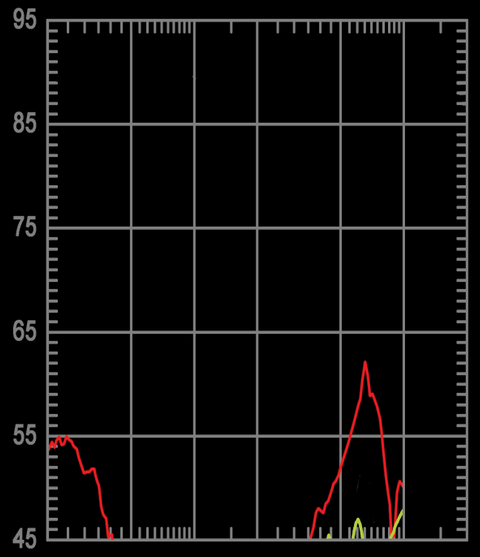
How do BilletCore™ drivers compare with more exotic materials?

Lower Distortion

Aircraft-grade aluminum, which is the raw material for BilletCore™ drivers, offers excellent stiffness-to-weight ratio. While some exotic materials offer better specs as a solid, unprocessed chunk, in a stamped or woven cone the weakest link lies within the micro-cracks where the material is bent or stretched respectively. The end-result is apparent when looking at distortion measurements of the finished product – a speaker using BilletCore™ drivers has far lower distortion than speakers using exotic materials.

This independent measurement was conducted by the Canadian National Research Council (NRC).

YG Acoustics™
Sonja™ 1.1 with BilletCore™,
THD 90 dB @ 2 m (96 dB @ 1 m) 200-20k Hz. 10 dB div.
Competitor with woven carbon-nanotube cones

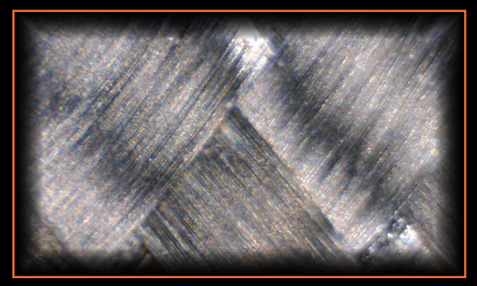


Superior Reliability

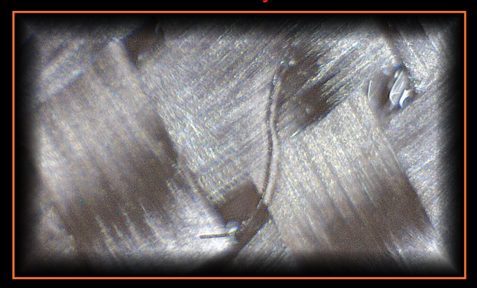
BilletCore™ drivers are extremely reliable thanks to the total lack of weak-spots. In comparison, deposited (typically ceramic) cones are brittle and can crack. Woven cones do not crack, but their weaving loosens over time and they lose strength.

Deposited ceramic cone, cracked after the voice-coil former hit the back of the motor at an independent customer's home. *

