



VAC Master Preamplifier

Operation & Maintenance Information



Valve Amplification Company

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SAFETY NOTICES, WARNINGS, AND CAUTIONS (ENGLISH)

The MAINS plug is used as the disconnect device. Disconnect the mains plug from the apparatus before servicing the unit.

Operate only from an AC MAINS SUPPLY of the voltage indicated. If voltage conversion is necessary it must be done at the VAC factory or by the importer.

The MAINS SUPPLY must be EARTHED. Do not defeat or remove the MAINS cord safety ground connection. Do not connect the mains cord to an outlet that is not properly earthed.

Provide adequate ventilation - allow at least 3 inches above and to each side.

Do not place in a completely enclosed cabinet.

Do not stack other equipment on top of the VAC unit.

Do not operate on carpet or any other surface that might block air flow. Do not impede air flow.

Keep all flammable objects away from the amplifier.

No naked flame sources should be placed on or near the apparatus.

Do not leave the apparatus unattended in operation.

Apparatus must not be exposed to dripping or splashing. Do not place objects filled with liquids on the apparatus.

This apparatus is heavy. Be certain to install it in a secure location from which it can not fall or tip over. Obtain appropriate assistance to unpack, move, and install the apparatus.

Never operate the apparatus without all covers and cages securely in place.

Vacuum tubes become hot enough to cause serious burns. Never touch a tube when the apparatus is on; it may take several minutes for it to cool down after the apparatus is switched off.

Do not touch a tube if the glass is broken; the internal structure carries high voltage. Unplug the apparatus and wait 30 minutes before attempting to remove such a tube.

Recommandations de sécurité (French)

Le câble d'alimentation est utilisée comme interrupteur principal. Débranchez le cordon d'alimentation de l'appareil avant d'intervenir sur l'appareil.

L'appareil ne doit être utilisé que sur la tension indiquée. Si un changement de voltage est nécessaire, il doit être effectuée par VAC ou par l'importateur.

L'appareil doit être relié à la terre. Il ne faut pas supprimer pas ou déconnecter la terre sur le cordon d'alimentation. Ne pas brancher le cordon d'alimentation à une prise qui n'est pas correctement mise à la terre.

Il faut assurer une ventilation adéquate - laisser au moins une dizaine cm au-dessus et de chaque côté de l'appareil.

Ne placez pas l'appareil dans un meuble complètement fermé.

Ne pas empiler d'autres appareils sur le dessus du VAC.

Ne pas utiliser sur un tapis ou toute autre surface qui pourrait bloquer la circulation de l'air. Ne pas faire obstacle à l'écoulement d'air.

Conservez tous les objets inflammables loin de l'amplificateur.

Aucune flamme nue ne doit être placée sur l'appareil ou à proximité.

Ne pas laisser l'appareil sans surveillance lorsqu'en fonctionnement.

L'appareil ne doit pas être exposé à des éclaboussures. Ne placez pas d'objet rempli de liquide sur l'appareil.

Cet appareil est lourd. Veillez à l'installer dans un endroit sûr d'où il ne peut pas tomber ou basculer. Faites-vous aider pour débarrer, déplacer et installer l'appareil.

Ne faites jamais fonctionner l'appareil sans que tous les couvercles et les cages soient bien en place.

Les tubes chauffent suffisamment pour causer des brûlures graves. Ne jamais toucher un tube lorsque l'appareil est allumé, cela peut prendre plusieurs minutes pour qu'il refroidisse après que l'appareil est éteint.

Ne touchez pas un tube si le verre est cassé, la structure interne est traversée par des courants élevés. Débranchez l'appareil et attendre 30 minutes avant de tenter de retirer un tel tube.

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INTRODUCTION

The VAC Master Preamplifier is one of the world's finest audio preamplifiers. Its unusual topology, premium parts, and flexibility make it a pleasure to hear and operate.

The line stage is, in effect, a small Class A₁ power amplifier, capable of driving loads as low as a few hundred ohms. This is a stark contrast to normal preamplifiers, which claim a low output impedance but completely collapse when asked to deliver current. The Master circuit has an internal 300 ohm output load, and is loading with virtually any external load, delivering an effortless, musical performance.

