

**CLASSÉ AUDIO**

**CDP-88**

**CD PLAYER**

**CDP-88**

**OWNER'S MANUAL**

## ***CLASSÉ DESIGN PHILOSOPHY***

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### **1. REPEATED LISTENING DESIGN SESSIONS:**

Fine tuning the sound by exchanging and mixing different parts (transistors, capacitors, wiring, PCB boards etc.), and adjusting many specific operating voltages within proper engineering ranges, has allowed us to produce an overall sonic recipe giving the most natural harmonic realism of music typical of instruments in a live performance.

### **2. UPGRADABLE SINGLE CIRCUIT DESIGNS:**

All Classé products share exactly the same circuit design philosophy. This means all amplifiers and all high level circuits benefit from the same design goals. Similar circuits are then tailored to different power levels etc. Differences between less expensive models and more expensive models are parts quality and compliment, power supply extravagance and the amount of filtering etc., as well as features and packaging.

This means that for years Classé has been constantly sonically fine tuning and technically upgrading this circuit design and its application, thus reaching a very high level of natural musical enjoyment as well as excellent reliability which benefits all models.

### **3. EXTREME LONG LIFE IN REAL WORLD CONDITIONS:**

Choosing the best attainable quality parts and materials combined with the advantages of the two above-mentioned areas provides Classé owners with years of proven trouble-free reliability and musical enjoyment.

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TABLE OF CONTENTS

UNPACKING & SET-UP.....	4
A.C. LINE POWER.....	5
REAR PANEL CONNECTIONS AND FUNCTIONS .....	6
DISPLAY, FUNCTIONS AND OPERATIONS.....	7
TECHNICAL DESCRIPTION.....	13
SPECIFICATIONS.....	16
WARRANTY.....	17
WARRANTY REGISTRATION.....	19

## ***UNPACKING & SET-UP***

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### **1. UNPACKING AND ACCESSORIES:**

The Classé CDP-88 has been carefully wrapped in heavy gauge plastic, packed in semi-rigid foam and contained in a special box. To remove the unit, open and spread the top flaps of the box. By its sides, lift the CDP-88 out along with its attached foam packing. Remove each foam side by pulling them straight out. Remove the plastic wrap and inspect the unit for any concealed damage. Report any concealed damage to your dealer promptly.

Apart from this owner's manual, please ensure the following is also included:

- 1) Detachable A.C. power cord.
- 2) Remote control handset (along with allen key and two (2) type "AAA" batteries).

Please report any missing parts to your dealer promptly.

### **2. SETUP:**

The CDP-88 CD player must be operated on a horizontal platform (see specifications for details) such as a table or, preferably, specialized audio furniture to extract the best performance. Like fine turntables and interconnect cables, the final location of the CDP-88 should be free of any hum-inducing magnetic fields, such as those caused by power amplifiers, AC line filters and other regulation devices. Such locations can introduce noise into an audio system, which inevitably degrades sound quality. Ideally, a few feet should separate the CDP-88 from the power amplifier. As well, keep low-level interconnect cables away from the power amp and separate from A.C. power cords. The CDP-88 generates negligible amounts of heat. Therefore, air space around the CDP-88 for ventilation need not be a concern.

**Important!** Check the Serial Number sticker on the back of the unit for the correct operating voltage. Regardless of the voltage, the fuse rating should be a 3/8 AMP SLO-BLO type.

## ***A.C. LINE POWER***

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The ON/OFF switch on the CDP-88 is located on the rear panel of the unit right besides the A.C. LINE CORD RECEPTACLE. Its low power consumption and improved sonics from always being ON led to the use of a STANDBY switch. While thoroughly musical shortly after turn-on, the CDP-88 will exhibit "sonic growth" for the first 300 hours of use.

For optimum sonic performance, you should consider use of the optional CLASSÉ REFERENCE A.C. LINE CORD. Consult your dealer regarding this accessory.

