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Subject: 4pis lacking bass?

Posted by [dutchswan0311](#) on Wed, 09 May 2012 19:24:18 GMT

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Let me start by saying I am very satisfied by how loud my three 4pi LCRs go with no distortion. I was hearing flaws and was trying to troubleshoot what was wrong with the speakers, and finally figured out that it was flaws in the MP3 and WAV recordings (and you can hear them on poorly mastered CDs too). A clean audio source really helps!

That said, I hear many people talk about their 4pis and how they do an excellent job of digging deep and how they excel with bass; some people even saying they don't feel the need to supplement with subs. While I like what I hear so far, I am not hearing the kind of bass I was expecting based on how people described them. Here are the possible causes I am brainstorming:

1. The JBL 2226Hs are just not properly broken in yet? How important is the break-in period? Is it just a subtle difference, or is it a major noticeable difference?
2. I am listening for the bass after turning off the two horned subs that have been playing with them in tandem; which is causing a "before/after" affect that is tricking my ears into not hearing the bass that is actually there because they are missing what the subs were producing.
3. Flaw in wiring configuration. This would be human error on my part. It seems possible, but all I really had to do is ensure that my polarity was correct. As I read the notes on the crossover diagram, both the 2226 woofer and the DE250 tweeter treat black as +, which is how I wired them to the crossovers. While there is certainly room for human error here, there is not much.
4. Flaws in the 2226 drivers. I purchased them from Guitar Center's website. They were advertised as new, came in original JBL boxes/packaging; and appear to be a brand new product. I only bring this up because Wayne has mentioned that some unsuspecting persons may sometimes be given re-treads.
5. Flaw in construction. This doesn't seem likely. I followed the instructions to a "T" and probably was more careful than I needed to be. And...a flaw in construction for all three?

Anyone have any thoughts?

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Subject: Re: 4pis lacking bass?

Posted by [Bill Epstein](#) on Wed, 09 May 2012 20:04:39 GMT

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It's too easy to say you're not used to hearing accurate bass, but many would.

You're also probably aware that there is a trade-off between "going low" and efficiency. There's another trade-off between deep bass and low distortion.

As big as the 2226 is, and other pro mid-woofers, the light stiff cone has a relatively low 8mm Xmax. It's dead accurate on the low "E" string of the electric bass but rolls off quickly from there, leaving the 27Hz tone of the 88th note on the piano as a distant memory. However, it also doesn't "double" the sub 40 Hz tones which most listeners equate with deep bass.

I'm intrigued by your mention of Horn Subs which will play loud into the lower 40s, but no lower unless they're 80 feet long with mouths you can stand in.

Finally, those stiff cones are amazingly stiff and do require a lot of break-in. Get a vintage amp or receiver with a "loudness" control and, as George Anderson of Tubelab says, "turn it up till it explodes, then back off a notch".

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Subject: Re: 4pis lacking bass?

Posted by [dutchswan0311](#) on Wed, 09 May 2012 20:57:42 GMT

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Well, they are 20 cubic feet each, and I would guesstimate 16 feet long. I only have two finished but will have four by the end of the week. You CAN stand in the mouth, but I suspect you meant the whole body, not just knee deep lol . I am told four of them will be 130dB SPL and that they are 20Hz subs. I do not know at what frequency they are sensitive to 130dB.

Again, I am far from dissatisfied with my 4pis. If how they sound is how they are supposed to sound, then I'm good. I think you are correct in that I just don't know how they are supposed to sound.

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Subject: Re: 4pis lacking bass?

Posted by [Bill Epstein](#) on Wed, 09 May 2012 22:31:15 GMT

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Awesome horns! All your work is first-rate. If I wasn't in a 12x15 room in a condo I'd ask for construction details.

I'm planning a trip West this Summer; I wonder if your Dinner Theatre (Quad Cities?) is anywhere on a line between Memphis and Portland, Or.?

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Subject: Re: 4pis lacking bass?

Posted by [dutchswan0311](#) on Wed, 09 May 2012 22:38:40 GMT

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If your journey takes you on Interstate 80, then you will be within 10 minutes of the winery & dinner theater, which will soon be located to Sully, IA. I live in West Des Moines, so you would be almost driving past my house. Thanks for the compliment. They use the Dayton Reference HF, which runs about \$175. Takes 2 1/4 sheets of 4x8 plywood (or 2 1/2 sheets of 5x5). So, about \$400 to build each one if you use BB...\$300 if you use oak. My first one was with oak, the other three BB. The BB makes for a considerably heavier sub considering these folded horns are 60" tall, 30" deep, and 20" wide. I haven't weighed the subs yet, but my 1pis came in at 22lbs each while the 4pis weighed in at exactly 70lbs each.

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Subject: Re: 4pis lacking bass?

Posted by [Wayne Parham](#) on Thu, 10 May 2012 04:26:23 GMT

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I agree with Bill's assessment, completely. I listened to four Pi's for a long time without subs, and they satisfied me completely. But they don't go deep. Compared to little single driver speakers, they "dig down deep" but compared to pretty much any competent home hifi speaker, they really don't. They're high-efficiency monitor speakers, and don't get much below 60Hz. That's not very deep, and subs are needed for that bottom octave.

But the truth is you get much better sound with subs anyway, because of the modal smoothing they provide. Flanking subs and four Pi's are a match made in heaven, because flanking subs do their modal smoothing magic between 60Hz and 180Hz or so. Perfect overlap with four Pi's, just exactly what we want. Then the subs give the thunder, when required. So it's a great combination.

As for "break in", what you'll find with four Pi's is they definitely shift electro-mechanical specs when power is put to them. They're designed to be used at high power level, so - much to JBL's credit, in my opinion - the T/S small signal measurements are actually taken at high levels. That way, the box tuning is appropriate for the driver at high power levels.

The consequence is that box tuning is overdamped at low power levels. And since I tune all my boxes to be slightly overdamped anyway - it's more conservative, safer, never gives thumpy, bloated bass even when used with high output impedance or high power levels - since they're overdamped anyway, low power levels make 'em pretty bass light. Not a problem with subs, but you can hear it without subs.

They are probably 10dB shy below 60Hz at 1 watt compared to what they are at 100 watts. Even just 10 watts wakes them up. So it's not so much a first-use initial break-in period as it is a difference between low power and high power operation. First time the driver sees 50 watts, it's "broken in" but it will always be different in tonal character at 1 watt than it is at 10 watts.

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Subject: Re: 4pis lacking bass?

Posted by [chrisR](#) on Sat, 12 May 2012 15:58:19 GMT

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FINALLY!!! Confirmation that the stereo really does need to be cranked up to sound "right." I'm printing that out for the Mrs.

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Subject: Re: 4pis lacking bass?

Posted by [Nick77](#) on Mon, 14 May 2012 11:41:33 GMT

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Just want to add that ive found the pi4's bass to much more pronounced sitting on the floor. When up off the floor on stands the bass is less impactful.

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