There is no loop feedback and no coupling capacitors in the line section. All active elements are triode tubes, the purest, most linear amplifying devices yet invented. Output matching is accomplished by way of superb output transformers. As a side benefit, different output grounding configurations are possible, optimizing performance into either balanced or single-ended loads, and allowing ground loops to be broken.

The optional phono stage uses six twin triodes operating without loop feedback. Gain is moderately high, with a very low noise floor. Low output MC cartridges are accommodated by means of high quality matching transformers, which contribute voltage gain without noise, resulting in detail that emerges from a remarkably dark and neutral background. A completely separate power transformer and filter system is provided for the phono stage, eliminating all unwanted interaction with the line stage.

Remote volume control is implemented via a motorized mechanical device. This is somewhat more expensive, but provides two major advantages. First, the Master Preamplifier controls are completely intuitive to use. Second, we avoid the sound degradation attendant with VCAs, relays, transistor switches, and switched resistor arrays.

The massive chassis is machined from quarter inch thick aluminum plate and fitted with damping material for a strong, resonance-resistant structure. The half-inch thick fascia has a hand rubbed gloss lacquer finish.

The audio circuitry and power supply are completely hand wired.

The Master Preamplifier is designed not to the latest fad but to substance, for the highest possible sound quality. Time spent familiarizing yourself with this manual will be well rewarded.

INSTALLATION

- 1) Provide adequate ventilation.
- 2) Do not operate on carpet or any other surface that might block air flow.
- 3) The chassis will become warm in normal use.
- 4) Do not allow the chassis to touch any metal parts, such as the frame of an equipment rack. This might create a parallel ground path that could degrade the sound of your system.
- 5) Input connection is via single ended RCA jacks or XLR jacks (which can be from balanced or unbalanced sources). Output can be on RCA or XLR jacks, and can be set for balanced or unbalanced loads, with or without ground connection at the preamplifier (early units only). **IMPORTANT: READ THE SECTION ON "OUTPUTS & GROUNDING SWITCH"**. Connect line level inputs (CD, Tuner, Tape, etc.) to the appropriate RCA input jacks on the rear panel. Note: with the exception of Phono (when fitted), all inputs are "line level"
- 6) Connect phono cables to the rear panel MM or MC inputs labeled "Phono." Connect the ground wire from the turntable or phono cable to the "Ground" terminal provided on the rear panel. Set the MM / MC switch to reflect the input jacks being used.
- 7) Connect the power cables from the power supply to the preamplifier. Note that each has a locating key and a locking collar. Be sure to insert the connector properly, and fully tighten the locking collar.
- 8) Connect the input and output cables.
- 9) Connect the power supply to the correct voltage source. Avoid power conditioners that float the ground pin. **ALWAYS** connect power cord to component before plugging it into an AC outlet, and make sure that unit's power switch is set to the "off" position before making the final connection. For best performance, try to route the power cord away from signal cables.
- 10) Pay close attention to power quality, and be aware that different power cords can alter the sound.
- 11) Set the logo illumination switch to bright or dim.



INPUTS (back panel)

There are five line inputs. Three pairs (L1, L2, L3) use RCA jacks. The other two inputs (L4, L5) can accept either RCA unbalanced or XLR balanced sources; by each of these sets of jacks you will find a toggle switch that must be set to the correct mode.

Not all sources with XLR connectors are balanced. Many are unbalanced, with pin 2 or pin 3 tied to ground. The Master Preamplifier accepts such sources, as well as true balanced sources.

One pair of RCA or XLR jacks accommodate a home theater surround sound processor (left & right front channels). When the CINEMA selection is made, the output from the processor is routed directly to the power amplifier at a fixed gain. This allows volume levels to be under the sole control of the processor, allowing easy integration of your high-end stereo system into a home theater system. Just as with Line 4 and 5, the balanced/SE switch must be set to match your source.

Units without the optional phono section have two RCA jacks labeled "MC". These act as a line level input (L6), engaged when the SELECTOR is set to "PHONO".

Units with phono have two sets of RCA jacks, labeled "MC" and "MM", to accept phono cartridges of low or high output. The switch should be set to "MM" or "MC" to match the inputs used. The ground lead from the turntable should be connected to the binding post located by these jacks.

OUTPUTS & GROUNDING SWITCH (back panel)

Up until serial number 1620801 this is a three position switch. The extreme positions are labeled "SE" and "BAL". The center "FLOAT" position is not labeled, but can be used with either balanced or single-ended power amplifier inputs. On later units there is no center "FLOAT" position.

