, and time display will show the elapsed time for the track being played.

To view the time remaining in the track being played, press the **Display Button** **2 28 28 31** for the deck in use so that the **REMAINING TIME** Indicators **S T** illuminate. The **Time/Message Display** **F** will count down the time remaining in the track, and at the start of the next track the counter will start to count down the running time of that track.

To view the total time remaining on the disc, press the **Display Button** **2 28 28 31** for the deck in use so that the **Total Time Indicators** **T V** light. The **Time/Message Display** **F** will show the total time remaining for all tracks on the disc and count down until the disc has finished playing. When the disc has played all the way through, the total number of tracks and the total running time of the disc will be displayed.

For MP3 discs, once the disc's Table of Contents data has been read, the **Time/Message Display** **F** will show the total number of tracks on the disc. During disc playback, press the appropriate **Display Button** **2 28 28 31** for the deck in use once, and the display will cycle through the following available information: Elapsed time of current track → Remaining Time of current track → Current Track Number → File name of Current Track (Up to the first six digits)

To read the total time of all tracks recorded on an MP3 disc, the disc must be stopped. Then, press and hold the **CDP or CDR Display Button** **2 28 28 31** (as appropriate) for three seconds, until a **TTL TIME ON** message appears in the **Time/Message Display** **F**. Then press the **CDP or CDR Display Button** **2 28** again to alternate between a display of the total number of tracks and the total time of the disc. Press and hold the **CDP or CDR Display Button** **2 28 28 31** again for three seconds until a **TTL TIME OFF** message appears in the **Time/Message Display** **F** to return to standard display.

Headphone Listening

You may listen to the output of the CDR 30 through headphones at any time by simply plugging the headphones into the **Front Panel Jack** **4**. The volume of the headphone output may be adjusted with the **Headphones Level Control** **5**. Note that changes to the headphone level will not alter the output settings to the analog outputs. Those levels are fixed, and the volume should be adjusted using your receiver, preamp or processor.

Note that when only one deck is playing back a disc in the Single-Play mode, the output of that deck will be fed to the headphone jack. When the unit is in the Dual-Playback mode, only the output of the **Play Deck** **3** will be fed to the headphone jack.

Program Play

The CDR 30's advanced programming system enables you to program the order in which tracks are played, to repeat one track or all tracks, or to repeat any segment of a disc without regard to track numbers.

Programming Play Lists

To program the order of playback for the tracks on a disc, insert the disc, let the unit read the Table of Contents information, and wait until the disc has stopped and the number of tracks and total running time is displayed. Next, select the deck that will be programmed by pressing the **CDP Select Button** **4** on the remote for the **Play Deck** **3** or the **CDR Select Button** **26** on the remote for the **Record Deck** **15**.

To begin the programming sequence, press the **Program Button** **5** **24** **35** and note that the **PROG Indicator** **C** will light and the **Time/Message Display** **F** will show **03 P - 01** for standard CD Audio discs and **-- P 01** for MP3 discs.

Next, enter the track numbers to be played by pressing the **Numeric Keys** **15**. For two-digit track numbers, be certain to enter the second digit within three seconds after the first number is entered. As each track is entered, the display will blink three times, alternating between two displays. The first display will show the track number just entered on the left side of the **Time/Message Display** **F** under the **Track Indicator** **W**, while the right side will flash the number of steps that have been programmed. For example, after programming the first step to be track number 3, the display will flash **03 P - 01** for CDs or **03 - P 01** for MP3 discs.

Alternating with the track number and program step will be a display of the track and the total running time of all tracks that have been programmed so far. For example, a display of **06 11 : 25** will indicate that track number six was the last track programmed, and that the total time of all tracks so far is 11 minutes and 25 seconds. The **Total Time Indicators** **SIV** will flash with this display to remind you of the display's contents.

These displays will alternate three times, and then show a steady display of the total time and last track programmed.

Continue to add tracks in the order you wish to have them played until the programming session is complete. You may add up to 20 tracks, repeating a track if desired, as long as the total number does not exceed 32. If you exceed the 32-track limit, the **Time/Message Display** **F** will read **FULL**. Tracks may also be added using the **Next** **23** **25** **33** and **Previous Buttons** **9** **26** **34** to locate the track, and the **Program Button** **5** **24** **35** to enter that track in the programmed sequence.

