

CD-302

OPERATING MANUAL

NOTE:

Before installing your new CD-302, please read this manual carefully as it will inform you of the CD-302's specifications, proper installation procedures and operation procedures. Also included in this manual are guidelines on how to properly service and care for your new compact disc player.

INTRODUCTION

Congratulations on your purchase of the CD-302 vacuum tube compact disc player. The CD-302, used in conjunction with fine associated audio components, will provide unsurpassed fidelity and musical enjoyment.

The CD-302 incorporates advanced, state-of-the-art digital and analog design features which provide unprecedented richness of detail, dynamic contrasts, and overall musical performance. The CD-302 is specially engineered and painstakingly hand-crafted to provide years of trouble-free performance with little or no maintenance.

PERFORMANCE FEATURES

The CD-302 incorporates advanced digital and analog design features, providing a new standard of sonic performance in digital audio playback:

1. Cary Audio Design's proprietary design provides superior analog reconstruction of the musical wave form. This advanced technology incorporates discrete components within a single chip wafer to provide greater speed and accuracy than either discrete or conventional integrated designs can provide. This results in reduced transient distortion in the critical current to voltage stage which effectively eliminates the principal source of harshness, glare and stridency commonly associated with CD sound.
2. State-of-the-art, select-grade, dual-differential Burr Brown 20-bit DACs provide exceptional low-level linearity and dynamic range with a guaranteed THD and noise level below -96 dB.
3. Transport drive utilizes high quality "stable-platter" mechanism to achieve exceptional stability and reliability.
4. 8x over sampling design employs a sophisticated, 199-tap digital filter (100 IBM PC equivalent) to achieve > 110 dB rejection of out-of-band spuriate with truly negligible ripple in the audio passband.
5. Sophisticated re-clocking circuitry achieves extremely low jitter, yielding a remarkable 108 dB suppression of jitter-related noise. The low-jitter clock output from the system clock is applied directly to the DACs, eliminating jitter produced by the digital filter and other intervening circuitry.
6. Unique, servoless DC-coupled output eliminates capacitors in the signal path, prevents low-frequency roll-off and phase shift, and ensures extended, deep bass into any load.
7. Full function infra-red remote control.
8. High-quality coaxial digital output provided for use with external digital processor uses proprietary re-clocking circuitry to achieve extremely low jitter (<10 picoseconds rms, typical).
9. High-quality custom, gold-plated coaxial connectors used for both analog and digital outputs.
10. High quality tube output section with dedicated power transformer and Pi-L network supply.
11. Includes Pacific Microsonics™ HDCD decoder.

SAFETY PRECAUTIONS

1. **Voltage** - Check to see that the AC voltage marked on your CD-302 conforms to your national standard. NOTE: Failure to confirm the appropriate voltage setting can result in damage to the unit.
2. **Servicing** - Do not attempt to service the CD-302 yourself. Opening the cover may expose you to dangerous high voltage and laser radiation. Refer servicing to Cary Audio Design or an authorized representative.
3. **Water and Moisture** - Do not use the CD-302 near (Ex: near a bathtub or laundry tub, in a wet basement, or near a swimming pool).
4. **Heat** - The CD-302 should be situated away from heat sources such as radiators, heat registers, stoves or other appliances (including amplifiers) that produce excessive heat.
5. **Power Cord** - The Power-supply cord should be routed so that it is not likely to be walked on or pinched by items placed on or against it. Pay particular attention to the cord at the power outlet and where it enters the CD-302.
6. **Lightning** - For added protection against voltage surges during an electrical storm, or if the unit is left unattended for prolonged periods, unplug the CD-302 from AC power.
7. **No Projectile** - Do not use the CD-302 as a projectile in a catapult or similar hurling mechanism. Use of the CD-302 as a projectile can cause personal injury as well as damage to the transport mechanism and will void the warranty.
8. **Cleaning** - Unplug the CD-302 from AC power before cleaning. To clean, use a cotton cloth moistened with water or a light solution of mild detergent.
9. **Condensation** - When the CD-302 is brought into a warm room from previously cold surroundings or when the room temperature rises sharply, condensation may form inside and the unit may not function properly. In such cases, allow the unit to stand for about an hour or raise the room temperature gradually.
10. **Transportation** - If the player is to be transported, remove the disc from the disc tray and press the POWER button. Once the blue standby indicator is lit, disconnect the power cord from the AC outlet and repackage the CD-302 in its original packaging materials.