Main outputs are available as unbalanced via RCA jacks or fully balanced via XLR jacks. You may use either set, *but not both simultaneously*. The GROUND switch must be set correctly for the output configuration being used. Incorrect setting will result in either excessive buzz, or cause gross distortion of frequency response and output.

For power amplifiers with RCA input jacks, you will normally use the "SE" setting. You may also choose "FLOAT" (if fitted) if it is necessary to break a ground loop.

For power amplifiers with XLR input jacks, you must determine if the input is truly balanced, or if either pin 2 or 3 is actually tied to ground (unbalanced XLR).

For true balanced inputs you may choose between "BAL" and "FLOAT" (if fitted) for lowest hum level.

For power amplifiers with unbalanced XLR inputs, select "FLOAT". If the amplifier ties pin 3 to ground, you may also use "SE". Do NOT use "XLR GND".

For either balanced or unbalanced outputs, two sets are provided for biamplified installations.

OPERATION

Before turning the power switch to the “on” position, you might also want to turn the “Volume” control fully counterclockwise.

Note that when adjusting volume via the remote control, you will hear a “buzz” from the chassis, which comes from the motor drive system.

Mute is automatically engaged when switching on the unit. The mute state is indicated by the VAC logo being illuminated in red. When un-muted, the logo will be blue. (Note: the logo illumination may be set for bright, dim, or off via the front panel switch.)

Allow the preamplifier to warm up for a minute before you un-mute the unit; failure to wait can cause a transient to be sent through your power amplifier that might cause damage to your loudspeakers.

As with all high fidelity products, the sound characteristic of the VAC changes somewhat as it warms up. Best sound will be achieved after about 15 minutes of operation.

Any time that the VAC Master Preamplifier has not been used for a few weeks the sound may be different. This is also normal for high resolution audio equipment. Optimum sound should return after a few hours of operation, preferably with an audio signal.

Please note that although your VAC System has been run for 48 hours at the factory, it will continue to "break in" for approximately 150 hours. Also be aware that many components display the need for a new break in period after being transported in unheated cargo aircraft.

FRONT PANEL CONTROLS

Although most of the front panel controls (Volume, Power, Mute) are self explanatory, VAC has outfitted this unit with several advanced features which bear further description:

Volume: This is a continuous control attached to a motor system for remote control function. You will hear a motor “buzz” from the chassis when adjusting via the remote, and feel a slight ‘texture’ from the motor drive when adjusting by hand.

Phono Section: When fitted, input “6” is connected to a discrete, pure tube phono preamplifier, providing 44 dB of gain, suitable for use with MM (moving magnet) and many high-output MC (moving coil) cartridges. An MC step up interface can be switched in for 64 dB of gain, making the Master Preamplifier suitable for most low output cartridges.

Cinema: Switches between “Source” and “Cinema” (home theater pass-through mode). In the “Source” position, input selection is determined by the Source Selector Switch. The “Cinema” position provides access to one of the Master Preamplifier’s most unusual feature. When set in the “Source” position, input choice is governed by the Input Selector switch. This is the normal setting, and enables the unit to be used as a typical preamplifier. Rotating the control clockwise to the “Cinema” position bypasses all preamplifier controls (including volume) and passes the output from your surround sound processor (i.e., the front left- and right-channel outputs of a multichannel processor) directly to your power amplifier. In this case, the users’ analog stereo sources would be connected, as usual, to the line, phono and tape inputs. A/V inputs (DVD, Laserdisc, DSS, etc.) would be connected to the home theater processor, and the processor’s main outputs would be connected to the pair of rear panel RCA jacks labeled “Home Theater Direct”. When the control is set to the “Cinema” position, the Master Preamplifier functions as a pass-through ONLY, and is controlled by the external processor, preamplifier, or other component connected to the “Home Theater Direct” inputs.

Mute: This knob is spring loaded; moving the control clockwise will toggle between the “Mute” and “Operate” condition. When muted, the VAC logo will be red; when un-muted, it will be blue. On occasion the preamplifier may seem not to have responded to a turn of the “Mute” knob; this is due to “contact bounce” in the switch. Simply turn the knob again until the desired condition is attained.

