

*Congratulations* on your purchase of the conrad-johnson Evolution 2000 amplifier. You have acquired one of the finer pieces of musical reproduction equipment available today. The Evolution 2000 is the result of conrad-johnson design's research into the application of both vacuum-tube and solid state devices to the reproduction of recorded music. The design and materials have been carefully selected to yield years of unvarying excellence.

Please take a few minutes to read this manual so that you will better understand the features and capabilities of your Evolution 2000.

***LIMITED WARRANTY FOR THE CONRAD-JOHNSON  
EVOLUTION 2000***

1. **conrad-johnson design, inc.** warrants to the original owner that the Evolution 2000 will be free from defects in material and workmanship for a period of three years from the date of original purchase.
2. During the warranty period, conrad-johnson will repair defective units without charge for labor or parts (with the exception of the vacuum tubes) subject to the following conditions:
  - a) The unit must not have been altered or damaged through misuse, abuse, negligence, accident or improper operation.
  - b) The purchaser must provide evidence of purchase at the time service is requested.
  - c) All repairs must be undertaken at the factory or other service center designated by conrad-johnson design, inc. Units submitted for warranty repairs must be shipped in the factory packing carton to conrad-johnson design or its designated service center, freight and insurance prepaid by the owner, and will be returned to the owner, freight and insurance prepaid by conrad-johnson design. Replacement cartons are available from the factory for a nominal charge.
  - d) Normal wear and maintenance are not covered by this warranty.
3. The above warranty may be transferred to subsequent owners provided that the warranty registration card has been returned to conrad-johnson design, inc. within 30 days of the original purchase and that the registered owner provides the factory with a signed notice giving the new owner's name and address and the model and serial number of the unit.
4. Where permitted by law, conrad-johnson design's liability shall be limited to that set forth in this warranty. No other warranty of any kind, expressed or implied, is made by conrad-johnson design, inc., and all implied warranties, including merchantability and fitness for a particular "purpose", which exceed the obligations and time limits set forth herein are hereby disclaimed. conrad-johnson design, inc. shall not be liable for incidental or consequential damages. Some states do not allow the exclusion or limitations on how long an implied warranty lasts, so the above limitation or exclusion may not apply to you.

5. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Questions about warranty service should be addressed to:

Service Department  
conrad-johnson design, inc.  
2800 R Dorr Avenue  
Fairfax, VA 22031

### ***REGISTERING THE WARRANTY***

Please return the enclosed card to the factory within 30 days of purchase to register the warranty. Proper registration of the warranty is important! It will enable us to inform you of any alterations in the design of a given model and of any new products we offer which are likely to be of interest to you.

## ***CIRCUIT DESIGN***

It is becoming increasingly apparent that the penalties imposed by negative feedback circuits often exceed any benefits they may offer. The Evolution 2000 was conceived as a zero-feedback power amplifier. This design objective virtually dictated the final circuit topology of the amplifier. The gain block of the Evolution 2000 employs triode amplifiers to achieve linearity even at the high-amplitude voltage swings required to achieve full power in a high power amplifier. The output stage uses MOSFETS for a low output impedance to enable the amplifier to deliver the large current demands of high amplitude musical transients driven into reactive speaker loads. A massive main power supply enables the Evolution 2000 to easily meet these extraordinary current demands. Discrete regulators provide a stable dc voltage for the voltage amplifiers for nearly absolute isolation of these sensitive stages.

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# ***I*NSTALLATION**

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Because of the large number of output devices (five pair per channel), the Evolution 2000 dissipates considerable heat. It is essential, therefore, that proper attention be paid to ventilation. The unit should be mounted horizontally on a flat hard surface so that the ventilation holes in the bottom are unobstructed. At least eight inches of clearance should be provided above the unit and three inches on the sides. The cabinet or shelf should be open at both front and back. For more restricted installations, cooling fans are essential.

