



***Conrad-Johnson Owner's Manual:
MET1 Multi-channel Enhanced-Triode Preamplifier***

conrad-johnson It just sounds right.

Thank you for selecting the conrad-johnson MET1 multi-channel enhanced-triode preamplifier as the control center for your audio system. The MET1 is designed to allow you to enjoy movie surround sound and multi-channel music in a simple and direct way, without compromising the two-channel performance of your system. The MET1 is capable of remarkably faithful recreation of the dynamics, textures, tonalities, and ambience of live musical performances. 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 the MET1 has been designed to operate in an intuitively apparent way, you will find useful information on its installation and operation in this manual. Please take a few minutes to read the manual to better understand the features and capabilities of your MET1. Note that this unit is phase inverting. See the section entitled "Getting The Most From Your MET1" for details on correct hookup in your system.

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 MET1, and to provide any needed service both during, and after the warranty period. Our goal is to heighten your enjoyment of recorded music.

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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

I *nstallation*

The first step in preparing your MET1 preamplifier for use is to install the vacuum-tubes. To do this, remove the top plate of the tube guard by removing the three socket-head screws using the supplied hex-head screwdriver. The MET1 uses six type 8080 tubes. After checking the pin orientation, insert one tube in each tube socket (the tubes are interchangeable). Next, fit two of the included silicone rubber rings over each tube, spaced at roughly 1/3 and 2/3 distances. These rings will minimize the effects of air-borne microphonics on the tubes. Finally, reinstall the tube guard.

Set Up

To maintain proper ventilation, mount the MET1 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.

All MET1s 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 MET1 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 MET1 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.

C *onnection*

STEREO SOURCE CONNECTIONS: There are 3 line-level stereo inputs labeled PH/AUX2, CD, and AUX1 for your convenience. Connect your line-level stereo sources (CD, DCC, Mini-Disc, VCR, tuner, cassette deck, phono preamplifier, etc.) to the input of your choice on the rear panel.

MULTI-CHANNEL SOURCE CONNECTIONS: Your MET1 has provision for two sets of multi-channel inputs, labeled DVD/MC1, and MC2. These allow for the connection of two separate 6-channel sources (e.g. DVD-A and SACD players). Each multi-channel source is provided with 6 inputs, arranged in three pairs labeled <Left Front / Right Front>, <Center / Subwoofer>, and <Left Rear / Right Rear>. Alternatively, the other input can be used as an additional stereo input – just make connections to the Left Front and Right Front inputs.

TAPE RECORDER CONNECTIONS: The MET1 includes a stereo pair of RECORD OUT connectors to provide for recording from the stereo inputs. Connect to the inputs of your tape recorder.

AMPLIFIER CONNECTIONS: Be certain your power amplifiers are all turned OFF, then connect to the MET1's 6-channel outputs.

TRIGGER OUTPUT: When the MET1 is switched on, these terminals provide a dc voltage that can be sensed by the “trigger” circuits used to switch on some power amplifiers. If your amplifier employs such a trigger circuit, and you wish to switch it on and off from the preamplifier, connect these outputs to the trigger input on your amplifier. Observe the coded polarities (“+” and “-”).

CONTROL IN: A connection for wired remote control input. This allows the MET1 to obtain its control instructions from an IR receiver located on another unit, or directly from a wired system remote-control panel. This connection accepts a mini-jack plug. NOTE: while a plug is inserted into this connector, the IR receiver in the MET1 will be bypassed and control signals only accepted through the wired input.

CONTROL OUT: A connection for wired remote control output. This output passes along remote control signals received at its CONTROL IN connection or at the IR receiver if no plug is connected to the CONTROL IN.

C ontrols

The MET1 has two basic modes of operation: *Listening Mode* and *Set-Up Mode*. In *Listening Mode*, you may listen to multi-channel sources or to stereo sources. When listening to any of the three stereo sources, an *Ambience Retrieval Mode (ARM)* is available which will synthesize six-channel sound from a two-channel source. When properly adjusted, ARM can create a very convincing acoustical environment, especially on live recordings. (We recommend adjusting the ARM settings so that the rear channels are barely audible, only contributing a sense of space to the playback, and the level of the center channel is well below the left and right channels).

The *Set-Up Mode* is used to adjust the relative levels of the six channels for multi-channel sources, and for ARM.

Note: All front panel and remote controls are “tactile” switches which operate by pressing and releasing.

<power> (front panel only): Press the switch labeled power to switch the preamplifier on. The MET1 uses a time delay auto-muting circuit to suppress transients at turn-on and turn-off. All outputs are grounded via relays for approximately 45 seconds after the unit is turned on. During auto-muting, the selected input indicator led will flash. Level and balance control functions are disabled during auto-muting, but input selection can be changed. The muting relay also grounds the outputs immediately at turn-off or in the event of any power line interruption. After the completion of auto-muting, the selected input indicator led will be lit steadily and the level display will light. When the MET1 is turned off (by pressing the power switch again), the selected input indicator led will remain steadily illuminated.