**CAUTION:** "FLOATING THE GROUND" OR DEFEATING THE GROUND ON A 3-PRONG LINE CORD MAY CREATE A SHOCK HAZARD. CONNECT ALL INTERCONNECT CABLES BETWEEN THE ELECTRONICS BEFORE CONNECTING THE A.C. LINE CORDS TO THE WALL OUTLETS. THIS WILL REDUCE THE POTENTIAL SHOCK HAZARD. IN ADDITION, PLEASE READ THE WARRANTY SECTION OF THIS OWNER'S MANUAL.

## ***REAR PANEL CONNECTIONS AND FUNCTIONS***

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The CDP-88 compact disk player is equipped with both BALANCED and REGULAR RCA (single ended) analog outputs. Connecting the CDP-88 to your audio system requires a pair of BALANCED or REGULAR RCA type interconnects and the supplied AC power cord. The CDP-88 is also equipped with a BALANCED (AES/EBU) data output connector. To use this output, you require a balanced cable and an AES/EBU input connector on your digital processor. Refer to Fig. 1 on page 10 for visual aid.

### A NOTE ABOUT THE CONNECTING CABLES:

The overall performance of the CD PLAYER will vary dramatically with the quality and type of cables chosen. Selection of the highest quality digital output cables combined with proper output interconnects is recommended for maximum performance of the Classé CDP-88.

### AC LINE INPUT

In addition to the analog and digital outputs, the remaining connection on the rear panel of the CDP-88 is the AC input connector. Connect the supplied AC power cord to this input. As the CAUTION section on the previous page indicates, it is always a wise PRECAUTION to connect all interconnect cables before attaching the AC power cords.

## ***DISPLAY, FUNCTIONS AND OPERATIONS***

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### 1. FUNCTIONS:

The front panel of the CDP-88 has six buttons that perform all the basic necessary functions. The remote control contains all the basic functions found on the front panel (except the LOAD button) as well as all advanced programming features.

Using Figure 1 on page 10, the front panel controls are (from left to right):

**LOAD:** Press this button once to open the disk tray. Pressing it again will close the tray.

**STOP:** Stops playing the disk, and also clears all programs in memory.

**PREVIOUS (◀):** Pressed once during playback, the CDP-88 will start playing the previous track.

Pressing it sequentially will cause the CDP-88 to go back one track each time it is pressed. This button is also used to select tracks to play and program into memory.

**PLAY/PAUSE:** Press this button to start playback. Pressing it again will pause the music until it is pressed once more.

**NEXT (▶):** Each time this button is pressed, the CDP-88 will advance one track i.e. press it twice to advance two tracks, three for three tracks, etc. If pressed during playback, the CDP-88 resumes playing from the desired track. If pressed while stopped, the CDP-88 will await further commands.

**STANDBY:** This is the "power switch" of the CDP-88. Press it to turn the CDP-88 on and off.

In addition to all the above functions, the remote handset of the CDP-88 contains the following additional functions (see Fig.2 on page 11):

**NUMERIC KEYPAD (digits 0 through 9):** This is a convenient alternative to the PREVIOUS and NEXT buttons. Pressing the desired track number on the numeric keypad is usually faster than the PREVIOUS and NEXT buttons. For example, if you just inserted a disk and wish to play track 8, pressing 8 followed by PLAY is easier than pressing the NEXT button eight times, and then PLAY.

**REPEAT:** Repeats the whole disk, the programmed tracks or just the single track being heard.

**SCAN:** Plays the first ten seconds of each track.

**SHUFFLE:** Plays all tracks on a disk in random order.

**STORE:** Stores selected tracks into memory for playback.

**FORWARD (») AND REVERSE («) SEARCH:** The CDP-88 employs a convenient 2-speed search. These buttons allow you to quickly search through the disk in both directions. Press and hold down the desired SEARCH button. The time counter will approximately double in speed, and the track heard will be reduced in volume. Once the desired point is reached, release the SEARCH button. Playback will resume.

If the SEARCH button is held for more than 4 seconds, the CDP-88 goes into a high-speed search mode, and the time counter advances very rapidly. During high-speed search, the volume is completely muted.

