Subject: Conical horn for 15" driver
Posted by jlharden on Sat, 06 Nov 2004 00:09:38 GMT
View Forum Message <> Reply to Message

Hi Wayne, In your writeup for 12 & 15 Pi horns you mentioned a conical horn for 15" driver. I've been thinking about this for a while. How large of mouth is required to get down to 100-125 hz range? Can mouth be minimized any when cornered using walls to extend mouth? Could you run up to say a 1.6K xover point with something like a 2226? Considering a folded bass horn up to conical horn, then compression driven horn up top. Thanks for any thoughts, JerrodP.S. Finishing drywall in music room now, getting close to kicking off major speaker building projects!

Subject: Re: Conical horn for 15" driver
Posted by Wayne Parham on Sat, 06 Nov 2004 05:43:10 GMT
View Forum Message <> Reply to Message

We're thinking along the same lines here. The size of the horn will depend on your intended useage. If you plan on using them in the house, your horn can be made much smaller than if you need to be able to use them flown in freespace.

In freespace, you'd need dimensions of about 4 feet, both in length and in height and width. But in home, you could downsize this and still expect good results. This kind of horn is real easy to model with Hornresp.

Subject: hornresp question
Posted by jlharden on Mon, 08 Nov 2004 20:50:43 GMT
View Forum Message <> Reply to Message

Hi Wayne, Began modeling in hornresp, I started by figuring the throat area at 6 3/4 x 6 3/4 based on the 15" size, relative to 4 1/2 x 4 1/2 for a 10" driver. I set the mouth size for a 30" x 15" horn. I wasn't sure how to set VTC and ATC. ATC I made equal to SD(?) How do you figure VTC? I need a McBean for Dummies book. Thanks, Jerrod

Subject: Re: hornresp question
Posted by Wayne Parham on Mon, 08 Nov 2004 22:12:56 GMT
View Forum Message <> Reply to Message

VTC is the volume of the front chamber and ATC is the average cross-section of the front chamber. Set VTC to the volume of the cone and ATC can be probably a little less than SD. The shape of the front chamber is a cone, so cross-section area is tapered. You can vary these parameters a little bit and they don't do much to response. For example, the additional volume made when the driver is offset from the baffle with a gasket or thin spacer won't make a measureable different. But if you double the front chamber volume, that will.

Subject: Re: hornresp question
Posted by jlharden on Wed, 10 Nov 2004 21:07:46 GMT
View Forum Message <> Reply to Message

Thanks for the info Wayne. I'm not sure what to expect out of a conical front horn loaded 15" driver. I really haven't been able to find much info, though most I've located pertains to 6"-10" drivers. I may be trying to push pretty far into the midrange with the 15", though it is the same upper frequency range as the 15" 2-way setups. Looks like I might have to do some prototyping(better woodworker than engineer!). Take care! Jerrod

---

Subject: Re: hornresp question
Posted by Wayne Parham on Thu, 11 Nov 2004 03:26:00 GMT
View Forum Message <> Reply to Message

I think you'll really like 'em. Efficiency will be highest down low, but cone flex modes will add energy above 500Hz. You can crossover below that if you want to run them in their pistonic range, or you can go with a driver that is well-behaved through the midrange and move the crossover up, making it a wide-range system.

Subject: Re: hornresp question
Posted by ronco on Sun, 21 Nov 2004 03:14:16 GMT
View Forum Message <> Reply to Message

Exactly what I'm trying to do. 12 or 15 inch woofer horn from 100 hz. to 1.5k hz. Can you guys keep me posted. I don't know enough about the whole horn thing and would like some help with plans. If you come up with something in the near future please mail me your findings. I kind of need sketches. You know what I mean. I don't mind paying for proper info either. I'll be listening to you guys.Great thoughts. Ron roncodev@hotmail.com

---

Subject: 12" or 15" midhorn
Posted by Wayne Parham on Sun, 21 Nov 2004 06:25:55 GMT
View Forum Message <> Reply to Message

You might be interested in the midhorn I did with a 10" driver. It covers nearly the range you're wanting, shifted about an octave up on each side. But if that will work for you, it will get you going right away. It's been tested and its performance is documented so you can know what to expect from it.Or maybe scale it up for a larger driver. I'm fairly confident it would work pretty well, at least put you in the ballpark. Maybe you would enjoy making one and giving it a listen.