



Atma-Sphere Music Systems, Inc.

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Atma-Sphere MA-3 amplifier setup and operation

WARNING! The MA-3 is a high power amplifier! Proper setup and conservative operation is essential as the MA-3 can easily damage many loudspeakers if used improperly. Please read this setup guide and follow the instructions carefully, if you have any questions please contact Atma-Sphere Music Systems directly at 651-690-2246.

Introduction: The MA-3 is the largest production OTL in the world, and amongst other things is also the largest Class A tube amplifier made. Despite its enormous size for a home stereo, the MA-3 is designed to be easy to live with, featuring built-in AC line conditioning and regulation (117V versions will make full power with only 100 Volts on the AC line), bank switchable output for heat and power management, a built-in tube tester and automated Bias and DC Offset management. Despite the scale of the MA-3, it employs a single stage of gain and a unique, double-patented direct coupled output circuit with proven reliability.

The MA-3 is an all-out assault on the State of the Art. Seven years in the making, over 15 chassis designs and 12 amplifier topologies were explored. During the process a new patent and other innovations not previously seen in any tube amplifier were developed. The MA-3 sets the bar for the State of the Art- there are simply no other amplifiers in its class, price notwithstanding.

Requirements: A fifteen Amp dedicated line is required for each channel. The MA-3 will accept either single-ended or balanced input, however best results are achieved using a balanced source. Use of cabinets for the amplifier is not recommended without a heat management system to move the heat of the tubes away from the amp to prevent overheating.

Installation: The MA-3 is a four chassis amplifier system with two power cords and four umbilicals. The power supply chassis can be operated side by side with the amplifiers or the amplifiers can be placed on top of the power supply chassis. Installation of the MA-3 alone is not recommended. Have an assistant available. Place the amps in your system. Connect the preamp cable to the appropriate input connector on the rear of the amp. If you use the RCA input connector, make sure a shorting plug is installed between pins 1 & 3 on the XLR connector else a buzz may result. The amps are non-inverting from the RCA connection and pin 2 of the XLR. Verify that all power switches are OFF and connect AC power to the AC input connector on the rear of the power supply. At this point you may hear some slight sounds from the power supply chassis as the regulator senses the presence of AC power.

Check the front panel meters. The right hand unit shows the AC line voltage. The left hand unit shows the output of the AC regulator/conditioner. It should read about 95 volts- one mark below 100 volts (this reading is 190 volts for 235V units). If it does not read this, carefully adjust the front panel control to obtain this reading. The umbilical is keyed for proper insertion- do not force it! Two sets of speaker connectors are provided for ease of use.

Setup: Install the tubes in their sockets. The central group of twelve sockets take the 6SN7GT driver tube. All other sockets take the 6AS7G output tube. If a tube shows obvious damage, do not attempt to use it; seek a replacement. NEVER USE OLDER AMERICAN 6AS7 TYPES as they will be failure prone!

Note that there are four power switches on the amplifier. Three of the switches are used to operate the output tubes in banks. You may select 1/3 power, 2/3 power or full power as a result. The main power switch (left side of amp chassis) is the master switch. None of the other circuits will operate if this switch is not ON. For initial operation, selecting 1/3 power is a good idea. Engage the Master switch and verify that the amber indicator lights. The power supply unit will likely respond with activity from the AC line regulator. After about 15 seconds, the filaments of all tubes should be visibly glowing orange. Wait at least one minute, then engage the Standby switch (right most of the four and has a red indicator) and verify that the red indicator lights. You should hear a click in the power supply, accompanied by activity from the AC regulator. The amplifier is now fully powered up.

Automatic Bias, DC Offset and Tube Tester: Bias and DC Offset are automated. During warmup in Standby, it is not uncommon to see some activity from the DC Offset meter, but this should stabilize in short order. During normal operation, the meter should point straight up, except at higher power outputs where some slight activity may be observed. If the meter is stable, but pointing to one side, it is likely that there is a fault with a power tube.

The MA-3 is equipped with an on-board output tube tester. It may be used at any time. Depending on how many tubes are in use (1/3, 2/3 or full power), the reading that the tester will give on a given tube will vary. Normally on 1/3rd power the readings will vary from .15V to .45 volts. Voltages higher than this are unusual- if the meter pins full scale it may be indicating a fault in the amplifier. The main failure mode of the 6AS7G is arc-over; thus the main readings of interest are tube sections with no reading at all.

The tube tester is arranged to test each section of each tube. As there are 21 tubes in the left hand bank and 21 tubes in the right hand bank, and because the 6AS7G is a *twin* power triode, there are two readings per tube socket, and the tester reads the left and right hand banks separately. The tube sockets are numbered 1-21 on both banks, making the tube tester reading easy to correlate with the location of the tube.

When the amp is on 2/3 or full power, the readings on the meter will be progressively less.

Use of Standby: The MA-3 amplifier can be left in either standby or operational mode indefinitely. Use the Standby function at will; its use can prolong tube life substantially.

Input Termination: set to high in most cases. If the manufacturer of your preamp specifies a low impedance drive capability, such as the Atma-Sphere MP-1, you may elect to use either position. Input impedance in the low position is 600 ohms.