## 2. DISPLAY INFORMATION AND VARIOUS MODES OF OPERATION:

To insert a disk, press LOAD to open the CD tray. Gently place the disk with the label side up on the tray, and press LOAD again. The tray will close, and several seconds later the display will indicate the total number of tracks on the disk with the total playing time. If the disk has not been properly inserted, or is inserted upside down, the message NO DISC will appear on the display. Disks with bad scratches, pinholes, or other severe manufacturing defects might also not be useable.

Once the display confirms the number of tracks and playing time, the CDP-88 is in STOP mode. At this point, you can carry out several different playback modes. Each is described in detail below.

### Playback from the beginning or from a selected track

To play an entire disk from the beginning, press PLAY. The CDP-88 will start playing in a few seconds, and will play the entire disk. To play from a desired track onwards, select the desired track using the NEXT (➤) and/or PREVIOUS (◀) buttons, or with the numeric keypad on the remote control.

Then press PLAY. The disk will play from that point on until the end of the disk. While playing, the display will show each track currently playing along with the elapsed time from the beginning of that track. Once the disk is over, the CDP-88 will return to STOP mode.



### Playback of only selected tracks

You can program the CDP-88 to play any combination of tracks on a disk, up to a maximum of 20. Using the NEXT (➤) and PREVIOUS (◀) buttons, or the numeric keypad, find the first desired track on the display. Then press the STORE button. Repeat this procedure until all desired tracks have been stored. As each track is being stored, the display indicates the total playing time of all tracks currently programmed. Press PLAY. Playback will commence from the first programmed track, and all programmed tracks will play in the order they were stored. Please note that:

- If you try to program more than 20 tracks, the display will indicate FULL, and no more tracks will be entered into memory.
- Each track can only be programmed once.
- During programmed playback, the numeric keypad is disabled; use NEXT and PREVIOUS to change tracks.
- The programmed tracks don't have to be in ascending numerical order; i.e. you can program track 2 to play after track 6.
- If you programmed a track by accident, simply go to that track once more and press STORE again. That track will be deleted from memory.
- To clear all the tracks programmed in memory, press the STOP button twice if the CDP-88 is already playing, or once if it is not. If you intend on changing the disk, simply opening the disk tray automatically erases all programmed tracks from memory.

### Playback using REPEAT

Pressing the REPEAT button sequentially toggles between three different functions: Repeating the entire disk, repeating the track currently being played or indicated on the display, or not repeating at all. In each case, the display indicates which mode is selected (REPEAT, REPEAT 1, or a nothing at all). Once the desired mode of repeat is chosen, press PLAY.

The REPEAT feature can also be used with tracks programmed in memory in the same way as above.

### Playback using SHUFFLE

Also known as Random Play, pressing the SHUFFLE button instructs the CDP-88 to play all tracks in a random order. Once all tracks have been played, the CDP-88 will return to STOP mode. While in SHUFFLE play, the display will indicate SHUFFLE. After pressing SHUFFLE, you do not need to press PLAY.

The SHUFFLE feature can be used in conjunction with the REPEAT button to provide endless hours of randomly selected, uninterrupted music.

### Playback using SCAN

This is a handy feature that lets you "preview" the contents of a disk. By pressing SCAN, the CDP-88 will automatically play the first 10 seconds of each track on the disk. Once you've found a track you like, pressing SCAN again will disable the SCAN feature and play the entire track currently being heard.

### 3. ERROR REPORTING:

The CDP-88 will report any erroneous operation via an "ERR" message on the display. For example, trying to program a disk while it is playing, or trying to play or program a track number non-existent on a disk (i.e. track 12 on a disk with 10 tracks) will trigger the error message. The "FULL" error message only appears when the user attempts to store more than twenty tracks into memory.

