

**OWNER'S MANUAL: CONRAD-JOHNSON PV9A
VACUUM-TUBE PREAMPLIFIER**

conrad-johnson design
703 - 698 - 8581

Congratulations on your purchase of the conrad-johnson model PV9a vacuum tube preamplifier. You have acquired one of the finest pieces of musical reproduction equipment available today. The PV9a was designed to provide audiophiles with a reference quality preamplifier capable of accurately reproducing the dynamics, tonalities and textures of a live musical performance. The design and materials have been carefully selected to yield many 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 PV9a. **NOTE THAT THE PV9a LINE STAGE IS PHASE INVERTING.** See the section entitled "Getting the most from your PV9a" for details on correct hookup to your system.

LIMITED WARRANTY FOR THE conrad-johnson PV9a

1. conrad-johnson design, inc. warrants to the original purchaser that the conrad-johnson PV9a will be free of defects in materials and workmanship for a period of three years from the date of original purchase.

2. 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 limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above limitations or exclusions 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.
2733 Merrilee Drive
Fairfax, VA 22031

REGISTERING THE WARRANTY

Please return the enclosed card to the factory within 30 days of purchase to register the warranty. The warranty may be transferred to a new owner if it has been properly registered initially and if the registered owner sends a signed notice providing the name and address of the new owner and the model and serial number of the unit.

Proper registration of the warranty is important! Not only will it preserve transferability of your warranty, it will also 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.

I **INSTALLATION**

Because of the number and type of vacuum tubes used, the PV9a dissipates a significant amount of heat (approximately 30 watts). 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 three inches of clearance should be provided above the unit and the cabinet or shelf should be open at the back. Vertical installation is not recommended.

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

The PV9a requires an ac power line providing between 108 and 125 volts at 50 to 60 Hz. Alternatively, the PV9a can be reconnected internally for operation on 220 volt power lines. Consult your dealer for details about the conversion.

CONNECTION

Phono input: This input provides the amplification and equalization required by moving magnet and high output moving coil cartridges. The input impedance is the industry standard 47,000 ohms shunted by approximately 100 picofarads capacitance. This is well suited to nearly all moving magnet and many high- output moving coil cartridges. If necessary, the input impedance can be lowered by soldering a resistor across (from center pin to ground) the input jack. To achieve a desired input resistance of RD, use the following formula to compute the required additional resistance RA:

$$RA = 47000 * RD / (47000 - RD)$$

Some moving magnet cartridges require higher capacitance for optimum performance. Increasing the input capacitance may be achieved by soldering a suitable value capacitor across the phono input jack. Use polystyrene capacitors for this purpose.

Tuner, cd, tape 1, tape 2: These high level inputs are electrically equivalent. They present a 35k ohm load to the source. The outputs of your tape recorders should be connected to tape 1 and tape 2.

Record output: The two pairs of record outputs connect the selected signal to your recorders or external processing loop (eg. equalizer). The output signal is not affected by the level control. Connect "record out" to the inputs of your tape recorders or external processors.

Output 1, Output 2: Connect this output to the input of your amplifier(or crossover in a bi-amped system). We recommend the use of an amplifier with an input impedance of 10k ohms or higher. Since the PV9a inverts phase, it may be necessary to invert the speaker leads to maintain correct phase. See the section on "Getting the most out of your PV9a" for an explanation of this.

USE OF EXTERNAL TONE CONTROLS OR OTHER EXTERNAL SIGNAL PROCESSING DEVICES: Use Tape 1 and Record 1 for your tape recorder, as described in the preceding two paragraphs. Connect the output of the tone controls to Tape 2 and the input of the tone controls to Record 2. The Monitor 2 position of the monitor switch will insert the tone controls in the circuit; the Source position will provide flat, unprocessed response. This method of connection will permit the use of tone controls with tape playback by selecting Tape 1 in conjunction with Monitor 2.

AC OUTLETS: Four AC outlets are provided for your convenience: two, marked unswitched, are always live; the remaining two are switched by the preamp's power switch. THE TOTAL CURRENT REQUIRED OF THE SWITCHED OUTLETS MUST NOT EXCEED 5 AMPERES. This precludes the use of these outlets for high powered amplifiers. It is preferable not to switch power amplifiers by the preamplifier power switch in any case.

CONTROLS

OFF, POWER: Because of the delayed warmup characteristics of vacuum tube equipment, a time delay muting circuit is incorporated in this preamplifier. Output 1 and output 2 are grounded via a relay for approximately 90 seconds after the unit is turned on in order to suppress warm-up transient noises. The relay grounds the outputs again immediately at turn off or in the event of any power line interruption.

SELECTOR: PHONO, TUNER, CD, TAPE 1, TAPE 2. This selector switch is used to choose an input. The selected source will be available at the source position of the tape monitor switch and at both record outputs. Note that a tape deck output is fed back to its own record input—CARE MUST BE TAKEN NOT TO SELECT TAPE 1 OR TAPE 2 WHILE THE TAPE DECK IN QUESTION IS IN RECORD MODE. Similarly, if tape loop 1 is used for an external signal processor, Tape 1 should never be selected (and, of course, there is no reason to select it since the external processor is not itself a program source). Failure to observe these precautions will create an unstable feedback system and may generate a "howling" sound.

TAPE 1/TAPE 2, SOURCE/MONITOR: Tape monitoring is accomplished via two pushbutton controls. The first, labeled Tape1/Tape 2 selects the tape deck from which you will be monitoring. The second, labeled Source/Monitor lets you compare the original program source with the playback from the chosen tape deck. These controls permit the user to listen to a tape from one deck while recording material from Phono, Tuner or CD inputs on a second tape deck.

