Posted by Wayne Parham on Sat, 06 Nov 2004 05:34:13 GMT
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The drivers are connected so that each will pressurize the front chamber in phase. There is also an isobaric arrangement that is sometimes called push-pull, but that's not what I'm trying to do here. What I want to do is to drive the chamber with the front side of one driver and the back side of another. If both drivers are the same, then any asymmetries caused by the motor or suspension will equalize in the throat.It is long been established that the main reason for loudspeaker distortion is asymmetry from the motor. It literally goes further in one direction than it does in the other, with the same amound of driving voltage applied. The reason is that the magnetic flux from the voice coil pushing the cone in one direction adds to the fixed magnet, and it subtracts from the fixed magnet in the other. This difference causes the motor to generate slightly less force in one direction than the other. That'swhat the shorting ring corrects. That's why it is called a flux stabilization ring, because that's literally what it does. Asymmetry is the cause of 2nd order harmonics, and reduction of second order harminics is done by restoring or improving symmetry.When mouting the radiators as shown in my drawing, the two drivers pressurize the chamber together. One driver is the "weaker" one and the other is the "stronger" one on each half cycle. So each half cycle is equalized by the fact that it always has equal amounts of drive, one strong and one weak. It is a very simple mechanism to use.