

Engineered to Perfection





Oleon benesch
THE FUTURE IS CARBON



The new R1 HIFI rack is a modular rack solution designed to provide optimal conditions for the operation of State-of-The-Art digital and analogue audio equipment. Developed through extensive testing with class leading components from CH Precision, the R1 is able to accommodate a full range of components from sizable, high-mass mono-block amplifiers, to highly sensitive high-end turntables.

The R1 has been engineered to fulfil the following design criteria:

// to provide level, stable and precise platform for optimal operation of installed components

// to transmit energy away from highly sensitive components and subsequently absorb this energy within the racking system

// to isolate components from energy generated by loudspeakers in the listening space, transferred through the structure of the racking from the ground

// to isolate each component from energy generated by other audio equipment installed on the racking system

POLYOXYMETHYLENE VERTICAL NODES

Machined in-house to a tolerance of 0.02mm, each vertical node of the R1 rack is assembled from six high mass blocks of polyoxymethylene (POM). POM is a dense, high-performance engineering polymer with a regular crystalline structure that results in a material hardness equivalent to aluminium. However, unlike aluminium which rings and exhibits poor damping characteristics, POM does not ring and has an inherently high damping coefficient. POM therefore provides the structural integrity of a metal structure, minus the sonic signature.

CARBON FIBRE ISOBAR

To achieve the same level of integrity and tons of pressure that are present in the vertical nodes, Wilson Benesch developed the innovative Carbon Fibre Isobar.

Seen externally the Isobar is an anisotropic carbon fibre tube. This is an excellent solution in and of itself. However, by adding a 14mm steel bar through the centre of the tube, tied at the ends in precision machined sockets, the Isobar becomes a high tensile member under 14-tons of compressive force. The carbon fibre Isobar now has an isotropic character; it has identical properties in all directions. Thus the Isobar has been optimised to transmit the maximum amount of energy at high velocity

away from the highly sensitive components residing on the R1.

Throughout the development of the R1, Wilson Benesch has been able to corroborate our design philosophy for the R1 and our understanding of carbon fibre through extensive testing using laser scanning vibrometry at the Sheffield Hallam University. Thus the R1 sets out to govern energy paths by the use of materials science and basic geometry to ensure extreme pressures at the mating points of all the principle surfaces of the system.

KINEMATIC LOCATION

It is said that precision engineering actually began with the discovery of kinematic principles. In the R1, Wilson Benesch applies these principles both the design of the foot and the spikes.

From the last component down to the ground, energy flow has been optimised through the R1. Four interfacial nodes legislate for near perfect high pressure, energy transfer junctions. Each Node is comprised of a 500g chrome steel spheres couple and locate kinematically with four sockets on the adjoining R1 level to restrict all six degrees of mechanical freedom and legislate for precision installation of each modular R1 level.

At the base, micro adjustable ball-bearing spikes meet kinematically with the supplied cups. When level, the kinematic principles of the design ensure the R1 exerts tons of pressure equally through the four nodes and into the ground.

PRECISION MANUFACTURING

The R1 design is only possible thanks to the State-of-the-Art CNC tooling and advanced 3D Dassault CAD-CAM software used in the design and manufacture of the R1. The degree of precision that is afforded by CNC manufacturing tolerances of 0.02mm, optimises geometry throughout. Only this way can the design concept of the R1 be achieved; optimising energy paths, through the application of advanced materials science and basic geometry.

THE R1 HIFI RACK

With each level shipped fully assembled, the R1 Rack is a truly modular design that ensures high performance and ultimate precision.

The R1 is a radical, game changing audio rack from the Ambassadors of Materials Science - Wilson Benesch.

R1 HIFI RACK SPECIFICATIONS

R1 Standard Level

- // Height 260mm (10.2")
- // Width 700mm (27.6")
- // Depth 480mm (18.9")
- // Single Level Weight 33kg (73 lbs)

R1 Base Level

- // Height 120mm (4.7")
- // Width 700mm (27.5")
- // Depth 480mm (18.9")
- // Base Level Weight 22kg (48.5 lbs)

Finishes

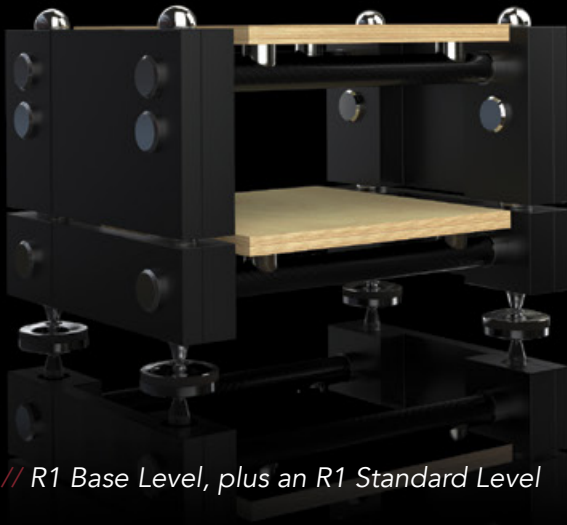
Black Polyoxymethylene Vertical Nodes with machined textured finish

Multi-axial Carbon Fibre Cross-members

Multi-layer Birch Ply Shelves

Polished Nickel Plated Steel End Caps

4 x 500g Chrome Finished Steel Spheres per level



// R1 Base Level, plus an R1 Standard Level



// R1 Base Level only

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