



Atma-Sphere Music Systems, Inc.

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### M-50 amplifier quick setup and operation instructions

**Installation:** Place the amps in your system. Connect the preamp cable to the appropriate input connector on the rear of the amp. If you must use the RCA input connector, make sure the shorting plug is installed between pins 1 & 3 on the XLR connector else a buzz will result. Verify that the power switch is OFF and connect AC power to the AC input connector on the rear of the amp. The "POWER AVAILABLE" LED should light. Connect the negative speaker cable to the negative output terminal and the positive speaker cable to the positive (red) post.

**Setup:** Install the tubes in their sockets. The end group of four sockets (no cooling holes) take the (3) 12AT7 & (1) 12AU7 driver tubes. All other sockets take the 6AS7G output tube. A total complement of four driver and eight output tubes are required per each chassis. Move the power switch to the standby position and verify that the "STANDBY" LED lights. In about 15 seconds, the filaments of all tubes should be visibly glowing orange. Wait at least one minute, then move the power switch to on position and verify that the "ON" LED lights. The amplifier is now fully powered up.

**DC Offset adjustment:** Depress the Test/Operate switch. Examine the reading on the bias meter. If it is NOT zero (above OR below) use the DC offset control to bring the meter to a zero reading. If the meter cannot be zeroed, perform the Bias adjustment procedure and then reexamine the DC offset. The bias and DC offset controls interact somewhat, and if one is very far off, it may be impossible to set the other correctly. If DC offset still can not be zeroed, perform the Statistical Swap as detailed later.

**Bias adjustment:** Depress the Bias test switch and the Test/Operate switch together and the meter will slowly rise to indicate the bias reading. Use the bias control to set the meter as follows: Cold amp = .400A / Hot amp (final setting) = .550A. If the amp is biased when cold, you can expect the bias to increase notably as it warms up, thus the difference in settings between cold and hot. Check bias on a new amp daily until it has stabilized, typically after 1020 hours of use. When bias has stabilized it can be expected to stay in adjustment for extended periods.

**Operation:** The amplifier is now completely operational. The amplifier can be left in either standby or operational mode indefinitely, but if you are not currently listening, place the amp in standby to increase output tube life and save energy. If you are done listening for the day, shut the amp off completely to increase the life of all tubes and save even more energy.

**Statistical Swap:** This procedure is the remedy for a DC offset which cannot be zeroed (see DC offset procedure). Using a potholder or similar object, randomly remove two tubes from the front bank of output tubes and exchange them for two tubes from the rear output tube bank. Perform the DC offset adjustment and note the improvement. If the situation worsened, you may have to perform several random swaps before the proper balance is achieved. This condition occurs occasionally as the result of variances in tube production and should in no way be considered a defect of either the amplifier or the output tube complement.