

Thank you for selecting the D/A-2b as the digital/analog converter for your audio system. It is ideally suited for use in combination with conrad-johnson's DR-1 CD transport to form a compact disc playback system capable of extracting all the detail and dynamics of the best digital recordings.

At conrad-johnson, we expect our products to be a source of satisfaction and of pride to their owners for many years to come. Accordingly, circuit designs, parts and materials for all conrad-johnson products are selected with a view to maintaining optimal performance over the years. Our reputation for producing among the industry's most reliable components is a natural consequence of this engineering approach.

Although the D/A-2b has been designed so that its basic operation is intuitively apparent, it has a number of features which are fully explained in this manual. Please take a few minutes to read the manual to better understand the features and capabilities of your D/A-2b.

In closing, we'd like to welcome you to the family of conrad-johnson owners. We want you to enjoy your conrad-johnson product to the fullest. To this end, our staff stands ready to answer any questions you may have about the function and application of your D/A-2b, and to provide any needed service both during, and after the warranty period. Our goal is to heighten your enjoyment of recorded music.

Limited Warranty For Conrad-Johnson Components

conrad-johnson design, inc. will provide service under warranty to the original owner on products sold new in the United States for the lesser period of three years from the date of purchase by the original purchaser, or five years from the date of shipment to the authorized conrad-johnson dealer. During the warranty period, conrad-johnson will repair defective units without charge for labor or parts (with the exception of vacuum tubes and batteries).

Exclusions. The following are not covered under this warranty:

- a) Units which have been damaged by misuse, abuse, or accident.
- b) Units which have been modified, altered, or improperly repaired by anyone not specifically authorized by conrad-johnson design, inc.
- c) Units not purchased from an authorized conrad-johnson dealer in the United States for use in the United States.
- d) Normal wear.
- e) Incidental or consequential damages are not covered under this warranty. Some states do not allow the exclusion of incidental or consequential damages, so this exclusion may not apply to you.

Obtaining Warranty Service: To obtain warranty service, the unit must be shipped, along with evidence of purchase, in factory packing to conrad-johnson design (or designated service center) with freight and insurance prepaid by the owner. After repair, the unit will be returned with freight and insurance prepaid by conrad-johnson design to any destination in the United States.

All implied warranties, including merchantability and fitness for a particular purpose are limited in duration to the duration of this express warranty. Some states do not allow limitations on the duration of implied warranties so the above limitations may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Conrad-Johnson products purchased outside the United States are covered by warranty terms of the importing distributor in the country in which the product was originally purchased, which may differ from the terms set out herein. Importing distributors are not obligated to provide warranty service for products originally purchased outside their country. Conrad-Johnson will provide warranty service for products outside the

United States, but the customer must pay all shipping, handling and customs costs both to and from our Service Department.

Questions about this warranty should be addressed to:

Service Department
conrad-johnson design, inc.
2733 Merrilee Drive
Fairfax, VA 22031

The Service Department can also be reached by phone at 703-698-8581, or by fax at 703-560-5360

Service

If your conrad-johnson audio component requires service, repack it using the original box and packing material and ship to the Service Department address above. Boxes and packing materials can be obtained from our service department for a nominal charge, if you no longer have yours. Include with the unit a note describing the problem you are having in as much detail as possible. It is especially important for our technician to know if the problem is intermittent. If you want an estimate of cost for out of warranty service, be sure to request it in this note. Be aware that requesting an estimate will delay service to your unit as we will have to contact you for your approval before commencing service.

Registering The Warranty

Please return the enclosed card to the factory within 30 days of purchase to register the warranty.

***I*NSTALLATION**

The D/A-2b dissipates a significant amount of heat, and must be adequately ventilated. Mount the unit horizontally on a flat, hard surface, and take care that the ventilation holes in the bottom are unobstructed. Allow at least two inches of clearance above the unit and keep the cabinet or shelf open at the back. Vertical installation is not recommended.

All D/A-2bs sold in the United States are configured for operation on a 60Hz ac power line producing between 108 and 126 volts. Export versions will have the correct operating voltage and frequency clearly marked on the back panel of the unit, near the ac power cord. In all cases, the actual line voltage should be within + 5/- 10% of the nominal rated voltage.

Electromagnetic Interference (EMI)

Considerable care has been taken in the design of the D/A-2b to minimize its susceptibility to radio frequency interference and other forms of EMI. Choice of materials, physical layout, grounding practice, and power supply design have all been specified with a view to reducing the impact of electromagnetic fields on the performance of this unit. At the same time, however, our primary goal is the accurate reproduction of recorded music in the normal home environment, and we have elected not to compromise this objective by the application of heavy-handed RFI filters, or by using grounding practices that reduce RFI at the expense of degraded audio performance. We find that the approach we have taken has worked extremely well, resulting in only rare instances of EMI problems which could be treated locally as needed, rather than compromising the performance of our product in the 99.9% of installations where EMI is not a problem.

