⊗VAC

Valve Amplification Company

Avatar Super
Integrated Tube Amplifier

Instructions

28 July 2003

Please read carefully before installing

WELCOME

Congratulations on your purchase of the VAC Avatar Super, and welcome to the family of VAC owners!

Your VAC is designed not to the latest fad but to substance, providing the highest quality of sound. Time spent familiarizing yourself with this manual will be well rewarded.

It is our goal to provide instruments of the highest quality, be informative to all of our customers, and to provide responsive, effective customer service.

Please feel free to contact us if we can be of assistance. We can be reached:

Telephone	941 359 2066
Fax	941 359 2057
E-mail	info@vac-amps.com
Website	www.vac-amps.com

We look forward to being of service, even as you have many years of enjoyment from your Avatar Super.

Kevin M. Hayes
President, VAC

INTRODUCTION

In recent years, integrated amplifiers have become the fastest-growing product category in consumer audio electronics. Given this popularity, and the demand among audiophiles for higher performance integrateds than were previously available, VAC proudly presents Avatar Super, the finest integrated amplifier ever created.

Rather than simply focusing upon the size and cost benefits inherent to the integrated amplifier, VAC took advantage of the performance advantages which are unique to the genre. By building a preamplifier and power amplifier on a single chassis, each component has been optimized to complement the other in a way not possible with separates. The result is a level of sound quality which only the largest and most costly amp/preamp combinations can approach. Ergonomically intuitive and functionally complete, Avatar Super has been designed to exceed the expectations of the most sophisticated music lovers.

GENERAL PRECAUTIONS & SAFETY NOTES

1. DO NOT REMOVE CHASSIS COVER UNTIL UNIT HAS BEEN SWITCHED OFF FOR 5 MINUTES. TUBES BECOME HOT IN USE, AND CAN CAUSE INJURY. DO NOT EXPOSE CHASSIS TO MOISTURE. DO NOT PLUG INTO AN AC SOURCE UNTIL ALL CONNECTIONS ARE COMPLETED.

2. Complete all signal (interconnect and speaker cable) connections *before* connecting the AC cord to the wall outlet and turning the unit on. Similarly, always turn the amplifier off and remove the AC power cord before detaching cabling. Failure to observe this sequence can result in damage to the amplifier, speakers or associated components.

3. At turn on, all volume controls should be full counter-clockwise and the mode switch should be set to "Mute". Allow one (1) minute for warm up before commencing playback. Note: Mute is automatically engaged when switching on the unit.

4. For protection of your speakers and power amplifier, always switch amplifier to "Mute" before switching the power off or on. Note: Mute is automatically engaged when switching on the unit.

5. THESE UNITS CONTAIN NO USER SERVICEABLE PARTS. DO NOT REMOVE THE BOTTOM COVER. LETHAL VOLTAGES ARE PRESENT WITHIN THE CHASSIS. DO NOT OPERATE THE UNITS IF THEY ARE WET.

6. VACUUM TUBES BECOME HOT ENOUGH TO CAUSE SERIOUS BURNS. NEVER TOUCH A TUBE WHEN THE UNIT IS ON. IT MAY TAKE SEVERAL MINUTES FOR THE TUBES TO COOL DOWN AFTER THE UNIT IS SWITCHED OFF. FOR THIS REASON THE TOP CAGE SHOULD ALWAYS BE LEFT SECURELY IN PLACE.

7. The Avatar Super is heavy. Please exercise caution in lifting the unit, and take care to install Avatar Super securely in a sturdy, well designed stand so that it will not fall or tip over (this could cause serious, possibly fatal injury).

8. DO NOT TURN THE SMALL PLASTIC SCREW ON THE METER. IF YOU DO, THE UNIT MUST BE RETURNED TO VAC FOR RECALIBRATION.

INSTALLING Avatar Super

Physical requirements:

1)   Provide Adequate Ventilation-Allow at least three inches of free air space above and two inches to either side of Avatar Super.

