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10 Audio – October 2020

POSTED 10/12/2020 BY JERRY SEIGEL

Minus K Technology CT-2 Bench Top Vibration Isolation Platform

The Minus K Technology CT-2 Bench Top Vibration Isolation Platform was originally developed for scientific and research applications such as spacecraft design, nanotechnology, and medical research. The patented technology is called “Negative-stiffness”, where the isolating platform seems to float with no resistance.



From the manufacturer's Web site (link below):

“Dr. David L. Platus is President and Founder and is the principal inventor of the technology. He earned a B.S. and a Ph.D. in Engineering from UCLA, and a diploma from the Oak Ridge School of (Nuclear) Reactor Technology. Prior to founding Minus K® Technology he worked in the nuclear, aerospace and defence industries conducting and directing analysis and design projects in structural-mechanical systems. He became an independent consultant in 1988. Dr. Platus holds over 20 patents related to shock and vibration isolation.”

The Minus K® products were formerly sold under the trade name Nano-K®. By reducing building and floor vibrations to unprecedented levels these systems enable vibration sensitive instruments and equipment to perform at unprecedented levels. They are used in a broad spectrum of applications including nanotechnology, biological sciences, semiconductors, materials research, zero-g simulation of spacecraft, and high-end audio. Minus K® is an OEM supplier to manufactures of scanning probe microscopes, micro-hardness testers and other vibration-sensitive instruments and equipment. Minus K® customers include private companies and more than 300 universities and government laboratories in 51 countries. (Paraphrased content from manufacturer's Web site.)

Product attributes:

- Isolation performance is typically 10 to 100 times better than high-performance air systems
- No air or electric power is required
- Nothing to wear out
- No maintenance

A complete description of the patented Negative-stiffness design can be found on the Technology page of the manufacturer's Web site. The Minus K platform is completely silent and requires no pumps or power. The CT-2 model platforms are available for different weight ranges of payload, or supported weight. The 40CT-2 model, while not specifically listed on the Web page, was perfect for the Clearaudio Ovation turntable used for this review. The platform dimensions are 18" W x 20" D x 2.7" H, with a weight of about 30 pounds. Different models, for different payloads, range in price from \$4,650 to about \$5,250. In my system, the platform was installed 20" W x 18" D, which placed the adjustment crank on the 18" left side.

The horizontal frequency of ~1.5 Hz is achieved at or near the upper limits of the payload range. The vertical frequency is tunable to 0.5 Hz throughout the payload range. What this means is that any very low frequency vibrations that are not blocked or absorbed by the Minus K platform are several orders of magnitude below what your phono cartridge, or even the best subwoofers, can process.



The other components which were supported by the Minus K platform include Origin Live Agile, Tri-Planar U2 SE or Clearaudio Universal tonearms, and ZYX UNiverse Optimum and Miyajima Destiny moving coil cartridges. Downstream components were mostly BMC MCCI ULN phono preamplifier, Soudation 325 and Benchmark HPA4 preamplifiers, Benchmark AHB2 and Velvet A4e power amplifiers, and Magico S1 Mk II speakers, all wired with our Mogami interconnects and speaker cables.

Installation is simple and includes checking the turntable level and adjusting the platform balance. The latter is achieved by turning the hand crank until the white dot in the Vertical Position Indicator is centered. Simple. Remember to install all outer ring and center clamps because this balance adjustment is quite sensitive. Changing record weights from the 2.3 ounce Origin Live Gravity One clamp to the 1 pound 7.5 ounce Stillpoints LPI clamp required about 13 rotations of the crank for the proper adjustment. A small, ¼ to ½ turn adjustment, was sometimes needed for the first few weeks to re-center the white dot.

The Clearaudio Ovation turntable usually sits on the rack's top shelf, which is 48" W x 18" D x 4" thick maple, atop sandstone shelves and side pillars. Total rack weight is about 550 pounds. The floor is dungeon-grade concrete. The Ovation is used with the Clearaudio Outer Limit edge weight and Clearaudio Battery Power Supply. Turntable speed is checked regularly, assisted by a strobe light app, RPM Stroboscope, on my smart phone.

The Minus K platform delivered audible improvements in several areas. The soundstage improved, not so much in the overall size of the sonic image, but the solidity of the 3D effect of individual performers. Each player is better separated from adjacent performers, better focused. For large-scale classical productions, each section of the orchestra is in its own defined space which rarely overlapped adjacent sections. The stage seems more tangible. This is not a momentary phenomenon, but is consistent with all recordings. Music gains in body and presence. This is all about resolution and the Minus K isolation platform enables more of it.

Very small scale, micro dynamics took on a significant upgrade, delineating each note all the way down to an even deeper silence. The purity of the midrange and treble also increased which brings singers to life, expressing emotion and nuance incredibly well.

The bass evidenced a small increase in resolution, while dynamic power and extension into the lowest bass remained largely unchanged. The increase in resolution and detail made it easier to follow bass players and hear the character of big bass drums.

The Loggins and Messina LP Sittin In is a high quality recording, being well mixed and mastered. Vocals are complete and very present. The focus of the studio-created soundstage is especially noteworthy. This is a long-term favorite "A-List" LP. It never sounded better.

Please note that these results were observed with a single turntable. The differences with the platform installed were somewhat less in magnitude than changing a tonearm or cartridge.

You might have thought, maybe for only a few moments, that your audio system was sounding especially good. With that feeling, you would have rated the sound a top score of "10". Then those magical moments ended and your system returned to it's normal - but still good - performance level. Well, folks, the Minus K CT-2 Isolation Platform could raise your system score to an "11" and keep it there! Highly recommended for systems that are already high performance and where you want to coax the maximum performance from your audio investment.

Overall Rating 1- LPs



Link to manufacturer: [Minus K Technology](#)

This review would not have been possible without the very kind support of Steve Varma at Minus K Technology. Thank you!

vibration isolation technology @ www.minusk.com?pdf