When the complete list of tracks has been entered, press the **Play Button** **10** **19** **37**. The tracks will then play in the order in which they were entered. Note that a programmed list of tracks may also be recorded if the disc being programmed is in the **Play Deck** **3**. Follow the instructions on page 21 for complete information on recording and dubbing.

Checking, Editing and Clearing Programmed Play Lists

Once you have entered a program list it will remain in the unit's memory until the disc is removed or the unit is turned off. Thus, if you play through a program list, simply press the **Play Button** **10** **19** **37** again to replay the list. If you find that you wish to check the list or make changes, that is also possible by following a few simple steps.

To scroll through a program list, press the **Program Check Button** **8**. Each press of the button will move through the tracks that have been programmed. The display will alternate between the track number of the program step number (e.g., **12 P - 03** for CD Audio discs, or **012 P 03** for MP3 discs, tells you that Track 12 on the disc is the 3rd program step) and the track number and the total running time so far in the program (e.g., **12 16 : 04** or **05 012** for MP3 discs tells you that at this point you have programmed a total of 16 minutes and 4 seconds of material).

At any point in the list you may insert a new track by simply entering the track number using the **Numeric Keys** **15**. Simply press the buttons that correspond to the number of the track you wish to add. Any tracks that are in the program will remain.

To remove a step in the program, first use the **Program Check Button** **8** to locate the

track you wish to delete. Next, press the **Clear Button** **30**. The information in the display will blink and the step will be removed from the program list. Program steps need not be deleted in any order; as long as you have located a step in the program list, it may be erased.

To cancel an entire program list while the program is playing, press the **Program Button** **5** and note that the **Program Indicator** **C** will go out. To remove a total program list when the disc is stopped, simply open and close the disc drawer. Whenever a disc is removed or the unit is turned off, the program list is erased.

Repeat Programmed Play

The CDR 30's programming system enables you to repeat either a single track on a disc, the entire disc, or a specially programmed passage that you select.

Repeat One Track

To repeat the track you are currently listening to, press the **Repeat Button** **17** and note that the **Repeat Mode Indicator** **B** will light **Repeat 1**. If the track is changed by using the **Next/Previous Skip Button** **9** **23** **25** **26** **33** **34** while the **Repeat 1** mode is active, the new track will now be repeated.

Once Repeat 1 playback has been started, it will continue until the unit is stopped by pressing the **Stop Button** **21** **20** **38**, or the disc deck is opened by pressing the appropriate **Open/Close Button** **6** **14** **3** **27**. When playback is stopped, the Repeat sequence is erased and must be reentered if you wish to repeat a track on another disc.

Repeat All Tracks

To repeat all the tracks on a disc in order, press the **Repeat Button** **17** twice while the disc is playing and note that the **ALL Repeat Mode Indicator** **B** will light. Once the **Play Button** **10** **19** **37** is pressed, the disc will play through from beginning to end continuously, until the **Stop Button** **21** **20** **38** is pressed. The Repeat All function may be cancelled at any time by pressing the **Repeat Button** **17** once until **ALL Repeat Mode Indicators** **B** go out. The Repeat All Function is also canceled when the disc drawer is opened.

Program Play

Repeat A-B

The CDR 30 may be programmed to repeat any section within a track, or a complete passage that includes material from a series of consecutive tracks.

To program the unit for A-B Repeat play, first play the disc and locate the point where you wish to begin the repeated section. At the start point, press the **A-B Repeat Button** **16** and note that the **Repeat Mode Indicator** **B** will show an **A** and flash. Let the disc play until the point at which the section to be repeated will end. At that end point, press the **A-B Repeat Button** **16** again and note that the **Repeat-Status Indicator** **B** will stop flashing and will light showing **Repeat A-B**.

The unit will immediately begin to play the section you have programmed, and continually repeat it.

Notes on Program Play:

- The program material selected for A-B repeat must be at least 4 seconds long.
- The repeat A-B feature does not function when an MP3 disc is playing.

To resume normal play, press the **A-B Repeat Button** **16**. The **Repeat A-B Indicators** **B** will go out, and the disc will continue playing through to the end. Stopping the disc or opening the disc drawer will automatically cancel the Repeat A-B programming.

Random Play

The CDR 30 may be programmed to play all the tracks on any disc in random order, playing each track until the entire disc has been played.