2)   Do not place Avatar Super in a completely enclosed cabinet. If equipment cabinet has a solid front door, a "boxer" fan will be necessary to ensure proper airflow.

3)   Do not stack other components (or any objects which could impede proper ventilation) on top of Avatar Super.

4)   Do not operate Avatar Super on carpet, or on any other surface that might restrict airflow.

5)   Avatar Super's chassis cover will become very warm during normal use.

6)   Avatar Super must be installed in a secure, sturdy, properly built (and ventilated) stand, cabinet or enclosure. Avatar Super is heavy, and could inflict serious injury or property damage if it falls, or if the stand upon which it is place tips over. This concern is particularly important in households with small children who might try to climb furniture.

Basic Hookup:

1)   Connect line level inputs (CD, Tuner, Tape, etc.) to the appropriate RCA input jacks on Avatar Super's rear panel. Note: with the exception of Phono, all Avatar Super inputs are "line level". Any non-phono source component may be connected to any input EXCEPT FOR phono.

2)   Connect phono cables to the rear panel RCA input labeled "Phono." Connect the ground wire from the turntable or phono cable to the "Ground" terminal provided on Avatar Super's rear panel. (See "Phono Section" for cartridge types appropriate for use with Avatar Super)

3)   Connect loudspeaker cables to the five-way binding posts on Avatar Super's rear panel. Make sure that all connections are tight (Do NOT over tighten, or damage to amplifier or speaker cable may result), and that heavy or bulky cables are properly strain-relieved. You will notice that Avatar Super includes four posts for each of the two (i.e., left and right) amplifier channels; use the positive connections that best

match your speaker's impedance (2, 4, or 8 ohms).

Note: The line stage of the Avatar Super inverts absolute phase. If you are concerned about absolute phase, you may correct for this by inverting your loudspeaker connections, i.e., connect the positive speaker lead to the "G" terminal, and the negative speaker lead to "2", "4", or "8".

4)   Connect the AC power cord to the IEC connector on Avatar Super's rear panel. 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.

5)   Mute is automatically engaged when switching on the Avatar Super.

6)   Allow Avatar Super to warm up for a few minutes, then adjust output tube bias. (See "Output Tube Bias Adjustment", below)

As with all high performance audio products, the sonic characteristics of all VAC products will continue to improve during the first several hundred hours of use.

OPERATING VOLTAGE

The Avatar Super may be set to run from 100, 120, 220, or 240 volt ac power sources. If your local voltage is between these, select the one just higher than your local voltage. For example, if your power is at 230 volts, set Avatar Super for 240 volts, not 220 volts.

Voltage is set by means of the voltage configuration card, located behind the main fuse. The setting is indicated by the number which is visible on the installed card.

THE FUSE MUST MATCH THAT SPECIFIED FOR YOUR LOCAL POWER !

OPERATING AVATAR SUPER

Front Panel Controls:

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

Phono Section: In addition to four line level inputs (CD, 1, 2, 3), Avatar Super includes a discrete, pure tube phono preamplifier, which is engaged by rotating the "Selector" switch (found at the upper left-hand corner of faceplate) fully counterclockwise to the "Phono" position. Avatar Super's phono preamplifier provides 39 dB of gain, suitable for use with MM (moving magnet) and many high-output MC (moving coil) cartridges. Your VAC dealer can recommend the proper phono cartridge(s) for use with Avatar Super.

Monitor: The small knob found at the lower left-hand corner of the faceplate switches between "Source" and "Tape". In the "Source" position, input selection is determined by the Source Selector Switch. In the "Tape" position, the Source Selector is overridden, and the Tape inputs are activated. Important: Avatar Super is outfitted with a full "tape loop", including a line level tape input and a fixed level recording output. In addition to driving the recording inputs of a tape deck, this output can supply signal to any typical line level input, enabling Avatar Super to control a second zone in multi room installations.

