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DOHMANN AUDIO HELIX TWO

The Döhmann Helix Two was engineered to incorporate most of the features of the acclaimed Helix One in a more compact format and at a more affordable pricing level. Nevertheless, the Helix Two still holds its own as an exclusive design in terms of the technology implemented and the sonic quality achieved. Utilizing the original damping system and anti-resonance technologies, the Helix Two is one of the most extraordinary turntables available today.



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Both the Helix One and Two turntables are based on the theory that in order to enhance the dynamic range and lower the noise floor of an analogue system, you need to have a set-up immune to any mechanical and external sources of noise. This is achieved by implementing a very sophisticated damping system and a series of mechanical cross over points that eliminate resonance across a wide frequency range. The Helix turntables are conceived from the vivid imagination of designer Mark Döhmann's mind, a brilliant aeronautical engineer thrilled by music, who built his first turntable in 1982 and in 2005 released the mythical Caliburn Audio Lab turntable and Cobra tonearm at 90,000 USD. For this new project, Mark collaborated with Rumen Artarski (Audio Union) and assembled a team of established scientists and engineers from a variety of industries. The aim was to identify the various challenges of analogue audio playback, look at how previous turn-

table designers dealt with those challenges, research the latest engineering solutions and incorporate those state-of-the-art solutions into a new contemporary turntable design. As a starting point, the team considered the XVIIIth century analysis provided by the tablet method of Ernst Chladni, a method which is still used by instrument manufacturers and scientists today. By placing a thin tablet covered with thin powder on the surface of a material exposed to vibrations, you have the means of observing vibration nodes thus allowing you to literally read a map of the vibration patterns. The latest developments in measurement software dedicated to cymatic phenomena allowed Mark Döhmann to build a complex chassis relying on a semi-active topology that offers auto-adaptive design features. This unique method allows the conversion of the energy induced by vibration into kinetic energy which is freed through a dissipating device, thus insuring a vibration mitigation system capable of isolating the most sensitive electron microscopes. To reach this aim, Mark Döhmann used the remarkable Minus K® BM10 platform which was modified for audio applications and completely integrated within the Helix Two chassis. Based on the oscillating mass principle, it utilises three different isolation systems in series. One isolator operates in an inclina-

***compact but still integrating the minus k®
technology visible through the front glass
panel, the synergy of the ensemble is to its full
extent with the schroder cb tonearm***



tion plane, another operates in the horizontal plane and finally a third isolator operates in the vertical plane. The damping factor is assured by a rigid loaded spring combined with a Negative Stiffness Mechanism (NSM) using horizontal blades that the user can tune with a knob thus allowing full adjustment of the force of compression applied and adjusting the vertical rigidity of the turntable. Solid pillars connect the top plate of the chassis to the bottom plate which behaves as a counterweight. The complete assembly can smoothly oscillate around the center of gravity, thus allowing the motor basis, the turntable platter and the tonearm support to be completely immune to vibrations in the external environment. The inherent resonance of the system is only 1.5 Hz in the horizontal plane and 1 Hz in the vertical. A system of mechanical crossovers on isolated plates

then trap and dissipate resonant frequencies above 100Hz. The armboard is also completely isolated from the chassis and 'floats' independently from other structures. The 15kg platter relies on different layers of materials including three layers of thermoplastics and non ferrous metal built with tight tolerances including an external damping ring. The aluminium structure is loaded to add mass, and the drive system uses two different belts using slightly different materials and textures that neutralise oscillation as well as prevent the development of static electricity. The Helix Two uses a high-torque motor that develops nothing less than 100W of power. In order to maximize the drive of the turntable, the Helix Two relies on an electronic predictive servo control device which operates on the input provided by 1000 measurements per rotation. This results in a phenomenal wow and



SCHRÖDER CB
tonearm and tonearm
basis which the
magnetic damping
is set by knobs on the
left of the picture.
In the back : the driving
pulley with double belt.