Care in installation can often avoid EMI induced problems. The following practices should generally be observed in any application, and will be especially important where EMI may be a problem.

Interconnect cables should be kept as short as possible (3 meters or less), and shielded cable should be used (cable which has two center conductors, and a separate external shield connected at only one end).

Physical location and cable "dress" can be an important factor in minimizing hum pickup. The installation should situate the D/A-2b away from the preamplifier, and power (ac mains) cords should be dressed to remain at least 4" (100mm) away from the output cable.

Connection

The D/A-2b provides three separate digital inputs (two coaxial, and one optical) and a coaxial digital output. Connect your digital sources (CD transport, Laser Disc Player, digital recorder) to any of these inputs, and a digital tape recorder to the digital output.

Digital Inputs

COAXIAL 1: Transformer coupled coaxial input with BNC connector

COAXIAL 2: Direct coupled coaxial input with phono connector

OPTICAL: TOSLINK optical connector. The TOSLINK connector is supplied with a plug to prevent dust from accumulating on the lens of the receiver. Leave this plug in place whenever this input is unused.

The D/A-2b is optionally available with an additional ST glass optical connector. This option includes a back panel mounted toggle switch to select between the two optical connectors.

Outputs

DIGITAL OUTPUT: A BNC connector is provided to send the digital signal out to another digital device (normally a digital tape recorder).

ANALOG OUTPUTS: These are the audio outputs, to be connected to a line-level input on your preamplifier.

CONTROLS

input: coax one, coax two, optical: This selector switch is used to choose a digital input for listening. The selected digital signal is also sent to the digital output. On units with the optional ST glass optical input fitted, the selecting "optical" on the input selector will connect the optical input that has been selected by the back panel toggle switch.

phase: This switch allows selection of **0** degrees "phase correct" and **180** degrees of phase shift (inverted) in the absolute phase of the audio output signal to compensate for phase incorrect recordings.

on/standby: The D/A-2b digital circuits remain powered at all times. In the on position, this switch turns on the vacuum-tube analog section. The power indicator led will light when the analog section is powered. The "locked" indicator light will be lit any time the digital circuit locks onto an input signal, since the digital circuitry is always powered.

***V*acuum-Tube Replacement:**

The D/A-2b uses two vacuum tubes, both 6GK5s. This tube is a medium gain, high current single triode chosen for low noise and microphonics. The brands of tubes we supply have been chosen by first selecting those brands which are known to be most reliable, then by extensive auditioning of these acceptable brands with the final choices being made solely on the basis of sonic performance. We know of no vacuum tubes available which will improve the sonic performance of your D/A-2b. The tubes in your D/A-2b have been tempered by a controlled burn-in procedure that permits them to perform for a greatly extended period without sonic degradation, then selected for minimum residual noise. Replacement tubes are prepared and selected in the same way. Therefore, we highly recommend that you purchase replacement tube sets from conrad-johnson design.

We anticipate tube life to accommodate two to three years of operation without degradation in normal use - if the D/A-2b is switched off when not in use. If left on at all times, tube life can be exhausted in a matter of a few months.

***G*etting The Most From Your D/A-2b**

In a system of commensurate high quality components, the Conrad-Johnson D/A-2b offers an extraordinary level of sophistication and refinement in music reproduction. To get the best performance out of any audio system, there are 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 almost 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 terms of 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 either preserves the phase of the incoming signal, and is said to be phase correct, or inverts the phase and is said to be phase inverting. It is unimportant whether an individual component is phase correct or phase inverting, as long as the system as a whole is phase correct. This will be the case if the number of phase inversions is even (or zero). A system with an odd number of phase inversions can be corrected by adding one more inversion by reversing the positive and negative speaker leads.

We recommend that you connect your system for correct absolute phase, and use the phase invert switch on the D/A-2b to correct for phase incorrect recordings.

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 little better than

average. To complicate matters, our experience suggests that the choice of interconnects will be system dependent - those that are top ranked on one 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 questions about the installation or function of your D/A-2b do not hesitate to call Customer Service at (703) 698-8581.

Specifications

Output @ 0 dB: 1.0V
Frequency Response: 5Hz to 20kHz +0,- .5 dB
Hum and noise: 92dB below 1.0V output
Output impedance: less than 200 ohms

Mechanical:

Dimensions: : 14.375"D x 19"W x 3.315"H
Net Weight: 16 lbs.

Fuses

The D/A-2b has fuses on the ac power line to protect each of it's transformers. Failure of a fuse is a symptom of a more serious problem, and a competent service technician should be consulted. ***In no event should the fuse be replaced with a value or type different than that originally supplied.*** The correct fuses are:

	120 volt mains	240 volt mains
F1:	1/2 amp slow blow	1/4 amp slow blow
F2:	1/2 amp fast blow	1/4 amp fast blow

