

Döhmann Audio Helix One Mk3 turntable

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There's something about Australian 'mate' culture that permeates audio turntable designers from the continent. Mark Döhmann of Döhmann Audio is a perfect example. He's the kind of disarming expert who is at once confident in their own designs and fascinated by the designs of others. He's not the kind of guy who will tear down a rival and is instead fascinated at why people make engineering decisions and how they positively shape products. Yes, Döhmann has also made his own design decisions and can explain the concepts and their reason for inclusion, but it never feels like he's fighting his corner or making bold claims. The late Max Townshend was cut from the same cloth. Perhaps this excited interest in his product – and other designs – is why Mark Döhmann can list dozens of similarly top-class turntable, tonearm, and cartridge makers who consider him a force for good and a friend rather than a rival.

Of course, his kudos among his peers would dip sharply if the product he made wasn't up to scratch. Still, Melbourne-based Döhmann Audio has been making world-class turntables under its own steam since 2015, and for some years before that, Mark has been a critical figure in top-end turntable making, contributing his design smarts to some of one of the most respected high-end turntables of this century; the Continuum Caliburn.

No flash in the pan

The original Helix One was Döhmann's first commercial design. The more affordable Helix Two followed a couple of years later in 2017, and this helped show the company was no flash in the pan and allowed Mark Döhmann more leeway in honing these two designs to perfection.

It's worth winding the clock back and looking at the Helix concept's original and Mk2 versions. The move from Helix One to Helix One Mk2 created virtually a new turntable, upgrading – and simplifying – every subsystem along the way in the case of the floating arm suspension system. You could argue that set against this root-and-branch change from the original to Mk2, the changes from Mk2 to Mk3 are more evolution than revolution. You'd be an idiot, but you could argue that a new composite bearing, a

new DC power supply and drive system, a new resonance control system, new composite armboards, a new record clamp and an improved platter is just 'evolution.' The fact that these changes are retrofittable (you could take any Helix One and upgrade it to the latest spec... it might be a 'spendy' exercise because there are so many changes over the years, but it's possible, a sign of how Döhmann respects its owner base and a sign of the quality of that original platform.

A key part of the Helix One design from the outset was using a MinusK negative stiffness isolation base. This, drawn from the world of electron microscopy, provides isolation to 0.5Hz vertically and 1.5Hz horizontally, far outside the bandwidth of LP replay. Mark Döhmann handles the Australian distribution of MinusK in audio and a range of professional fields. But, if you are thinking that the Helix One 'rests' on a MinusK, think again. That's not how Döhmann works. The turntable is so integrated into a custom version of the Minus K that it's practically symbiotic.

Using the MinusK falls into Döhmann Audio's core principles regarding vinyl replay: any turntable must be a supremely accurate vibration measuring machine. It converts vibrational energy, from the shape and cut of the grooves, into an electrical signal. In an ideal world, the turntable would retrieve and convert that vibrational energy and nothing more, unadulterated by the surroundings or the mechanical shortcomings of the turntable, arm, and cartridge.

Sadly, that ideal world is not the real one, and in real-world turntable systems, a lot of unwanted energy is being introduced into the replay system at source. We're not dropping great revelations here; this unwanted energy reduction has been the goal of every halfway-decent turntable brand for the last 130 or more years. But what sets Döhmann Audio apart is that Mark spends considerable time researching precisely what unwanted distortion is being introduced in the front end. Mark Döhmann quickly found that resonance was the problem. Resonance was three problems wrapped into one; resonance introduced by the mechanical aspects of a turntable, resonance from the environment (such as footfall) and some coming from the electrical subsystems in a turntable (such as power supplies for a turntable motor).

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In the process, Döhmann found that these resonances constantly move through the turntable itself, creating its own internal resonance artefacts along the way. And in trying to eliminate their impact on the music itself, Döhmann inevitably looked toward platforms designed to keep extremely sensitive equipment stable, which led to MinusK.

