

THE DÖHMANN HELIX 2



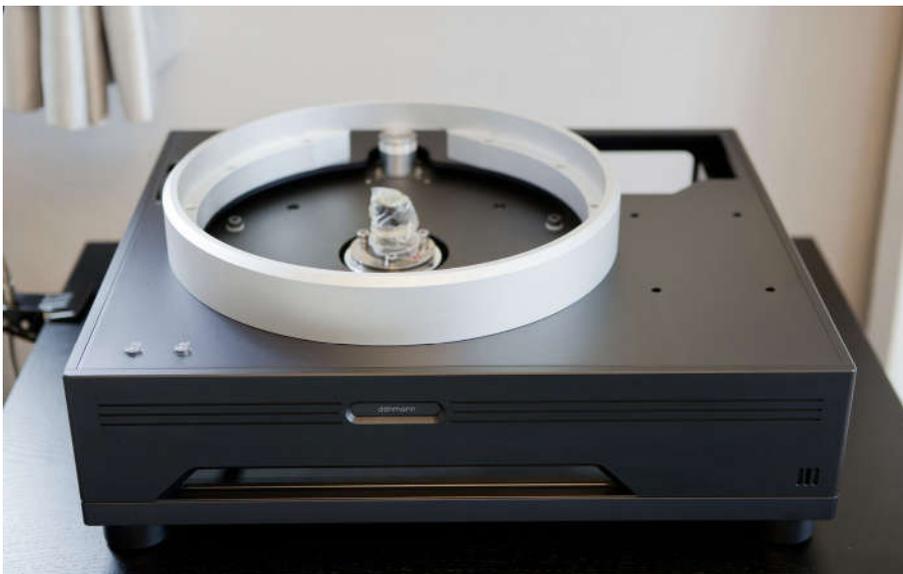
As a dealer you work with good equipment day in day out. It's actually easy to become a bit blasé about good sounding products and even many things we trial but reject from selling are still great performers with impressive characteristics, sonically or otherwise. Once in a while though, something comes along that makes even a seasoned highend dealer stop and scratch his head in amazement. The Dohmann Helix is such a product and it's got me so excited that I wanted to get pen to paper the instant I took delivery of our demo unit earlier this year.

There's a lot of good information out there on the internet about the Helix already, particularly on Youtube. The well known US Turntable aficionado Michael Fremer from Stereophile has championed the deck quite extensively with a very comprehensive review (and comparison to his own personal Continuum Caliburn) and a visit to the factory in Bulgaria. I will link all this information below but to give you a brief overview, the Helix was the result of a coming together of various industry experts spearheaded by Rumen Artarski from Audio Union who make the very fine range of Thrax Amplifiers. Mark Dohmann (previously of Continuum Labs and designer of the then state of the art Caliburn turntable and Cobra arm) was chosen to be the chief designer of the Helix. Amongst others, Allen Perkins of Spiral Groove was chosen to look after the deck's bearing, Frank Schroder to create a new Tonearm design and Dr David Platus from MinusK to implement his technology as the core foundation of the design.



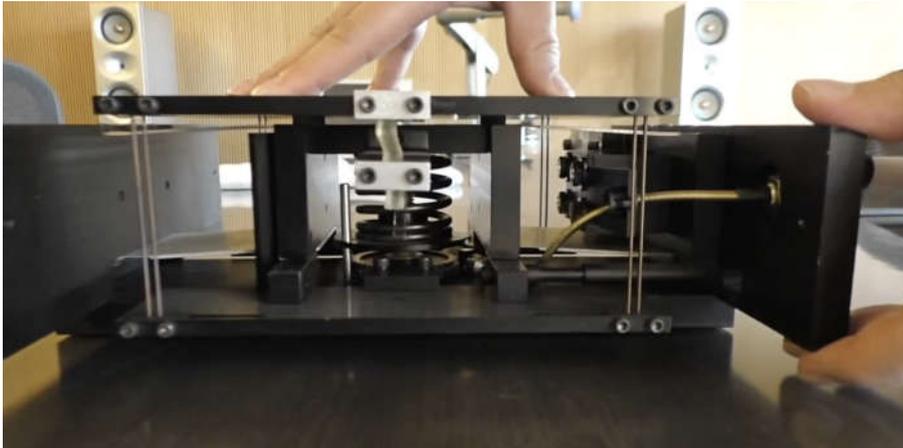
The Minus K

If you've never heard of a MinusK negative stiffness isolation platform then this [20 second youtube clip](#) will very rapidly give you the gist. They were never intended to be used in Audio systems but in the more obsessive corners of highend hifi, end users have actually been very successfully using these devices under turntables and electronics for some time now. Only with the Helix though do we have the first ever turntable to implement a specially developed MinusK device into the core design and product. When I first set up my deck and touched the platter and watched it (and the tonearm) pistonically move down and up I was completely aghast at the quality, smoothness and overall sensation of it all. "Now THAT is how you engineer Turntable isolation" I thought to myself. I guess it's a bit like the weighty volume knob on a Tidal preamplifier, something you have to experience in the flesh to fully appreciate.



