
Subject: Mid horn driver options
Posted by [jgoodd8050](#) on Tue, 19 Apr 2016 20:59:33 GMT
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Has anyone tried JBL's 2123 in the Pi midhorn? The Eminence certainly sounds good but I can't help wondering about the JBL...

Subject: Re: Mid horn driver options
Posted by [Wayne Parham](#) on Wed, 20 Apr 2016 23:07:09 GMT
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The JBL 2012 sounds fantastic on our midhorn. The 2123 is a great sounding driver too, but it rolls off early when mounted on the midhorn. It would still sound good with a tweeter crossed lower, but that's a completely different design with all the considerations of directivity matching, crossover phase, position of the lobes, etc.

Subject: Re: Mid horn driver options
Posted by [jgoodd8050](#) on Thu, 21 Apr 2016 02:29:16 GMT
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Too bad the 2012 is so hard to find. Maybe a pair will turn up someday...

Subject: Re: Mid horn driver options
Posted by [johnnycamp5](#) on Wed, 26 Apr 2017 00:41:48 GMT
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Is the pi mid horn specific to (designed for) the delta 10 and the jbl 2012 only?

Could it not be used as a general purpose "full range" horn, with a full range driver mounted to it, in an attempt to improve horizontal dispersion and perhaps dynamics?

I saw a fellow on another forum, who mounted a pair of Tang Band 1772's to a medium sized looking horn, it looked about the size of the pi midhorn, although that horn was round, with a round throat of approx 4".

He seemed quite happy with them.

Subject: Re: Mid horn driver options

Posted by [johnnycamp5](#) on Wed, 26 Apr 2017 13:06:19 GMT

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Here's the link of those round horns <https://www.audioasylum.com/cgi/vt.mpl?f=hug&m=166323>

Subject: Re: Mid horn driver options

Posted by [Wayne Parham](#) on Wed, 26 Apr 2017 17:30:16 GMT

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I tested the midhorn with a variety of drivers during development. By "variety" I actually mean "several" - even some that weren't 10" diameter. In fact, I first wanted to use 8" drivers but found none that were satisfactory. None went low enough. So that made me settle on 10" drivers, which provided the passband I wanted.

When choosing drivers for the midhorn, what I watch for is response at the edges of the passband, particularly above 1kHz. This is largely determined by cone shape (including the cap). And even more importantly, this aspect affects the blend with the tweeter waveguide. I am looking for a seamless transition in response and directivity.

Long story short is the two midrange drivers that are tested and approved for use in the constant directivity cornerhorn are the Eminence Delta 10 and the JBL 2012. We're juggling a lot of things here, so it isn't that other drivers aren't very good, just that the "stars don't line up" for use in the system. We are melding the bass bin, midhorn and tweeter not just in response but also directivity.

We want a seamless transition in response as well as uniform directivity without ripple on-axis or off-axis. So while I can nudge some characteristics with the crossover, the midhorn/driver subsystem still has to blend with the other horn/driver subsystems to create a seamless point source. It is not a trivial task. But with the drivers and the corresponding crossover components shown in the plans, the response is nice and flat at all radiating angles, providing uniform response throughout the room.

Subject: Re: Mid horn driver options

Posted by [johnnycamp5](#) on Wed, 14 Jun 2017 15:42:44 GMT

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"the response is nice and flat at all radiating angles, providing uniform response throughout the room."

I figured as much.

To me, that may be the most important feature of any "in home" (in room) speaker.

I am not surprised with all those combinations of priorities in the horn/speaker design, that it would take "years" (or should I say decades) to design/refine such a loudspeaker.

The reason I ask is, as I love to "diy", I had some TB 1772 full rangers i was trying to possibly horn load, and buid a "FAST" (full range and subwoofer technology) system with.

I wanted to horn load to try to increse sensitivity, and get more gain from them, as I thought they would not play very loud, despite their being rated at 95db/1w/1m, But after reading your explanation, I more realized you cant just plop a fullrange woofer on a horn. LOL!

So i tried it with just direct radiator, which also dramatically decreases the depth of the enclosure compared to a horn-

As you can see by the pics, these are not "real corners", otherwise I would have built some 7pi's> (I wonder how the 7pi's would work in this configuration?).

These are bi-amped.

I had best luck with the Tang bands high passed at 150hz (using a set amp), and the subs low passed at 170hz.(crown amp).

This is where they sound thier best to me, without taking room measurments.

The toe in (approx. 30d.?), although not 45d., does help widen the listening response in the room. These mains sit about 13' apart. They are set up on the long wall, so the seating area is about 12' back.

As you might guess, the overall volume isn't there like with my 4pi's.

I think their 95db rating may be a bit of embellishment.

I also figure, how can one expect this driver to compare to a nice compression driver?

They are somewhat dynamic sounding, but certainly not like my two ways.

An example Im talking about- high hats sounding like real high hats.!

The other boxes in the pics, with no woofers installed, are meant to go on top of the mains, creating a "single bass array" with the woofers being 2' from the ceiling and floor, with 4' vertical between the pair, quarter spacing for an 8' ceiling height.

Also, I never did post pics of my 4pi's with flanking subs-

File Attachments

- 1) [IMG_3631.JPG](#), downloaded 2514 times
- 2) [IMG_3629.JPG](#), downloaded 2571 times
- 3) [IMG_3632.JPG](#), downloaded 2564 times
- 4) [IMG_3633.JPG](#), downloaded 2604 times

5) [IMG_3660.JPG](#), downloaded 2610 times
