

Bogen MO-200 Audio Power Amplifier Specifications

Model	MO-200 / MO-200A
Tubes, Output	Eight 8417 beam power tubes
Tubes, Driver	Two 7247 dissimilar dual triodes
Frequency Response	+/- 1 db, 8-50,000 Hz @ 1 watt
Power Output	200 watts, +/- 1 db, 21-50,000 Hz @5% or less THD
Input Terminations	RCA style input connection; Approx. 1 volt RMS input for full output.
Output Terminations	Screw Terminal Strip, Phenolic. 8 ohms 25VCT (3.125 ohms CT/0.78 ohm) <i>use 4 ohm load</i> 70VCT (24.5 ohms CT/6.125 ohms)

Comments:

The amplifier consists of two almost separate amplifiers, each with its own output transformer and push-pull-parallel set of 8417 tubes, and a 7247 driver. The inputs to the 7247 grids and the secondaries of the output transformers are connected in parallel. Needless to say, an octet of matched 8417's, and a pair of matched 7247's would be essential for maximum performance.

If the input sections and output wiring are separated, the unit can be modified to be used as a dual channel power amplifier. Each channel of course has its own output transformer and push-pull-parallel set of 8417 tubes, and a 7247 driver. In such a case, each channel will have about 100 watts output. Both share the power supply. The impedance conversions are shown below:

Original Operation (as a single channel amplifier)	Split Operation (as a two channel amplifier)
8 ohms	16 ohms
25VCT (3.125 ohms CT/0.78 ohm @12.5V) <i>use 4 ohm load</i>	25VCT (6.25 ohms CT/1.56 ohms @12.5V) <i>use 8 ohm load</i>
70VCT (24.5 ohms CT/6.125 ohms @35V)	70VCT (49 ohms CT/12.25 ohms @35V)

This information presented, it is well to surmise that it would probably be inefficient to connect to only half of the 70V or 25V windings, as it will cause twice the current to flow in the winding (for a given output power level) with the resultant I^2R losses. An 8 ohm load connected across the 25V winding (6.25 ohms) will net about 90 watts, as confirmed in some tests. The amp will also run 6550's but to do so you will need to increase the bias from about -25V to about -40V. Please refer to the tube manuals! Note the 6550's can be a tight fit, depending on the envelope. The coke bottle ones and KT88-style ones barely fit. You can use a 12AU7 for the driver if you rework the circuit. The empty 9-pin transformer/accessory socket can be used for a 12AX7 or other dual triode, to provide an additional stage of gain for each channel of the amp.