So the principal technology behind the Helix 2 and a big reason for its lofty performance is that it's inner chassis is affixed into a bespoke low frequency MinusK device specifically created for the turntable. This sophisticated type of isolation from the outside world (along with the platter shield) is key in preserving the accuracy and fidelity of the style/groove interface. Like all the world's "super decks" we find that they will always have additional technologies above just a well designed bearing, chassis and motor/power supply. You need something extra to elevate the performance to the uppermost echelons, air suspension stands, vacuum hold downs, air bearings, magnetic induction drive, the list goes on. I must stress though

that the Negative Stiffness mechanism from MinusK is not the only impressive technology behind the Helix; there are a multitude of other properties and designs which help make it the high performing turntable that it is and although I have listed these in full down below for you in the further reading section, we can mention some more in passing as we go over the decks' setup for you.



Before we go any further allow me to point out that we could easily be talking about the Helix 1 here. The "1" was the initial design and then Mark Dohmann and his team went on to create the "2" at a lower cost and in a more compact chassis. The truth is though that given Audio Union's current introductory offer on the Helix 2 (you basically get the £3700 Schroder CB tonearm bundled in free of charge), for £15,000 less the performance of the Helix 2 is scarily close to the 1 and the saving could easily be spent on a better tonearm or phono stage, making your Helix 2 setup actually higher performing for the same outlay. You just have to ensure that you don't want to run more than one tonearm.

Setting Up

Setting up the Helix 2 is a doddle. Everything arrives in an extremely heavy flight case and initially you just want to remove the entire chassis and uncrew it's two tonearm assembly transit screws from underneath and then set it down on your chosen rack/platform and then remove it's 4 upper transit screws located just inside the raised platter shield to release the MinusK. The 2 part bearing is machined from carbon free 'maraging steel', hardened in an inductive oven and ground to a tolerance of 5 microns. The bearing spindle of the platter sits on top of a ceramic ball so installation is just a matter of setting the platter down into the chassis mounted thrust pad. The best way to do this is to simply hold and lower the platter using the supplied Helix record clamp screwed into the spindle.

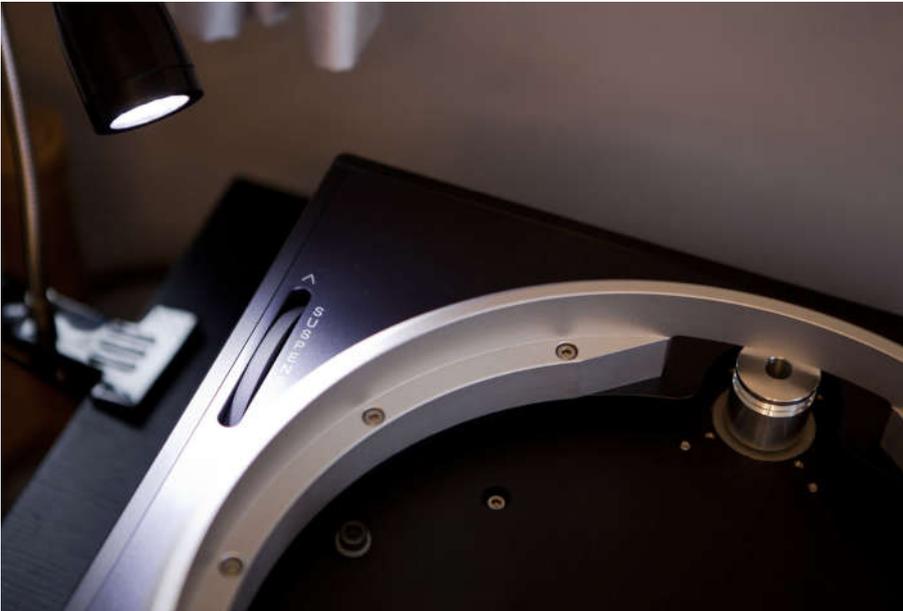
The 15kg platter system is triple or even quadruple layer, with the lower aluminium part housing the two belts mechanically isolated from the middle section. The upper layer is a fibrous rubber surface for the record interface, mated to a thermoplastic layer and then the middle alloy section is filled with lead shot. Once installed, the two belts of two differing materials (two different levels of hardness to counteract cogging) can be pulled through a rear facing hole in the platter shield and fitted around the chassis mounted motor spindle. The supplied armboard is affixed onto the inner chassis with 5 hex headed screws and then at this point, with the tonearm roughly installed, you can get the deck perfectly level by simply rotating each of the 4 feet.



