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> Brilliant new turntable from **EAR** – in-depth test inside!

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Magnetic charm

Valve amp specialist EAR's first turntable tears up the rulebook with opposing magnets for isolation

PRODUCT EAR Disc Master

TYPE Turntable

PRICE £7,695 (arm and cartridge extra)

KEY FEATURES Size (WxHxD): 43x16x43cm

• Weight: 24kg • Outboard PSU with 45, 33 & variable 78rpm • Decoupled magnet drive system • Tonearm outrigger can support two arms

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EAR is one of the UK's best-established makers of valve amplifiers, yet it remains outside traditional valve circles because EAR amps don't sound like other valve designs. Instead, the company's founder and designer Tim de Paravicini uses these classic devices in the same way that others use transistors. With its first turntable – the company's first source component – EAR's maverick approach delivers a design that is as radical as anything you're likely to see under a piece of vinyl.

The Disc Master turntable's most ingenious feature is what's known as the 'no contact'

drive system. This is a technique for isolating the drive system from the bearing, platter and tonearm, by using opposing magnets. Most turntables attempt to stop motor energy from affecting the stylus/groove interface by decoupling the motor itself and using a rubber belt to minimise vibration transfer. The drawback to this approach is that rubber belts can be inclined to slip very slightly and thus induce small fluctuations in speed, known as 'flutter'. By using a system of opposing magnets in the driven sub-platter and underneath the bearing, EAR has managed to engineer a drive system with enough compliance to iron out motor energy, yet stiff enough to drive the platter.

The Disc Master turntable has a toothed belt connecting the motor (which sits upside down in the case at the front of the turntable) to the sub-platter. Cleverly, both elements are decoupled from the spider that supports the platter and arm by springs inside the three chunky aluminium feet.

The bearing is also an unusual type that uses an angular-contact – rather than the popular point-contact – system, because this approach is said to give considerably longer life. It feels stiff to turn when the platter is not on, but this is because you are also turning the sub-platter and motor as well as a damped drag system that's designed to maintain speed stability.

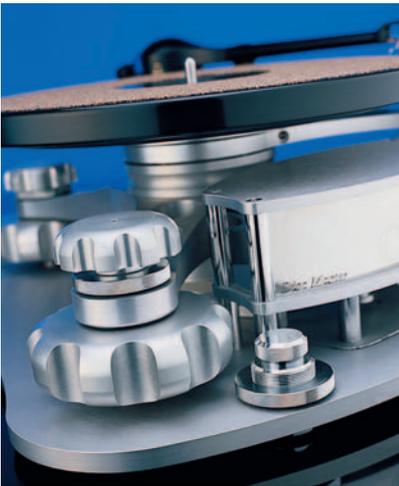
The gorgeous black platter is made from the king of kitchen work surfaces, Corian – a material selected for its very high self-damping and topped with cork, which is very good at turning energy into heat. EAR eschews record clamps because they tend to deform vinyl and are a bit of a pain to take on and off, something we can heartily agree with. The Disc Master has been designed to stop from full speed within a revolution, so that changing records is a quick and easy job, one that's only marginally inconvenienced by the tight-fitting centre spindle (and then only with some records). Its benefit in anchoring the disc to the platter outweighs the occasional tight squeeze.



EDITOR'S CHOICE

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magazine





You may have noticed that the armboard has the potential to support a second tonearm – the aluminium outrigger will let you run an alternative arm and cartridge combination. This could be for a 78rpm specific cartridge, or a set up which suits some albums better than others (an approach that's popular in Japan).

The tonearm supplied with our review sample was a standard Helius Omega (from £1,485) rather than the forthcoming EAR-specific Omega, which will include some functional modifications alongside a silver finish to match the deck. The Omega is the latest generation of Helius arms and an evolution of its Orion and Cyalene forerunners. Innovations include the main bulk of the counterweight being fixed to the bearing body and the placement of the vertical bearing in front of the lateral one.