The front panel of the Evolution 2000 will fit in a standard 19" equipment rack and is designed to carry the weight of the unit so that it may be rack mounted. Again, it is important that adequate clearance be provided above and below so that ventilation is not impeded. About eight inches of the front of the rack should be left open above the unit.

To minimize hum pickup, keep the unit well away from the preamplifier and turntable and route power cords away from input cables.

## **THE EVOLUTION 2000 IS TO BE OPERATED ONLY ON AC LINE VOLTAGE OF 108 TO 125 VOLTS.**

The Evolution 2000 is optionally available wired for 100 volt, 120V, 220V or 240 volt, 50/60 Hz current.

## ***CONNECTION***

**INPUT:** Connect the preamplifier to your Evolution 2000 amplifier at the RCA type connections located on the back of the amplifier.

**OUTPUT:** Five-way binding posts are provided for connection of your loudspeakers, with correct spacing to accept "double banana" connectors. They will also accept spade lugs, bare wire, or pin connectors.

The two channels should be connected in correct "relative phase". This means that when the same signal is applied to both channels, the right and left channels speaker diaphragms should move synchronously-in and out together. Terminals on the speakers are usually coded-one

designated "C", "earth", "ground", "-" or black, the other designated "+" or red.

Correct relative phase connection of the speakers can normally be achieved by taking care to connect the wire from the red (+) amplifier terminal on each channel to the red or "+" coded terminal on each speaker, and connecting the black amplifier terminal to the black or "-" coded terminal on each speaker (but be sure to read the section on absolute phase which follows).

Correct relative phase connection of the speakers can be readily ascertained by ear. With the preamplifier mode switched into the MONO position, play a record of a solo vocalist. With the speakers in phase the voice should be clearly focused between the two speakers. With the speakers connected out of phase, the voice will be diffused, with no identifiable source. Relative phase may be reversed by switching the "+" and "-" leads at one speaker only.

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## ***GETTING THE MOST FROM YOUR EVOLUTION 2000***

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The conrad-johnson Evolution 2000 offers an unparalleled level of sophistication and refinement in music reproduction, but it cannot transform an inferior stereo system. Only the very best loudspeaker systems will be capable of fully revealing the capabilities of this precision instrument. On the other hand, the Evolution 2000 is ruthlessly revealing. For example, it can render unacceptable faults in the phono system which are not discernable with an amplifier of lower resolution.

Proper set-up is important in any high-fidelity system, but with state-of-the-art components it is essential. Before attempting to evaluate the Evolution 2000, be sure that your phono system has been set up carefully according to manufacturer recommendations. Adjustment of the cartridge vertical tracking angle can be especially critical with modern stylus configurations.

Given a system of high quality components, there remain a number of important details which must be attended to.

### ***ABSOLUTE PHASE***

Musical notes are heard through the ear's response to waves of alternating rise and fall of air pressure. Musical transients are exclusively positive: that is, the initial effect is a rise in pressure. The ear is capable of distinguishing these positive transients from the musically unnatural alternative of a negative transient (an initial fall in air pressure). In your stereo system, these transients are created by your loudspeakers. If the speakers respond to musical transients by first moving out, they are creating a rise in pressure, and the system is said to be "phase correct". If they respond by moving in, they create a fall in pressure and the system is said to be "phase inverting".

Each component in the stereo system is either phase correct or phase inverting (including the cartridge and speakers-these are normally phase correct). THE EVOLUTION 2000 AMPLIFIER IS PHASE INVERTING. It is of no consequence if an individual component is phase inverting, as long as the system as a whole is phase correct. This will be the case as long as the number of phase inversions is even (or zero). If

your system has an odd number of inversions, then you must add one phase inversion. This is conveniently done by reversing the positive and negative connections on your speakers (be sure to reverse both channels).

If you are not sure about the phase of every component in your system, you can establish correct absolute phase by careful listening. When the system is in correct phase, transients will be noticeably cleaner and more sharply defined. The effect is especially apparent on plucked string sounds. A final warning-not all records are phase correct (including some "audiophile" recordings), so listen to several before concluding your investigation of absolute phase.

