Subject: Push-pull versus shorting rings
Posted by Wayne Parham on Wed, 08 Aug 2007 15:08:22 GMT
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I like the push-pull configuration too. But shorting rings work very well at midbass frequencies up. Push-pull works best as frequency drops, at least the version I'm talking about, which is a pneumatic/acoustic implementation where two drivers are mounted physically opposite and driven opposite in order to cancel mechanical asymmetry.

The reason for the shorting ring's "preference" to higher frequency is that it is an electro-magnetic device. Just like coils have to be large to work at low frequency, so do shorting rings, which are essentially single-turn coils.

Mechanical push-pull works best as frequency drops. This is because it is summing acoustically, in the air. So the drivers have to couple together, and this gets increasingly harder as frequency goes up. The drivers just aren't coupled together as well at higher frequencies because they grow further apart in phase. The lower the frequency, the closer in phase the two drivers are.

fine if you use a truck with a ramp, because it is designed to fit right on it. But if you have to carry

complementary pairs. It incorporates push-pull drive when used in compementary pairs as designed, but the trade-off is that it may not receive as much distortion reduction from push-pull

the throat. I expect distortion reduction to be good at very low frequencies but that it becomes less effective as frequency rises. We'll be able to quantify this more definitely after measuring the prototype.