Home Theater Mode: Located immediately to the right of the bias meter, a rotary switch labeled "Input" provides access to Avatar Super's most unusual feature. When set in the "Selector" position, input choice is governed by the Input Selector switch. This is the normal setting for Avatar Super, and enables the unit to be used as a typical integrated amplifier. Rotating the control clockwise to the "Home Theater" position separates the preamplifier and power amplifier sections, and enables the Avatar Super's power amplifier to be driven by an external source, such as the front left- and right-channel outputs of a multichannel processor. In this case, the users' analog stereo sources would be connected, as usual, to the Avatar Super's 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 "Input" control is set to the "Home Theater" position, Avatar Super functions as a power amplifier ONLY, and is controlled by the external processor, preamplifier, or other component connected to the "Home Theater Direct" inputs.

Mute: This control is a momentary rotary switch that 'toggles' between the muted and unmuted condition. In the "Mute" condition, all input signal is blocked from Avatar Super's power amplifier section. Note: Mute is automatically engaged when switching on Avatar Super.

This knob is spring loaded; moving the control clockwise will toggle Avatar Super between the "Mute" and "Operate" condition. When Avatar Super is muted, a red glow will be observed in the bias meter. On occasion Avatar Super 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.

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.

Volume Up/Down: These buttons cause a motor to turn Avatar Super's 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.

Mute: Pressing either side of the "Mute" button will toggle Avatar Super between the "Mute" and "Operate" condition. When muted, a red glow will be observed in the bias meter. Mute is automatically engaged when switching on Avatar Supers equipped with the remote control option.

<u>OBTAINING THE BEST PERFORMANCE FROM AVATAR SUPER</u>

Although surprisingly simple to use, Avatar Super is also remarkably versatile, and has been outfitted with an assortment of useful features that enable it to excel in a broad range of applications. Familiarity with these facilities will assure that Avatar Super performs optimally in your system.

Output Tube Bias Adjustment:

Your Avatar Super has been shipped with the output tube bias properly set. Nonetheless, it should be checked when you install your amplifier and approximately once every month thereafter. It must also be adjusted each time a tube is replaced.

Allow the amplifier to reach normal operating temperature (about ten minutes of warmup should be sufficient). Mute the amplifier and remove the small, gold-handled access panel (located below the bias meter) from the front of the unit. You will see a four pairs of buttons and knobs, each pair of which corresponds to one of the four KT88 output tubes (V10-V13, respectively). Press the button for V10 and observe the bias meter. Rotate the knob directly above and to the right of the button until the needle is centered on the small black dot near the top of the meter. Repeat for V11, V12 and V13, and then, because the adjustments can interact slightly, recheck all four tubes, starting once again with V10.

PREAMPLIFIER OUTPUT

The preamplifier outputs may be used in many ways. Most common will be to provide signal to an active subwoofer.

You may also use the Avatar Super as the main unit in an elaborate active biamplification configuration. In such cases, hookup is made as follows:

1) Connect the preamplifier outputs to the active crossover inputs.
2) Connect the high frequency outputs from the crossover to Avatar Super's Home Theater/Cine inputs.
3) Connect the low frequency outputs from the crossover to the bass amplifier(s).
4) Set the Avatar Super to the "Home Theater" mode via the front panel control.
5) The Selector, Tape Monitor switch, volume control, and mute switch will function as normal, controlling signal for both high & low frequency systems.
6) Adjust the relative level between the high and low frequency systems with the trim controls on the crossover.

NOTE: The line stage of Avatar Super inverts absolute phase, while its power amplifier section does not. Thus, overall, Avatar Super inverts phase from all inputs to both the preamplifier outputs and the speaker terminals.

Absolute phase inversion through the Avatar Super may be corrected by inverting your loudspeaker connections, i.e., connect the positive speaker lead to the "G" terminal, and the negative speaker lead to "2", "4", or "8".