With your tonearm installed and setup (the bundled Schroder Captive Bearing tonearm is also very easy in this respect) final levelling of the armboard can be performed. On the chassis surface there are 4 screws which can be adjusted in small quarter turns to help level all 4 corners of the armboard. This sounds more complicated than it looks but it's merely a matter of ensuring that the armboard in its cut out is proud of the chassis by the same small distance all the way around. If the deck is perfectly flat then you can also use a small spirit level on the armboard as well to achieve the same result.



The very last thing to do on the Helix is to correctly level the MinusK. This must be done with a record and the record clamp fitted and of course your cartridge. The large surface mounted wheel at the back of the chassis can be turned to 'centre' or level the platter/tonearm height to the middle of its range of travel. You want it's rest pose to be halfway between the upper and lower extents of the MinusK's movement so that at rest, it is neither bottoming out nor hitting it's upper bump stops as it were. In other words, it is free to move vertically either up or down. This is a very simple process and there is a neat green LED and gauge on the front panel to help you. Easier still for me was to just observe the MinusK innards through the front fascia window and adjust until the two main lower plates that you see are nicely horizontal.



Now you probably know that the preservation of the stylus/groove relationship, and its isolation from all extraneous influences is key in turntable design. Structural and airborne vibration, vibration from the bearing, noise from the motor either through the chassis or through the belt, platter wobble and even resonances from the stylus/groove interface itself. What of course is also paramount is speed stability, turning the platter around at exactly the same speed and whilst this sounds simple enough many factors will conspire against you: the inherent pulsating nature of electrical motor rotation, motor vibration, the cogging of a belt, stylus drag and bearing friction to name but a few.

So before we get onto listening we should probably just say a quick word on the Helix's motor and power supply. The motor control system is a digital closed loop servo with greater than 16bit resolution. The motor actually spins several hundred times to achieve one revolution of the platter so over the course of 1 second, a huge amount of checks are made (>120,000) on the platter speed and these are fed back into a very fast micro processor in the servo control unit. As for motor cogging, the Helix coil design smooths the motor to negligible levels of vibration resulting in super low motor noise.



Once setup and ready for action, the Helix 2 exudes quality and looks like it really means business. What I love about this deck is that it's an engineer's piece with not one ounce of jewellery or bullshit to it. The construction and fit and finish is first rate and the hefty and clean cut of the smart anodised metalwork goes a long way in foreshadowing exactly what kind of performance you are going to get from this beast.

I like the illuminated Dohmann logo and the glowing speed selector switches work well too. My only criticism is that the fascia window could have been a little bigger as it's very nice to see the beautiful complex workings and leaf springs of the internal MinusK. Perhaps some subtle illumination inside would have worked well? That said, if you pay the full amount for the original Helix 1 then you do indeed get a much bigger view of the innards.

For my first ever listening I ran the Helix with a Transfiguration Phoenix S moving coil followed by a Proteus. We have a Lyra Etna inbound as well which should be interesting when it arrives. The system was a Tidal Preos/Impulse with internal phono stage running into a set of Tidal Contriva. So an extremely open neutral system and one I know very well, perfect then for quickly understanding the nature of this new super deck.



Listening

The first thing that struck me about the Helix, from the first few notes, was the immediacy and purity with which the music leaps out of the grooves and is seemingly three dimensionally cast into the space in your listening room. Some of the very best decks seem to have this highly pleasurable ability, a sense of no delay or even actual process at play in terms of extracting the music off the walls and instantaneously projecting it into the room and from the get go it was clear that this is one of them. Key to this impression was also the physicality and certainty of the music. Notes had shape and form and seemed to occupy real space with a believability that they actually exist.

If the first track I played was something spacious and acoustic with great soundstaging, my next selections endeavoured to sample the deck's dynamic ability. I found that the Helix is a very dynamic performer with great speed and attack. The ultra low noise design means backgrounds are very black as you would expect but then bandwidth on offer is prodigiously high. As the demand for separate volumes and intensities within the overall mix increase, individual performers or instruments feel like they each have their very own amplifier. In this way the Helix never seems to reach a dynamic brick wall and playing some complex and difficult tracks from Midlake, for the first time ever I heard them decongested and still replete with space and air, every single strand still well delineated and uncompressed.

The Helix then is an exciting deck with great power. It has clean and precise dynamics of the very first order and delivers a sense of energy and presence to the room which transcends the listening experience way beyond the nagging notion that a piece of plastic is spinning around in the corner of your house. This is an adept illusion, totally unveiled or corrupted by any blur, softening of edges or noise, a strong sense that the real thing is taking place right there in front of you.