That engineering also includes a “mechanical crossover” that creates a ‘least harm’ mechanical pathway to dissipate vibrations above 100Hz. This works by mounting the motor, bearing, and armboards on interlocking plates to reduce unwanted vibration impacting the stylus/record interface.

However, nothing was off the table, and that included getting in touch with NASA engineers to discuss mechanical isolation in satellites or mining engineers to talk about taking sensitive equipment down mines was all fair game. That resulted in some serious left-field ideas to crack the vinyl nut.

Many of these revelations hit pay-dirt between the original Helix One and the Helix One Mk2. This saw even deeper integration of the Minus K vibration isolation system utilising what the company calls ‘NSM’ technology, fully floating armboards, a custom-designed Swiss-manufactured motor designed to Döhmann Audio’s specifications and carefully designed resonance dissipation

pathways within the chassis. Döhmann Audio’s PowerBase contains the power supply, with control software to drive the new motor and special high-frequency and radio frequency absorption features. It also contains a suspension stabiliser to lock the table from moving during record changeover, a lighting control system and power filtration functions.

That button...

Looking at the front of the PowerBase from Helix One Mk2 onwards, there is a large, circular push-button. It’s even more noticeable because it contrasts both colour schemes of the Helix One Mk3. Press it, and... it does nothing. At least, at the moment, it does nothing. A big part of the promise of the Döhmann design is its flexibility and upgradability. That button will operate a vacuum record hold-down at one point in the future. Mark Döhmann promises that all the vacuum ‘gubbins’ (save for the external pump/compressor) will fit inside the ample Helix One Mk3 footprint.

The turntable’s size has an added and obvious bonus, multiple arms. The Helix One Mk3 and its extremely clever floating arm bases are designed to work with two arms, whether for stereo or mono use or to get the sonic benefit >>





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» of multiple arm and cartridge combinations. This is so intrinsic a part of the Helix One genetic make-up that if you are a 'unidexter' (borrowing the term from Peter Cook's famous 'One Leg Too Few' sketch), you should probably be looking at the smaller Helix Two Mk3. This incorporates the technologies rolled into the Helix One Mk3, but in a smaller, single-tonearm footprint, saving you almost £19,000. However, we went for maximum chonk in the Helix One Mk3, despite using it primarily with the one tonearm – the excellent Reed 5A tested in Issue 219.

Look ma, no belt?

Maybe the least prominent part of the Helix One Mk3 is that it's a belt drive. Döhmann thinks that though good, the limitations in a direct drive are noticeable enough for belt drive to still reign supreme from an audio perspective. However, the belt is built into the platter housing is never visible. The end-user can change it, but I think this should be considered part of a periodic service. That's not a suggestion directed at the Döhmann deck alone; if you have a significant investment in a complex piece of engineering, regular (maybe bi-annual) maintenance is a good idea. Over the years, I've heard a few potentially excellent decks in dire need of service.

The platter-and-bearing system draws on the 15kg triple-sandwich non-ferrous alloy/thermoplastic platter topped with a permanently attached damping mat. However, this, too, has undergone significant changes, including adding a new 'Advanced Composite' bearing with a single ceramic ball and a thrust pad designed to place the rotation point within the centre of the platter itself. The platter is driven by a dual-groove machined aluminium pulley using a pair of dissimilar-diameter O-rings, each with a different hardness grade.

This speaks to Döhmann Audio's engineering concepts, best summed up as 'build it to last'. The platter, platter housing, motor and its housing and power supply module are all powerfully built (that power supply module is the size of a small power amp in its own right). Most of this is – almost – hidden from view but can be seen from the front of the deck.

Even the motor points to how little Döhmann Audio is prepared to compromise. It's a custom-designed, Swiss-manufactured, high-torque design controlled by a custom, software-based, closed-loop servo control system that monitors and calibrates speed more than 130,000 times per second. Turntable brands tend to buy off-the-shelf motors

and often deploy surprisingly simple means of speed control (such as having a line or two cuts into the inside of the platter, which is read by an optoelectronic circuit to adjust speed once or twice per platter revolution). That Döhmann Audio goes for the road less travelled shows how seriously the company takes its vinyl replay. This is probably a good idea for a company that only makes turntables!