Woven carbon-nanotube cone under a microscope, after minimal use. *



Same cone after 1 year of use. *



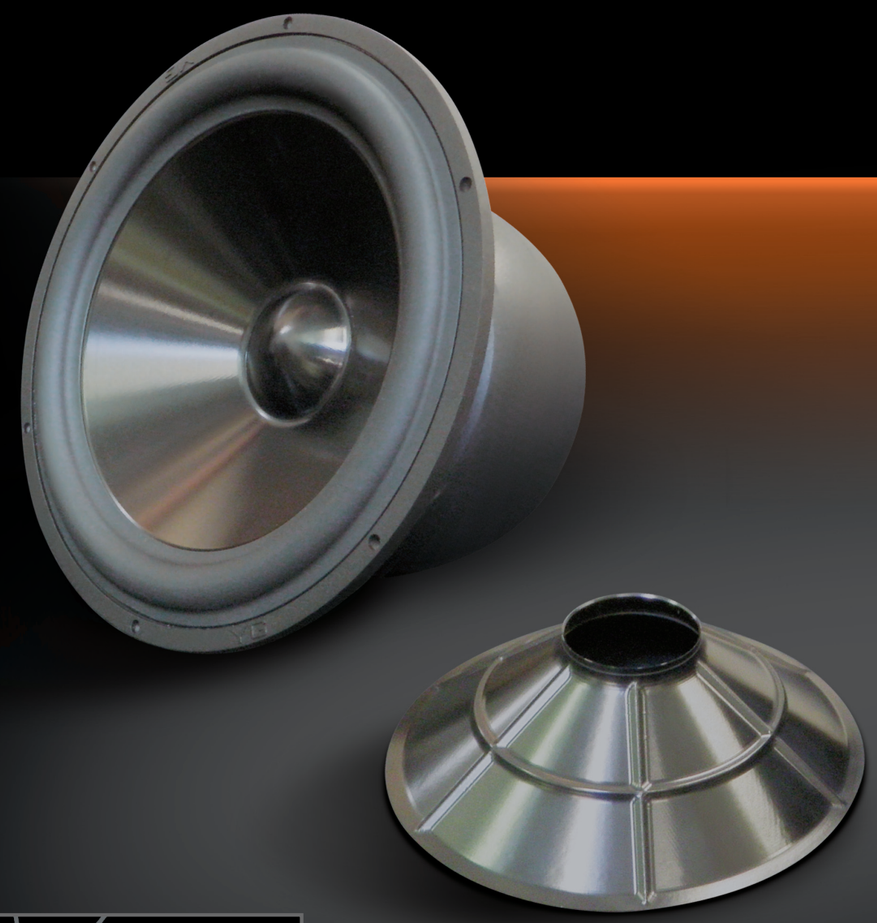
* This photo depicts a trademark and/or registered trademark of a competitor not affiliated with YG Acoustics™ LLC. The competitor's name can be found at www.yg-acoustics.com/mandatory-disclosures.pdf

BilletCore™

YG ACOUSTICS™

BilletCore™

Revolutionary Drivers Machined from Solid Billet



Engineered by Yoav Geva

YG Acoustics LLC
4941 Allison St. #10, Arvada, CO 80002, U.S.A.
Tel. 801-726-3887 • info@yg-acoustics.com
www.yg-acoustics.com

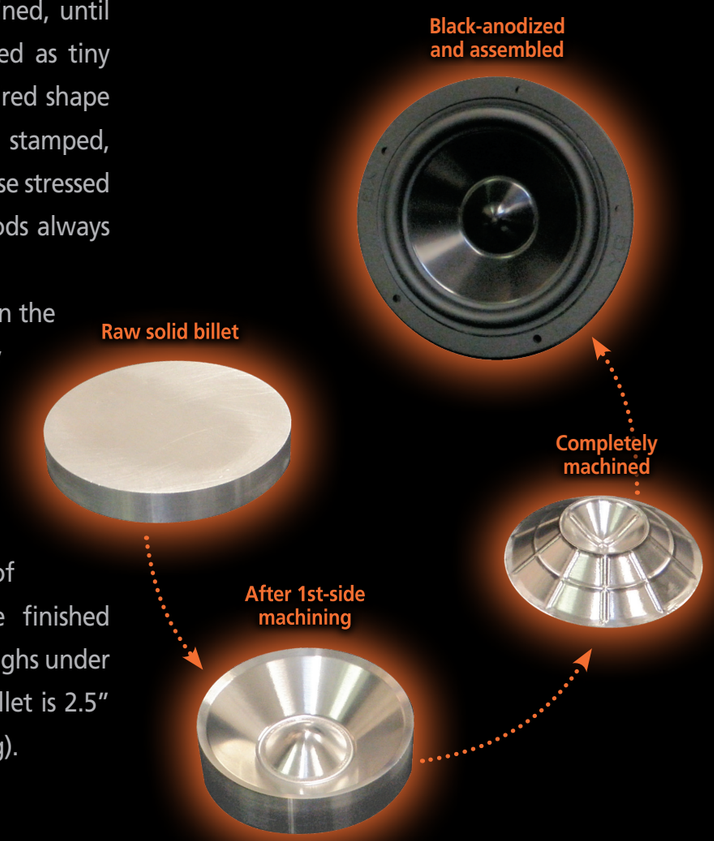
BilletCore™

What is BilletCore™ driver technology?