SOUND QUALITY

We had a few teething troubles with the first sample of this deck. Speed stability proved to be distinctly wanting, but a couple of tweaks later and it was turning at precisely the right amount of revolutions per minute. This is probably because we encouraged EAR to supply the deck as soon as one became available, so the company didn't have the time to iron out this particular foible. Regular production samples will not have this problem.

“The turntable’s resolving capabilities are most apparent when you switch LPs and hear the difference in recording quality.”

Initially, the Disc Master merely sounds very neutral and not dissimilar to the SME Model 20 we use as a reference. However, the longer listening went on, the more it became apparent that the grooves were giving up an unusually large amount of information.

Listening commenced with the Helius arm and a van den Hul Condor cartridge, a partnership that allows the turntable to turn in a powerful and fleet-footed performance with great three-dimensional solidity and a precise rendition of acoustic space. Its sense of speed can be pinned down to a total absence of overhang in the bass. On the one hand, this means the bass doesn't have the girth that it's capable of; on the other, you get more nimble and musical bass lines. This quality rather than quantity approach serves instruments like double bass extremely well, the turntable delivering the energy of the music in full effect.

The flip side of this precision is a slight over exposure at high frequencies that was not apparent when we swapped over to an SME Model V arm with the same cartridge. The

Helius Omega does deliver speed and dynamics with considerable gusto, however, reminding us of the way that its predecessor, the Cyalene, used to sound with Voyd turntables in the 1990s. For many, the ability to turn on a dime and describe the full character of an instrument will outweigh the slightly upward tonal balance tilt with this arm – it certainly makes for thrilling listening.

With the more relaxed SME V on board, the calm it brings to the sound does seem to allow rather more fine detail to emerge, and the control at low frequencies means that the bass has all the power and weight you could wish for. Then again, you could obtain the best of both worlds by fitting the Helius Omega and SME Model V, if your pockets are deep enough.

The turntable's resolving capabilities are most apparent when you switch LPs and hear the magnitude of difference in recording quality that exists. We can't say we compared the rumble signature of run-in grooves, but it was easy to hear how the rumble disappeared just before the music kicked in on Frank ▶

Q & A

We talked to Tim de Paravicini, EAR's founder and designer, about the intricacies of the Disc Master's unusual design



HFC: Why build a turntable now?

TdP: Because I've spent 20 years thinking about the problems [of turntables] and secondly, 20 years ago I would have had to market it against the Linn LP12... forget it! The Linn was so effectively marketed back then, it would have been like trying to start up against McDonalds.

Can you tell us more about the bearing?

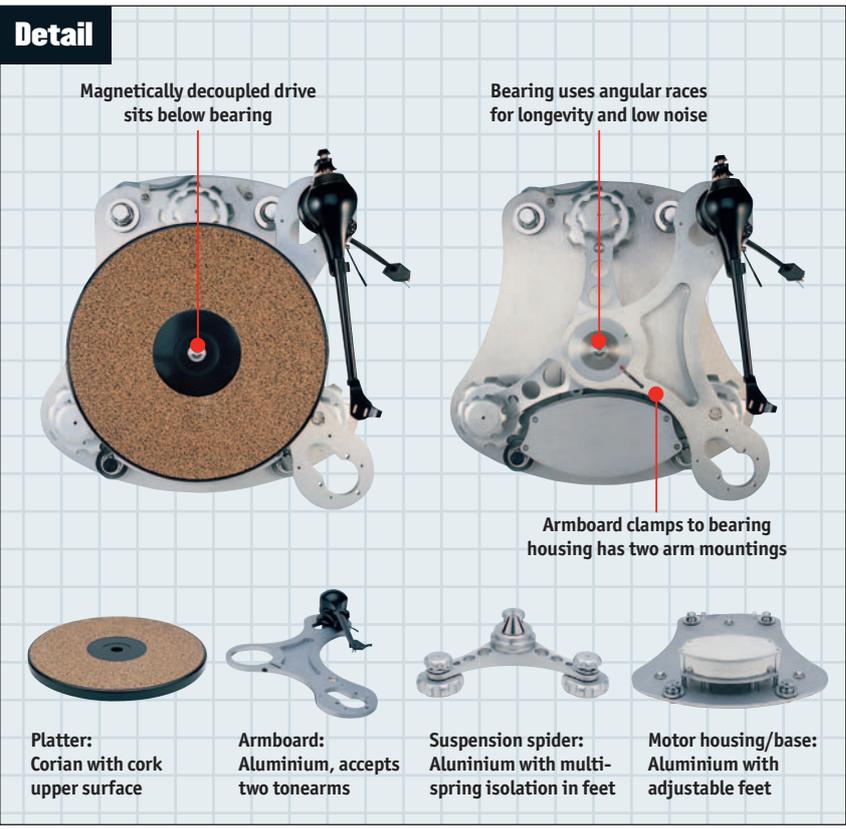
The angular-contact bearings are hideously expensive and made in Switzerland; they are normally used in ultra high-speed spindles. With the loading I have on them they should certainly last ten years, if not a lifetime. They have lower rumble and lower noise than any other bearing structure. They are also stiffer in side-to-side motion than any single-point bearing.