You must take care that your bass amplifier and bass speaker are connected to yield the same absolute phase result.

Some people appear able to hear absolute phase inversion, while many do not. However, the phase of the recordings we buy is indeterminate, such that any installation will be incorrect in this regard about 50% of the time.

<u>Matching Avatar Super To Your Loudspeakers</u>

Like many modern tube amplifiers, Avatar Super includes multiple "transformer taps" for the left- and right-channel outputs. The rear panel includes separate binding posts for each channel's 2, 4, and 8-Ohm taps. Do NOT assume that the tap which corresponds to your speakers' published impedance specification will yield the best sound. Due to the various standards by which impedance can be measured, not to mention the fact that a speaker's impedance varies with frequency, it is impossible to assert with certainty which output tap will yield the best sound. For this reason, VAC strongly suggests auditioning your speakers through both taps. In general, we find that a speaker's minimum impedance is more important than its nominal (average) impedance when determining which tap is correct. A lack of bass response often indicates that a lower impedance tap should be tried.

<u>MAINTENANCE</u>

Chassis Care:

Although your VAC Avatar Super chassis and faceplate are extremely durable, its finish can be scratched, chipped or damaged if improperly treated. Cleaning with a soft, damp cloth <u>while the amplifier is switched off and unplugged</u> should restore the finish to its original lustre. Never clean Avatar Super with harsh or caustic cleansing agents.

When shipping your Avatar Super, 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.

Installing New Tubes:

Original Equipment Replacement tubes are available from VAC. These tubes ensure your Avatar Super will meet or exceed all factory performance specifications.

Before replacing tubes, all power must be off. Mute unit, place power switch in the "off" position and unplug power cord. Remove cover and old tubes ONLY after the unit has cooled down (In normal use, tubes become hot enough to cause serious burns. Allow several minutes for tubes to cool before attempting to remove or replace.) Install the new tubes fully firmly in their sockets, taking care to observe the direction of the locating ridge in the plastic center pin of the KT88 output tubes' metal & phenolic base. With 9-pin miniature tubes (V1-V9), make sure that pin pattern corresponds to holes in tube socket.

When changing KT88 (V10-V13), turn the bias control corresponding to the new tube fully counterclockwise. After turning the unit on and allowing it to reach normal operating temperature, follow the normal biasing procedure.

In the event that trouble is encountered, switch power to the "off" position, check that all tubes are correctly seated in their sockets and check all signal, speaker and power connections. If possible, try another tube. If the problem persists, please consult your VAC dealer or contact the factory directly.

GENERAL INFORMATION ABOUT TUBES

It is a truth that each brand of tube sounds different in a particular high resolution circuit. This is because no two manufacturers make a tube type in quite the same way, and the central tendencies of the performance parameters will differ slightly with each maker.

This sonic variability may at first seem a liability, but further thought will reveal that it is an advantage. The owner of a tube amplifier can select those tubes which sound like the real thing in his/her specific system. VAC can recommend the best tubes for your amplifier.

Normally vacuum tubes should last for 4,000 to 12,000 hours of use, or two to ten years for most users. There are always occasional exceptions, long or short. If you have to replace a tube before, say, 3,000 hours, just replace the single tube. If you have to replace a tube at 8,000 hours, replace them all and keep those still functioning well as spares

VAC will be happy to 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, a service contract will be extended to cover your equipment for three (3) years (tubes excepted). It is the responsibility of the purchaser to determine suitability of this unit for any given application.

This warranty applies only to units sold in the United States of America through authorized VAC dealers. It covers factory service and 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, Inc.
> 1731 Northgate Boulevard
> Sarasota, FL 34234 USA
> Telephone   941 359 2066
> Facsimile   941 359-2057
> E-mail   info@vac-amps.com

VAC AVATAR SUPER SPECIFICATIONS (typical)

Type: Integrated vacuum tube amplifier with MM phono stage and home theater (direct power amplifier) mode. Remote control for volume & mute.