To playback the tracks in a random sequence, press the **Random Play Button** **11**, making certain that you have first pressed the **CDP** **4** or **CDR Select Button** **26**, as appropriate, so that the random command will be accepted by the proper deck. Once the **Random Play Button** **11** is pressed, the CDR 30's internal processor will select the tracks to be played in random order and play through the disc.

If one of the **Next Track Buttons** **23 25 33** is pressed during Random Play, the unit will move to the next randomly selected track, not the next track in numerical sequence.

To stop a Random Play sequence, simply press the **Stop Button** for the deck in play **21 20 38**. A Random Play sequence is also stopped when a disc drawer is opened by pressing one of the **Open/Close Buttons** **3 27 6 14**.

Intro Scan Play

Intro Scan Play is a feature of the CDR 30 that allows you to quickly sample the contents of a disc by automatically playing the first 10 seconds of each track.

To begin Intro Scan Play, press the **Intro Scan Button** **19** for the deck containing the disc you wish to hear. The deck will automatically go into the Play mode, and will play the first 10 seconds of each track on the disc in sequence.

To hear the entire contents of a track while it is playing in the Intro Scan mode, press the **Play Button** **10 19 37** for the appropriate deck.

CD Recording

Making recordings on the CDR 30 is simple and easy once you become accustomed to the basics of CD Recording. Before making your first recording, please take a moment to review the CDR Basics on page 14. In particular, you will need to become familiar with the types of discs that may or may not be used in the CDR 30. In addition, some terms used in the following pages may be new to you. The following definitions and information will help you to make CD recordings using the CDR 30's many features:

- The CDR 30 accepts analog inputs and digital coax or optical inputs. Before making a recording, be certain that you have selected the correct input, using the **Input Select Button 27**.
- After a disc is recorded, it must be finalized. This process adds a table of contents data to the disc and makes it playable on other machines. Until a disc is properly finalized, it may not be played on standard CD players.
- The CDR 30 may record on either CD-R or CD-RW discs, but they must be of the type specifically designed for use in consumer-audio CD recorders. These discs may be recognized by looking for the words "Digital Audio" in the compact disc logo on the blank disc or its packaging. Discs with the logo reading only "Compact Disc/Recordable" are designed for computer data recording, and they may not be recorded using the CDR 30.
- CD-R discs may not be erased or have material added to them once they have been finalized.
- At least four (4) seconds of blank recording time must remain on an unfinalized disc for recording to take place.
- The maximum number of tracks that may be recorded on a disc is 99.
- Note that some CD-R/CD-RW audio recording discs may be used for single-speed recordings only. If you use a disc with such a warning, make certain not to make a dub at x2 or x4 speed. However, the CDR 30 has been tested for compatibility with a wide range of blank discs from manufacturers throughout the world. In most cases, blank discs will produce high-quality recordings at any dub speed.
- In some rare cases, a CD player may not be compatible with CD-R discs. If you find that a CD-R disc plays in some players but not in others, the fault is most likely with the player, not with the recorded disc or the CDR 30. Remember that CD-RW discs made in the

CDR 30 will play only in CD players that are specially designed to accommodate CD-RW discs. Note that most DVD players are compatible with finalized CD-RW discs.

- Some commercial CD discs may contain a copy protection data bit that will prevent a digital copy of the disc to be dubbed. In that case, the **Copy Prohibit Indicator I** will light to remind you that the inability to record is intentional, and not the result of a problem with the CDR 30.
- This product is equipped with the Serial Copy Management System (SCMS) to protect the rights of copyright owners. Although it is possible to make a copy of most CDs for your own personal use, it is not possible to make a digital copy from another digital copy, including CDP, although it is possible to make an analog copy of a digital copy.

RECORDINGS MAY BE MADE FOR PERSONAL USE ONLY, AND ANY UNAUTHORIZED COPYING IS SUBJECT TO THE APPLICABLE LAW.

- The CDR 30 will not copy DVD discs, computer-data discs, CD-based computer or video-game discs, or digital audio discs with a sample rate that is not compatible with the range of the CDR 30's sample-rate converter.
- Discs containing MP3 data may only be copied to the standard CD Audio format.

Recordings on the CDR 30 may be made in a number of ways:

- Discs may be dubbed using the playback deck on the CDR 30 as a source. These copies may be made in real time, at twice normal speed, or at four times normal playback speed.
- Recordings may be made from an external CD player or other digital source that is synchronized with the dub being made in the CDR 30.
- Recordings may be made from a compatible external digital source.
- Recordings may be made from an external analog source.

