
Subject: Subs for floorstander and corner horns
Posted by [Ybolg](#) on Thu, 23 Feb 2023 14:14:50 GMT
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Question on flanking and distributed subs that I don't think has been clearly stated.

My understanding, at least with respect to the bookshelf speakers, you'd probably be looking to add flanking subs (with left or right feed, crossed around 100hz) before distributed subs (summed stereo, crossed 60-80hz).

I've seen comments that subs are not as necessary on the 2pi floor standers or the 6/7/8 horns. Would it be fair to say that for these models you'd then be less concerned about smoothing in the flanking sub range, and instead be looking to add distributed subs first to fill and smooth the lower frequencies?

Subject: Re: Subs for floorstander and corner horns
Posted by [Wayne Parham](#) on Thu, 23 Feb 2023 14:29:37 GMT
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There are two different answers to what are really two different questions here.

One is whether subs are needed for six Pi and seven Pi constant-directivity cornerhorns. The other is whether subs are needed for two Pi towers.

They're two different kinds of speakers, and they are intended to provide solutions for different requirements.

The six Pi and seven Pi cornerhorns don't need flanking subs but they do need distributed multisubs for best sound. They need the extra bass extension and they benefit from modal smoothing.

The two Pi tower doesn't really need the additional extension of a subwoofer. Subs could be used to smooth room modes, and I suppose they might offer extra extension, but the towers sound good without them. Two Pi towers aren't really intended for an installation like that.

The one Pi, two Pi and two Pi tower loudspeakers sound great, and I love them. But they're really budget models. They sound better than they have a right to sound at their price point.

Most times, the one Pi and two Pi speakers are used as surrounds. As such, they generally are used with larger mains and subs. And they are really providing ambience, not imaging. They don't need to provide controlled directivity in that role.

When used as mains, they are usually either in small rooms or secondary listening environments. I have a pair of two Pi towers in my bedroom, and I listen there and watch movies there a lot. But it isn't my main loudspeaker system. Sounds great, but it doesn't benefit from controlled directivity or modal smoothing.

The two Pi tower fills a niche where someone has a need for a good-sounding set of main speakers on a budget. It is also great where space is limited. In either or both of those cases, the two Pi tower produces high-fidelity sound with ample bass. It's a more traditional "cone/dome" speaker that does a great job for what it is.

Subject: Re: Subs for floorstander and corner horns
Posted by [Ybolg](#) on Fri, 24 Feb 2023 17:59:21 GMT
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Wayne,

Thanks for all the clarification!

I have another question which may or may not have been answered elsewhere. I'm looking at subwoofer plate amps, and I'm leaning towards the Dayton Audio SPA500. Since your 3pi subs are carefully tuned to 20Hz, would you lengthen the cabinet to make up for the decreased interior volume caused by the plate amp protruding into the cabinet? Rough calculation (I'd get more precise for the real deal) on this amp would see approximately 400cubic inches of volume reduction which can be made up for by 1+ inches of extension. in one dimension of the cabinet.

Subject: Re: Subs for floorstander and corner horns
Posted by [Wayne Parham](#) on Fri, 24 Feb 2023 18:26:41 GMT
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Yes, absolutely. Compensate for any displaced internal volume by "growing" the cabinet to make up for the difference.

In this case, internal standing waves aren't possible because cabinet dimensions are so much smaller than a wavelength throughout the passband. So you don't need to worry about standing wave issues when you modify the dimensions of an acoustically small subwoofer cabinet.

Subject: Re: Subs for floorstander and corner horns
Posted by [Ybolg](#) on Wed, 08 Mar 2023 18:27:51 GMT
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I thought I saw this question answered somewhere, but I can't find it.

What's the flange thickness for the 3pi sub? Looking to test out my new router and circle jig.

Subject: Re: Subs for floorstander and corner horns
Posted by [Wayne Parham](#) on Wed, 08 Mar 2023 19:20:26 GMT
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Here you go:

LAB12 spec sheet

That shows overall diameter and baffle hole diameter, which can be used to determine the width of the routed groove. Depth, on the other hand, isn't listed there. But the depth should be to 5/8" to 3/4" to make the driver appear flush.

The rubber surround actually protrudes past the front gasket, even when the driver is at rest. So to make the gasket flush, you would want a 5/8" depth recess. To get the surround to be flush, you'd need a little more depth, about 3/4".

Subject: Re: Subs for floorstander and corner horns
Posted by [Ybolg](#) on Fri, 10 Mar 2023 13:30:19 GMT
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Wayne,

Thanks for the details! It's frustrating that none of these speaker spec sheets list flange thickness.

That kind of makes things easy for the LAB12 since your spec baffle thickness is 18mm. I can just cut out the recess OD, and glue in a 13.5"OD 11"ID backing ring behind it to mount the speaker on.

Plunge router and circle jig is too much fun. Right now I'm waiting on some new baffles for my 2pi floorstanders after I ruined a pair trying to cut them without the proper tools (using the scrap for backing rings). Figured I'd use up the rest of the sheet with some sub cabinets.
