Belt-driven turntable with electronic speed control
Made by: Vertere Ltd, london
Supplied by: Vertere Ltd
Telephone: 0203 176 4888
Web: www.vertereacoustics.com
Price (with arm/cartridge): £2850

AUDIO FILE

hi-fi news OUTSTANDING PRODUCT

Vertere DG-1 Dynamic Groove

Supplied with or without a partnering MM cartridge, this new 'entry-level' deck to the Vertere range comes equipped with a re-imagining of the archetypal flat tonearm
Review: **Adam Smith** Lab: **Paul Miller**

In a world of plug 'n' play convenience, having to manually configure a piece of equipment before it can be used is felt by some to be far too great a barrier to enjoyment. And perhaps in no area of hi-fi is this truer than vinyl replay. I know of many people who have consciously shied away from exploring the ol' black stuff because they believe it to be 'just too much hard work'. So any manufacturer able to help eliminate any of the perceived faff and complexity that comes with putting together and setting up a turntable – not to mention its arm – is onto a winner.

The latest company to pick up the baton is Vertere, with its DG-1 'Dynamic Groove' record player – a complete package for £2850 including arm, cartridge and cabling. The DG-1 draws on designer Touraj Moghaddam's extensive knowledge of turntable design but makes it available at a much lower price point than the company's MG-1 (£7300), SG-1 (£13,900) and RG-1 (£21,500) stablemates. For example, the DG-1's motor is derived from the RG-1 but is integrated onto a single PCB here, and housed inside the turntable plinth rather than being in a standalone enclosure.

ENGINE ROOM

So, what has Vertere done to make life easier? Generally speaking, assembling a good quality record player involves lubricating and installing the bearing, fitting the belt, fitting and aligning the tonearm and then mounting and aligning the cartridge to the arm. Add in VTA, azimuth, tracking force and bias adjustment and it's no wonder the less technical music fans out there are tempted by the rash of online streaming services!

Fortunately it is possible to eliminate a few of these stages. In the case of the DG-1, the arm is pre-fitted to the turntable plinth and the deck can be bought in this state for £2750 including a Vertere D-Fi interconnect cable. However, £100 more adds in a ready-installed and aligned Audio-Technica VM520EB cartridge. This MM pick-up has a bonded 0.3x0.7mm elliptical stylus and aluminium cantilever. It tracks at a nominal 2.0g and has an output of 4.5mV, so should match easily with any MM phono stage you care to employ.

The DG-1's engine room includes a 24-pole synchronous AC motor, driven by a microprocessor-controlled circuit, a machined aluminium pulley and circular cross-section silicone rubber belt that runs around the periphery of the platter. The drive circuitry is well-screened and the processor is fully programmable, holding out the promise of accommodating future improvements to the motor drive.

The slim, disc-like platter consists of three layers – a central core of machined aluminium alloy with bonded layers of cork, Neoprene and nitrile rubber. This composite helps control resonance across the entire platter, but the cork is not an LP mat – it's actually on the *underside* of the platter. In fact the platter is topped-off with a layer of PETG (a thermoplastic polymer most often used in extruded form for 3D printing). This 'mat' is both stylish and well finished, but also has two small dots printed onto it that are used for cartridge alignment, should you be bitten by the aforementioned 'vinyl faff' bug and wish to change the cartridge at a later date.

UNUSUAL SIGHT

The platter itself spins on a stainless steel shaft and tungsten carbide ball bearing that, the manual is at pains to point out, is lubricated on assembly and requires no maintenance. It should also never be removed as it requires specialist tooling to re-fit. The turntable plinth is another laminate, comprising a clear acrylic with coloured acrylic layers bonded above and below. A sub-plinth sits within a cut-out here, suspended via a series of white silicone-rubber straps.

RIGHT: Vertere's choice of AC synchronous motor [top left] is decoupled from the main chassis, as is the acrylic 'subchassis', the latter suspended via four white silicone strips. The laminated tonearm looks striking from above!

ABOVE: The DG-1 'Dynamic Groove' makes good use of laminates, from the steel chassis and three-layer acrylic plinth to the cork/alloy/polymer platter and flat, sandwich tonearm

Meanwhile, the flat 'Groove Runner' arm is an unusual sight. Outwardly similar arms already exist and work very well, such as the EAT E-Flat and the Scheu Cantus and these have successfully expunged the memory of the old NAD 5120 flat arm from the 1980s [see PM's boxout, below]. That said, the DG-1's arm is similar to the 5120 design as it's also based around a central PCB track that carries the connections from the cartridge to the rear of the arm. Either side of this, however, are layers of aluminium to add strength and rigidity, while also providing electrical shielding.