Disc Dubbing

The easiest way to make a copy of an entire disc is to use the CDR 30's internal dub capability.

First, insert a blank or unformatted disc in the **Record Drawer 15**. When the disc is inserted, the CDR 30 will examine it to determine whether it is a CD-R or CD-RW disc, and optimize itself for the best possible recording. This is indicated by the **OPC** message in the **Time/Message Display F**.

Place the disc to be dubbed in the **Play Drawer 3** and wait until the Table of Contents data is read and the **Time/Message Display F** shows the track and running time data for the disc.

If you wish to copy the entire disc, proceed to the next step. However, if you wish to copy only one track from a disc, first select that track by pressing the **Next Button 33/23** until the track number appears in the **Time/Message Display F** and then immediately press the **1 Track Dub Button 9**.

Next, select a dub speed. The default speed is a real-time dub, where the recording takes as long as the actual running time of the disc. However, with the CDR 30 you may also select x2 dubbing or x4 dubbing. Press the **Speed Button 11** to select a speed as indicated by the **x2/x4 Indicators H**. When no Speed Indicator lights, the unit is set to real-time recording. Note that the slower the record-dub speed, the more tolerant the unit is of errors on the blank disc. However, with most high-quality blank discs, the 2x and 4x speeds should not present a problem.

Before beginning a dub, make certain that there is sufficient blank space on the record disc. To do this, first determine the time available on the blank disc by subtracting the time of previously recorded material, if any, that is shown in the record side **Time/Message Display F**, from the total time available on the disc. That number should be greater than the total time of the disc to be dubbed, which is shown in the play side **Time/Message Display F**.

When you are ready to start the dub, press the **Dubbing Button 10**. During this process the appropriate **Dubbing Indicator J** will light, the **Record Indicator O** will flash and a **BUSY** message will flash in the Record Deck's **Time/Message Display F**. When both Information Display Indicators return to normal,

CD Recording

with indications of **01 00 : 00**, press the **CDR Play/Select Button 19** to start the dub.

While the dub is in progress, you will see the track numbers and running time increase as the disc is copied. The Level Indicators will also flash but this is only for your reference, as record levels may not be adjusted during digital recordings. It is possible to listen to the source disc while it is being dubbed by selecting the appropriate input on your receiver, preamp or processor.

During a dub it is possible to view the level for either the output of the CDP/Play deck or the input to the CDR/Record deck. To select the display being viewed, press the desired **Level Indicator Select 20**.

Important Note: When a high-speed (x2 or x4) dub is being made, you will hear the playback from the **CDP Outputs 1 4 9** at the faster speed. Fast speed playback increases the pitch of a sound, and when played back at high volume levels this may damage your speakers. DO NOT use high volume levels when listening to high-speed dubs while they are in progress.

The dub will stop automatically when the source disc has played through to the end. After the dub is finished, the Information Display will show an **UPDATE** message, and then return to normal operation. To manually stop a dubbing operation, press the **Stop Button 21 20 38** for either deck.

As with all recorded CD-R/CD-RW discs, the disc must be finalized before it can be played in other machines. See page 23 for instructions on disc finalization.

Notes on Dubbing:

- If you wish to make a dub with the tracks in a different order from the original disc, omit tracks on a disc, or make a dub that mixes tracks from different discs, create a Programmed Playback List before pressing the **Dubbing Button 10** to start the dub. Instructions for creating a program list may be found on page 19. **Note:** Dubs containing program lists may be made at either the x1 or x2 speed. If you attempt to make a Programmed Dub at the x4 speed, the unit will automatically select the x2 speed.
- The Pause buttons do not operate while a dub is in progress.
- Tracks will be added automatically to mirror the track structure of the original disc.
- The Total Time indication of the recorded CD may vary slightly from the original due to

variations in the spin speed of each drive, but this is normal. No information has been lost in the recording process.

- If the original disc being dubbed is a digital copy or if it contains copy-prohibit signals, the unit will automatically make an analog copy.
- When a dub is made from an external digital source that has a sample rate other than 44.1kHz, such as some modes of MiniDisc or DAT, the CDR 30's built-in sample rate converter will automatically convert the digital signal to 44.1kHz for proper recording of a standard CD Audio disc. When the sample rate converter is in use, the **Sample Rate Converter Indicator R** will light.
- Remember that MP3 discs may only be copied to the conventional CD Audio format.
- When dubbing an MP3 disc, it is possible that the total running time of the material on the MP3 disc may exceed the capacity of the record disc, since the compressed file structure of the MP3 format allows over ten hours to be recorded on a disc, while most CD-R discs have a time limit of 74 minutes. In that case, program the tracks to be recorded into a playlist using the procedure shown on page 19; otherwise, the record disc will stop once its capacity has been reached.