Part of this illusion of realism is image stability, a key property of a good turntable experience and also a very reliable indicator of a deck's speed stability. The sense of focus, the tautness of the image lock, the feeling of the dimensionality of various notes, instruments and performers being completely riveted in space is first rate. Whilst belt drive decks will often be on the back heel when it comes to this ability I would say that the image stability of the Helix is as good as the best direct drive turntables I have heard and that is a tall achievement indeed. The size and spacing of the soundstaging I found first rate as well. The Helix gave an absolutely enormous rendition of some of my favourite records both left to right and front to back. Between and around various components of music I am sure that I heard degrees of space and depth that I have simply never heard before. The sheer scale and vitality on offer here is something I believe, that is comfortably ahead of what the very best digital sources can provide.

Three or four years ago here at Lotus we imported and sold a deck named the Beat, manufactured by a company called Kodo over in the USA. This was a direct drive table with a bearing and motor developed by Teres Audio and chassis design by Frank Schroder and Stillpoints. Sadly, for reasons mostly unrelated to its performance we had to remove it from our roster but this deck was a very good performer and also a giant killer at the asking price. The immediacy and image stability of the direct drive Beat was deeply impressive but I would say that the Helix is at least as good in this respect which is quite something for a belt drive unit. This is of little wonder though because when creating the belt drive Continuum Caliburn, Mark Dohmann worked out how to achieve arguably a new level of speed stability with that design.

The other really important contrast here though vis a vis the Kodo Beat, is that despite the fantastic dynamics, the absence of softness and the sheer speed of the deck, the Helix never once sounds aggressive or over-egged. Like the Caliburn it is beautifully natural and unforced in presentation and for this reason I am certain that it would accommodate the whole gamut of tonearms extremely well from air bearing to unipivot and gimbal. Notes are never hard or too sharp but just begin and decay in the most natural and faithful manner. One suspects that Audio Union's extensive work with the motor control software has played its part here, being voiced painstakingly by ear to nail down just the right degree of torque from the motor.

Now to tonality. As you might expect, I found the deck very even from top to bottom with no recessive or expanded frequencies. Bass performance was first rate and hugely impressive for a suspended design and the midrange was beautifully open and expressive and very accurately textured. This is a very neutral deck with no added warmth but could not be described as cool and clinical as some performers are.

Standout Feature ?

Although the Helix's dynamic ability, resolving power, quietness and imaging prowess is absolutely top draw, it's important for me to convey to you that none of these abilities stick out like a trump card. No, the helix is way more mature and accomplished than that. In point of fact, the property of the deck which perhaps impresses even more than anything we have so far mentioned is this fabulous sense of flow and momentum that it exudes. Music is never laid back but then it's never too forward or forceful. Rhythm and structure seem perfectly coherent and simple, and your favourite beats and tunes flow along so smoothly and melodiously. Although all the audiophile badges of honour are more than fully present here perhaps the over-riding feature of this turntable is just how beautifully balanced and well judged it is, and how incredibly pleasurable it is to listen to. This is a table that has enormous dynamic ability yet simultaneously feels so calm and at ease. Tracks, albums, whole listening sessions, days, weeks ... they will surely melt into one and you will most definitely be buying heaps of new Vinyl and going through Moving Coils faster than you ever did before.



In Conclusion

In a way the Helix delivers a performance that belies its makeup. There is another review out there which touches upon this and I have to say that I fully concur. As a suspended design you almost expect a small degree of softness and a slight deficit to speed, transient attack and focus. As a belt drive you expect imaging to be a notch behind the very best and a sound with perhaps a smidge of warmth and some sweetness and flavouring in the midrange. The Helix has you wrong though at every juncture. Here is a deck that has the dynamics, speed and imaging of a direct drive but then the tunefulness, liquidity and beauty of a belt drive. I suspect there are some mega decks out there that may just edge it in one domain or another (the hewn from granite sensation of a Rockport Sirius's stability and precision will probably never leave me) but the Helix does not do "Aces", instead it strives to nail absolutely everything in a mature balanced fashion. Neither laid back nor aggressive, neither clinical nor indulgent, it is the final whole sound that is uppermost, the way it so cohesively and convincingly delivers music in such a pleasing and believable manner. It's not an audiophile's deck but rather a true musical device and although it's possible (but not provable) that it's the best deck I've ever heard, it is most certainly, hand on heart, the very best turntable I have ever set up, sold, or had in my home.

I also genuinely believe that the current pricing is a bit of a giveaway (in relative terms). I have heard decks that were over three times the price yet not nearly as compelling and at £25,000 with the Schroder tonearm it is just a small amount more or still quite a bit cheaper than many 'mid-fi' turntables which you honestly could not even place in the same sonic category. I would say that of course, I am selling the damn things ! But as ever the proof is in the pudding and any customer is welcome any time to come over for a listen to verify all these things and more for themselves. I don't doubt that you will be as spellbound as I was/am but then if it just so happens that the Helix is not quite your cup of tea, with the Brinkmann balance and Spiral Groove in session as well, we will be sure to have something which fits you like a glove.