UNPACKING

Your CD-302 package should include the following items:

1. CD-302 CD Transport
2. Remote control transmitter
3. Batteries for transmitter (2 AAA cells)
4. Owner's manual
5. Warranty/Registration Card

NOTE: Save all original packaging materials.

After unpacking the CD-302, check to see that the AC voltage checked on the unit (100-120 VAC or 200-240 VAC) conforms to your national standard. Warning: Failure to confirm the appropriate voltage setting can result in damage to the unit.

Fill out and send in the enclosed Warranty/Registration card to qualify for Cary Audio Design's one year warranty and to ensure notification of future design upgrades as they become available.

SERVICE AND MAINTENANCE

The CD-302 is inherently a low maintenance component which should provide years of trouble-free performance with only cosmetic maintenance. Should servicing become necessary, refer to Cary Audio Design or an authorized representative.

Cary Audio Design will make every effort to promptly repair or replace the CD-302, as necessary. Malfunctions due to parts or workmanship are generally covered by Cary Audio Design's limited one year warranty.

WARRANTY

The CD-302 is guaranteed for one year against defects due to parts or workmanship. If the CD-302 is found to be defective, Cary Audio Design will, at its option, repair or replace the defective unit. The warranty extends to the original owner of the CD-302 purchased from an authorized Cary Audio Design dealer or representative. The warranty does not extend to cosmetic damage caused by normal wear and tear or to damage caused by accidental or intentional misuse.

INSTALLATION

For playback of compact discs, the CD-302 must be connected to a preamplifier or integrated amplifier with a volume control and line level inputs. Use a high quality audio interconnect to connect the left and right audio outputs to a line-level input on your preamplifier. The CD-302 is now ready for AC power-up.

FRONT PANEL CONTROLS

1. POWER (ON/STANDBY) SWITCH - Press this button to toggle between "ON" and "STANDBY" status. During STANDBY, disc play stops and output is muted, but internal components remain warmed up and ready to resume optimal functioning. A blue STANDBY light illuminates in STANDBY mode.
2. REMOTE SENSOR
3. DISPLAY WINDOW
4. DISC DRAWER
5. OPEN BUTTON - Press this button to open and close the disc tray.
6. STOP BUTTON - When this button is pressed during playback, the disc stops playing and disc rotation stops.

7. **PAUSE BUTTON** - When this button is pressed during playback, the disc stops playing temporarily. To resume playback, press the **PLAY** button or the **PAUSE** button again.

8. **PLAY BUTTON** - When this button is pressed after placing a disc on the disc tray, the disc drawer closes and play begins. In addition, pressing this button in **STOP** mode starts playback. Pressing this button in **PROGRAM** mode starts programmed playback.

9. **SKIP BUTTONS** - Press these buttons to skip forward or backward to the beginning of any track on the disc. When **SKIP BACKWARD** is pressed once, playback returns to the beginning of the track being played.

10. **DISPLAY BUTTON** - Turns display off only when a CD is playing.

11. **REPEAT** - Press once to repeat one track. Press twice to repeat all tracks and three times to cancel repeat function.

REMOTE CONTROL

POWER (ON/STANDBY) / STOP / PAUSE / PLAY / SKIP AND SCAN buttons have the same functions as their corresponding Front Panel switches.

