Subject: Re: Help with tweeter to woofer distance please
Posted by Wayne Parham on Thu, 06 Jan 2011 22:37:15 GMT
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With direct radiators, closer is better in almost all cases. The thing you have to juggle is the fore/aft spacing and crossover phase. With first-order, it's a pretty good rule of thumb to align the voice coils on direct radiators but that only really works at resonance. At all other frequencies, the acoustic center is either a little forward or a little ahead.

Horns are a little different, certainly those designed for constant directivity like I favor. When designing a loudspeaker for uniform directivity, the mid and tweeter should match directivity in the horizontal plane, something that is largely set by the horn flare and crossover point.

A 90°x40° radial horn or waveguide is large enough to control the pattern at the crossover in the horizontal, but not usually in the vertical. The mouth isn't tall enough, so the pattern begins to open up down low. But you can put the nulls just outside the flare angle to augment pattern control in the crossover region. Above that, the flare gains pattern control.