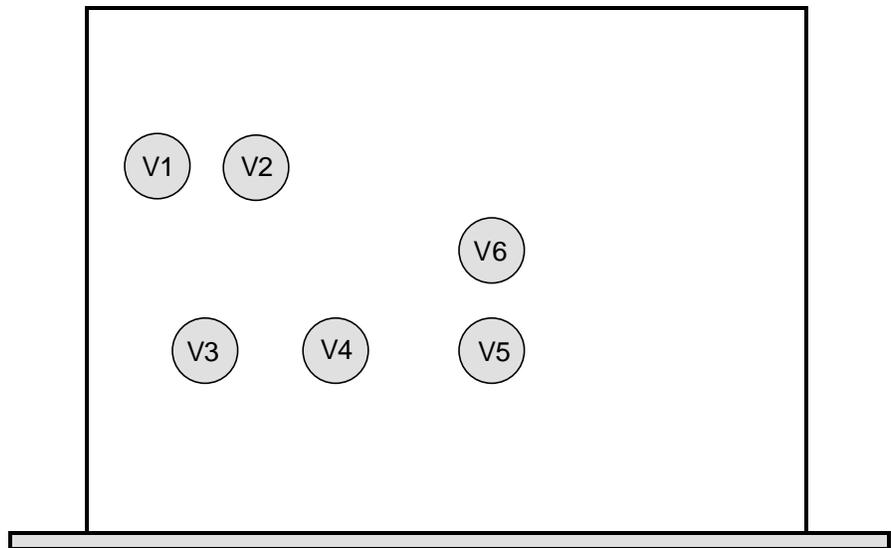
BALANCE: This control is an eleven position stepped attenuator, adjusting the channel balance in approximately .75 dB steps. The maximum attenuation is about 4 dB, so both channels will be present even in the extreme positions. In normal use the control will be centered.

LEVEL: The PV9a volume control is an extremely precise control, maintaining channel to channel accuracy to within 1/2 dB throughout its rotation.

V*VACUUM TUBE REPLACEMENT*

The audio circuit of the PV9a uses six vacuum tubes of three different types: two 12AX7 (V1 and V2), two 5751 (V3, and V5) and two 6FQ7 (V4 and V6). Each type has been carefully chosen for its circuit application. It is well known that tubes of a given type vary sonically depending on the manufacturer. We have chosen the brands of tubes we supply based on extensive auditioning of available brands. The choice of brands has been made solely on the basis of sonic performance without regard for either cost or prestige. We know of no vacuum tubes available which will improve the sonic performance of your PV9a. Also, the tubes in your preamplifier have been tempered by a controlled burn in procedure that permits them to perform for a greatly extended period without sonic degradation. We anticipate two or three years of operation 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.

TUBE LOCATIONS



Tube Complement:

V1, V2	12AX7
V3, V5	5751
V4, V6	6FQ7

Fuse: The AC line is fused to protect the transformer. This fuse will not fail in normal operation. Failure of the 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 the one supplied by the factory.

100V, 120V: 3/4 amp 3AG slo-blo
220V, 240V: 1/2 amp 3AG slo-blo

***G*ETTING THE MOST FROM YOUR PV9a**

The Conrad-Johnson PV9a offers an unparalleled level of sophistication and refinement in music reproduction, but it cannot transform an inferior stereo system. Only high quality amplifiers and loudspeaker systems will be capable of fully revealing the capabilities of this precision instrument.

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 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 is either phase correct or phase inverting (including the source and speakers-these are normally phase correct). 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).

THE PV9a IS PHASE INVERTING. If your system has an odd number of inversions, then you must add one phase inversion. This will be the case if the PV9a is the only unit in the chain that inverts phase. **THIS IS CONVENIENTLY DONE BY REVERSING THE POSITIVE AND NEGATIVE CONNECTIONS TO YOUR SPEAKERS** (be sure to reverse both channels).

If you are not sure about the phase of every piece 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 recordings are phase correct (including

some "audiophile" recordings), so listen to several before concluding your investigation of absolute phase.

AC LINE POLARITY

Each piece of electronic equipment in your system is subject to minute ac leakage currents to the chassis. Since the chassis of components in a system are usually connected via the ground side of the interconnect wires, these leakage currents are superimposed on the musical signals. It is possible to minimize these current flows by carefully selecting the way in which each component is plugged into the wall outlet. Because the power cord on the PV9a is not polarized, it can be plugged in two ways. It will normally sound better in one orientation than in the other. The same will be true of any electronic device in your system.

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.

TIP

Warm up the PV9a before listening: The sonic performance of the PV9a improves noticeably as the unit warms up. The midrange becomes more lucid, the highs smoother, and the soundstage expands. The warm up period can be expected to last several minutes.

Questions: If you have questions about the installation or function of your PV9a do not hesitate to call Customer Service at (703) 698-8581.

PV9a SPECIFICATIONS

Gain: Phono stage 47dB
High level 31dB

Output: Maximum 20V
Rated at 2.5V

Phase: Line stage inverts phase of all inputs.

Phono overload: in excess of 200 mv at 1KHz

Response: bandpass 2Hz to more than 100 KHz
RIAA equalization to +/- .25dB (20Hz-20KHz)

Hum and noise(20Hz-20KHz):
phono inputs: 77dB below 10mv input
Line level: 86dB below 2.5V output

Distortion: THD less than .25%
IM less than .25%

Output impedance: less than 200 ohms

Dimensions: 19"W x 5.25"H x 14.25"D

Weight: 20 lbs.

SERVICE

In the event your conrad-johnson PV9a stereo preamplifier requires service, repack it with the original packing material and ship via United Parcel Service (UPS) to:

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

Be sure to include a copy of your sales receipt from the original purchase, along with 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 for a nominal charge.