Recording From an External Source

To record from an external source, first place a CD-R or CD-RW audio disc in the **Record Deck 15**. Next, select the input to be used by pressing the **Input Select Button 27**. Pressing the button will cycle between the input choices, which will be shown in the **Time/Message Display F** as **COAX REAR**, **COAX FRONT**, **OPTICAL REAR**, **OPTICAL FRONT** or **ANALOG**. In addition, an **Input Indicator Z** will light to show the selected input.

After the digital input is selected, the connection may be made to either the front panel **16 17** or rear panel **6 7** jacks. Note that when a signal is present at both the front and rear panel jacks, the signal at the front panel jacks will be used as the input source. In that case, the **Front Input Indicator Y** will light to alert you to the fact that the source connected to the front panel is in use.

Press the **Auto/Manual Track Increment Button 13** to select how tracks will be numbered on the recorded disc.

- The default mode is Manual as indicated by the **Manual Track Increment Indicator K**. In that mode for either digital or analog

recordings, you must add track numbers manually by pressing the **Track Increment Button 14** when you wish to increase the track number. This mode is recommended for recordings made from analog sources.

- The Auto mode will add track numbers automatically, in one of two ways. When track data is present from a digital recording, it will be carried over to the new copy disc. Thus, when the CD being played moves from one track to the next track, the copy disc will also increase the track number by one. Activate the Auto mode by pressing the **Auto/Manual Track Increment Button 13** and noting that the **Manual Track Increment Indicator K** goes out.
- In the Auto mode for recordings from an analog source or a digital source with no track data, the track number will be increased when the CDR 30 receives silence for 3 seconds. After 5 seconds of silence (for digital, 10 seconds for analog sources), the recording will stop. To activate the Auto mode, press the **Auto/Manual Track Increment Button 13** once and note that the **Manual Track Increment Indicator K** goes out.

To prepare for a recording, press the **Record Button 20 8**. The **Record Indicator O** will flash, and the word **BUSY** will briefly appear in the **Time/Message Display F**. When the Display returns to the track and running-time information, the unit is ready to record.

Once the source material is playing, start the actual recording by pressing the **Play/Select Button 19**. Note that the **Record Indicator O** will stop flashing and the **Time/Message Display F** will begin to show the running time of the recording and the track data. Depending on which mode of track increment has been selected as described above, track numbers must be increased manually or they will be added automatically. Regardless of which mode has been selected, a track may be added at any time by pressing the **Track Increment Button 14**.

Note: During recording from an external source, the unit will automatically go into "Record/Pause" when it senses 3 seconds of silence. The recording will resume when a signal is received. Also, when the Pause button is pressed during a recording, the track number will increase by one number and the recording will stop and must be restarted by pressing the **Play/Select Button 19**. When the recording is finished, press the **Stop Button 21 20**.

CD Recording

CD Sync Recording

CD Sync recording allows you to make an automatic digital recording from an external CD or MD player. During CD Sync Recording, the record unit starts in sync with the source, and tracks are added automatically.

To make a CD Sync recording: First, make certain your playback source is selected and cued to the correct starting point. Next, select the appropriate digital input by pressing the **Input Button 27** until the desired input indication appears in the **Time/Message Display F** and **Input Indicator Z**. CD Sync recordings may not be made from an analog input.

Next, make certain that there is a fresh disc in the Record Drawer for the recording. Press the **CD Sync Record Button 8** as instructed below and note that the **Sync Indicator M** will light and the **Record Indicator O** will flash. Select the type of recording to be made:

- To record only the first track from the source player, press the **CD Sync Record Button 8** ONCE so that **1 TRK** appears in the **Time/Message Display F**.
- To record the entire disc or tape, press the **CD Sync Record Button 8** TWICE so that **ALL** appears in the **Time/Message Display F**.

When the desired mode has been selected, start the playback from the source machine. The CDR 30 will automatically recognize the incoming digital data and begin recording. If the source material is a CD, the track numbering from the original disc will be carried over to the dub. If the playback source is NOT a CD, you will have to increment the tracks manually.

