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Subject: Re: tractrix horn/driver throat matching

Posted by [Wayne Parham](#) on Thu, 11 Mar 2010 17:43:54 GMT

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Well, that's exactly right. You really want the entry angle of your horn throat to match the exit angle of your compression driver.

You have a problem that doesn't have a good solution, I'm sorry to say. If your horn entrances are already exactly 1" and 2" diameter, as they should be, then you cannot easily make adapters that provide a flare match. That's what you want - to start at the driver exit angle and end at the horn entrance angle. Both entrance and exit are already the same size, so there is no way to make an adapter with a radiused expansion to match one with the other.

What I might suggest is to have the horns cut so you can make a proper adapter. Transition the conical section of the driver with the tractrix entrance using an adapter that is contoured to have a gradual transition and no abrupt change in area. The curve you choose is up to you - some would say stick with tractrix, some would want oblate spheroidal, some might prefer a quadratic.

Since you've already chosen tractrix, you may want to try and stick with that shape although the fact that you're matching an existing section with another that will ultimately be slightly longer will preclude that. My advice is that it is better to remove the abrupt change in shape with any gradually radiused shape than it is to leave the abrupt change there. Use an oblate spheroidal, tractrix or simple radius, anything smooth is better than a sharp change. If you want it perfect, you'll have to start from scratch, but I think an adapter with a nice radiused transition will get you 99% there.