Subject: New low distortion Peerless XXLS 10" and 12" Subwoofers w/shorting ring
Posted by Adrian Mack on Tue, 16 Nov 2004 05:53:43 GMT
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Just thought I'd post this here. Was browsing through the Peerless website a few days ago and saw their new XXLS subwoofers. Its similar to the XLS series, but with a higher Qts so it doesnt need EQ when used in ported box or passive radiator box. Main features of XXLS series is emphasized on reducing distortion and power compression: has alumnium shorting ring, aluminium spacer, 8-hole vented cone and 2-inch black anodized aluminium voice coil. Comes in both a mid-Qts and high-Qts 10" and 12" version. The mid-Qts 12" version (qts=0.36) models very similar to what LAB12 needs in a vented box. 12" mid-Qts version has Fs=21.8Hz, Qts=0.36 and Vas=144.2L. Full T/S specs of drivers at:T/S specs for XXLS Mid-Qts 10" (vented box suited)T/S specs for XXLS High-Qts 10" (sealed box suited)T/S specs for XXLS Mid-Qts 12" (vented box suited)T/S specs for XXLS High-Qts 12" (sealed box suited) A. Aluminum SpacerThe aluminum spacer serves as heat sink for the coil to reduce power compression.B. Black Anodized Voice CoilThe 2-inch  voice coil is wound on thick black anodized aluminum for improved heat dissipation.C. Stacked Magnet SystemThe twin stacked magnetic system is optimized by FEA (Finite Element Analysis), to create a symmetric powerful magnetic field in the air gap, and provide space for the 50 mm max excursion of the voice coil.D. Distortion Reduced MotorA long multi layer voice coil normally results in high self induction and impedance varying with excursion. Its many ampere turns react on the magnetic field in the air gap. These two main factors causing motor distortion in subwoofers are practically eliminated by the combined impact of the Aluminum Short Circuiting Ring (D) and the Aluminum Spacer (A) on the pole piece.At the same time they both contribute as heat sinks for the voice coil, reducing power compression.The result is unbelievable clean bass reproduction.E. Vented ConeTo eliminate compression under the dust cap the cone is vented by 8 large holes.This way the coil is cooled and there is no need for a bore in the pole piece.F. Nomex® SpiderThe spider is made of high tech Nomex® material. This material is chosen for its high rigidity and long term stability. The suspension will stay in shape for a very long time under heavy load.G. Rubber SurroundThe surround is made from SBR rubber because of the wide operating temperature, low creep and long term reliability.H. Fiber CompositeConeThe cone is molded from a propriety air dried wood free pulp with a blend of Nomex®, Kevlar® and glass fibers bonded together by deep impregnation with polymers. The blend also contains special material in order to make the cone Waterproof.This creates an ultra stiff and relatively light cone that will stay stable even under very large sound pressures.I. Rigid Cast Aluminum BasketThe rigid cast basket with an aerodynamic profile provides the necessary sturdy base for the magnet structure and suspension and allows for the 50 mm max excursion of the cone.The spider is ventilated to achieve the lowest possible compression and allow air to flow freely to create a cooling effect for the voice coil.Tech notes:http://www.d-s-t.com/main/tech/xxls_intro.htm 12" pics10" picsQuickly ran it through Hornresp too, seem to work well compared to older XLS series which need huge horn - XXLS series might be something worth looking into for a small low distortion basshorn.