Subject: First Timer Questions
Posted by Michael Brown on Mon, 26 Apr 2004 12:11:37 GMT
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I've got my first Theater 4pi Box built up have few do it right questions...I've built up a MDF box w/biscuts & tightbond wood glue, cut out all the holes, & put in two sets of 1"x2" popular cross braces above and below the bass baffle, each set has one brace to the left / right panels the other being attached to it and the front / rear panels, and I've got my pi kits ready to install.1) It seems pretty solid right now, do I need more bracing? For example do I need to put anything on the top bottom panel centers?2) Time to make it air tight. What do you guys recommend to seal the insides of the mdf panel corners? How about pl-400 or one of those window sealers? What have you guys used successfully?3) What do you recommend I seal all the removeable parts with?4) What is a good way to mount all the electronics in the box, worried about vibrations...5) What is the best way to attach the r13 to the mdf.

Subject: Re: First Timer Questions
Posted by Wayne Parham on Mon, 26 Apr 2004 20:57:32 GMT
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You might run this by some of the guys over in the Craftsmen forum. Then again, most of the regulars there visit here pretty frequently too. There's some really good cabinetmakers that hang out on these sites.Anyway, to respond to your questions:>> 1) It seems pretty solid right now, do I need more bracing?>> For example do I need to put anything on the top bottom panel centers?From what you've said, I think you've used adequate bracing. It generally can't hurt to add more though, unless you add so much material that you appreciably reduce box volume in doing so. A couple hundred cubic inches displacement from bracing in a cabinet the size of

you'd like, but I think you've done just fine.>> 2) Time to make it air tight. What do you guys recommend to seal>> the insides of the mdf panel corners? How about pl-400 or one of>> those window sealers? What have you guys used successfully? I think maybe the cabinetmakers should address this, but hopefully your joints are airtight already. Usually the seams are tight and glue together firmly. I know that bisquit joints sometimes tend to add some space, but I'd really prefer to see the joint be snug.If there are gaps that cannot be filled with glue, I'd probably suggest silicon seal.>> 3) What do you recommend I seal all the removeable parts with?The woofer is gasketed, and I usually don't add any gasket compound to it. if you do, then you will damage the gasket if you ever remove the woofer. Usually, if the hole is uniformly round and the mounting surface is smooth, the dry gasket seal is airtight.The tweeter is sometimes more of a problem. Generally, if it is centered on the hole, it will seal too. But you should test for leaks after assembly. When playing some material with a lot of bass fairly loudly, feel for air leaks with your hand. Run your hand around the edge of the tweeter, the amplifier connection panel and all edges that you are concerned about. Leaks will be prety obvious as gusts of air, if you are playing content loudly and with a lot of bass.If you find leaks, you can fill the gap with silicon. The tweter might be removed and a bead of silicon gasket material run along the inner edge of the horn mouth. You may not need silicon sealant there and I don't think you'll need it anywhere else. But

if you find leaks, that's a good way to seal them.>> 4) What is a good way to mount all the electronics in the box,>> worried about vibrations...I like to bolt the large woofer Zobel resistor and the crossover PCB on the bottom interior, others prefer the back. Use a wood screw large enough to bite into the wood but not so long that it goes through and pokes out. Then lay the insulation over the Zobel resistor and the crossover PCB and cut a slit for the wires to pass through.You can tack the Zobel capacitor down with glue or silicon if you like. You can also tack down the tweeter cabinet assembly onto the crossover in the same way. If you use a glue, be sure it is of a type that is semi-permanent. The silicon compount works good here too; Another thing that works well is weatherstrip adhesive. You can get that at any car parts store.But you can also just lay these components on the R13. It is thick enough that it will prevent the Zobel capacitor from vibrating against wood. The block of components on the tweeter cable assembly is pretty rigid and doesn't have freedom to move far enough to run against the wood, but it could vibrate against the PCB. But with the insulation separating it from the crossover board, it will be padded just like the Zobel capacitor and won't vibrate.>> 5) What is the best way to attach the r13 to the mdf.Some people tack it in with a staple glue. Four or five shots will do. It's fast and works well, that's how I've done a lot of speakers. But if the staple gun isn't strong, somtimes the staples aren't driven in well and they can come out. I donb't like the idea of debris inside speaker cabinets, especially pointed metal debris. So I prefer to use white glue. It takes longer and is a little bit messy. But it ensures a good bond that's free of debris. IN either case, staples or glue, remove the paper water barrier from the insulation before installing it.Glad to hear your making progress. Please keep us posted, and post some photos here if you can!

Subject: answers
Posted by ToFo on Mon, 26 Apr 2004 21:10:34 GMT
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Hi Michael,These may or may not be the best methods, but I have some incredible sounding T 4's and they have never failed in any regard."1) It seems pretty solid right now, do I need more bracing? For example do I need to put anything on the top bottom panel centers?"You would probably be fine as things are, but if you want even more solid, easy and do-able with what's at hand, just use the same stock you used for the other braces. Place them so the 1" edge is your glue joint from front to back along the middle of the top/bottom. (but check that they are not curled or bowed at all, since the long dimension will be the major joint) and cut them so they are just snug when tapped into position."2) Time to make it air tight. What do you guys recommend to seal the insides of the mdf panel corners? How about pl-400 or one of those window sealers? What have you guys used successfully?"If you joints and glue job went well you should be ready for sound, but I have seen people use more glue, caulk or what have you for insurance and it is probably all good. I went to no special pains with mine and can attest there is no leaking or air noise of any kind."3) What do you recommend I seal all the removeable parts with?"I didn't, except on my cheap-o terminal cups where I used rope caulk. no problems."4) What is a good way to mount all the electronics in the box, worried about vibrations..."This is where I went for it. I used pegboard as a surrogate circuit board to create my crossover. This gave me ample holes where I used fat nylon standoffs and rubber grommet or rubber washer sandwich to isolate the crossover panel from the cabinet. Just make sure that the screws do not touch the crossover board and that only the rubber does(stack like so, screwhead, big washer, rubber, crossover

board, rubber, big washer, standoff). This is probably a bit tweaky, but I like how easy it is to remove since it it not glued down and the standoffs make screw insertion easy enough to install/uninstall blind(assuming you glue all of the below the board parts to the cabinet so the stack doesn't fall apart when you remove it). Got it all at the hardware store cheap."5) What is the best way to attach the r13 to the mdf."I just used adhesive applied in a zig zag pattern. I wondered, but it stayed put. A few staples to keep it down while it dried was my insurance and I couldn't tell you which holds it now, but it is very there. Note, if you use staples, few is good, many will tend to keep the glass squashed down in so many places and it doesn't suck up sound so good. Fluffy glass = happy box.

Subject: Re: answers
Posted by Wayne Parham on Mon, 26 Apr 2004 21:36:02 GMT
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Fluffy glass = happy boxYou're right. Made me laugh, but you're exactly right.