HI-LITE SCAN - When **HI-LITE SCAN** is pressed during stop mode, playback starts from a point one minute after the beginning of the track, and each track is played for about 10 seconds. The **SCAN** indicator blinks during the **HI-LITE SCAN**.

HI-LITE SCAN can also be initiated from any desired elapsed time on the track. During playback, press **HI-LITE SCAN** at the point you want to start **HI-LITE SCAN**. The player memorizes the minute and the second of that point, and the **HI-LITE SCAN** is carried out from this memorized starting point on each track.

During Program Play or Random Play, pressing **HI-LITE SCAN** interrupts these modes, and **HI-LITE SCAN** commences starting at the particular time at which the button is depressed. The Program contents are not erased by this procedure.

RANDOM PLAY - When **RANDOM PLAY** is depressed, all tracks on the disc are played in random order. After all tracks are played, the player enters **STOP** mode. The **RND** light illuminates during Random Play.

NUMERIC KEYPAD - When a track number is specified using the numeric keypad, playback starts automatically from the beginning of the specified track. To specify track number 1 to 10, simply press the corresponding digit on the keypad. To specify track no. 11 or above, use the **>10** key.

Example: To enter track no. 26, press: >10,2,6
 To enter track no. 30, press: >10,3,10

-When entering 11 or above, the 10 key acts as a 0.

-When >10 is pressed, the subsequent key must be pressed within 5 seconds.

NOTE: When using the remote control unit, point the unit's infrared transmitter at the remote sensor on the front of the player. The remote control can be used within a range of about 7 meters (25 feet) from the remote sensor, and within angles of up to about 30 degrees.

1. Press the POWER button to switch the CD-302 "ON".
2. Press OPEN to open the disc drawer.
3. Place a disc onto the disc tray *with the label surface facing down*.
4. Press PLAY to start playback.

To pause playback temporarily - Press PAUSE. The 11 indicator will light and playback which is temporarily paused at that point. Pressing PLAY or PAUSE again resumes playback from the position at which PAUSE mode was entered.

To stop playback - Press STOP.

To remove the disc - Press OPEN to remove the disc. Press OPEN again to close the disc drawer, or press POWER to close the drawer and switch the CD-302 to STANDBY mode.

To search for a particular track - Use the SKIP Forward or SKIP Backward keys. The numeric keypad on the remote control can also be used.

To search for a particular passage - Use the SCAN Forward or SCAN Backward keys as described on the previous pages.

To display the playing time of each track - During STOP mode, pressing SKIP Forward displays the playing time of each track starting from track no. 1.

NOTE: This procedure cannot be used for track no. 30 or above.

Timer Playback - By using a commercially available audio timer, it is possible to initiate playback at any preset time automatically.

1. Load a disc into the disc tray and close the disc drawer with the OPEN button.
2. Set the timer to the time when you wish playback to begin. When the timer returns power to the CD-302, playback begins from the first track.

- If no disc has been loaded in the drawer, the CD-302 will enter the STANDBY mode when the audio timer turns the AC power on.

PROGRAM PLAY

Programming can be accomplished in both the STOP mode and in Playback mode; however, only in STOP mode does the programming dialogue appear in the display window to facilitate programming.

1. Press PROGRAM (PGM) on the remote control.
 - "Track?" appears on the display.

2. Enter the desired track numbers in the desired order using the numeric keypad.

3. Press PLAY.

- The tracks are played in the programmed order. When all programmed tracks have been played, the player enters the STOP mode.

To stop Program playback - Press STOP. While the disc remains in the transport, the program contents will not be erased even when the CD-302 is switched to STANDBY mode.

To go to the next or the previous step in a program - Press SKIP FORWARD or SKIP BACKWARD.

To scan forward or scan backward within a track during Program playback - Press SCAN FORWARD or SCAN BACKWARD.

