Subject: One pi - almost ready
Posted by RMW on Thu, 06 Jan 2005 03:53:01 GMT
View Forum Message <> Reply to Message

I'm in the final planning phase of a one pi project, using 5/8" MDF with butt joint, screw and glue construction, and no internal bracing. I have an ample supply of #8 particle board screws and 1/8" drill bits for the pilot holes, so I will be able to practice on scrap material before I actually start assembling the boxes.I've modified the dimensions slightly. The plans call for internal dimensions of 7.25 x 11.25 x 17.25. I decided to go closer to the golden ratio and came up with 7 x 11.25 x 18. The baffle layout is identical to the original, except the center for the tweeter cutout is 3 3/8" from the top of the baffle, as opposed to 2 5/8" in the original design.Other things that may actually have an effect on the sound of the finished product - I plan to line the top, one side and the rear panel with 3 1/2" R-12 fiber glass and coat the exterior surfaces with this stuff:http://www.duplicolor.com/products/truckbed.htmlI have a neighbor who is a serious woodworking hobbyist, and he has agreed to help with corner rounding, driver recesses, and hole cuts. I repay him with stuff from Lee Valley - circle jigs, router bits, etc. - the arrangement is beneficial for both of us. Anyway, on to my question.Does the 23 liter gross internal volume for the one pi design include allowance for internal bracing? I'm asking because my implementation of the design doesn't use any braces. This is my first vented box project, and I don't want to muck it up Thanks!

Subject: Re: One pi - almost ready
Posted by Wayne Parham on Thu, 06 Jan 2005 04:27:41 GMT
View Forum Message <> Reply to Message

Those sound like some seriously good speakers. I hope you'll post photos when you finish

loudspeakers. The towers need braces, as do the other larger speakers. But these speakers are small and the cabinet is very rigid without adding braces. The internal volume is right if no braces are used.

Subject: Which part of Canada are you in? (nt)
Posted by GarMan on Fri, 07 Jan 2005 20:12:24 GMT
View Forum Message <> Reply to Message

nt

Subject: Re: Which part of Canada are you in? (nt)
Posted by RMW on Fri, 07 Jan 2005 20:56:15 GMT
View Forum Message <> Reply to Message

Hi GarMan,I'm in SW Ontario - Kitchener-Waterloo area. What gave me away, the liters? LOL....

Subject: Re: Which part of Canada are you in? (nt)
Posted by GarMan on Fri, 07 Jan 2005 22:35:52 GMT
View Forum Message <> Reply to Message

No. Lee Valley. Easy to spend all your allowance there, isn't it?

Subject: Re: Which part of Canada are you in? (nt)
Posted by RMW on Fri, 07 Jan 2005 23:16:07 GMT
View Forum Message <> Reply to Message

For sure - Toys 'R' Us for woodworker types. They ship to USA and international customers too. I'd be interested to hear what our American friends think of the prices.

Subject: Re: One pi - almost ready
Posted by RMW on Mon, 17 Jan 2005 02:23:05 GMT
View Forum Message <> Reply to Message

Update - I finally got the MDF yesterday - all panels cut to size, and the guys at the lumber yard did a really good job. Yesterday I put five sides of each box together and caulked all the inside joints with clear silicone. Today I applied the first coat of primer - one more to go. I decided to try Benjamin Moore black chalkboard for a finish, instead of the truckbed liner stuff. So tomorrow, I'll apply another coat of primer in the morning, followed by the first finish coat tomorrow afternoon.The mailman brought a new Jasper model 400 circle jig on Friday, payment for my woodworker friend who is helping with the cutouts. Just my luck that his folks were celebrating their 40th anniversary yesterday, so the cutting of the holes will have to wait a few days. I'll be ready - the centers for the cutouts are marked - ready when he is. In the meantime, I still have to cut the fiber glass panels for box lining. Not looking forward to that....I will post pix when the job is done. One question before I go - any ideas on the best tool to make clean cuts on the cardboard mailing tube? I'm thinking a utility knife with a new blade, but I'm open to other ideas.

