

## Harmonic Resolution Systems (HRS) M3 Isolation Base & Damping Plates

Source: Harmonic Resolution System

Price: \$45.00 to \$1,965.00 US

Rating: ♪♪♪♪



This relatively new company located near Buffalo, NY, is owned and operated by a good old-fashioned audiophile who happens to be intimately familiar with vibrations and resonances. Mike Latvis is chief engineer with more than twenty years experience in product development of isolation systems for the aerospace and defense industry where vibrations must be rigorously controlled under the most strenuous conditions. He holds a number of US and foreign patents related to shock and vibration isolation products, obtained while working with a number of leading companies on the development of isolation products for commercial aircraft, military aircraft, and missile defense systems. He is also a

devoted audiophile and the (audio) hobby led him to explore the influences of various materials and design concepts on audio system performance. He set out to design devices which would contribute to musical authenticity and, after a couple of years, developed custom materials and a scientific technique to control, modify and even eliminate unwanted vibrations. Encouraged by a member of the audio industry, he formed Harmonic Resolution Systems.

For our review, we were supplied with a couple of small "boards" called "damping plates", a couple of larger "damping plates" and a large platform "isolation base" for use under CD players, turntables, amps, preamps—or whatever

resonates. Before we get into the workings of vibration control devices, let us look at the HRS'...

### Appearance:

The small "damping plates", 4.5 x 5.5 inches, 4.5 x 9.5 inches and 4.5 x 14.5 inches are designed to dampen chassis and cabinets of components with little surface space, such as the top of loudspeakers, CD players etc. The somewhat larger "damping plates" are designed to be placed on larger surface areas which might include receivers and preamplifiers.

Four isolation platforms are available, designed to accommodate a wide range of components varying in size and weight and can be customized to suit any component. Platform prices range



from US \$1,345 to \$1,965. The isolation platforms are finished in a black anodized aluminum frame in which a suspended polished granite top is placed. Four custom designed isolation feet float the assembly on a special polymer material. Platforms can be ordered to accommodate weights from 2 to 500 pounds and in size ranging from 14 x 19 inches to 21 x 23 inches—all have a height of three inches. The smaller damping plates match the appearance of the platform and the whole system is rather inconspicuous and blends well with components or decor.

#### Technology:

One must understand that when operating a sound system everything resonates—sometimes in conformity, but more often than not in dissonance. There are many sources of vibrations, but two principal origins affect the performance of an audio system more than any other: structure-borne and airborne vibrations.

Of the two, the more apparent one is the mechanical, structure-borne energy that originates inside a component. In amplifiers it may be the power supply/ transformer section or, in vacuum tube designs, sockets and the tubes themselves. CD players, DVD players and other devices with moving parts are a major source

of vibrations. But let's not forget that all components are mounted on a chassis and most are housed in a metal case which can also resonate and amplify vibrations.

Airborne vibrations, although less easily perceived, can be as harmful. Loudspeakers are the most offending culprits—unless well braced—and the bigger the speakers the bigger the potential problem. However, other vibrating devices within earshot of the audio system will also influence sound by vibrating walls, ceilings and floors. Furniture, TVs and other appliances, chairs and humans sitting in them, all contribute to vibrations one way or another. These structural airborne vibrations are broad in frequency range and very complex. They pass from the source and contact the outer layer of the component, then travel to all structures used to accommodate the audio components. Then the airborne energy is transmuted into mechanical force, which is often amplified, thereby escalating the problem. That is what we must understand to make sense of the following:

HRS has developed isolation devices (the aforementioned damping plates and platforms) which dampen vibrations over the entire operating frequency range.

The process uses a very unique, customized polymer material, developed by Harmonic Resolution Systems with the help of skilled chemists who have decades of experience in developing custom elastomer formulations with unique properties. The isolation and damping method employs the HRS materials in a unique combination with other natural substances through a process developed and predicated on years of experience in development of isolation systems and materials.