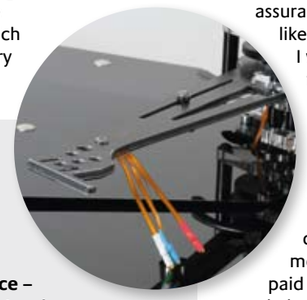
> 'It is Dynamic in name and also dynamic by nature'

As per other tonearms in Vertere's range, the DG-1 variant does not employ conventional ball bearings. Instead, both vertical and horizontal movement is achieved through hundreds of twisted micro-fine nylon threads, which the company claims are light, noiseless and have minimal friction and stiction (an initial resistance to movement). Tracking force is applied by a stainless steel rear counterweight, augmented by a fine adjustment weight situated along the length of the arm 'beam'.

Operation is simplicity itself with one illuminated button pushed sequentially to select 33rpm (green), 45rpm (red) and a longer press for off. A sustained press also selects between illumination LEDs mounted on the plinth that are always on, always off or on only when the deck is in standby. My only gripe here is that the button is slightly close to the belt – it could do with moving to the left.

SOLID STAR

During set-up of the deck, the word 'wobble' kept coming to mind. The diameter of the bearing step on which the platter sits is very small so the platter can tilt if pushed. Equally, the nylon arm bearings make the arm feel loose and not unlike a unipivot to handle. However, as soon as the music started playing through my regular Anatek MC1 phono stage, Naim Supernait amp and PMC Twenty5.24 loudspeakers [*HFN* May '17], the word that sprang to mind was 'solid'. Frankly, how a small, slim and light deck such as the DG-1 can produce a sound that is so fulsome, weighty and capacious is little short of remarkable. This deck is Dynamic in name and also dynamic by nature



This is no shrinking violet of a turntable by any means. It dives straight into the heart of the performance, brushing aside any rough edges to serve up the overall musical message with a confidence and assurance that is not just superb but like little else at its price point.

I was also reassured to hear that the deck was pleasingly stable in pitch terms. When I heard a prototype of the deck on its release at the 2019 Munich High End Show, some piano tracks sounded decidedly 'watery' but Vertere's continued development and work on the motor and drive system has clearly paid off. The DG-1 was as steady as a rock during its stay in my listening room.

PLEASED AS PUNCH

If further proof of the deck's stability were needed, it was to be found at the bass end of the spectrum. The DG-1 digs deeply, of that there is no doubt, but once again it does so with a precision and detail that is utterly bewitching. The main synth bass notes on 'Girlfriend' from Christine And The Queens' *Chris* LP [Because Music BEC5543602] rumbled deliciously from my loudspeakers without any sense of wallow

FLAT EARTH?

Vertere's cartridge carrier owes more to the ultra-flat arm of the NAD 5120 turntable, launched in late 1983, than to the 'flat-sos' of the 1950s-1970s. More recently still, EAT launched a flat, rigid Kevlar arm to accompany its E-Flat turntable [*HFN* Jan '12], but only Vertere shares NAD's novel idea of using PCB track – or flexible PCB wiring in this instance – for its tonearm wiring. Unlike the three-layer laminate of Vertere's tonearm, NAD's super-thin flat arm was cut from circuit board material, the idea conceived by designer Jili Janda at the Tesla Research Institute in Prague and NAD's then-Director of Research, Bjorn-Erik Edvardsen. At the heart of the accompanying 'white paper' was the claim that this arm design could neutralise resonance by means of a reverse wave, a product of the arm's flexibility, fluid damping and a sprung weight. Unfortunately the arm was not universally well received, suffering the epithet of 'the floppy tonearm'. Regardless of how the 5120 sounded – and many thought it was a fine package for the price – commercial pressure obliged NAD to replace the flat arm with a conventional tube. EAT's E-Flat variant is still going strong, so perhaps Vertere will also benefit from today's more enlightened and tolerant hi-fi age. PM

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ABOVE: There's no external PSU here but a direct AC mains power connection to the onboard speed synthesiser. 'PCB' tonearm wiring is terminated in RCA outputs

or uncertainty. What's more, the bass guitar line that is tucked subtly behind the synth skipped along with a lightness of touch that had me playing the track twice in a row, just to enjoy it once more.

Give the deck something with a bit more bounce and it typically rises to the challenge. The snappy drum beats from The Colorblind James Experience's 'Considering A Move To Memphis' from their eponymous debut LP [Fundamental Music SAVE 50] punched out with impact and precision. Every cymbal strike sounded gloriously realistic and was imbued with just the right level of metallic sheen.

ABSOLUTE RIOT

Soundstaging impressed too, the deck having a masterful way of drawing the main performers from the loudspeakers and out into the room towards you. With one or two tracks I played there was an almost 'reach out and touch' sense of realism. While the old claim that CD is two-dimensional and only vinyl has proper depth is unrealistic, the DG-1 could well have you sympathising with that argument all over again.