Options: External MC step-up network (plugs into MM input)

Power amplifier ("Home Theater" direct mode):

Output matching: 2, 4, or 8 ohms nominal
Power output: 80 watts/channel ultralinear
Frequency response: 9 Hz - 35 kHz +0 / -0.5 dB; 3 Hz - 71 kHz +0 / -3.0 dB
Residual noise: Typically less than 0.5 mV at 8 ohm output
Absolute phase: Non-inverting

Line stage preamplifier:

Maximum input signal: Infinite (attenuation precedes line stage)
Preamp/subwoofer output: Volume controlled
Absolute phase: Inverting from all inputs
Tape output: Unity gain from selector, non-inverting

Phono stage preamplifier:

Gain: 42 dB (measured at tape output)
Frequency response: RIAA +/- .25 dB
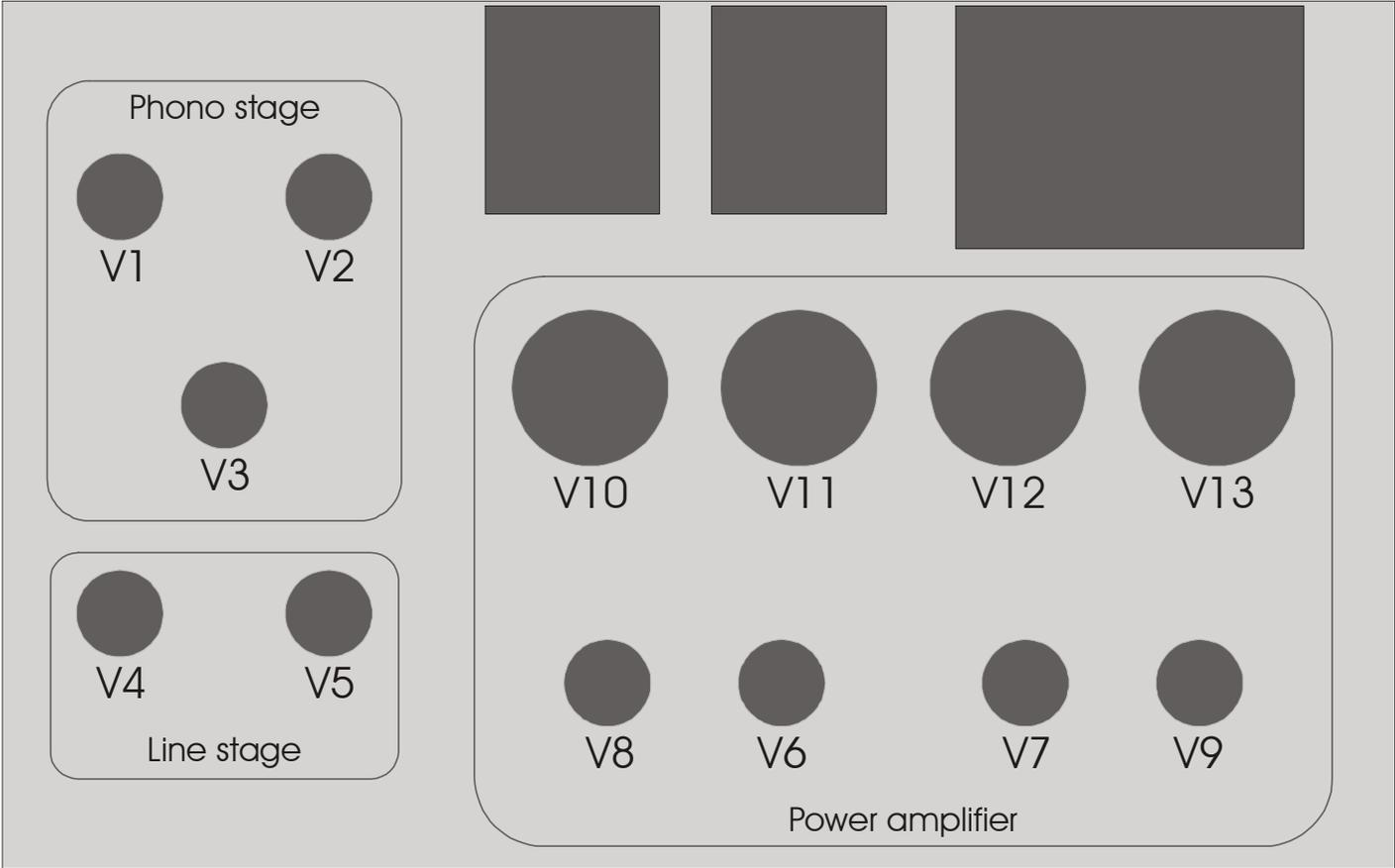Absolute phase: Non-inverting by itself (inverting through the line stage)