Programming during Playback - During normal Playback or Hi-Lite Playback, the track being played can be programmed:

1. During playback, press PROGRAM (PGM) to enter the Program Mode.
2. Whenever a track to be programmed is played, press PGM. (You can repeat this step until up to 24 tracks are programmed.)
3. After Programming, press PLAY to play back the tracks in programmed order. During Program Playback, enter the track without pressing Program. The tracks will be added to the program being played.

Programming a Pause - Inserting a pause in your program can be very useful when making a recording. To insert a pause, press PAUSE instead of a track number. "PA" will appear on the display. To resume play after the CD-302 enters PAUSE mode, press 11.

1. A pause can be programmed only when the program procedure is performed in the STOP mode.
2. A pause cannot be programmed at the beginning of a program, nor can two pauses be programmed after the other.
3. A pause inserted in a program is counted as one step.
4. If a pause is entered as the last step of a program, the player will not enter the pause mode.

To clear all of the program contents -

1. During STOP, press STOP or
2. Press OPEN. The program memory is cleared when the disc drawer is opened.

SPECIFICATIONS

The following section describes the CD-302's basic specs. Specifications are subject to change without notice or obligation.

DIMENSIONS:	17" X 11" X 4"
WEIGHT:	31 lbs.
POWER CONSUMPTION:	40 Watts
OPERABLE TEMPERATURE:	41 degrees to 95 degrees F (+5 degrees to 35 degrees C)
POWER REQUIREMENTS:	100-120 VAC, 50/60 Hz OR 200-240 VAC, 50-60Hz
DIGITAL OUTPUT:	75 Ohm coaxial Consumer Standard SPDIF bi-phase Mark Code, 44 kHz
ANALOG OUTPUT IMPEDANCE:	400 Ohms
ANALOG OUTPUT VOLTAGE:	(at 0 dB): 2.0 Volts rms
ANALOG SECTION:	2 - 12AU7 triodes
PHASE LINEARITY:	± 0.6 degrees (20 kHz)
PASSBAND RIPPLE:	<0.00005 dB
STOPBAND ATTENUATION:	>110 dB
AMPLITUDE LINEARITY:	>96 dB (minimum) 98 dB (typical)
ULTRASONIC & RF OUTPUT NOISE (0 ~ 20 MHz):	<0.0001 Volts rms
SIGNAL TO NOISE RATIO (0 ~ 20 kHz):	>100 dB (minimum) >105 dB (typical)
FREQUENCY RESPONSE:	4 ~ 20 kHz \pm 0.1 dB
WARM-UP TIME:	3 minutes
BREAK-IN PERIOD:	100 hours of music playing time
FINISH:	Steel chassis in textured black finish with black anodized aluminum face plate. OPTIONAL: Gold anodized face plate

CD-302 TROUBLESHOOTING

SYMPTOM	CAUSE	REMEDY
Disc drawer does not open when OPEN is pressed	-Power plug is disconnected from outlet	-Connect plug to AC power outlet.
	-The CD-302 is in STAND-BY mode	-Press the POWER switch to ON.
When playback is initiated, it stops immediately; pauses or stops during playback.	-The disc is loaded up side down	-Reload the disc with the label side down.
	-The disc is scratched, warped or dirty.	-Clean the disc and try playing it again.
With certain discs, loud clicking noise is produced or play stops.	-Disc is scratched or warped.	-Replace the disc.
	-Disc is smudged or dirty.	-Clean the disc.
Remote control does not function	-Batteries are dead.	-Replace batteries.
	-Obstruction between CD-302 and remote control unit.	-Relocated remote control or remove obstacle.
	-Too far from CD-302 or wrong angle.	-Operate the remote control unit within 25 feet (7 meters) and within ± 30 degrees fo the CD-302.
The picture of a TV screen displays fluctuations or FM radio reception is degraded.	-Radio interference is being picked up from the CD-302.	-Try placing the CD-302 in STAND-BY mode. Alternatively, disconnect from AC power, or move it away from the TV or tuner.

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