The recording will continue until the CDR 30 senses that the playback is finished when there is no incoming signal for more than three seconds. At that point the recording will stop. You may also stop the recording at any time by pressing the **Record Deck Stop Button 20**. When there are only four seconds remaining on a blank disc, **DISC FULL** message will appear in the **Time/Message Display F**.

When you see this message, you will need to stop the recording process and, when a CD-R is being recorded, insert a new blank disc or, when a CD-RW is in use, either use a new disc or erase existing tracks following the instructions on page 24.

After the recording is complete, an **UPDATE** message will appear briefly, and the unit will then return to normal operation. Remember to finalize the recorded disc so that it may be used in other machines.

Record Levels

As with any recording, the setting of record levels is important to the creation of a copy disc that is correctly recorded so that it is both free from noise (caused by too low a record level) or distortion (caused by too high a record level.) Since the CDR 30 accepts both digital and analog sources, a different procedure is required, depending on the type of input used.

To view the record level, press the **CDR Level Indicator Selector 20** and verify that the **CDR Deck Level Indicator E** is lit. In general practice, and particularly for analog recordings, a proper recording is made when the individual left and right **Level Indicators G** run in the left two-thirds of the display scale, and the red **OVER** indicators flash only briefly.

The default setting for level control is Manual with the adjustment set at a 0db level. This setting is appropriate for most recordings, and under normal circumstances you will not need to make any changes.

With analog recordings, it is desirable to have the **Level Indicators G** flash at the right two-thirds of the display, and only occasionally lighting the red indicators. If the level is too high or too low during an analog recording, simply adjust the **Analog Record Level Control 18** until the level is set properly.

It is important to note that for digital recordings the level indications will always run lower than what you would expect for an analog recording. This is due to the fact that, within limits, low level for digital recordings is not a severe problem. However, high digital levels will cause a complete loss of information. In most cases it will not be necessary to adjust the level for digital recordings.

When automatic level control of digital control is desired, press and hold both **Digital Level Control Buttons 22** and release them when the **Digital Record Level Status Indicator X** lights as **A DRL C**. In this mode, the system will automatically limit digital record levels to prevent loss of information.

To manually adjust the level, press the appropriate **▲** or **▼** **Digital Level Control Button 22**, but make certain that the level shown in the **Level Indicators G** does not exceed the red levels. Digital levels may only be adjusted from -3dB to +3dB, as shown in the **Time/Message Display F**.

To stop the recording, press the **Stop Button 20**. The recording will automatically stop if it takes more space than is available on the CD-R/RW disc. A **DISC FULL** message will appear to remind you that a new disc is needed.

At the end of a recording, a **BUSY** message and an **UPDATE** message will appear briefly, and the unit will return to normal operation. Remember to finalize the disc after recording so that it may be used in other players.

Finalizing CD-R and CD-RW Discs

Finalizing is a simple process that completes the recording of a disc so that it may be used in other players. Once that is done, a CD-R disc may not be changed or added to. CD-RW discs are "locked" once they are finalized, but they may be unfinalized to permit additional recording or erasure.

To finalize a disc, place it in the **Record Drawer 15**, if it is not already in that drawer. Once the disc's Table of Contents (TOC) information has been read and the OPC process has been completed, press the **Finalize Button 13** and note that the word **FINAL** will begin to flash in the **Time/Message Display F**. Within five seconds, press the **CDR Play/Select Button 19** and note that the message will stop flashing.

The finalization process will take up to two minutes, depending on the length of the material recorded on the disc. During finalization you will see the number of seconds remaining in the process count down in the **Time/Message Display F** until the disc is finalized. During finalization the CDR deck will not accept any operating commands.

When the finalization process is complete, the **Time/Message** display will return to its normal messages, and the **R/RW Indicator Q** will go out, with the CD indication remaining to indicate that the disc is finalized and ready for play on standard CD players (for CD-R discs).

Unfinalizing and Erasing CD-RW Discs

CD-RW discs are unique in that they are both recordable and rewritable. This means that you may use them over again like a cassette tape. However, the process of reusing a CD-RW disc is slightly different from that used with tapes.

Unfinalizing a CD-RW Disc

To keep the material that is already recorded on a CD-RW disc but to add an additional track and erase single tracks, you must first unfinalize the disc. To do that, place the CD-RW disc in the **Record Deck 15** and wait until the Table of Contents data has been read.