### ***THE IMPORTANCE OF WIRES***

Interconnect and speaker wires are an important element in your stereo system. Interconnects are available which will permit a reference quality system to blossom and fulfill its promise of musical reality. Others will strangle the system to the point where it becomes no better than average. To complicate matters, our experience suggests that the choice of interconnects will be system dependent - those that are ranked first on a given system may be a poor choice for a different system. Consult your Conrad-Johnson dealer for recommendations for your specific system.

### ***QUESTIONS?***

If you have any questions about the installation or function of your Evolution 2000 do not hesitate to call Customer Service at (703) 698-8581.

## ***TUBE REPLACEMENTS***

The Evolution 2000 uses four type 5751 vacuum tubes. These have been carefully chosen for this circuit application. It is well known that tubes of a given type vary sonically depending on the manufacturer. We have chosen the brand of tubes that we supply based on extensive auditioning of available brands. The choice of brand has been made solely on the basis of sonic performance and reliability without regard to either cost or prestige. We know of no vacuum tubes available which will improve the sonic performance of your Evolution 2000. Also, the tubes in your amplifier have been tempered by a controlled burn in procedure that permits them to perform for a greatly extended period without degradation in normal use. We highly recommend that, when the time comes to replace the vacuum tubes, you purchase replacement tube sets from conrad-johnson design.

The Evolution 2000 has been designed to make tube replacement as simple as possible. Simply turn your amplifier off, then remove the front access panel using a 5/32 "hex" key. Remove and replace the four tubes and re-install the panel. That's all there is to it. The tubes are self-biasing, so no adjustments are needed.

### ***FUSES***

**LINE FUSE:** The AC line is fused to protect the power transformer. This fuse will not fail in normal operation. Failure of the line fuse is a symptom of a more serious problem, so the unit should be taken to a qualified service center. **IN NO EVENT SHOULD THE FUSE BE REPLACED WITH A FUSE OF DIFFERENT TYPE OR RATING THAN THAT SUPPLIED BY THE FACTORY.**

**POWER SUPPLY FUSES:** Your Evolution 2000 has been fitted with fuses for the positive and negative power supplies for each channel. The fuse holders are physically located near the speaker connectors. The sonic effects of a blown fuse are low, very distorted sounds from the speaker being driven by that channel.

**TO AVOID SHOCK, ALWAYS TURN OFF THE AMPLIFIER BEFORE REMOVING THE FUSE HOLDER CAP.**

SPECIFICATIONS:

**Power:** 200 watts per channel RMS both channels driven into 8 ohms from 20Hz to 20KHz at no more than 1% total harmonic distortion or intermodulation distortion.

**Sensitivity:** 900 mv to full power.

**Phase:** Phase inverting

**Frequency response:** 20Hz to 20KHz +0, -.5dB

**Hum and noise:** 96dB below full power output.

**Input impedance:** 100K ohms.

**Dimensions:** 22.5D x 19W x 10.5H inches.

**Weight:** 114 lbs.

Fuses: There are 5 user replaceable fuses in the Evolution 2000. The four fuses above the speaker terminals are power supply fuses, type 3AG 5 amp fast-blow. The fuse near the ac line cord fuses the main power transformer. It is a type 3AG 15 amp slo-blow . **NEVER REPLACE A FUSE WITH A VALUE OR TYPE DIFFERENT FROM THAT ORIGINALLY SUPPLIED BY THE FACTORY.**

## ***SERVICE***

In the event your conrad-johnson Evolution 2000 stereo amplifier requires service, repack it with the original packing material and ship via truck freight Service to:

conrad-johnson design, inc.  
Service Department  
2800R Dorr Avenue  
Fairfax, VA 22031

Be sure to enclose a note explaining the problem you are having in as much detail as possible. If the problem is intermittent, please indicate. If you do not have the original packing material, replacements are available from conrad-johnson design at a nominal charge. If the unit is under warranty, be sure to enclose a copy of your receipt as proof of purchase.