

# VACUUM TUBE AUDIO AMPLIFIER



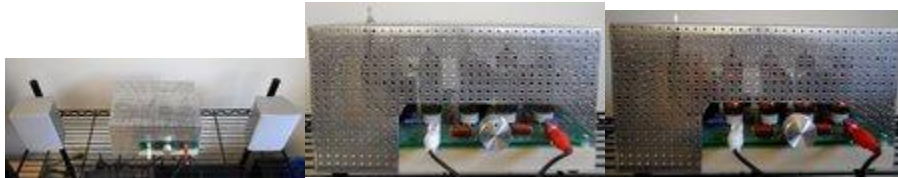
I have been somewhat interested in vacuum tube projects for a while now after I refurbished an old AM radio from my grandmothers house. Although a simple project, involving cleaning the radio and replacing the old tubes with new ones, I think the main draw of a tube project is that distinct retro feeling you get when you fire up the project and it starts glowing, but in a good way. While looking around for a simple, beginners tube project I stumbled upon a fairly large community of people who had built and subsequently modded the K-502 audio amp kit from Antique Electronic Supply.

I purchased the kit and built it in a couple of hours. It is a very simple project to complete, consisting of only about two dozen parts. I had originally planned to assemble the kit in an enclosure, but my final assembly behaved poorly (I think in part due to improper grounding). I reassembled the parts on the pine board which comes with the kit and it now performs flawlessly. The amp takes a standard left and right RCA style audio input and can output up to 8 Watts of power.

This may not seem like much, but with efficient speakers it gets loud enough for any common usage around the house.

I would still like to put some sort of cover over the board to minimize the risk of myself or others from coming into contact with the line voltages present. Although not the most inexpensive kit out there (compared to some solid-state kits), it is cheap compared to other tube based audio amplifier kits which can run upwards of \$300. Definitely a fun project, especially if you need an extra audio amplifier.

Ever since I first completed this project I have wanted to build an enclosure for it. I wanted something that would decrease the risk of electric shock while also showing off the cool aspect of the vacuum tubes, ie. their characteristic glow.



In order to keep it simple I bought a sheet of aluminum that had a pattern of pre-punched holes in it at the hardware store. This allows the tubes to be ventilated while still being visible. I then made a template out of cardboard to determine what shape needed to be cut from the sheet of aluminum that could then be bent into a proper enclosure. I made sure to leave tabs on the sides so that I could secure adjacent sides of the box to one another with sheet metal screws.

I then relocated the power switch to the top of the case and attached the enclosure to the wood base with screws. Overall I am fairly satisfied with this enclosure. It's not the perfect case for a project like this since you have to remove the box to change burnt out tubes, but it is good enough for my purposes.

About two months ago I made an enclosure for my vacuum tube amplifier. While a decent first effort, I became more frustrated with it as time went on. The poor nature of my design prevented me from accessing the tubes themselves as well as the speaker wire connection points on the main board. Also, esthetically, it blocked the view of the vacuum tubes too much.

Instead of starting over from scratch, I decided to try to reuse the existing enclosure. In order to solve my complaints with the previous design I came to the conclusion that what the amplifier really needed was a circuit board cover, not a full enclosure. To accomplish this, I shortened the enclosure by cutting off the back couple of inches of aluminum. This allowed access to the speaker wire terminals. Next I removed a couple more inches from the bottom, shortening the overall height of the enclosure. Then I cut out a rectangle in the middle of the top to allow the tubes to stick through. Finally I re-attached the case to the base board using six screws instead of four, the two additional screws in the front greatly stiffened the whole unit.



I am much more pleased with my second attempt at enclosing my vacuum tube amplifier. It is much more functional, as well as better looking.

Source: <http://www.highonsolder.com/blog/2007/8/13/vacuum-tube-audio-amplifier.html>