

Assembly Instructions

The Tube Amp, Remixed
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1. Choose, make, or repurpose an enclosure. I used a 16" x 8" x 3" aluminum enclosure, which easily fit all of the components without too much extra space.
2. Follow the instructions provided with the 16LS tube amp kit to assemble the amp, with the following changes:
 - (a) Install the tube sockets and the rectifier (DB1) on the top of the circuit board, which is the side with component names printed on it.
 - (b) Install the rest of the components on the bottom of the circuit board.
 - (c) Do not install the volume control potentiometer, the RCA input jacks, the transformers, and the power leads.
3. Modify the headphone to RCA cable included with the iPod dock:
 - (a) Leaving the headphone jack intact, cut the cable to an appropriate length for your layout.
 - (b) Strip the cable back around 3". Heat shrink the end of the cable sheath, leaving the wires protruding.
 - (c) Strip the ends of the wires. Solder the red wire and a ground to the right input pads on the circuit board. Solder the white wire and the other ground to the left input pads.
4. Solder a 6 conductor shielded twisted pair cable between the 6 pads for the volume potentiometer on the circuit board and the potentiometer you'll be mounting on the front panel. Run another lead or use the cable's shield itself to connect the ground pad on the circuit board to a 1/2" ring terminal.
5. Layout and machine holes in the enclosure according to the drawings.
6. Install the iPod dock and its power supply:
 - (a) Using epoxy or hot melt glue, stick the iPod dock in place under its opening in the enclosure.
 - (b) Remove the plug from the power adapter and solder leads onto the tabs that remain. Cover the exposed connections with heat shrink tubing.
 - (c) Stick the power adapter in place, again with epoxy or hot melt glue.
 - (d) Connect the USB cable to the ipod dock. Coil and secure the extra length.
7. Install the transformers:
 - (a) Extend the leads on all of the transformers with 16ga wire. Use wire of the same color as each transformer lead, or otherwise label the leads.
 - (b) Install 1x 7/16" grommet near the power transformer and 2x 3/8" grommets near the output transformers.
 - (c) Mount the transformers on top of the enclosure using 8-32 hardware.
 - (d) Feed the leads through the grommets holes.
 - (e) Make a drawing of the transformer connections on the bottom of the circuit board. Label them according to the markings on the top of the circuit board, which will no longer be visible once the circuit board is installed.
8. Install the circuit board inside the enclosure on 1/2" 6-32 standoffs.
9. Install the mains wiring:
 - (a) Mount the on-off switch and the power indicator light in the front panel.
 - (b) Put the cord holder around the power cord and snap it into the rear panel.
 - (c) Wire the mains power according to the schematic.
10. Install everything else:
 - (a) Install the volume potentiometer in the front panel. Put the ring terminal from the circuit board around the threaded shaft between the pot and the back of the front panel. Install the knob.
 - (b) Plug the audio cable from the amp input into the line out plug on the iPod dock.
 - (c) Install the binding posts in the rear panel. Solder one end of 4 or 2 pair of 16ga wires to the output pads on the circuit board and crimp #8 stud sized ring terminals onto the other ends. Install those ring terminals onto the binding posts, paying attention to polarity.
11. Solder the transformer leads to the circuit board.
12. Double check all of your wiring and look for solder bridges.
13. Wearing latex gloves to block oil from your fingers, carefully install the tubes. The sockets are very tight, so you'll need to support the circuit board from below and rock the tube slightly around in circles while fitting them.