Subject: AE Drivers
Posted by MerlinGS on Sat, 15 Oct 2011 14:20:46 GMT
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Hi Wayne,

I have not started on my Pi 7's yet, but I was wondering, how difficult would it be to use AE drivers on this design? Would it make a difference or would there be an advantage to just doing the 15" or would using AE's in the 10" also be viable? Is there a reason you didn't provide the AE's as an alternative for the Pi4's and Pi7s?

Thanks

Subject: Re: AE Drivers
Posted by Wayne Parham on Sat, 15 Oct 2011 15:12:56 GMT
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The reason I think it would probably work is the (300Hz) crossover point is low enough that the woofer characteristics would almost certainly be similar. Almost all woofers act pretty much the same in this range. The source location within the cabinet is the same, so I expect standing waves to line up the same. For all these reasons, it is likely that a woofer swap in this model would work well.

would be required in this model.

To expound a little bit - the TD15M is pretty much a drop-in replacement for the 2226 as far as T/S specs are concerned. It was designed to be a bolt-on replacement for many prosound drivers that have emulated this tuning. Kind of cool, really, that a pseudo-standard alignment emerged in the last couple decades.

What's potentially different is the behavior above about 500Hz. That's very specific to cone material and shape, including the dust cap. Impedance is also largely an issue, because most woofers have rising impedance due to voice coil inductance but the amount of rise and where it begins is widely different between models. So these things would need to be dialed in when using

I am often asked about the differences between JBL 22xx and AE woofers, and why I didn't use

literally decades. It's a great speaker.

with an AE driver. I am very fond of this model too. Can't say which I prefer - they are both very fine.

I tend to try and refrain from giving my subjective opinions on the comparisons between the JBL

speakers. I just think too highly of each of them. I don't hesitate to point out the benefits of midwoofers that have shorting rings, which is why I suggest the upgraded drivers over the stock ones. But once you get into the upgraded drivers, you're into the realm of what I consider to be the best speakers you can build or buy. It just doesn't get any better than that, both models are superb.

I sometimes make the comparison to cars. Which would you prefer, a Ferrari F40 or Porsche 959? Both are world class cars, both exceed 200MPH. It is like this with the fully upgraded

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Subject: Re: AE Drivers
Posted by MerlinGS on Sat, 15 Oct 2011 17:07:15 GMT
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Thanks for the info Wayne. Regarding the 10" driver in the 7 Pi, is there any benefit in upgrading the driver to an AE, or is the stock sufficient in that size? Also, I have read a number of posts where you speak of your fondness for the Pi 3s and 4s, but I have not noticed much on the Pi 7. Although one of the reasons I was choosing the Pi 7 was aesthetic (I'm planning to use it in a stereo setup in the living room, where they are readily visible), I assumed there was some benefit to controlling the sound wave below 1K. In the context of stereo, how do you find the 4s and 7s compare (each with upgraded drivers where applicable)?

Thanks

Subject: Re: AE Drivers
Posted by coctostan on Sat, 15 Oct 2011 18:53:44 GMT
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My models suggest that a TD10M would be less efficient than the Eminence Delta 10a spec'd by Wayne. This would require a crossover change for sure.

I'm curious if there are any upgrade drivers for the pi7 midhorn. I read your old midhorn thread and you mention the JBL 2012H, but it is no longer available. The JBL 2251J is very similar in spec's but uses a differential drive motor...and it is a 16 ohm driver. I'm curious if you would consider this a good fit for the horn if I were able to alter the crossover of the pi7 myself.

Subject: Re: AE Drivers
Posted by Wayne Parham on Sun, 16 Oct 2011 13:49:14 GMT

I've always noted my fondness of the constant directivity cornerhorns, saying things like "nothing else can beat this setup." I feel quite strongly that it is the best configuration possible for home hifi or home theater. The only downside is that not all rooms can support this configuration. In fact, most can't. But if you have the right corners, it is definitely the way to go.
High-Fidelity Uniform-Directivity Loudspeakers
Speaker placement and wavefront launchAs for the midrange drivers in the midhorn, the Delta 10 is very good in this application. I don't think much of the Delta 10 as a midwoofer (like would be required of a two-way) but it's excellent as a midrange driver, especially when horn loaded. Midrange horn loading leverages its strengths without being burdened by any of its weaknesses. Horn loading reduces excursion and its natural low-pass function attenuates cone breakup. So more expensive drivers tend to gain less, and ironically, sometimes don't even work as well.

2012 as an upgrade option for a while, but honestly, it didn't gain much for the price tag. A horn loaded Delta 10 does as well as the 2012 did to around 800Hz up, and actually performed better above that. Horn loading reduces excursion and its natural low-pass function attenuates cone breakup.