#### The Sound:

This section should really be titled "what sound?" because these isolation devices actually kill sound, or more precisely, noise which develops when playing a sound system. After listening to a couple of tracks on a DVD player, we placed a couple of the "damping plates" on top of the housing (one 4.5 x 5.5" and one 4.5 x 9.5") and compared the resulting audio information. However, the A/B comparison was so one-sided in favour of the Harmonic Resolution Systems that comparing is practically an unnecessary waste of time. As the DVD player sports a rather flimsy housing and a modest, elementary chassis, we almost expected an improvement, which prompted us to take the HR plates to the big Sony DVD-A player (to be reviewed in the next

issue). We assumed that the Sony wouldn't need much help, if any, as its chassis and housing, indeed most of its mechanism, boasts superior construction. Imagine our surprise when the A/B comparison tests revealed similar results—not as blatantly obvious, but quite apparent nevertheless. Used with the DVD player, the plates rendered much better resolution across the audible frequency band, significantly improved imaging and focus and more body and weight to the sound.

With the Sony, resolution improved only slightly, but there was better bass energy, smoother high frequency information and, surprisingly, more definition to the sound stage.

We then use the “damping plates” on the Musical Fidelity CD player (also to be reviewed in the next issue), to triple-check the HRS product's effectiveness and again noted overall sonic improvements, similar to those mentioned earlier.

Testing the heavy HRS isolation base—the model M3—wasn't as simple, as it had to be carried to our first test—under the Sony SCD-1 and on top of our shelf which was built to eliminate most vibrations and resonances. However, again the results of our listening test were instantaneous and a veritable ear opener. In addition to added body and improved imaging and focus, we all noted improved handling of dynamics, and a significant improvement in low-level information and inner detail. Placing the small “plates” on top of the player's housing further improved the sound just a touch.

For our next test, we “schlepped” the platform to our auditioning amplifiers—the Chord (reviewed in the last issue), the Bryston 14B ST (reviewed in Vol. 13 #4) and the Manley Snapper monoblocks

(to be reviewed in the next issue). The HRS platform held the two amps. Though we didn't expect spectacular improvements, each test proved that upgraded sound is possible when mechanical adjustments are used to prevent vibrations feeding into the system.

As we heard rather significant improvements when the HRS was used in audio systems, we reasoned that resonance control could also enhance video information. We took a couple of DVD players, placed them on the platform, fired up a movie—and looked at the image in astonishment. The HRS platform actually added resolution to images, stabilized colour and added dimension to imagery. We then removed the HRS platform, placed the players on our (already vibration-reducing) shelf, placed a couple of HR plates on top of the players and also noted improvements in picture quality—not as apparent as with the platform, (we estimate about 40% less effective) but certainly enough to justify the use.

#### Synopsis & Commentary:

This evaluation ends up being a quasi research paper and a lesson in vibration control. Mike Latvis has approached the field of resonance control with the utmost proficiency, resulting in a very well finished product that looks professional and works like one.

For many years, our Editor has tested many devices to control vibration and resonances and he states that “vibrations or the resulting resonances are a curse in the audio industry—a predicament that has been addressed by many.” He goes on to say that “resonances can be dealt with in countless ways and with an inestimable number of devices and methods.” Most of the ones he and we have examined and tested work quite well, but do not always complete the job. The

reason for this can be over-damping, which dulls the audio information; under-damping, which results in limited success; or moving the vibration to another spot but not eliminating it. However, when the component in need of resonance control has been damped by a device that, by chance, harmonizes with the resonance frequency, the result can be perfect. This said, we'd like to point out that, with the Harmonic Resolution Systems, nothing seems to have been left to chance, as they functioned well beyond our expectations. One of the unique services offered by Harmonic Resolution is that each platform can be customized and adjusted to the weight it must accommodate, and that any HRS isolation platform can be retrofitted to suit.

It is very important to know your system well. Examine all chassis and moving part components—feel the amplifiers and the preamplifier when the sound is at a comfortable listening level. To achieve the best possible results, experimentation (read a trial and error approach) is not just in order, it's imperative. We experimented for hours on end and were able to eliminate or “tame” most vibrations, so that the systems took on a very open and transparent quality without annoying side effects. This makes the Harmonic Resolution System suitable for all audio applications and, as a bonus, it works astoundingly well with video components. We consider the HRS products a user-friendly “accessory”, fun to audition and quite cost efficient. :||

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