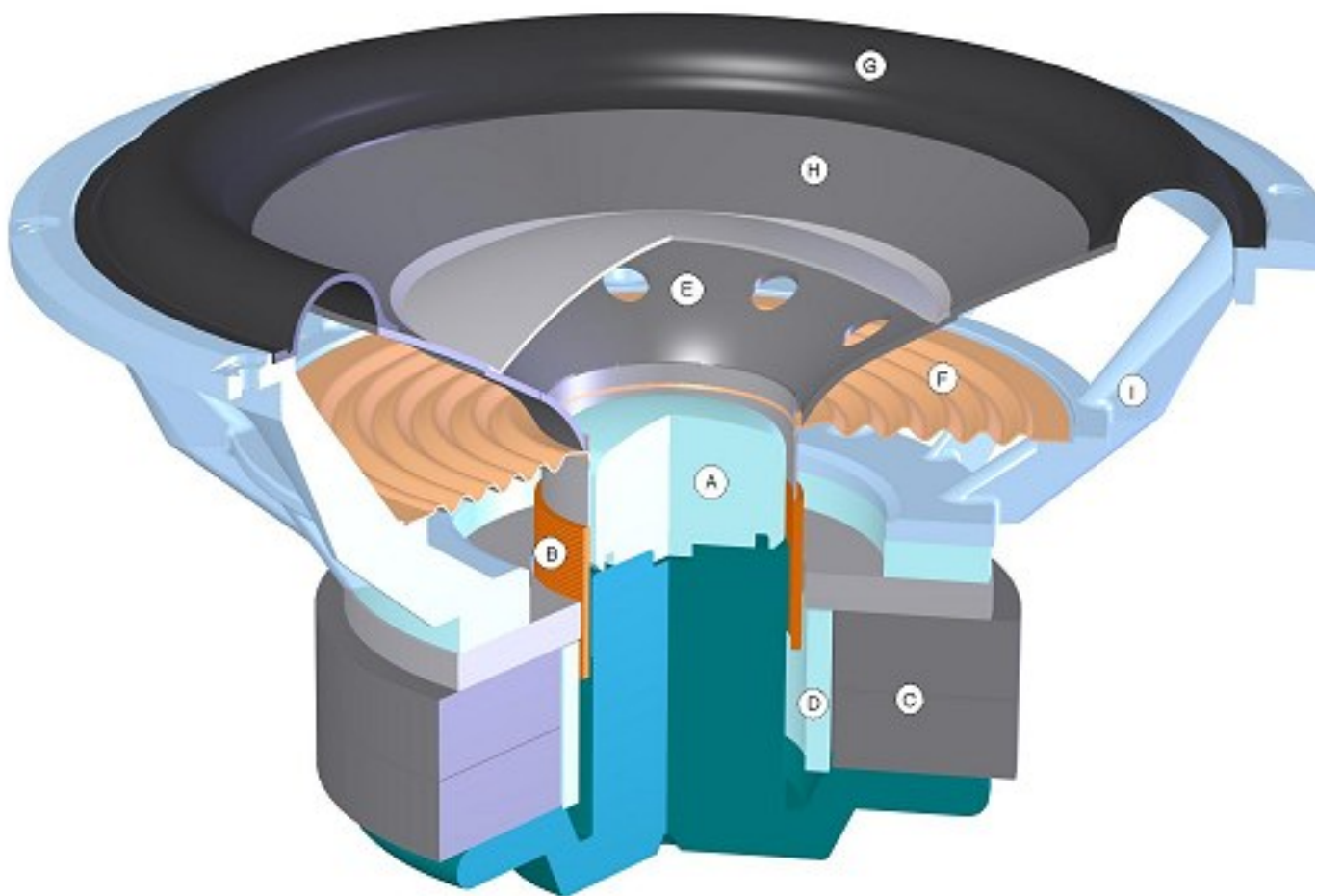


## Architecture Notes: XXLS Platform

Extreme Long Stroke Subwoofers: A new class of subwoofers from Peerless.

By introducing the new range of Xpanded Xtra Long Stroke (XXLS) subwoofers, Peerless has pushed the performance limits for subwoofers. The XXLS/subwoofer range will fulfill every demand for deep clean bass reproduction like active THX home theatre and Dolby Digital subwoofer applications.

In the design the emphasis has been put in achieving extreme deep bass, long time reliability, high power handling, and very low distortion - also under very large sound pressures.



### **A. Aluminum Spacer**

The aluminum spacer serves as heat sink for the coil to reduce power compression.

### **B. Black Anodized Voice Coil**

The 2-inch voice coil is wound on thick black anodized aluminum for improved heat dissipation.

### **C. Stacked Magnet System**

The 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 Motor**

A 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 Cone**

To 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 Spider**

The 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 Surround**

The surround is made from SBR rubber because of the wide operating temperature, low creep and long term reliability.

### **H. Fiber Composite Cone**

The cone is molded from a propriety air dried wood free pulp with a blend of Nomex 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 Basket**

The 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.