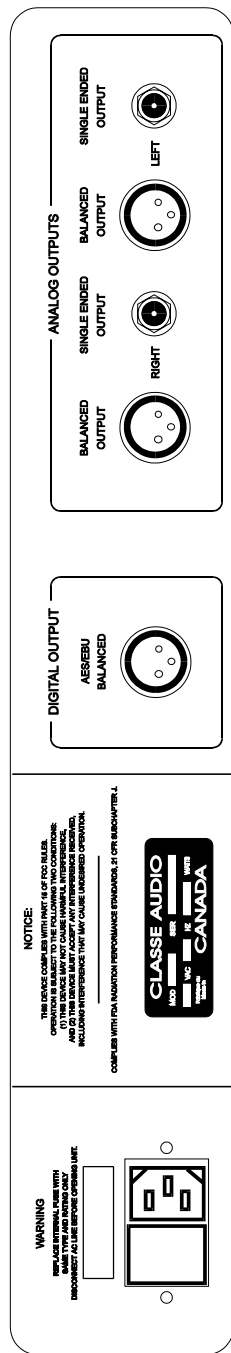
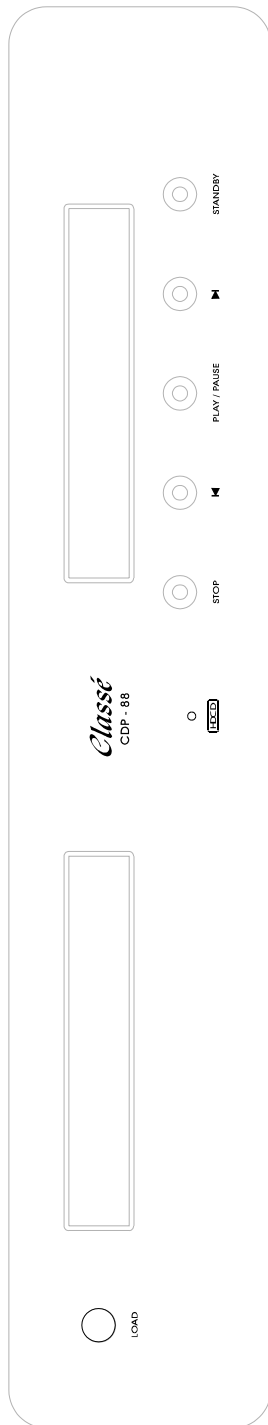


