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Subject: pi 2 towers

Posted by [Mario](#) on Mon, 13 Nov 2006 22:55:49 GMT

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Hi! wayne thanks for the plans for the pi 2 towers I'm going to order the speakers from your website, but I have a question about the size of the hole for the speaker wires, and the other is about the braces they should be all along the cabinet or small sections? and did you recommended to put the box together with screws or finishing nails, and last insulation if you can be little more specific, and I almost forgot in my line of work we use fiber glass duct board rigid 1 1/2" thick with an R value of 6.5 can that be used to insulate the speakers Thanks Mario....

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Subject: Pic 1

Posted by [Shane](#) on Mon, 13 Nov 2006 23:59:09 GMT

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Here's a couple of pics of mine that may help.

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Subject: Re: Pic 2

Posted by [Shane](#) on Tue, 14 Nov 2006 00:00:04 GMT

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Subject: Re: Pic 1

Posted by [Mario](#) on Tue, 14 Nov 2006 00:25:20 GMT

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Thanks Shane, OK I got the idea I was thinking making all the cuts in 45 degrees that way the plywood edges aren't going to be exposed, did you use veneers to cover the edges of the plywood ? one question how did you place the insulation and if you use screws or finishing nails, what kind of wood do you use to make the crosses, it looks to me like a piece of 1 x 14 cut with the jigsaw I was thinking to put the braces all along the inside corners of the box and use carpenter's glue in all the joints when finished with the box is going to be tight as a drum ???? during fly season lol!! please let me know if I'm correct.. Thanks Mario

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Subject: Re: Pic 1

Posted by [Shane](#) on Tue, 14 Nov 2006 04:11:00 GMT

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Well, my cabs are all MDF, not plywood. I used butt-joints as you can tell. The rear panel, sides, and top/bottom I reinforced with dowels at the glue joints. I just used clamps to hold it all together while it dried. The front of mine is a 1/2" MDF panel with a 1/4" or 3/8" (I can't remember now) panel glued right on top of it and held in place with screws which will get removed later on. I cut the holes in the 3/4" front big enough for the basket of the driver, then cut holes in the thinner piece as large as the outside diameter of the speaker for a recessed look. Since I didn't have a circle jig for my router at the time, this seemed to work. The braces are just pieces of 3/4" MDF that I cut out the corners on. I cut these pieces on my table saw at the same time I cut the sides/top/bottom so they were the exact same size front to rear. An easier method is just to cut some braces that are 1 1/2"-2" wide and put them in a cross pattern. Or cut a square piece like I did and cut the middle out for a window frame type of brace. Really anything you can do to stiffen the cab up will help. I think Wayne recommends kinda what a minimum amount of bracing and the locations in the directions? I've never gotten around to veneering mine yet! LOL!!! I've had them sitting in the room for about a year or so and can't bring myself to tear them apart to do it! Mine are a little different though as I plan to put a solid oak top and base on them as well as a couple of 1 1/2" oak strips up the sides of the front stained in a red oak. Then veneer the actual front baffle, sides, and rear with maple in a natural color. Here's a link to a previous post of mine showing the front so you can see what I mean.

<http://www.audioundtable.com/PiSpeakers/messages/18412.html>

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Subject: Re: pi 2 towers

Posted by [Wayne Parham](#) on Tue, 14 Nov 2006 04:14:25 GMT

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towers should be built. The connector panel cutout is 2 1/8" x 2 7/8". You can put it anywhere but we center them 9" down from the top in back.

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Subject: Re: Things about stick braces and gluing up cabinets

Posted by [Bill Epstein](#) on Wed, 15 Nov 2006 01:40:48 GMT

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There are 2 things I don't like about stick braces just from my own experience. When I built my first speakers, the Theatre 4's I found that cutting the sticks exactly to size didn't keep them in place while the glue dried. Over-sizing them, which is what I did, caused a subtle bulge in the panels that only showed up after veneering. So take to heart what Shane says about cutting them same time as the panels and find a way, as he did, to keep them in place. Now I use 'window

braces'.....that are cut the same size and time as top and bottom panels so they also help square the cabinet during glue-up. Very important if you don't use fasteners which I deem a needless complication. I also feel intuitively that they spread the load better but don't know if Wayne would agree from an engineering standpoint. I always dry clamp first to be sure the parts fit as well as having at hand all the clamps I'll need. It also tells me which clamps may torque the workpieces so I can plan for that. I never use glue straight from the bottle 'cause I can't judge how much to use. Acid brushes, those aluminum barrels with short bristles are just right. I pour out a puddle on a piece of scrap and paint the glue on both surfaces, thinly. On ends I make 2 applications, one after the first is dry. The thin glue spread is necessary for making the 'rub joint' that holds the top and bottom in place prior to clamping. When you rub 2 glued surfaces back and forth a bit, after a few times a bond develops and it takes some effort to move them some more. Too much glue just lubricates and this won't happen. I lay down the back panel on the bench. Then I paint glue on one edge of the top and bottom panels (remember edges get 2 coats), paint the matching area of the back panel and rub them until the panels will hold an upright position. I know, I know....but let's not go there....Now I apply glue to the sides of the top and bottom and along the outside of the back where the sides will go. I've already put one coat on the edges of the sides and quickly follow up with another. This is why white carpenters glue or the too expensive Titebond 3 is better than yellow. You need the longer open time to do all this. This is the time to finally use the clamps. You have to clamp the top and bottom vertically as well as the sides horizontally; the 'rub joint' won't hold up to the clamping pressure. Leave the upper horizontal clamps off until you glue-up and place the braces. Apply only enough pressure to see 'beads' of glue squeeze out. Where you don't see them you don't have a good bond, either from too little glue or not enough clamps. After about an hour the glue is just rubbery and can be easily removed with a sharp chisel or a scraper. never wipe of wet glue with a wet rag. It will spread the glue into the wood and/or deform the MDF. Once the glue is dry, about 4 hours, you have a cabinet minus only the front baffle. At this point, I double check the positions of the drivers and ports in relation to the bracing. Only then do I cut the driver and port holes. Caulk all the joints and install the stuffing, crossover and wiring. Then the baffle. Listen. Enjoy.

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