

MECHANICAL DIFFERENCES IN 3-500Z and ZG TRIODES,

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1_25_06

Recently I bought a "house brand" 3-500ZG triode, and an Amperex 3-500Z, from a reputable national RF tube dealer. The 500ZG was stamped with their name, and had PRC on it (Peoples Republic of China). I noted that the envelope was slightly different in length and diameter, but not by much. But the annoying thing was that the anode with grid/filament basket inside, were not concentric with each other. In other words, the spacing from one side of the anode cylinder was closer to the grid than on the opposing side! This is not an old Chinese tube, but a 2004 date code product I believe. With such a misalignment, the electron optics would appear to be suboptimal (with anode to grid space too close on one side and too far on the other side). The net (average) performance of such a tube may pass test parameters, as the increased capacitance on one side would balance against the decrease on the other. Likewise for the mu factor. However, the sloppy construction did not give me much confidence in that product or the makers Q/A.



The Amperex tube, on the other hand, was likely made in their Covimag plant in France, and was aligned as a new tube would be expected. It clearly had a better 'look' to it. I plan to run both tubes in a particular socket soon, although it's not an RF socket but a pulsed HV modulator. The tube on the right is the obsolete Eimac 3-400Z/8163 triode that is being replaced by the best 3-500Z or ZG. The same distributor has two other variants, both priced even less than their brand-name tube. Differences include the name stamped on the tube and the warranty terms. As for the tubes above, the mechanically inferior tube was about half the (list) cost of the Amperex triode.

The second photo shows three chimneys, the SK416, the SK406 and the "house brand" chimney with no marking. The exhaust hole on all three is different in diameter and location. The first one goes with the short, fat 3-400Z. Our distributor had at least one more variant, the SK406B, said to be shorter than the unmarked chimney on the right (SK406A). The two sizes of 3-500Z should be carefully used with the appropriate chimney, depending on airflow requirements and design. The use of a radiating anode cap would mandate that air be forced to flow around the cap. It is good practice to direct a steady stream of cool air to the anode seal.