Fig.1 CDP-88 Front and rear views

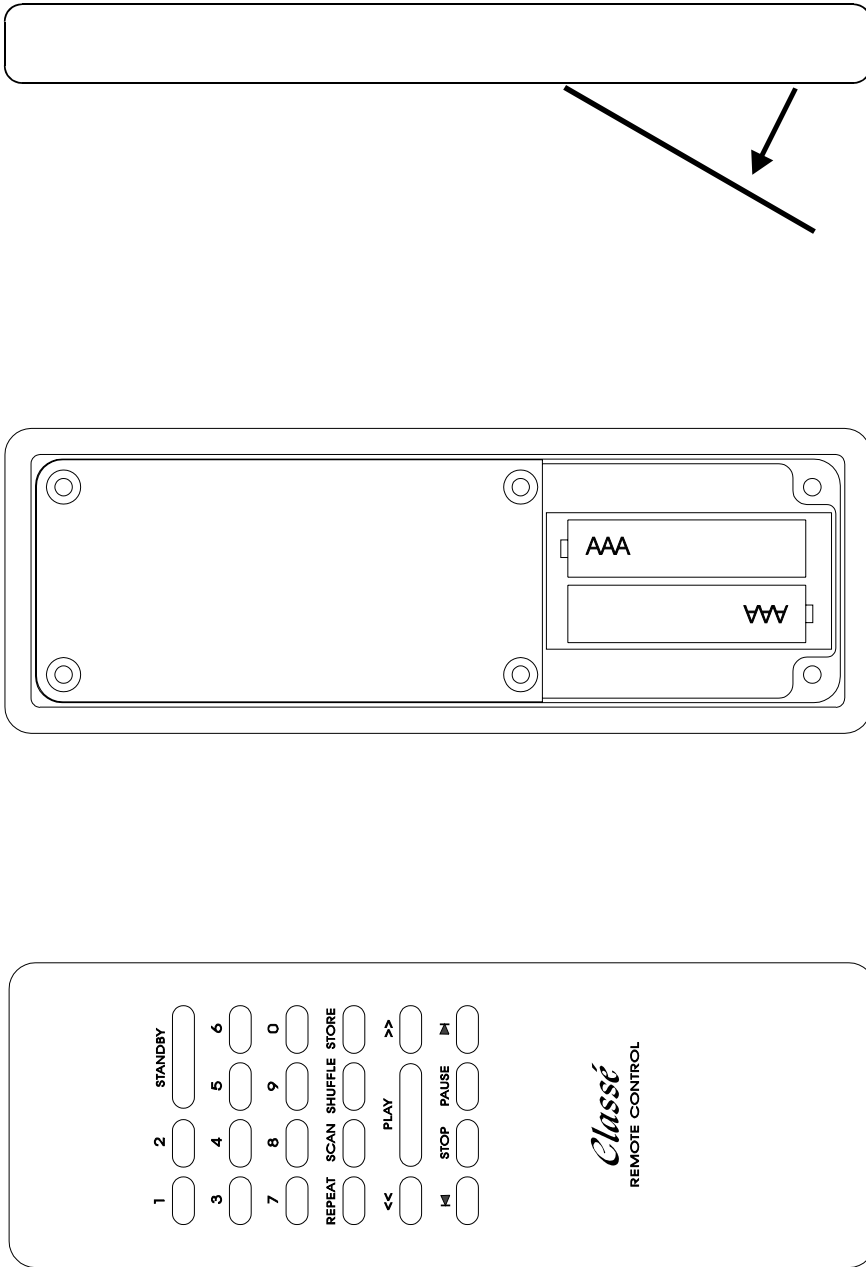


Fig 2. Remote control unit

## ***TECHNICAL DESCRIPTION***

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The Classé CDP-88 compact disk player is high quality unit utilizing the latest innovations in digital audio reproduction. The philosophy behind the CDP-88 is advanced technology for extracting the maximum musical performance, but also embraces the time proven idea of simplicity, in accordance with the saying "simpler is better."

No effort has been spared in the development of the CDP-88. The chassis is of exceptionally thick gauge metal, and has been designed to resist vibration through solid construction and proper isolation from sources of vibration. The half-inch thick faceplate is a tribute to its construction and aesthetics.

Inside, main power is provided by a custom high-current 38VA toroidal transformer. The power supply of the CDP-88 is generously oversized to assure that regardless how much current is drawn, the circuitry will remain unaffected by any fluctuations. Numerous power supplies are used, to assure the elimination of interference caused by fluctuations often induced by heavy current draw on shared supplies. The CDP-88 inherently has a low power consumption, but micro-information is easily contaminated when traditional power supplies clip due to their inadequate output. This is the general idea behind the high current, stable supply that powers the CDP-88.

The disk transport itself is the latest Philips CDM12.4 with the L1210 Loader assembly. This mechanism employs a newly-developed linear tracking laser pickup which is faster, quieter, and longer lasting than the well received CDM9 Pro mechanism. The isolated suspension system of the CDM12.4's optical circuitry and disk motor is completely separate from the disk tray, eliminating micro-vibrations caused by sudden atmospheric pressure changes around the front panel. The CDM12.4 is of broadcast quality, and its outstanding construction using highly efficient, long life motors assures excellent long-term reliability. In addition, this compact disk player is designed not to require periodic calibration, assuring that long-term alignment will always be right on specification.

Jitter, also known as errors in the time domain, is the prime factor in performance degradation, and Classé has addressed this problem from every perspective. One aspect is the outstanding power supply described above; another is the exceptional reclocking circuitry. Using a 16.9344 MHz crystal oscillator to generate the digital output, the final jitter measured at the output is typically so low it can

barely be detected. The crystal oscillator itself is designed to generate a spectacularly low jitter of approximately 2 picoseconds!

