Subject: Two way- conventional and coaxial
Posted by hurdy_gurdyman on Sun, 16 Apr 2006 17:22:02 GMT
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Anyone care to comment on the pros and cons of a conventional two way woofer/tweeter horn and similar drivers in a coaxial configuration? Maybe touch on pros and cons of coaxial tweeter horns with the driver mounted behind the woofer's magnet vs those mounted in front of the cone?Dave

Subject: Re: Two way- conventional and coaxial
Posted by Wayne Parham on Mon, 17 Apr 2006 17:54:11 GMT
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The advantage of the coaxial arrangement is that driver spacing is much closer. The disadvantage is the size limit on the tweeter horn.

Subject: Re: Two way- conventional and coaxial
Posted by hurdy_gurdyman on Mon, 17 Apr 2006 18:05:56 GMT
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Wayne,What if the tweeter horn loads right into the bass cone? Doesn't that have the bass cone become part of the horn loading?Dave

Subject: Re: Two way- conventional and coaxial
Posted by Wayne Parham on Wed, 19 Apr 2006 02:53:54 GMT
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Yes, the woofer cone can act as a horn or part of a horn with a very wide flare.

Subject: Re: Two way- conventional and coaxial
Posted by GM on Wed, 19 Apr 2006 22:41:20 GMT
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Greets!Not necessarily. GM
9894

Subject: Re: Two way- conventional and coaxial
Posted by hurdy_gurdyman on Thu, 20 Apr 2006 00:09:16 GMT
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I'm asking about coaxials to try and understand better the advantages and disadvantages of using them. I can't find a lot of info on this. I'd be interested in the pros and cons of each way of mounting the tweeter as well, like front mounting vs behind the magnet mouting. What problem does each have and what is good about each. Having the horn meet the cone like one big horn les vs protruding horn in the middle. These just doesn't seem to be much info online, or at least not easily found.Untill recntly, I haven't used a coaxial since my teens. Now it's time to learn about them.Thanks for any help.Dave:)

Subject: Re: Two way- conventional and coaxial
Posted by Wayne Parham on Thu, 20 Apr 2006 15:07:13 GMT
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How big is the tweeter horn on the Altec-Lansing 9894A? Looks pretty small for a 1kHz crossover point. Probably sounds pretty good, but I'll bet that tweeter horn is a bit of a compromise.

Subject: Re: Two way- conventional and coaxial
Posted by GM on Thu, 20 Apr 2006 16:50:10 GMT
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Greets!Big, but don't recall its exact dims and the rest of the data sheets isn't that specific. It's large enough to use down to 500 Hz in a lower power app:GM
9894

Subject: Re: Two way- conventional and coaxial
Posted by GM on Thu, 20 Apr 2006 17:17:45 GMT
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Greets!Not much to tell beyond what WP has already said. Mounted in front of a LF driver, the tweeter can only be aligned at the XO point if electronic delay is used, while it can be physically done with the HF driver behind the LF's if properly designed. If the LF diaphragm acts as a horn extension, then its angle(s) and diameter determines its BW gain/polar response, so bigger is better. The abrupt/flexible change at the horn's metal mouth to LF diaphragm transition causes reflections back to the HF horn's throat, modulating its output somewhat, as does the LF's excursion, so won't be nearly as 'clean' as a well designed/built separate horn. Bottom line, where space is a problem and/or the listening position is relatively close, the coax is a better choice IMO than a separate two way of comparable XO point/slope, but as the distance increases and/or the XO gets down around where our hearing acuity starts to roll off pretty good (~1 kHz), then an aligned two way separates makes more sense to me.GM

Subject: Re: Two way- conventional and coaxial
Posted by hurdy_gurdyman on Thu, 20 Apr 2006 21:35:43 GMT
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Thanks GM. That's some of what I wanted to know.Dave

Subject: Re: Two way- conventional and coaxial
Posted by GM on Fri, 21 Apr 2006 00:08:32 GMT
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Greets!You're welcome! What did I forget?GM

Subject: Re: Two way- conventional and coaxial
Posted by hurdy_gurdyman on Fri, 21 Apr 2006 03:44:48 GMT
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Not sure if you forgot anything at all. Now that I've taken an interest in coaxials, I just have to learn all I can about them. I did the same with single fullrange drivers a few years back.A while back I recall reading where some types of coaxials experience a narrow but rather deep notch in the highs. I have measured a notch like this on the 15 inch coaxial I have now. It's at 10 kHz. Seems like I read it had something to do with phase cancelation. I don't remember where I read this and was only mildly interested at the time. Know anything about this?Dave

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Subject: Re: Two way- conventional and coaxial
Posted by GM on Fri, 21 Apr 2006 04:45:55 GMT
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Greets!Most compression drivers have a strong HF standing waves in its phase plug's channels just like in a BR's vent, varying depending on design, so you get a null, then a peak before the final roll off in a plane wave tube measurement. How it performs attached to a horn depends on its design.GM

Subject: Re: Two way- conventional and coaxial
Posted by hurdy_gurdyman on Fri, 21 Apr 2006 13:06:45 GMT
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Thanks. That makes sense. Explains some of the things I've measured in other horn tweeters, also. Dave