



GEOMETRY SERIES
THE FUTURE IS CARBON





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// Adding the Torus transforms the timing and integration of the instruments. The picked melody is more fluid... the snare more snappy... the space around the instruments much more apparent. Suddenly the music takes on a feeling of underlying urgency that dovetails with the lyrics perfectly - **Roy Gregory, HIFI+, Issue 59**

// Strokes of genius are rare in any field, but I think Milnes' Torus qualifies.
Jonathon Valin, The Absolute Sounds, March 2007



Following an intensive 3-year R&D project, Wilson Benesch realised the Torus Infrasonic Generator and the Torus Amplifier. This landmark design is one of the most important in the company's history, gaining recognition with numerous awards worldwide. The Torus represents a paradigm shift in our expectations of low-frequency sound reproduction.

THE SUBWOOFER

Richard Lord of REL was the architect of the subwoofer, a design that was realised to produce low frequency sound, the like of which small woofers within a loudspeaker are incapable of producing. The now ubiquitous subwoofer design is based on three elements; the wooden box, a woofer and an active amplifier.

THE TORUS INFRASONIC GENERATOR

The first and most important design element of the Torus, is that it is not based upon the woofer, which is why we don't call it a subwoofer. In fact, the Torus removes the concept of woofer design entirely from the equation.

While the Torus motor converts electrical energy from the amplifier into kinetic energy in the same way as a regular woofer, the fundamental difference comes from a push-pull motor design. Unlike a common subwoofer that relies upon high hysteresis suspension to reset the cone to its resting point, the cone position of the Torus is dictated at all times by electromagnetism. This enables the Torus to reproduce low frequency sound with a stunning degree of precision and allowing the reliable communication of transient low frequency information. The powerful push-pull motor is capable of handling 500 amperes, converting over 1000 watts of electromagnetic energy into kinetic energy, generating huge compression and decompression forces.

CARBON FIBRE DIAPHRAGM

Physics dictates that moving a large volume of air in a split second demands a large moving surface area. This principle immediately rules out the possibility of using a small diameter driver to produce low frequency sound. The complexity this introduces is that larger diameter cones require greater stiffness to maintain the temporal resolution of smaller drivers.

Carbon fibre is renowned for its high strength-to-weight ratio, and this property makes it the ideal for the Torus cone. A novel multi-axial carbon fibre weave developed by the company is used to create a phenomenally stiff, light and highly damped diaphragm.

Thus, despite its relatively small size, the Torus boast an 18" diaphragm, capable of displacing huge volumes of air instantaneously. Transients are handled with ease, giving rise to the chest moving kick drum and attack, impossible to achieve with a conventional subwoofer design.

THE CORE

At the heart of the Torus is the core, a formidable 16kg precision machined steel column, with the two large rare earth magnets of the push-pull motor either side. The core is the central component and reference point for every other component within the design acting as both a high capacity metal heat sink and a structural component that conducts all structural borne resonance directly to earth with zero reference to the outer enclosure.

BORON NITRIDE

In the Torus, where huge amounts of low frequency energy are generated, thermal efficiency is a critical concern. In addition to the steel core acting as a highly efficient heat sink, Wilson Benesch collaborated with the Oxford University to create a Boron Nitride Coil.

Boron Nitride offers the high electrical conductivity required by any coil design, but its thermal conductivity supercedes that of copper by several orders of magnitude.

TORUS AMPLIFIER

Consider a world where audiophiles invest significant time and money in isolating components from vibration and electrical interference, yet happily accept their subwoofer amplifier being housed in the same enclosure and mere millimetres away from ground-shaking resonance. Separating the design of the Torus system into a passive speaker with a separate amplifier immediately isolates the amplifier from the severe low frequency energy distortions and dramatically improves the performance of the Torus.

GEOMETRY AND FORM

The elegant and minimal toroidal shape of the Torus is a testament to the use of purist geometry in every component and its form-follows-function design approach.

Whether it be ground breaking low frequencies in a home cinema, or the attack and dynamics of a drum solo, the Torus never misses a beat or fails to deliver the physical impact that we know and love of low frequency sound.

TORUS INFRASONIC GENERATOR SPECIFICATIONS & AWARDS

TORUS INFRASONIC GENERATOR

Drivers

1 x 18" Carbon Fibre Diaphragm

Frequency Range

10 - 150Hz -6dB at 18Hz

Impedance

8Ohms - Coils can be wired in series or in parallel

Power Handling

Maximum 1000w Peak Program

Maximum SPL

100dB @ 1-Meter

Dimensions

// Height: 300mm (11.8")

// Width: 450mm (18")

// Air Volume: 24L

// Weight: 34kg (75 lbs)

Finishes

Black Gloss

TORUS AMPLIFIER

200w Discrete Bipolar DC Coupled Amplifier

Dimensions

// Height: 90mm (3.54")

// Width: 430mm (16.9")

// Depth: 300mm (11.8")

// Weight: 10kg (22 lbs)

Finishes

Black Anodised



TORUS INFRASONIC GENERATOR
PRODUCT OF THE YEAR 2006
THE ABSOLUTE SOUND - USA



TORUS INFRASONIC GENERATOR
PLATZ HIGHLIGHTS 2007
STEREOPLAY - GERMANY



TORUS INFRASONIC GENERATOR
BEST BUY 2007
HI-FI CHOICE MAGAZINE - UK



TORUS INFRASONIC GENERATOR
PRODUCT OF THE YEAR 2008
HI-FI+ - UK

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