There is a single AES/EBU balanced digital output on an XLR 3-pin Neutrik connector. A final technical highlight of the CDP-88 is the custom remote handset. It features an exceptionally wide transmission angle to the IR receiver on the CDP-88, and is engineered to last an extremely long time.

The CDP-88 features an HDCD decoder that, in addition to allowing full HDCD decoding, functions as a state of the art 8X oversampling filter if the input data is not encoded in HDCD format. The CDP-88 employs a high performance 20-bit digital-to-analog converter, which serves to decode both left and right channel information. The digital information is oversampled by the HDCD decoder to a rate that is 8 times higher than the original sampling frequency. Oversampling the digital data to such a high rate allows the analog filter following the DAC to have far fewer poles than would be otherwise required. This allows a simpler analog filter to follow the DAC which reduces the errors that are associated with “brick wall” analog filters, and also minimizes the number of components in the signal path. With non-HDCD encoded data, the decoder exhibits performance to common digital filter IC’s. The stop band attenuation is greater than -120dB, and the internal calculations are carried out with 27-bit accuracy. If the data is encoded in HDCD encoded format, the filter will detect it and decode it, extracting all of the additional information available with an HDCD recording. The HDCD indicator on the front panel will come on if the HDCD encoded data is detected. The indicator will be off for a normally encoded CD. The analog gain is increased by 6dB automatically when an HDCD disc is detected, as suggested by Pacific Microsonics, Inc. The HDCD filter also performs de-emphasis filtering for discs encoded with preemphasis.

The output of the UltraAnalog, Inc 20-bit dual DAC is followed by passive 3-pole, linear phase, anti-imaging filters to remove any artifacts beyond the audio frequency range from the analog audio signal. Tight tolerance, low temperature coefficient polypropylene capacitors and 1% metal film resistors are used in the filter for long term accuracy and stability. The last stage of the filter is a passive 6dB attenuator to provide the proper HDCD levels.

The output drivers are followed by relays to protect outside equipment from power-on transients as well as to protect the CDP-88 from other equipment when the CDP-88 is not powered.

Great care has been used throughout the design and layout of the CDP-88 to meet FCC class B requirements. This will ensure that the CDP-88 will be insensitive to noisy components in a system, and in turn will not cause harmful interference to other components.

Every CDP-88 undergoes rigorous computerized testing that measures each critical performance parameter, and is burned in for several days to ensure the consistency of performance over time. Every unit has to pass more than 100 separate tests before leaving the factory.

***CLASSE' CDP-88***  
***COMPACT DISK PLAYER***

**SPECIFICATIONS:**

Wow and Flutter	Below measurement level
Jitter	Below measurement level
Digital outputs:	Balanced on XLR-3 connector
AES/EBU	110 ohms $\pm$ 5%
Impedance	3.0 Vpp typ. with 110 ohm load
Level	7 ns typ.
Frequency response	DC to 20 KHz, +0.1 dB, 20 KHz -0.7 dB
Signal to noise	-108 dBr typical
D/A	Ultra Analog 20400A dual 20 bit
Dynamic range	16 bit linear
THD+N	Better than -90dB @ 1 KHz
Channel separation	Better than -115 dB @ 1 KHz
Offset voltage	Better than +0.005 VDC
Clock Jitter	<5ps rms from 20Hz to 40 KHz
Laser semiconductor	GaAIAs, 0.5 mw, continuous, 790 nm
Sampling rate	852.8 KHz
Disc rotation velocity	200-500 rpm (constant linear velocity)
Quantization	16 bits linear
Error correction	CIRC principle
Number of channels	2 channels, stereo
 <b>POWER REQUIREMENTS:</b>	
Europe/UK	180-260 VAC, 50 Hz, 27 Watts typ.
Canada/USA/Japan	90-130 VAC, 60 Hz, 27 Watts typ.
 <b>WEIGHT AND DIMENSIONS:</b>	
Dimensions: Gross:	22"x 19 1/2" x 10 1/2"
Net:	19" x 13 3/4" x 4" (W x D x H)
Weight: Gross:	22 lbs.
Net:	18 lbs.
Operating temperature	0°C to + 40°C
Storage temperature	-20°C to + 60°C
Operating position	Horizontal, up to $\pm$ 5° inclination in any direction.