Even better, this grasp of space and depth seemed largely independent of musical type. Diane Schuur's heartfelt vocals on 'Love Dance' from *The Diane Schuur Collection* LP [GRP Records GR-9591] were seemingly right in front of me and had the hairs on the back of my neck rising in response. Equally, the bass line was once again deep and sinuous, while the icing on the cake was the sound of the piano which had a rich, resonant impact.

In complete contrast, the unruly whooping, hollering and applause that make up The Art Company's 12in single of 'Susanna' [Epic TA 4174] made for an absolute riot as they seemed to bounce around my room with breezy abandon.

And the top end? At this price it's as good as you'll hear. Treble detail was very fine indeed and the combination of the Audio-Technica VM520EB cartridge and Groove Runner arm worked harmoniously. That said, as the VM520EB is new to me, I did spend time listening to the DG-1 with my regular Ortofon 2M Black cartridge installed and the results were just as impressive.

When fitted onto the Groove Runner, the 2M Black sounded both purer and cleaner than I have heard it for a long time. There was not the merest whisper of sibilance or distortion, the pair working uncannily well together.

Moving back to the VM520EB only confirmed it to be a highly capable cartridge. It's one I'll happily give a thumbs-up to in its own right, and proof that Vertere has chosen its matching 'packaged' pick-up very well. However, it was also clear that the DG-1 has much more to give when you feel like an upgrade.

HI-FI NEWS VERDICT

In case you hadn't gathered by now, I'd say the Vertere DG-1 really is something quite special. It isn't quite as 'plug and play' as some, but it is still easy to set up and the results are truly outstanding. It may look unusual and it certainly feels unusual at times when in use, but all that is forgotten when it starts playing. Put simply, the DG-1 redefines what is sonically possible at its price point.

Sound Quality: 88%

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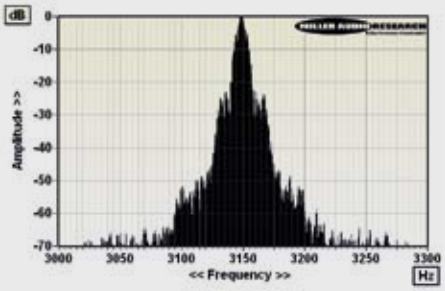
LAB REPORT

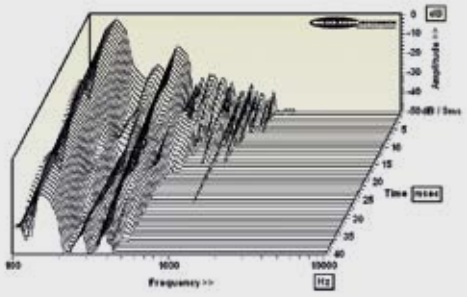
VERTERE DG-1 DYNAMIC GROOVE

Whatever the pros and cons of the arm [see boxout p43, and below] by incorporating the cartridge leads as flat, flying PCB conductors within the laminate, Vertere has reduced hum pick-up to below –61dB (re. 5cm/sec). The brass/stainless bearing, with tungsten ball, is put under minimal strain by the lightweight cork/alloy/polymer platter and this is reflected in the hearteningly low –73dB rumble, increasing marginally to –72.2dB through the vinyl groove (DIN-B wtd, re. 5cm/sec). These are class-leading results for a sub-£3k deck even if the speed stability is marginally less impressive. Start-up is a swift 3-4secs, absolute speed is almost bang on the money at just –0.03% and peak-wtd wow acceptable at 0.4%, but higher-rate flutter variations appear at ±15Hz, ±19Hz and ±23Hz and amount to 0.6% [see Graph 1, below]. This same cluster of peaks is also visible on the unweighted rumble spectrum [not shown here].

In common with EAT's flat Kevlar tonearm [*HFN* Jan '12] Vertere's laminated version trades the beam resonances of conventional tubes for its own unique set of bending modes, further complicated here by the three-way 'split' in its construction. The main 'springboard' mode occurs clearly enough at 150Hz with other modes at 280Hz, 375Hz and 420Hz [see Graph 2, below]. Clearly this laminate does exhibit bending (flexing) and higher frequency torsional (twisting) modes from 700Hz-2kHz, but they are evidently high-Q and rapidly damped. Finally, the twisted nylon thread 'bearings' necessarily have a degree of 'play' (movement) but are also free of chatter and have very low levels of stiction/friction (typically <10g in both planes). **PM**



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division)



ABOVE: Cumulative tonearm resonant decay spectrum, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.32rpm (–0.03%)
Time to audible stabilisation	4sec
Peak Wow/Flutter	0.04% / 0.06%
Rumble (silent groove, DIN B wtd)	–72.2dB
Rumble (through bearing, DIN B wtd)	–73.0dB
Hum & Noise (unwtd, rel. to 5cm/sec)	–61.0dB
Power Consumption	4W (<1W idle)
Dimensions (WHD, with lid) / **Weight**	469x130x384mm / 8kg