This all spells a masterwork of a turntable and the kind of device that should be the stuff of professional installation. With an all-up weight of 76kg, it's not a 10-minute installation project anyway, and in fairness, the Helix One Mk3 is not the kind of turntable that is in any way prone to drift or sag; when it's set, it stays set. You need someone exceptionally well-versed in making it 'set' properly.

This is why I think the nearest most people get to the sophisticated engineering of the Helix One Mk3 will be when they press the two buttons on the carbon-fibre top plate, backed up by a rear-panel-mounted speed-adjustment feature, which can be adjusted and diagnosed over the Internet. The top-plate buttons control operation and speed and pressing them shows how free-floating the Helix One Mk3 can be. This is an almost unnerving experience, even for those used to turntable design. This high-mass platter is set in a heavy chassis; you don't expect those to move around. You don't expect them to dance with the freedom of movement you might expect from something like an old but well-maintained Pink Triangle. Because it has the freedom of movement and the authority of sheer mass, your first time cueing up a record comes as a bit of a shock.

And then you listen to it. An album passed, played front to back. the listening notes don't even go as far as listing the album or track, just some shorthand that reads 'listener hypnotised by sound. Try again later.' I've never played quite so many records and made so few notes because each time I played a record, I was absorbed by the music that to write anything about what I was hearing was an act of musical heresy. I didn't want to pollute my music by breaking the spell and writing something down.

After several warm-up albums, I felt sufficiently 'dunked' in sound to start to make some observations. The first of which is, for so heavy a turntable, it has a very light touch, but not too light, just relative to what you might expect from a large and weighty design.

The sound is full of grip and drive, with none of the over-refinement from high-mass turntables nor the steely sound you can sometimes get from suspended designs. It's just... damn good.



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While there are differences you can point to in sound between extreme high-end decks, they mainly converge on a point of sheer musical excellence. So, if I say the sound of the Air Force One is 'smoother' it's not like the Air Force One is satiny sounding throughout or that the Döhmann Audio Helix One Mk3 is more rough-hewn. These are nuanced differences, akin to adding or subtracting a couple of contrast steps to your TV set's picture. That this turntable trades blows with the established vinylista best-in-breed shows just how good the Helix One Mk3 gets.

The Helix One Mk3 has its accent, but it's a mild one. The language it speaks is absolute fidelity to the groove; if it were more faithful to that goal, you'd find it burning digits at the stake. The turntable has fewer points of omission or emphasis than most turntables, and this is all too clear to the listener when they play a record on their existing deck; I listened to 'Canadee-i-o' by Nic Jones [*Penguin Eggs*, Topic] and you would expect the relatively simple combination of acoustic guitar and male folk vocals to be fairly free from exaggerations or absences. Still, that total

sense of 'thereness' the Helix One Mk3 bestowed on the music wasn't as present on other top-end decks I've tried over the years. And the more records I played, the more that distance was confirmed.

However, I mentioned that mild accent, and it's one of quicksilver leading edges and dynamic range as opposed to a more 'beauteous' approach to the musical presentation. This worked remarkably well with various musical styles, from the unrelenting Stravinsky-based assault on a piano by Alexander Toradze [EMI] to the twisted beats and electronic percussion sounds of Orbital [*'Are You Alive?' Optical Delusion*, London], the speed and precision of beat information are paramount... and often a point where super-decks fail to shine. I've erroneously attributed this to the sheer amount of information being processed in our heads. Still, the Helix One Mk3 shows it's just a form of distortion and a turntable can deliver all the detail and do it fast. In both these recordings, the speed of attack dictates the recording, and any flatness or slowing of the sound is simply a mistake. Granted, there are audiophile >>



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» arguments about whether Orbital should be included in a review of high-end equipment, but if a high-end deck cannot play everything as well as possible, arguably it doesn't deserve the high-end epithet. Döhmann Audio's Helix One Mk3 plays both albums with excellent speed and precision. That doesn't just form the basis of 'Pace, Rhythm and Timing' but points back to the 'you are in the listening room' concept at a deep level.