***CLASSÉ CDP-88 LIMITED FACTORY WARRANTY (North America only)***

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IMPORTANT: WARRANTY REGISTRATION, AND A COPY OF THE "AUTHORIZED DEALER BILL OF SALE", MUST BE RECEIVED AT THE CLASSÉ FACTORY (address below) WITHIN TWENTY (20) DAYS OF PURCHASE BY THE FIRST RETAIL PURCHASER IN ORDER TO VALIDATE THIS WARRANTY.

Classé Audio Inc. warrants the electronic circuitry of the CDP-88 to be free from defects in materials and workmanship for a period of FIVE YEARS from the date of first retail purchase, (remote handset and batteries not covered by this warranty) provided that any claim in virtue of this warranty be made in writing within such period.

The transport mechanism itself contained in the CDP-88, and the remote handset, are excluded from the five year warranty, and are covered by a ONE YEAR warranty from the date of first retail purchase. (no warranty on batteries).

The balance of all warranties stated above remain transferable to a second owner, provided all conditions stated herein are met in validating the original owner's warranty. Second owner's warranty must adhere to these conditions and continues from first owner's purchase date.

In the event of failure of this processor, Classé Audio Inc. will repair, recalibrate, or at its discretion, replace the unit in accordance with this warranty providing that all the conditions contained in this warranty are met.

In order to initiate service of any kind, it is necessary to OBTAIN PRIOR FACTORY AUTHORIZATION, AND SHIP THE UNIT PREPAID TO THE CLASSÉ FACTORY. For units coming from outside Canada, contact the factory for our forwarding address. Units shipped directly to our Canadian address from outside the country will be stopped at the border, causing extensive delays or return of the unit to the sender.

The warranty shall be void and of no effect in the event of any of the following:

1. Operation not in accordance with this manual;
2. Accident, abuse, tampering, or unauthorized modification, as determined by Classé Audio Inc.;
3. Removal, defacing, or falsifying the serial number plate;
4. Shipping without the complete factory packaging;
5. Transfer or sale of this processor by the original owner;
6. Non-compliance with any of the other conditions hereof.

CLASSÉ AUDIO INC. SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES ARISING FROM OR RELATING TO THE SET-UP, OPERATION, FAILURE, TROUBLESHOOTING, OR REPAIR OF THE CDP-88 AND/OR ANY OTHER EQUIPMENT USED THEREWITH.

THIS WARRANTY, ALL CLAIMS MADE IN VIRTUE HEREOF, AND ALL ISSUES RELATING TO ANY SUCH CLAIM SHALL BE GOVERNED BY THE LAWS OF THE PROVINCE OF QUÉBEC.

**WARRANTY REGISTRATION**

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You must fill out and return the form below, along with a copy of the authorized dealer bill of sale, to the factory within twenty (20) days of purchase. This will allow us to provide expedient service, information regarding updates and new products, and validate the Classé warranty.

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**CDP-88** SERIAL NUMBER \_\_\_\_\_  
PURCHASE DATE \_\_\_\_\_  
AUTHORIZED DEALER \_\_\_\_\_  
PURCHASER'S NAME \_\_\_\_\_  
STREET ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE/PROV. \_\_\_\_\_  
COUNTRY \_\_\_\_\_ ZIP/POSTAL CODE \_\_\_\_\_  
I BECAME AWARE OF THIS PRODUCT BY: \_\_\_\_\_  
(DEALER, MAGAZINE, FRIEND, ETC.)

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SEND TO: CLASSÉ AUDIO INC.  
Product Registration  
5070 François Cusson  
Lachine, Quebec, Canada  
H8T 1B3