Logo: The logo may be set for bright, dim, or no illumination. Since the logo light also functions as the mute indicator, we suggest that it be left on.

REMOTE CONTROL

The remote control allows for wireless adjustment of MUTE and VOLUME.

The remote wand is powered by two “AAA” batteries. These should be of the alkaline type. You will need to install them in the wand before using the remote. Since batteries can leak, they should be removed from the wand if it is not going to be used for an extended period of time.

Mute: Pressing either side of the “Mute” button will toggle between the “Mute” and “Operate” condition. When muted, a red glow will be observed in the LED indicator. Mute is automatically engaged when the preamplifier is first switched on.

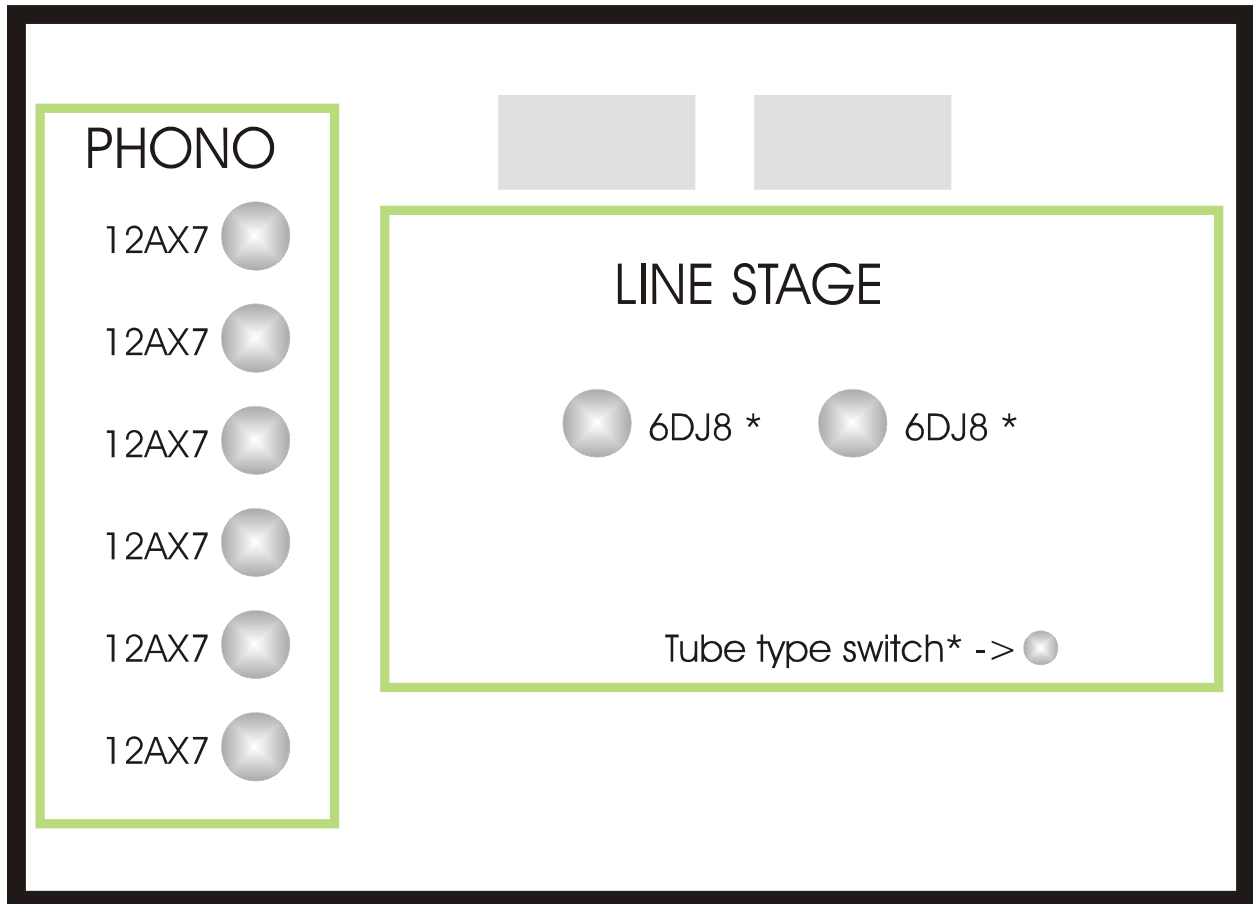
Volume Up/Down: These buttons cause a motor to turn the volume control; the more briefly you press the control, the smaller the motion of the volume control. Motorized controls offer superior sound, as well as direct visual indication of volume setting. The front panel control may also be used directly in the conventional way.

