

# GBS

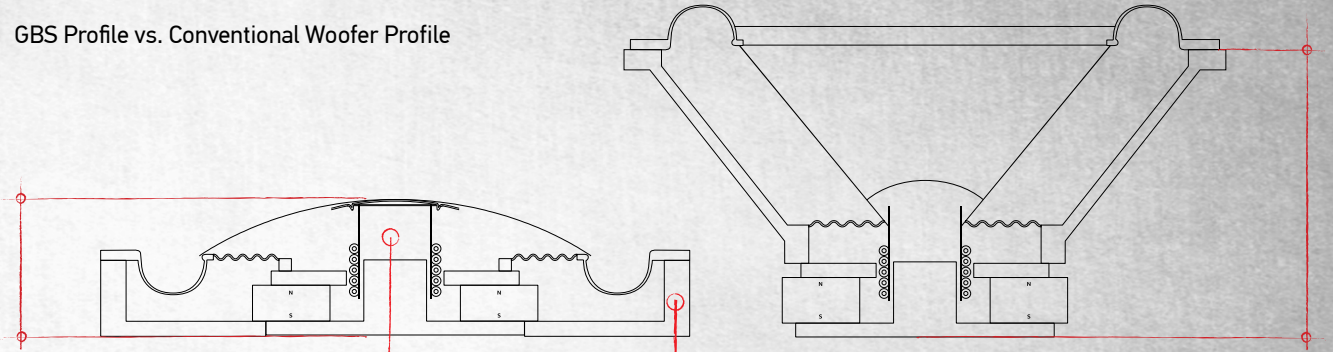
## Technical Highlights

With GBS, our goal was to reduce the overall height of the woofer, while still allowing large excursions of the diaphragm. There are two key features that make this possible:

- A. The geometry of the diaphragm is dome-shaped, rather than cone-shaped – this allows the motor to be raised, taking advantage of the space underneath the dome, and reduces the total height significantly.
- B. Raising the motor normally would not be possible, due to placement of the spider. The solution is to invert the spider fixation arrangement, which allows for a secondary suspension that doesn't interfere with the new motor location.

### HEIGHT SAVING COMPARISON:

GBS Profile vs. Conventional Woofer Profile



### VOICE COIL CENTERING:

The centering of the voice coil in the magnetic gap is provided by both the surround and spider. With the use of FEA, we designed lateral stability into the suspension system, which helps to control the rocking modes and allows a reduction of distance between both suspensions. The dome geometry of the diaphragm assists with mass centralization – as a result, the rocking mode center of the driver is placed in a similar plane as the voice coil and magnetic gap. Thus, the driver has a much higher tolerance to rocking modes than a conventional driver, which has a pendulum-like relationship between the voice coil and suspension.

### EXCURSION CLEARANCE:

Both the basket and suspension components were carefully designed to allow full excursion, without risk of rocking or hard 'bottoming'. All mechanical excursion clearances were precisely balanced to ensure that the driver is of the minimum height for a given excursion capability.