



***Conrad-Johnson Owner's Manual:
MET150 Multi-channel Enhanced-Triode Amplifier***

conrad-johnson It just sounds right.

Thank you for selecting the MET150 to power your multi-channel audio system. The MET150 draws on three decades of research at conrad-johnson into the reproduction of recorded music. The result is a power amplifier with a remarkable ability to recreate the dynamics, textures, tonalities, and ambience of live musical performances. With the MET150, we believe that you will experience the excitement of discovery in hearing more from your favorite recordings than ever before.

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 operation of the MET150 is quite straightforward, please take a few minutes to read this manual for useful information on its installation and operation.

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 MET150, 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 in these cases, 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 conrad-johnson service department can also be reached by e-mail at service@conradjohnson.com, 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 purchased through our service department 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 approval before commencing service.

Registering The Warranty

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

Installation

As is the case with any power amplifier, the MET150 dissipates a significant amount of heat. Provision must be made for adequate ventilation. Mount the unit on a flat, hard surface, taking care that the ventilation holes in the bottom are unobstructed. Maintain at least six inches of clearance above the unit, and at least 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.

All MET150s sold in the United States are configured for operation on a 60Hz ac power line producing between 108 and 126 volts. Export versions of the MET150 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 MET150 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 preamplifier well away from the power amplifier, and power (ac mains) cords should be dressed to remain at least 4" (100mm) away from input/output cables.

Connection

INPUT: Connect the preamplifier to your MET150 amplifier at the RCA type connectors located on the back of the amplifier.

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

The five channels should be connected in correct "relative phase". This means that when the same signal is applied to all channels, the all speaker diaphragms will move synchronously - in and out together. Terminals on speakers are usually coded - one designated "C", "ground", "-" or black, the other designated "+" or red. "In phase" connection of the speakers can normally be achieved by taking care to connect the wire from the "+" amplifier terminal to the red or "+" coded terminal on each speaker, and connecting the "-" terminal to the black or "-" coded terminal on each speaker. In phase connection of the left and right front speakers can be readily ascertained by ear. Listen to a recording of a solo vocalist (use a mono recording if available). With the speakers in phase the voice should be clearly focused between the left and right front 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.

REMOTE TURN-ON: Your MET150 features a circuit to switch the amplifier on in response to an applied dc voltage - a facility incorporated in many home-theater processors. Connect a pair of wires ("zip" cord or similar light-weight wire will work fine) from the controlling unit (eg. your multi-channel preamplifier or surround sound processor) to the Remote Trigger terminal strip on the back of your MET150. Be sure to observe the indicated polarity. Switch the associated toggle switch to the Remote Trigger position. When a dc voltage between 5 and 15 volts (supplied by your control unit) is applied to the MET150's turn-on circuit, the amplifier will switch on. When the dc voltage is removed, it will switch off. *NOTE: Switching the rear panel toggle switch to the Remote Trigger position will disable the front panel power switch.*

Vacuum Tube Replacement

The MET150 uses five vacuum tubes, all type 6922. 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 MET150. 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 amplifier is switched off when not in use. If it is left on at all times, tube life can be exhausted in a matter of a few months.

Getting The Most From Your MET150

In a system of commensurate high quality components, the Conrad-Johnson MET150 offers an unparalleled 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 that 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).

The MET150 is phase inverting. If your system has an odd number of inversions, (for example, if your MET150 is the only phase inverting component in your system) then you must add one phase inversion. This is conveniently done by reversing the positive and negative connections to your speakers (be sure to reverse all 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.

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.

Performance Tip

Warm up the MET150 before listening: The sonic performance of the MET150 improves noticeably as the unit warms up. The mid-range becomes more lucid, the highs smoother, and the sound-stage expands. The warm up period can be expected to last about fifteen minutes.

Questions: If you have questions about the installation or function of your MET150 do not hesitate to call Customer Service at (703) 698-8581.

Specifications

Power: 150 Watts per channel RMS into 8 Ohms from 20Hz to 20KHz at no more than 2% total harmonic distortion. 250 Watts per channel into 4 Ohms.

Sensitivity: 1.5 V rms to rated power

Frequency Response: 20Hz to 20 kHz +0/- .25 dB

Hum and Noise: 104 dB below rated power output

Phase: phase inverting

Input Impedance: 100 kOhms

Mechanical

Dimensions: 16.125"D x 19"W x 7.188"H

Net Weight: 65 lb net

Fuses

The MET150 has eleven user accessible fuses – an ac mains fuse located in a drawer in the IEC type ac mains power inlet socket and ten B+/B- fuses located in fuse holders on the back panel. These fuses should only be replaced by fuses of the same value and type. The correct fuses are:

AC Mains Fuse:

5x20mm 10 amp T-type if configured for 100 or 120V:

5x20mm 5 amp T-type if configured for 220 or 240V.

B+/B- Fuses:

3AG 5 Amp, fast blow