Are there no problems with placing the motor under the arc of the stylus?

It's such a long distance away, the effect is immeasurable. If it's not measurable on the output of the cartridge when it's resting on the vinyl, then it's a nonentity. It's the same with the magnetic coupling: there is no stray field that affects or produces any subsonic signatures. All the subsonic signatures you hear are inbuilt deformations in the records when they are pressed, and you should be able to hear a different rumble signature on every record you play. This is because the lead-in grooves all sound different – on a normal turntable, there's enough basic rumble in the system that you can never quite hear all that. The Disc Master is different. I wanted to hear only what existed on the record and not other effects. Even turntables with 50kg platters have significant inbuilt rumble, because of the heavy loading on the bearing.

What's the Helius connection?

I've known Geoffrey for many years and I've always thought that his arms are better engineered – in a technical sense – compared to other arms. They are fundamentally well thought out and his bearing structure is unique and clever. The Omega is also a genuine 10in (25cm) arm which gives you less angular (tracking) error – you can keep 90 per cent of the record under one degree of error.



❑ Zappa's *One Size Fits All* and just as easy to hear the coherence and separation of instruments and voices within the dense mix. What the deck does best is to reveal how much better some recordings are than others, how much quieter the background is and just how strong a sense of three-dimensionality some engineers manage to achieve with the medium. John Fahey's *Visits Washington DC* album revealed not only the extraordinary timbre that he gets out of a steel string guitar, but also the scuffling of his fingers on the body of the guitar as he picks the strings.

Timing is another strong point of the EAR Disc Master. One's foot or fingers rarely sit still and the rhythmic qualities of the material shine through. The Helius arm emphasised this with its balance, but it's there in equal measure with the SME too, albeit rather more

subliminally presented. Combine a great recording with a musician that has a fine sense of timing – something like Keith Jarrett's *Eyes of the Heart* – and you have a musical feast of extraordinary depth and richness. Even the sax playing here comes across better than Coltrane on *Kind of Blue*, because the recording is so much more real.

The Disc Master's level of resolve will make it more apparent which of your albums are the better recordings, but it will also extract every last scrap of detail from the lesser ones. It is an extraordinary turntable in many ways, from the innovation of its design to the gripping clarity of its sound. Make no mistake: this is a high-resolution deck, yet the music always come first – whatever tonearm (or tonearms) you choose. **HFC**

Jason Kennedy



VERDICT

SOUND >> 96% [Progress bar]	PRO Combines new technological solutions with high-quality materials to bring state of the art resolution to good ol' analogue audio. Second arm option surprisingly handy.
FEATURES >> 88% [Progress bar]	CON Early samples had speed stability issues and motor noise is a little higher than average. It's also a bit of a 'mare to dust!
BUILD >> 88% [Progress bar]	
VALUE >> 83% [Progress bar]	

CONCLUSION
It's hard to break new ground in a technology that's a century old, but EAR has done just that. This turntable is extremely neutral, and has the ability to tell you exactly how your records (or even your tonearms) sound.

HI-FI CHOICE OVERALL SCORE >> 90%