Subject: Cabinet Doors, 3Pi changes and Plan Request
Posted by joshua43214 on Fri, 30 Mar 2018 21:54:02 GMT
View Forum Message <> Reply to Message

Hello all,

I have several different topics I would like some help with. I am going to order 6Pi's in a couple of weeks, and I plan to use a 3Pi as a center channel.

My first question is in regards to the dimensions of the 3Pi. The 6Pi's will flank a fireplace that I have never used in 23 years of ownership. It occurred to me that I could tuck the 3Pi back into the fire box. My fire box is tiny and measures 21w x 23h x 14d. This is fairly close to the side profile of the 3Pi. I am wondering if I could make the speaker shorter and put the extra volume on the side along with the drivers and horn.

My second question is in regards to the bookshelves that flank the fireplace. I am going to replace the freestanding shelves that came with the house with proper built-ins with doors.

I am worried about the doors themselves resonating, and would like some advice on construction materials. The walls are lathe and plaster.

I see two options, sliding doors (which are not a perfect fit style wise) and flush mounted hinges.

Hinges are by far the simpler solution since I can use latches that will pull the doors firmly closed to prevent any rattles. The down side is the doors can not be of equal width if I want to be able to open the door closest to the fireplace with out moving the speaker, but I am willing to have unequal doors.

I do plan to put the speaker on wheels, but I also plan to store CD's and movies in the book shelves, so having easy access to the shelves is important. Sliding doors will require me finding and fabricating some solution to hold them rigid so they do not rattle.

The last option is not to use doors at all, but I think that defeats the purpose of using a corner horn in the first place. Please correct me if I am wrong on this point.

Any thoughts on door materials? Is raised panel construction ok? Or do I have to use flat panels like yucky Ikea stuff in my Arts and Crafts bungalow?

The ideal thing to match the house would be oak doors with 6 or 8 glass panels, next best is 2 (or even 1) oak raised panels, last would be oak veneered plat panel. Oak raised panels must be free floating, and can be challenging to make so they do not rattle during the winter. Glass panels can be rigidly glazed, but will make any damping materials visible unless they are almost opaque (opaque = very expensive).

Flat panels have the benefit that I can veneer over anything solid enough to not get permanently crushed in my veneer press.

My intuition says that the contours of raised panels are OK, since the wavelengths coming out of

the bass box will pass right over them, but my understanding is that the bass driver does share a fair bit of the low-midrange that could be affected.

Any thoughts on what doors will do? Should they be backed with damping material? If so, what is good that is still thin? Are glass panels just a nightmare problem?

I am a very competent furniture maker (formerly a professional), and a competent hobby machinist. I have two shops full of woodworking and metal working machinery. So basically, nothing is out of the question provided it is worth the hassle.

Lastly, Wayne, please email me plans for the 2Pi tower and the 3Pi please.

Thank you all in advance
-Josh

Subject: Re: Cabinet Doors, 3Pi changes and Plan Request
Posted by Wayne Parham on Sun, 01 Apr 2018 16:33:21 GMT
View Forum Message <> Reply to Message

You've got mail!

As for the cabinet and doors, I think you understand the issues well, and you'll just have to investigate the situation using the knowledge you already have. As you mentioned, the two main things are acoustic size of the discontinuity and damping of the panels.

Where a discontinuity is acoustically small, it is inconsequential. This may make the shelves a non-issue for you, because bass wavelengths are long. I often find that adjacent bookshelves are acoustically invisible.

As for the possibility of doors, they just need to be free from vibration and panel resonance. Probably all you'll need is rubber stoppers to prevent them from buzzing when they're closed.

Onto the topic of modifications, I would suggest scanning the forum for posts on mods. The last

might encounter.

In a nutshell, some designs are more easily modified than others with confidence that there won't be adverse effects. Subwoofers, for example, usually have cabinets that are acoustically small so dimensional changes are usually inconsequential because standing waves cannot develop inside. But large full-range speakers are exactly the opposite. You have to assume standing waves will be present, so the shape and position of things are important. The bottom line is I'd suggest

Subject: Re: Cabinet Doors, 3Pi changes and Plan Request
Posted by joshua43214 on Thu, 05 Apr 2018 19:47:08 GMT
View Forum Message <> Reply to Message

Thanks Wayne for the reply.

Just ordered a pair of 6Pi's and a pair of 2Pi towers.

I had to split the order up, since PayPal could not handle all four kits in one order. Might not be a bad idea to add some text to the order page instructing people to order different kits separately, especially since I am not sure the shipping works out the same when order is split.

I will try to get a build thread going since I came up with a nice method for making the horn flares that can be done in most shops.
I also made up CAD models and full drawings. Am I right in assuming I can not provide either to the public here or on my own website? Makes me feel like a hoarder not sharing them, but I understand it is your intellectual property

-Josh

Subject: Re: Cabinet Doors, 3Pi changes and Plan Request
Posted by Wayne Parham on Fri, 06 Apr 2018 14:48:07 GMT
View Forum Message <> Reply to Message

Thanks for your order, Josh. We're working on it now.

Also, I appreciate your offer for the CAD drawings, but we already have CAD drawings and even CNC code for some of the more complex models and parts. We don't provide those drawings or G-code because we don't want to encourage third-party flat-pack builders. There have been a few unapproved businesses that have sold flat-pack kits for our models, with one of the most aggressive being just a few years back. They usually start off offering to build cabinets or flat-pack kits as a favor or limited service, but then gradually transition to a full-fledged manufacturing operation.

We provide flat-pack kits for the more complicated horns, and will offer flat-pack kits for all models by the end of the year. This is something I've vacillated on over the years, because I've usually suggested to people that local builders do the work. Mos of the cabinets are simple to build, and the cost of shipping large cabinets is quite expensive, so my thinking was the savings could allow the builder to afford a high-quality finish or just put cash in their pockets. But still, many would like a flat pack offering, and third-parties seem to always try to fill the void. So we'll soon be offering flat-pack kits in addition to the existing kit offerings.