CD Recording

Press the **Erase Button** **12** twice and check to make certain that the word **ERASE** flashes in the **Time/Message Display** **F**. Within three seconds, press the **CDR Play/Select Button** **19** **10** to start the process. The **ERASE** message will be replaced by **OPC** and then **TOC** as the disc is readied for the erasure. The word **ERASE** will be displayed again during the process.

When the **ERASE** message goes out and is replaced with a normal display, the disc has been unfinalized and is ready to have single tracks erased or new tracks added.

Erasing an Entire CD-RW Disc

Erasing the entire contents of a disc is simple, and it does not matter if the disc has been finalized or not. To erase the disc, press the **Erase Button** **12** TWICE if the disc has *NOT* been finalized and once if it has been finalized, so that the word **DISC** appears in the **Time/Message Display** **F** and the word **ERASE** flashes. To start the erasure, press the **Select Button** **19** and note that the word **ERASE** will stop flashing. The erasure process takes about a minute, and it is complete when the Information Display resets to **00 00:00** and **ERASE** goes out. The disc is now totally erased and may be reused.

Erasing a Single Track

The individual tracks on a CD-RW disc may be erased one at a time, starting with the last track on the disc, or you may erase more than one track. Note that before individual tracks

may be erased the disc must be unfinalized. If the disc is finalized, follow the instructions above for unfinalizing before proceeding with these steps.

To erase only the last track, press the **Erase Button** **12**. Note that the **Time/Message Display** **F** will display **01 TRK** and **ERASE** will flash. Press the **Play/Select Button** **10** **19** within three seconds and note that the Erase Indicator will stop flashing. When **ERASE** goes out, the **Time/Message Display** **F** will show the total number of tracks that now remain on the disc.

You may erase more than one track, counting backwards from the last track. First, press the **Erase Button** **12**. Note that the **Time/Message Display** **F** will display **01 TRK** and **ERASE** will flash. Press the **Next Button** **23** **25** or **Previous Button** **9** **26** until the number of tracks to be erased appears in the **Time/Message Display** **F**. For example, when **06 TRK** appears in the display a total of six tracks will be erased, counting back from the last track on the disc. Next, press the **Play/Select Button** **19** **10** within three seconds of making the track selection and note that **ERASE** will stop flashing. When **ERASE** goes out, the **Time/Message Display** **F** will show the total number of tracks that now remain on the disc.

Important Note: Tracks at the beginning or in the middle of the disc may not be erased until all of the tracks after them have been erased.

Important Note on Erasure and

Finalization Times: Regardless of the speed at which a disc was recorded, the CDR 30 will erase and finalize discs at the x4 speed to minimize the length of the process. However, in some cases, it may be necessary for the unit to repeat the erasure or finalization due to the nature of an individual disc. For that reason, it is normal for the time required to complete these steps to vary from one disc to another.

Troubleshooting Guide and Error Messages

TROUBLESHOOTING GUIDE

| SYMPTOM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| Unit does not operate when Standby switch or remote Power-On is pressed | <ul style="list-style-type: none"> No AC power Main Power Switch is off | <ul style="list-style-type: none"> Make certain AC power cord is plugged into a live outlet Check to see whether AC outlet is switch-controlled Turn on Main Power |
| Remote does not function | <ul style="list-style-type: none"> Wrong deck selected Dead batteries Sensor blocked | <ul style="list-style-type: none"> Press the CDP button to control the Play Deck; press the CDR button to control the Record Deck Replace both batteries Remove obstructions from front panel or connect a remote sensor to the Remote-In Jack |
| Disc does not erase | <ul style="list-style-type: none"> CD-R disc in use | <ul style="list-style-type: none"> CD-R discs do not erase, only CD-RW discs may be erased |
| Recorded CD-R disc does not play in another CD player or DISC ERROR message appears in Play Deck | <ul style="list-style-type: none"> CD-R disc not finalized | <ul style="list-style-type: none"> Finalize the CD-R disc in the CDR 30's Record Deck (see page 23) |
| Recording suddenly stops | <ul style="list-style-type: none"> Input source stopped or paused | <ul style="list-style-type: none"> Recordings will stop when the input source is paused for more than 5 seconds for digital recordings and 10 seconds for analog recordings |

