Subject: Cornerhorn woofers
Posted by Wayne Parham on Tue, 18 Dec 2007 03:41:34 GMT
View Forum Message <> Reply to Message

JBL takes care to machine the gap so the flux lines are symmetrical around the voice coil. In addition, their older alnico drivers had reduced distortion because alnico resists flux modulation. Their newer drivers with ferrite magnets use shorting rings and boast even lower distortion. Newer still are their woofers with push-pull drive using dual voice coils and they provide even better performance.JBL Magnet Structures, Comparing alnico and ferrite with and without shorting ringsWhat I've found is that shorting rings work best as frequency rises. They just don't work well at subwoofer frequencies. Push-pull works better below about 50Hz. I have never seen a woofer with a shorting ring that was effective below 50Hz. Depending on the woofer, some shorting rings don't do much below 100Hz or even 150Hz. But the JBL 22xx series woofers provide reduced distortion starting around 50Hz to 100Hz.With a first-order crossover at 250Hz, there is plenty of overlap between the mid and bass. In this design, it's important to have good clean output from the woofer up through 500Hz or so. That's a decade of output from where the JBL shorting ring starts to work.