Output power: 500 watts 2-16 ohms
Bandwidth: 1Hz-100KHz 1/2 db at full power
THD less than 1% at full power with proper setup
IM distortion < .004% at full power
Output section risetime: 600V/Sec.

Care of Finish

The Anodized finish of the MA-3 is easily cared for. It is impervious to water and oils, but the combination of brushed aluminum and the hardness of the finish means that it will capture and hold materials in its surface relatively easily. As the finish is harder than most tools, light scrapes that do not penetrate the finish may leave a mark that looks like a scratch. These and the marks left by handling due to skin cells, cardboard and other materials can be lifted out by lightly rubbing the finish with Scotchbright or other similar material. 409 or similar products can assist without damaging the finish. The metal oxide hardware is prone to oxidation if exposed

to high humidities or moisture, however the finish can be restored by application of light oils. Usually a light wax polish/protectant like Lemon Pledge is all that is needed to protect the finish of the hardware and add luster to the anodizing. Use a lint free cloth to reduce your efforts!

Care of Tubes

The 6AS7G power tube is quite reliable, but its life will be extended by a few simple practices.

Precondition a brand new set of tubes by running them in Standby for 72 hours without B+ applied. This will double the life of the tubes and reduce arcing. Resist the urge to run the amplifier at full power right away. Listen at moderate levels for about a day to allow the tubes to settle in.

You may see some tube failure immediately after shipment, due to jarring of the tubes during shipment. The usual failure is arcing, which occasionally may pop loudly in the speaker. If this happens, do not be discouraged but locate the faulty tube and replace it. After two weeks of use such failures become unusual. In over 35 years of operation, no amplifier fault has ever been found to cause arcing in the tubes.

The tubes should be clean, kept free of dust and fingerprints. The amplifier should be allowed to operate in an open environment with good ventilation. Otherwise a fan is recommended both for the amp and tube life. The tubes should be allowed at least one minute of warmup for proper lifespan. Warmup of over 5 minutes will not have any additional benefit. Like any tube amplifier, the tubes will last longer if the amplifier is operated on a moderate load that does not require full power all the time and is not a low impedance (in this case less than 2 ohms). At less than full power (1/3 or 2/3), this issue is more important.

If you have any questions contact your dealer or Atma-Sphere Music Systems, Inc.

A large, bold, black logo consisting of the letters 'C' and 'E' in a stylized, sans-serif font. The 'C' is on the left and the 'E' is on the right, both rendered in a thick, solid black color.



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LIMITED WARRANTY ON ATMOSPHERE MUSIC SYSTEMS PRODUCTS

This warranty on your ATMA-SPHERE MUSIC SYSTEMS product, which is distributed and warranted by ATMA-SPHERE MUSIC SYSTEMS, shall remain in effect for three (3) years from the date of consumer purchase, provided the enclosed registration form is completed and returned to ATMA-SPHERE MUSIC SYSTEMS within ten days of purchase.

WHAT IS COVERED:

Except as specified below, this warranty covers all defects in materials and workmanship. The following are NOT covered by the three year limited warranty:

Tubes are covered for one (1) year, with the following exclusions, as per the rest of the warranty:

Damage occurring during shipment (present claims to carrier).

Damage resulting from failure or inability to follow proper instructions.

Damage resulting from the performance of repairs or modifications by other than ATMA-SPHERE MUSIC SYSTEMS.

ATMA-SPHERE MUSIC SYSTEMS will pay for all labor and material expenses for repairs covered by this warranty.

HOW TO OBTAIN WARRANTY SERVICE:

If your unit requires repairs covered by this warranty, you MUST obtain a return authorization number from ATMA-SPHERE MUSIC SYSTEMS. You are responsible for transporting the unit to ATMA-SPHERE MUSIC SYSTEMS, 1742 Selby Av., St. Paul, Minn. 55104. You must pay the initial shipping charges, but ATMA-SPHERE MUSIC SYSTEMS will pay the return charges, if the repairs are covered by the warranty. All products MUST be shipped in the original carton(s) or in replacement cartons supplied by ATMA-SPHERE MUSIC SYSTEMS. Contact ATMA-SPHERE MUSIC SYSTEMS for replacement cartons and cost.

LIABILITY IS LIMITED TO THE REPAIR OR REPLACEMENT, AT OUR OPTION, OF ANY DEFECTIVE PRODUCT AND SHALL IN NO EVENT INCLUDE INCIDENTAL OR CONSEQUENTIAL DAMAGE OF ANY KIND.

This warranty is transferable. Implied warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. This warranty sets forth all expressed warranties made with regard to the above-referenced product. We neither assume nor authorize any other liability in connection with the sale or any shipment of products. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. We reserve the right to make changes and improvements in our products without incurring any obligation to similarly alter products previously purchased.

WARRANTY REGISTRATION FORM

IMPORTANT: This form must be filled out and returned to ATMA-SPHERE MUSIC SYSTEMS within 10 days of purchase to validate the warranty! Please type or print clearly.

NAME _____

Address _____

City or town _____ State _____ zip code _____

Country _____

Name of dealership _____

Model MA-3 Date of purchase _____ serial # _____ price paid _____

Optional section for our records and information:

Comments concerning your dealer _____

Comments concerning this product _____

list the components in your system _____

comments, suggestions _____
