



STANDARD 220 MONOBLOCK TUBE AMPLIFIER

INSTRUCTIONS

9 SEPTEMBER 2003

Please read carefully before installing

WELCOME

Congratulations on your purchase of the VAC Standard 220, 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 Standard 220.

Kevin M. Hayes
President, VAC

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.
4. For protection of your speakers and power amplifier, always switch amplifier to “Mute” before switching the power off or on. As a general rule, source components should be switched on before the power amplifier. Similarly, turn the power amplifier off before switching off the source components.
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 Standard 220 is heavy. Please exercise caution in lifting the unit, and take care to install Standard 220 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 Standard 220

Physical requirements:

- 1) Provide Adequate Ventilation-Allow at least three inches of free air space above and two inches to either side of Standard 220.
- 2) Do not place Standard 220 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 Standard 220.
- 4) Do not operate Standard 220 on carpet, or on any other surface that might restrict airflow.
- 5) Standard 220’s chassis cover will become very warm during normal use.
- 6) Standard 220 must be installed in a secure, sturdy, properly built (and ventilated) stand, cabinet or enclosure. Standard 220 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 a volume-controlled line-level source to the input RCA
- 2) Connect loudspeaker cables to the five-way binding posts on Standard 220'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.
- 3) Set the output impedance selector switch to match the impedance of your loudspeaker.
- 4) Connect the AC power cord to the IEC connector on Standard 220'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) Allow Standard 220 to warm up for a few minutes, then adjust output tube bias. (See "Output Tube Bias Adjustment", below)
- 6) Adjust the front panel FEEDBACK control for the best subjective sound quality with your speaker and room.

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.

OBTAINING THE BEST PERFORMANCE FROM Standard 220

Although surprisingly simple to use, Standard 220 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 Standard 220 performs optimally in your system.

Output Tube Bias Adjustment:

Your Standard 220 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 preamplifier 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. Press the first button 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 the other three tubes, and then, because the adjustments can interact slightly, recheck all four tubes, starting once again with first push button.

Output Tube Sentry Circuit

A unique circuit has been fitted individually to each of the output KT88 tubes. In the event that a KT88 enters a 'run away' condition and begins to draw excessive current, the Sentry circuit will engage and limit the current that the tube can draw to approximately 40 milliamperes (about 50% of normal).

If the Sentry circuit has engaged, you will note low bias meter readings for that tube, which will not increase even if you advance the bias control fully clockwise.

The Sentry circuit can trigger either due to a tube that needs to be replaced or due to misadjustment of the bias. To test this, turn the bias control fully counter-clockwise and turn the amplifier off. Wait 15 minutes, then restart the amplifier. Follow the normal bias adjustment procedure. If the tube can be biased normally and does not re-trigger the Sentry circuit, then all is fine. If the bias can not be adjusted to the normal value, or if the Sentry circuit is triggered again, then replace that KT88.

Matching Standard 220 To Your Loudspeakers

Like many modern tube amplifiers, Standard 220 includes multiple settings for the speaker outputs. Do NOT assume that the setting 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 all settings. In general, we find that a speaker's minimum impedance is more important than its nominal (average) impedance when determining which setting is correct. A lack of bass response often indicates that a lower impedance setting should be tried.

CHASSIS CARE

Although your VAC Standard 220 chassis and faceplate are extremely durable, its finish can be scratched, chipped or damaged if improperly treated. Cleaning with a soft, damp cloth while the amplifier is switched off and unplugged should restore the finish to its original lustre. Never clean Standard 220 with harsh or caustic cleansing agents.

When shipping your Standard 220, 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.

GENERAL INFORMATION ABOUT TUBES

It is true 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.

Installing New Tubes:

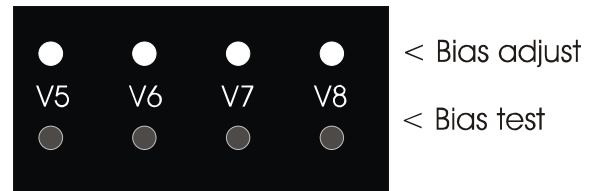
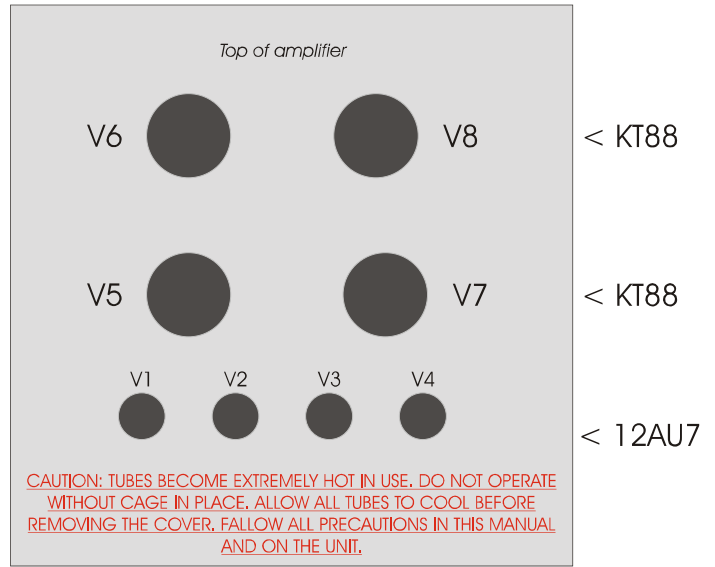
Original Equipment Replacement tubes are available from VAC. These tubes ensure your Standard 220 will meet or exceed all factory performance specifications.

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, make sure that pin pattern corresponds to holes in tube socket.

When changing KT88 tubes, 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.

LOCATION OF TUBES AND BIAS CONTROLS
VAC Standard 220 and Standard 105/105



For best results use VAC Tested audio tubes.

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 customer and dealer to determine that this unit is suitable for a particular 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 Standard 220 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?