Subject: Re: One pi - almost ready
Posted by Wayne Parham on Mon, 17 Jan 2005 15:51:33 GMT
View Forum Message <> Reply to Message

Saw the port tube with a table saw. That will give you a very smooth and straight cut.

Subject: Re: One pi - almost ready
Posted by RMW on Fri, 04 Feb 2005 03:21:39 GMT
View Forum Message <> Reply to Message

Setback...my neighbor and I got together last night, and using his router and the new Jasper jig, we did the through holes for LF and HF drivers, plus port and terminal cups - all on the baffle. Tonight we were planning to cut recesses/rebates, using his router table and his brand new Sears 1/2" rabbeting bit. We did a test cut on a piece of scrap, and found that the 1/2" referred to the depth of the bit, and the actual width of the bit's cut was only 3/8" - 1 1/4" diameter bit minus 1/2" bearing diameter divided by two. I did an extraordinary job of managing my rage....I'll be picking up a real 1/2" bit tomorrow, so it's not the end of the world, but I have run into another issue, and need some help and advice. We did the port cutout 2 1/2" according to the plans, and I discovered that the cardboard mailing tube I picked up at Staples does not conform to the design specs. Specifically:1. The 2 1/2" mailing tube, made and purchased in Canada, is 2 1/2" ID, so the tubing does not fit in a 2 1/2" cutout.2. The tube's wall thickness is roughly 0.1", not 0.03" as specified in Wayne's plans.Questions:1. Can anyone on the north side of the 49th recommend a source for a tube that will suit for this application?2. If 1 is a no go, question for Wayne - would you be willing to sell me a suitable mailing tube? OD = 2 1/2", wall thickness = 0.03", length = 24". (Did I mention I'm working on six identical cabinets for my HT?)Thanks for any and all suggestions.

Subject: Re: One pi - almost ready
Posted by Wayne Parham on Fri, 04 Feb 2005 11:38:49 GMT
View Forum Message <> Reply to Message

We've run into this before, occasionally the port tubes are made slightly larger than spec. The added strength from greater thickness is good, but it does make OD slightly larger. It's best to use an adjustable hole cutter and set it exactly to match the duct. Honestly, the best and easiest way is to cut new baffles, I think. But you may be able to open up the port cutout slightly to fit the thicker tube in place.
 Port tube material at PaperMart.com

Subject: Re: One pi - almost ready
Posted by RMW on Sat, 05 Feb 2005 00:25:58 GMT

Vented box theory is just that, theory, for me at this stage. I'd like to know what you think of this.My port cutout and the ID of my port tubing are both equal to 2 1/2" as opposed to the 2 3/8" in the original design. Not much of a difference, I know, but as I understand it, to maintain a given tuning frequency, an increase in the port diameter dictates that the port length should also increase. Any thoughts on mounting a 3" length of my 2 1/2" tube on the backside of my 5/8" baffles, and flaring the front side of the port cutout using a roundover bit? My reasoning is by increasing the length of the port from 3 1/2" to 3 5/8" I would be compensating for the increased port diameter, and by flaring the front of the port, I would be adding a bit more to the air volume "inside" the port. Plus, the flare might look kinda cool I have a lot of time and several pesos invested here, and like I said a few weeks ago, I don't want to muck things up. I have some basic test equipment, namely a digital multimeter and a synthesizer that I can use as a signal generator. I also have Dickason's LDC, so I can probably figure out how to measure box tuning frequncies and stuff. I'm not looking to improve the original design, just to match it as closely as I can with what I have.

Subject: Re: One pi - almost ready
Posted by Wayne Parham on Sat, 05 Feb 2005 13:14:37 GMT

The design specifies a port that tunes the cabinet to 50Hz. The truth is that there is very little difference in response in this particular cabinet if the port is tuned anywhere in the range from 45Hz to 55Hz, so there is a pretty broad range of port dimensions that work well.