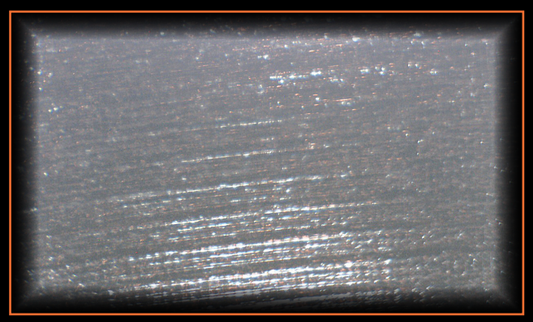
YG Acoustics™' BilletCore™ drivers start life as massive slabs of aircraft-grade aluminum alloy. The drivers are then precisely machined, until over 99% of the material is removed as tiny chips for recycling, and only the desired shape remains. The material is not bent, stamped, stretched, woven, cracked or otherwise stressed into submission. Any of those methods always induce fatigue.

BilletCore™ drivers, in contrast, retain the full strength of the material. They are, however, significantly more difficult to manufacture: several hours of machining are required to produce a single BilletCore™ woofer cone from a solid slab of aircraft-grade aluminum alloy. The finished cone is 0.008" (0.2 mm) thick and weighs under 1 oz (30 g), whereas the raw solid billet is 2.5" (64 mm) thick and weighs 16 lbs (7 kg).

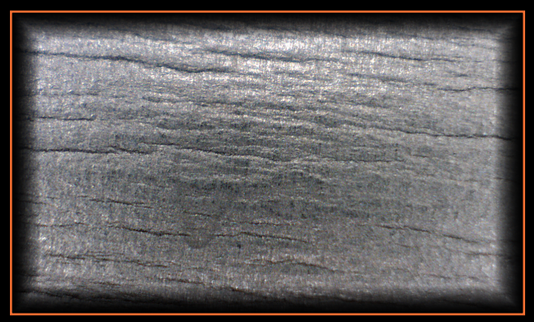
YG Acoustics™ BilletCore™ mid-woofer



YG Acoustics™ BilletCore™ membrane under a microscope.
Smooth, stress-free surface.



Stamped aluminum membrane under a microscope.
Micro-cracks due to stress.



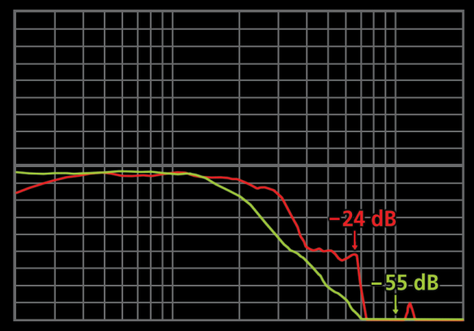
What are the advantages of BilletCore™ driver technology?

BilletCore™ drivers possess the following overwhelming advantages over conventional designs:

High Rigidity

Breakup modes are moved farther outside the drivers' pass-bands. This guarantees that drivers operate as pure pistons.

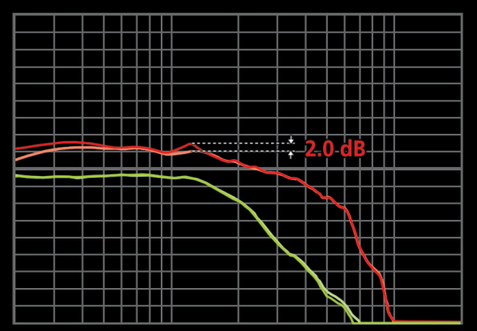
YG Acoustics™ BilletCore™ mid-woofer with crossover.
200-20k Hz, 5 dB Div
First resonance peak at 9.8 kHz is suppressed by over 55 dB, i.e. only 0.2% of the signal.
Competitor's woven carbon-nanotube midrange with crossover.
First resonance peak at 6.5 kHz is closer to the pass-band and therefore suppressed by only 24 dB, i.e. 6.3% of the signal.



Accuracy

The tolerances of machining are far tighter than those of stamping, weaving or casting (molding). Thus, BilletCore™ drivers are more consistent, and a better left-to-right match is obtained.

Two YG Acoustics™ BilletCore™ mid-woofers with crossover.
The tolerances are within only ±0.2 dB.
Two of leading competitor's molded carbon-pulp mid-woofers with crossover.
The tolerances are within ±2 dB.



Advanced design features

YG Acoustics™ BilletCore™ drivers include unique, computer-optimized ribs (both axial and radial), which give them a phenomenal strength-to-weight ratio. In contrast, ribs on stamped cones mandate recesses on their opposing face, which are not nearly as effective. With woven cones the situation is even worse – reinforcements cannot be introduced at all, as they would severely diminish tensile strength.

Measurements on this page performed in YG Acoustics™' state-of-the-art lab