ERROR MESSAGES

| ERROR MESSAGE | EXPLANATION AND PROBABLE CAUSE | SOLUTION |
|-------------------|---|---|
| CHECK DISC | <ul style="list-style-type: none"> A record-related button has been pressed when a Finalized disc is in the Record Deck 15 A record-related button has been pressed when a standard CD is in the Record Deck 15 | <ul style="list-style-type: none"> Unfinalize the disc to add tracks to a CD-RW disc Replace the disc with a blank CD-R or CD-RW disc Replace the disc with a blank CD-R or CD-RW disc |
| DATA DISC | <ul style="list-style-type: none"> A non-audio CD-ROM or a CD-Video disc has been placed in the machine | <ul style="list-style-type: none"> Only CD Audio, DTS and MP3 discs will play in the CDR 30; replace the disc |
| DISC ERROR | <ul style="list-style-type: none"> An unfinalized disc has been placed in the Play Deck 3 A DVD disc has been placed in the unit | <ul style="list-style-type: none"> Finalize the disc (see page 23) Replace the disc; the CDR 30 does not play or dub DVD discs |
| DISC FULL | <ul style="list-style-type: none"> There are only four seconds of record time remaining on the disc being recorded | <ul style="list-style-type: none"> Use another blank CD-R or CD-RW disc Erase one or more tracks on a CD-RW disc |
| ERROR | <ul style="list-style-type: none"> The disc is not seated properly There is a problem with the disc | <ul style="list-style-type: none"> Open the drawer and check to see that the disc is properly seated Try another disc |
| FAILED | <ul style="list-style-type: none"> A dub has not been completed properly | <ul style="list-style-type: none"> Check the play disc Repeat the dub process |
| FULL | <ul style="list-style-type: none"> More than 99 tracks have been recorded | <ul style="list-style-type: none"> The CDR 30 does not record more than 99 tracks on a disc |
| NO AUDIO | <ul style="list-style-type: none"> A record-related button has been pressed when a non-audio disc is in the Record Drawer 15 | <ul style="list-style-type: none"> Replace the disc with a blank CD-R or CD-RW audio disc |
| SVC - 1 | <ul style="list-style-type: none"> There is an internal problem with the CDR 30 | <ul style="list-style-type: none"> Contact an authorized Harman Kardon service depot |

Technical Specifications

Signal Format

| | |
|-----------------------------|---|
| Playback Sampling Frequency | 44.1kHz |
| D/A Conversion | 96kHz, Multi-Bit Delta-Sigma Conversion |
| Oversampling | 128 Times |

Playback Specifications

| | |
|------------------------|---------------------------|
| Frequency Response | 2Hz – 20,050Hz |
| Playback S/N | 100dB |
| Playback Dynamic Range | 100dB |
| Playback THD | 0.005%/–88dB |
| Analog Audio Output | 1V RMS, \pm 2dB |
| Digital-Coaxial Output | 0.5Vpp/75 Ω |
| Headphone Output | 0.5V RMS/32 Ω Load |

Record Specifications

| | |
|--|------------------------------|
| Digital Input Sample Rates | 32kHz – 96kHz |
| Recording S/N: Analog | 91dB |
| Recording S/N: Digital Dub Mode | Equal to Source |
| Recording S/N: Digital External Source | Source –10dB |
| Recording Dynamic Range | 91dB |
| Recording THD | 0.005%/–85dB |
| Analog Input Sensitivity | 330mV RMS 47k Ω = 0dB |
| Digital Inputs (Direct Recording) | 44.1kHz, \pm 100 ppm/min. |

General

| | |
|-------------------|---------------------|
| Power Requirement | 100–240 VAC/50–60Hz |
| Power Consumption | 26 Watts |
| Dimensions | |
| Width | 17.3"/440mm |
| Height | 4.4"/112mm |
| Depth | 14.2"/363mm |
| Weight | 10.6 lb/4.8kg |

Depth measurement includes knobs, buttons and connection jacks.

Height measurement includes feet and chassis.

All features and specifications are subject to change without notice.

Harman Kardon is a registered trademark, and
Power for the digital revolution is a trademark, of Harman Kardon, Inc.

DTS is a registered trademark of Digital Theater Systems, Inc.

HDCD system manufactured under license from Pacific Microsonics, Inc.

This product is covered by one or more of the following:

In the USA: 5,479,168; 5,638,074; 5,640,161; 5,808,574; 5,838,274;

5,854,600; 5,864,311; 5,872,531; and in Australia: 669114.

Other patents pending.

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