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flutter reading which is practically negligible. Control of speed is ultra-precise with the help of a software interface and even 78 RPM is available on request. The inverted pivot forged from high-stiffness steel lays on a ceramic ball. The spindle is lubricated by aeronautical grease. The Helix Two can be ordered with a specific armboard configuration to suit virtually any tonearm. Having said that, one of the other strong points of the Helix Two is the particular 'CB' tonearm designed by Frank Schröder that can be ordered with the unit. It offers a magnetic decoupling insuring a perfect independence from the chassis of the turntable. To tune the device you have to work on the relative position of the tonearm plate via a set of knobs located on the upper part of the Helix Two chassis. Once the green LED turns red, the tonearm basis is isolated with a gap as thin as piece of paper and thus provides the best isolation possible for a tonearm! All these incredible technologies are incorporated in a compact chassis with a footprint of only 48x20x40 cm and weighing around 60kg. One more rare detail: The platter's edge is surrounded by a fixed aluminium ring which prevents influence from external air movement and furthermore uses the Venturi effect produced by the rotation of the platter to linearize naturally the rotation of the platter. The heavy turntable clamp has been designed in order to optimize the coupling of the record with the platter. Our demonstration Helix Two had the famous Schröder CB tonearm (ebony version), teamed with a MySonic Lab Ultra Eminent Bc loaded with the MSL Stage 1030 step up transformer coupled to the remarkable

Thrax Orpheus LCR phono stage. It is important to consider that the importer of the Döhmman Helix Two, 'Ana Mighty Sound', deals with all the installation & rather complex settings needed for the set-up of the Helix Two, but once this turntable is set-up, it is 'set and forget'. Tasting such a unique analog set-up feeds your audiophile passions that you have been accumulating over many years. It goes even further than what you thought you could expect from a turntable and the fact that it clearly outperforms anything that we have ever listened to until now is a huge surprise. Every single quality vinyl record led us to a beautiful and euphoric state that made us forget how even to describe with words our sensations, our rational mind being literally 'unplugged' in order to experience the full extent of the feeling of the moment. The Helix Two turntable is able to show the sonic event with such an impact, such realistic intensity, immune to any kind of perturbation against a pitch-black background of silence. This allows you to perceive the micro-details



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and 'truth' of the contours of the music to a full extent, giving a unique sensitive dimension to recordings as freed from any constraints. The music just flows....It is clearly the music which is the winner. All this technology would be useless if it was aiming only for a marketing goal, but in the case of the Helix Two it is clearly the demonstration of unique savoir-faire dedicated to the reproduction of music. First hit : the bass. You have to listen to a full-scale orchestra to perceive how much the bass and extreme bass have never been as well articulated in terms of differentiations, textures, tone, soundstage as well as a thunderous grip of the lowest frequencies. For example, in the wonderful record Une Symphonie Imaginaire from Rameau under the direction of Mark Minkowski (Archiv), every single double bass can be clearly identified in the orchestral mass, with a perfect focus, no intermodulation and a bass extension beyond what we have previously experien-

ced. The dynamic range splashes as in real life with an authority that is inaccessible to any other musical supports. As transfigured by this lower frequency sturdiness, the mid and treble registers are astonishing and provide a fabulous texture full of diversity, which is as close as it can get to reality thus bringing a life-like presence at the same time with definition and subtlety. The charming voice of Cécile McLorin Salvant, a young French-American singer shines on the double LP 'For One To Love'. In the song 'le mal de vivre', we were moved instantaneously by the incomparable richness of the timbre and perfect soundstage illusion. The piano had unbelievable realism and energy with a fullness of harmonic textures. It's at this point that you have that strong feeling that the real thing is happening in front of you. The treble register is phenomenal, with the MySonic Lab cartridge is one of the very best we've ever heard by its tone but also shades and colour variations. Listening to our best vinyl records leads us to rediscover our music in an addictive way, and we do keep in mind that these are unique moments, which are not accessible to everybody.

The Döhmann Helix Two in this particular described configuration and perfectly set-up is without a doubt one of the most beautiful moments of analog playback ever experienced by our magazine and it will stay vividly in our minds. Can the Helix One perform even better?



mark döhmann and his team have realized a technical and musical masterpiece.



The cartridge My
(initials of the designer
Matsudaira Y. who built
Air Tight, Super, etc.)
Sonic Lab Ultra Eminent
Bc is designed abroad a
ultra low impedance
moving coil (0.6 ohms)
which allows high
resolution and still
achieve 0.3mV of output
with the exclusive
SH-uX magnetic circuit.