When first connected to ac mains, or after an interruption of power, the MET1 will turn on with default settings (after auto-muting), with levels set at 50, and DVD input selected. In subsequent sessions, as long as the ac mains has not suffered a power outage, the unit will turn on at the last used volume setting and input.

<mute>: Pressing the mute button will silence the preamplifier main outputs on all six channels (but does not affect the TAPE outputs), and set the level displays to zero. Pressing the mute button again will restore the previously selected level setting.

Pressing and holding the mute button on the remote for three seconds will toggle the MET1 on and off.

<vol up>, <vol dn>: Level setting on the MET1 is achieved by advanced level control devices adjusting all channel levels in 200 steps of .5 dB per step. The steps are numbered 0 through 99, with 0 being silence, and 99 being maximum volume. The second decimal point on each display is used to indicate the half dB steps. For example, after first turning the MET1 on, pressing level up once will move the display from **<50 50>** to **<50. 50.>**, indicating a .5 dB increase in level.

The level control adjusts all six channels up and down together in *Listening Mode*, and with the Left Front channel selected in *Set-Up Mode*. For the remaining five channels in *Set-Up Mode*, the level control adjusts the level of the selected channel relative to the Left Front Channel. The left display indicates the channel being adjusted, and the right display indicates level of that channel in dB above or below the Left Front Channel (the first decimal point is illuminated to indicate that the channel being adjusted is set below the level of the Left Front channel). As in *Listening Mode*, the second decimal point is used to indicate .5 dB steps. As an example, a display reading of **<C 1.2.>** would indicate that the Center Channel is adjusted 12 dB below the Left Front Channel.

<balance>: In *Listening Mode*, these controls shift the balance to left or right in increments of .5 dB. Both Front and Rear channels are adjusted by alternately lowering one channel, then raising the other, leaving the overall level virtually unchanged. Center and Subwoofer outputs are unchanged. In *Set-Up Mode*, the BALANCE controls select the channel that is being adjusted. When *setup* is toggled on with one of the multi-channel inputs selected, or one of the stereo inputs in ARM, LF is the initial setting. Pressing [↔] steps forward through Center (C), Right Front (rF), Right Rear (rr), Left Rear (Lr), Subwoofer (S) then back to LF. Pressing [←←] steps through the sequence in reverse.

Channel offsets are retained in system memory as long as the ac mains power is maintained. The settings will be lost if the unit is unplugged or if there is a power outage. There are two separate memory registers, one for the settings for your multi-channel inputs, and a separate memory register for the settings for the ARM setup. Typically, the LF, C, RF, RR, and LR channels are adjusted for equal levels for the multi-channel sources, whereas you will most likely want to attenuate the center and rear channels in ARM mode.

<setup>: This switch toggles the MET1 between *Listen* and *Set-Up Modes*.

<arm>: Pressing the ARM switch with a stereo source selected toggles between Stereo and Ambience Retrieval Mode. In Ambience Retrieval Mode the Center, Subwoofer and Left and Right Rear channels are derived from the Left and Right channels of a stereo source. Note that ARM is not available on either of the two multi-channel inputs.

V *acuum Tube Replacement*

The MET1 circuit employs six vacuum tubes, all 6C4/8080s. 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 MET1. 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, and 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 preamplifier is switched off when not in use. If the preamplifier is left on at all times, tube life can be exhausted in a matter of a few months.

Getting The Most From Your MET1

In a system of commensurate high quality components, the conrad-johnson MET1 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 audio 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 MET1 is phase inverting. If your system has an odd number of inversions, (for example, if the MET1 is the only phase inverting unit in the chain) 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 MET1 before listening: The sonic performance of the MET1 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 about fifteen minutes.

Questions: If you have questions about the installation or function of your MET1 do not hesitate to call Customer Service at (703) 698-8581.

S *pecifications*

Gain: 25.5 dB

Maximum Output: 6V rms

Bandpass: 2Hz to more than 100kHz

Hum and Noise: 100 dB below 2.5V output

Distortion at 1.0 V output: less than .1% THD or IMD

Phase: inverts phase of all inputs at main out

Output Impedance: 200 ohms

Mechanical

Dimensions: 15.5"D x 19"W x 5"H

Net Weight: 27 lb net

Fuses

In addition to an ac mains fuse (F3) located in the IEC inlet socket, the MET1 has individual fuses located on the main pc board protecting each of its two power transformers (one for the tube circuitry, one for the control circuits). A failure of any of these fuses is a symptom of a more serious problem, and a competent service technician should be consulted. In no event should these fuses be replaced with a value or type different than that originally supplied. The correct fuse values are:

If configured for 100 or 120V:

F1 1/2 amp, slow blow

F2 1/4 amp, slow blow

F3 T800ma

If configured for 220 or 240V:

F1 1/4 amp, slow blow

F2 1/8 amp, slow blow

F3 T400ma