

Audiophile**BASE**

Technical Development of the BASE Vibration Control System

Necessity has always been the mother of invention and the development of **BASE platforms** fits into this category.

Domestic requirements determined that a range of audio equipment should reside in a cabinet but sound quality could not be compromised and flexibility to accommodate the variously sized pieces of equipment was also necessary.



A test bed cabinet was produced which went to great lengths to minimize resonance's which might be transmitted to the height adjustable shelves.

This left the problem of an device which would control vibration, particularly high energy bass frequencies, and yet be capable of accommodation within the shelf.

Drawing upon previous experience with the design of a theatre roof (seeking to minimize aircraft noise transmission with a light weight structure) the theory of a two stage system was employed. Firstly control energies within a narrow frequency band and then target those frequencies for further reduction.

The final design is very simple and robust, a metal beam spans between two support points and is isolated from the platform with a Sorbothane strip which has two functions. It provides a fast, strong damping factor to vibration within the beam and additionally provides effective high frequency isolation. The success of the system is readily demonstrated by removing the beam suspension points and relying upon the Sorbothane alone, this causes the majority of the sonic benefits to be immediately lost. MDF is frequently used where an acoustically "dead" material is required, however, densities and qualities vary considerably from different manufacturers and our platforms are closely specified to ensure consistent performance.

The compliance of the beam, degree of damping and relative masses were fine-tuned by ear in the final analysis to provide all of the sonic benefits with the totally natural, uncoloured sound unique to **BASE**.

The **Audio Supports** are specifically designed to house the **BASE platforms** where a rigid, sturdy, "non-ringing" structure is required to be of appropriate mass.

We have yet to find any item of electronics, whether active or passive, which does not benefit to some extent from BASE mounting. Developments within our own reference loudspeaker design have fully met our expectations!

The UK Patent (GB2277789), European and US Patents have been granted.

The BASE Platform and its role in the Audio System

The audible effects of unwanted vibrations acting upon electrical components within audio equipment are now fully recognised. An effective support for audio equipment should be regarded as an essential component before consideration of accessories.

These vibrations are generated by energy introduced into the listening room by loudspeakers and transferred to the room structure and contents. Additionally, transformers and motors also generate vibrational energy, this time directly within the audio components.

There are two approaches for dealing with these problems adopted by support systems in common use. Firstly the high mass, rigid support coupled to the floor by spikes or cones and, secondly, the light-weight support often offering some level of compliance. In practice, the first approach appears to work best with some equipment whilst the second benefits other components.

The "***BASE Platform***" provides a novel suspension system, as confirmed by the Patents for the design, offering an alternative universally successful support. The mechanics can be compared with the more familiar suspension system comprising a spring and damper. Compliant beams (the springs) are each supported by two feet and allowed to cantilever at each end. The beam is continuously bonded to a selected elastomeric strip (the damper) which, in turn, is fully bonded to the support platform allowing movement in the beam and deflection under the loading of supported equipment. This assembly effectively damps low order vibration over a wide frequency range.



When a ***BASE Platform*** is inserted between audio equipment and a support table the structure borne vibration energy is controlled. This is particularly evident from reproduced bass extension, "speed" and clarity.

Additionally, vibrations internally generated within electronics are transferred to the support platform and there damped by the carefully designed assembly.

The recognition of these factors affecting reproduced sound and their successful resolution combined within a single device is currently unique to the ***BASE Platform***. The overall sonic improvement offers wonderfully natural tonal characteristics, superb imaging and a dynamic, detailed presentation of transients even into the lowest bass frequencies