Tube compliment:

2 x 12AX7 low noise (phono)   Identified as V1, V2
1 x 12AX7 (phono)   Identified as V3
1 x 12AU7 (line stage)   Identified as V4
1 x 12AX7 (line stage)   Identified as V5
4 x 12AU7/6189A (power amp)   Identified as V6, V7, V8, V9
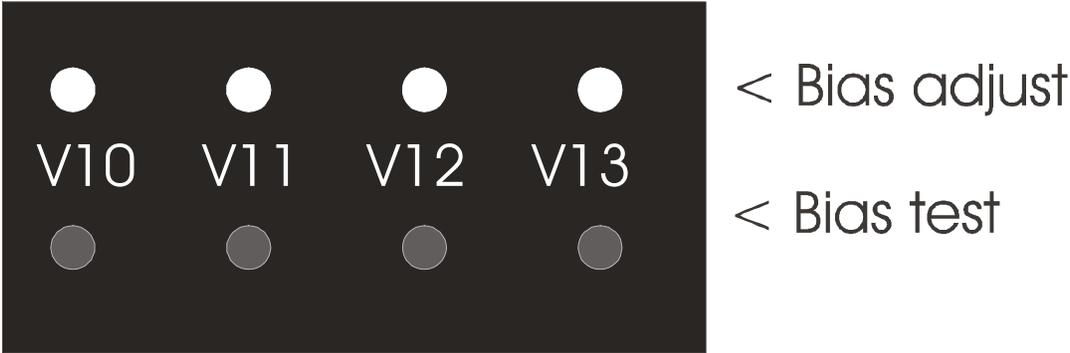4 x KT88 (power amplifier)   Identified as V10, V11, V12, V13

Warranty: Up to three years parts and labor, excluding tubes.

LOCATION OF TUBES AND BIAS CONTROLS
Avatar Super

Phono stage

V1   V2

V3

V4   V5

Line stage

V10   V11   V12   V13

V8   V6   V7   V9

Power amplifier

CAUTION: TUBES BECOME EXTREMELY HOT IN USE. DO NOT OPERATE WITHOUT CAGE IN PLACE. ALLOW ALL TUBES TO COOL BEFORE REMOVING THE COVER. FALLOW ALL PRECAUTIONS IN THIS MANUAL AND ON THE UNIT.

V10   V11   V12   V13

< Bias adjust

< Bias test

For best results use VAC Tested audio tubes.

AVATAR SUPER REGISTRATION FORM

MAIL TO VAC SOON AS POSSIBLE.

Name _____

Address _____

_____

Telephone _____/_____-_____   E-Mail _____

Dealer name _____

" address _____

Purchase date _____   Serial Number _____

Salesperson _____

How did you first learn of VAC products?

_____

What other brands and models did you consider?

_____

_____

What made you decide on the VAC?

_____

_____

Please provide any comments on VAC products or your dealer

_____

_____

What magazines do you read regularly?

_____

_____

What are your hobbies?

_____

What are your favorite types of music?

_____

_____