Naturally, when the turntable is fed something more audiophile friendly – 'Do Nothin' Till You Hear from Me' from *This One's For Blanton!*, by Duke Ellington and Ray Brown [Pablo] – the sound is astounding. The instruments are in front of you, with a believable dynamic range and the sort of detail that makes you think you just stepped back 50 years ago. This is an overplayed recording at high-end audio shows for a reason, but when heard through the Döhmann it's like hearing it anew for the first time. Wow!

Maybe the best example of what this deck does so well comes from one of my latest purchases, 'The Ghost' by Alice B Savage [*in*]FLUX, City Slang]. Her small, yet powerful voice, singing "Stop haunting me, please" in the chorus (as she sings about an ex-partner who sounds suspiciously like a stalker) is chillingly beautiful and stops you in your tracks in a way many decks purport to do, but the Helix One Mk3 does! That voice stands both apart from and integrated into the rest of the music. If that sounds impossible, it usually is... but the skills of the Döhmann Audio Helix One Mk3 to extract and resolve that aural dichotomy in one is what sets the turntable apart from others. This musical *Mise-en-scène* is something that once heard, is never forgotten, and is surprisingly prevalent in good recordings. Unfortunately, we often equate it with 'image separation' and sounds that should cohere within a musical whole are artificially spaced out instead. The Döhmann shows us an alternative view!

Don't stop believin'

Some years ago, as the vinyl revival picked up again, I believed we had reached the limits of what could be pulled from a groove. I was very wrong. What never ceases to amaze me about vinyl is how much more we can extract from records made decades ago. The level of information extraction possible from the Döhmann Audio Helix One Mk3 – and the handful of super-decks that form its very select peer group – was almost impossible to achieve 10 years ago and completely unattainable at the turn of the century. Yet, the information was hidden in grooves cut as Sputnik was bleeping its way around the planet. How much more

is still locked away, waiting for the next generation of vinyl replay systems?

The Döhmann Audio Helix One Mk3 arrives fully formed at the spearhead of the best in vinyl replay. While it's easy to point to the deck as the spiritual heir to the Continuum Caliburn both on an intellectual and sonic level, it's so much more. This turntable gives an insight into the recording that's nothing short of jaw-dropping. It's a platform that deserves and demands the best arms and cartridges – preferably two of each – and the finest phono stages known to humanity. Still, you are rewarded with a level of sound quality previously only open to those in the studio control room when recording. And that it hints at still more from its vacuum hold-down platter when it arrives must make it a strong contender for the very best in LP replay today. It really is that good! +

Technical specifications

Type Belt-driven turntable built into Minus K suspension system

Operation Two push buttons on the table top plate for speed selection/on/off

Speed Control Speed is constantly calibrated over 130,000 times per second to deliver precise 33.33 or 45.15 rpm (factory default). Default factory set speeds are 33 RPM and 45 RPM. Please note that 78 RPM and other custom speeds are available by request. Simple user-adjustable speed control is accessible via two intuitive push buttons on the rear of the main chassis

Drive System Fully integrated Swiss-manufactured high torque motor (de-coupled). Dual-belt platter drive designed to reduce static electricity and vibrations

Tonearm facilities Two armboards to facilitate the mounting two tonearms up to 12" (305mm) simultaneously. All Helix One Mk3 turntables come with two Mk3 Advanced Composite Armboards. The armboards are removable and allow simple interchange and calibration

Finish titanium or black. All Helix One Mk3 turntables have a carbon fibre top plate

Dimensions (without clamp or tonearm, WxDxH)
60 × 48 × 25cm

Weight 76kg

Price £64,998

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