You will hear a slight mechanical buzz when adjusting volume via the remote control.

Note: Your remote control wand may contain buttons for additional functions, but these are not active with the Master Preamplifier.

REPLACEMENT OF TUBES

Refer to the figure (below) for the location and types of tubes.



With the tube type switch set to the "6DJ8" position, you may use the following types:
6DJ8, 6922, 7308, ECC88, E88CC.

With the tube type switch set to the "8416" position, you may use the following types:
12DJ8, 8416.

IMPORTANT!

Do NOT mix brands or versions of tubes in the line stage (6DJ8, etc.).

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DANGEROUS VOLTAGES EXIST WITH THIS COMPONENT. YOU MUST FOLLOW THESE STEPS TO PROTECT YOUR SAFETY. Before replacing tubes, all power must be turned off. Unplug the power cord from the wall, and remove all audio interconnect cables. Wait 30 minutes before removing the top cover. Install new tubes of the appropriate types firmly in their sockets, noting the location of holes in the socket and pins of the tubes, taking care to make sure that pin pattern corresponds to holes in tube socket. Reinstall the top cover before reconnecting the unit.

NEVER INSTALL OR OPERATE THIS UNIT WITHOUT ALL COVERS IN PLACE.

In the event that trouble is encountered, check all signal, speaker and power connections. If the problem persists, follow all safety precautions stated earlier in this section, and check that all tubes are correctly seated in their sockets. If possible, try another tube. If the problem persists, please consult your VAC dealer or contact the factory directly.

For best performance we recommend that you use tubes specifically selected and tested by VAC for this application.

CARE OF CHASSIS

VAC chassis are machined aluminum for superior electromagnetic performance, and finished in durable textured gloss paint. Cleaning with a damp cloth WHILE THE AMP IS SWITCHED OFF AND UNPLUGGED should suffice. Do not get cleaning solutions onto or into the connectors or controls.

When shipping your unit, be certain to wrap the amplifier in the cloth, tissue or plastic wrap in which it was originally packaged. Given the high gloss of the lacquered finish, make sure there are no ridges or sharp surfaces in those parts of the cloth which contact the faceplate. Use of a coarser cloth or failure to otherwise protect the faceplate may result in damage to the finish. VAC is not responsible for cosmetic damage resulting from improper care or packing.

A Word About Tubes in General

Tubes are like the tires on a car; they will eventually need replacement. Murphy's Law states that a tube will probably fail right at the start of a long holiday weekend. Therefore, many audiophiles keep a spare tube of each type on hand, just in case!

VAC can test tubes for concerned customers.

WARRANTY

Your equipment is warranted for a period of thirty (30) days from the date of purchase. In addition, if the registration form is received by VAC along with a copy of your sales receipt from an authorized VAC dealer within this thirty days, the warranty will be extended to two (2) years (tubes excepted). It is the responsibility of the dealer and customer to determine suitability of this unit for a particular application. This warranty applies only to units sold in the United States of America through authorized VAC dealers and operated in the USA by the original owner. It covers factory service and, within the continental U.S., standard return shipping. For warranty information outside of the U.S. contact the importer of VAC equipment for your country. Units sold outside of the U.S. should still be registered with VAC.

Your questions and comments are always welcome. Contact:

Valve Amplification Company
1911 East Avenue North
Sarasota, FL 34234
Telephone 941/952-9695 Fax 941/952-9691
info@vac-amps.com

Detach and mail to the address above as soon as possible.

Master Preamplifier Registration Form

Name _____

Address _____

Telephone _____/_____-_____ e-mail _____

Dealer name _____ City _____

Salesperson _____ Purchase date _____ Serial Number _____

How did you first learn of VAC products? _____

What other brands/models did you consider? _____

What made you decide on the VAC? _____

What else would you like us to know? _____

Optional:

What magazines do you read regularly? _____

What are your hobbies (besides filling in warranty cards)? _____

What are your favorite types of music? _____

On what format? (CD, LP, DVD, SACD, MP3, etc.) _____