Subject: 201 Measurements and Notes
Posted by microwatt on Mon, 25 Sep 2006 00:51:58 GMT
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Here are some notes about my work-in-progress 201 speaker build. My dad and I are building these at his place, two hours away, on the rare occasions when geography, work and child-care are in perfect alignment. At the moment we've got all the stock cut and the sides and ribs glued up. The next step will be cutting driver and port holes, then gluing up the front and rear baffles, then filling and sanding, then veneering, then finishing, then installing drivers, crossovers and port tubes. If I have finished speakers by the end of 2007, I'll consider myself a lucky man.Based upon what I read online, there are two main types of 201's: the older style, with three groups of two curved struts, and the newer style, with three groups of three straight struts. The older style only came in a fifteen-ohm version. The newer style came in both fifteen-ohm and eight-ohm version. Thorsten's pair seems to have been an older-style pair, and the Decibel Dungeon pair seems to be the newer-style. The older style are taken to be the better sounding, but are in shorter supply and thus are more expensive. I bought a pair of the eight-ohm version of the newer style for $200 on eBay last winter.I have not been able to locate any published specs for the newer version, so I bought a Woofer Tester 2 from Parts Express and used it to run the drivers through the added-mass-method tests (I balanced five nickels around the inside edge of the whizzer's dust cap. No idea whether that gave valid results, but the measured and calculated values don't appear crazy to my naive eyes.) Woofer Tester spit out the following specs (average values for the two drivers):Revc (Ohm) 5.48825Fs (Hz) 42.51945Zmax (Ohm) 37.93795Qes 0.49325Qms 2.89105Qts 0.42085Vas (L) 157.6913Vas (ft^3) 5.56885Sensitivity (db @ 1W/1m) 95.7484When I run those figures through BoxPlot 3.01 and align the enclosure, BoxPlot recommends a 6.41ft^3 enclosure tuned to 40.7Hz. For two 4" ports, BoxPlot calculates that each port must be 3.45" long to give a 40.7Hz tuning.I decided that I wanted to build cabinets with the rough proportions of filing cabinets: Tall, narrow and deep, with the 201's centered at 36" from the floor with spikes installed. Each box has two window braces. Here are the final cabinet dimensions (assuming 3/4" stock):Ext H (In) 46.5Ext W (In) 15.825Ext D (In) 19Int H (In) 45Int W (In) 14.325Int D (In) 17.5V Total (In^3) 11280.9375V Driver (In^3) 120V Brace (In^3) 64.85625V Net (In^3) 11031.225V Net (Ft^3) 6.383810764 I'm planning to use Fostex FT17H tweeters. I haven't chosen crossover values yet.Hope this helps. Please forgive (but do point out) any boneheaded errors you spot.Thanks.-uW