
dynamic groove
VERTERE
Dynamic Groove
VERTERE™

'The job of a record player is very simple, and very linear: the most accurate measurement of something hurtling past the stylus and throwing it from side to side over 1000 times every centimetre.'

Touraj Moghaddam, Founder and CEO, Vertere

Introducing the Vertere DG-1 Dynamic Groove Record Player

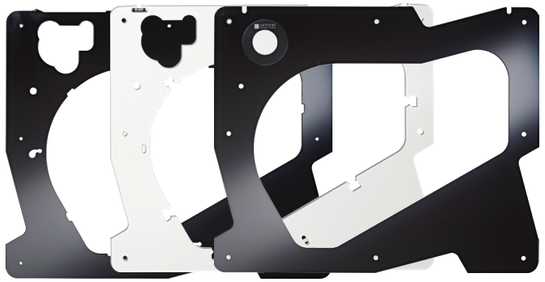
The DG-1 is the most affordable model in the Vertere record player range, but building it proved one of our greatest design and engineering challenges. It takes a huge amount of work to achieve the ultimate simplicity, delivering the best possible sound from the fewest components.

To develop the DG-1, our first 'plug and play' record player, we needed to find a way to make it as simple as possible to set up and use, while at the same time delivering class-leading sound – and the potential for future upgrading.

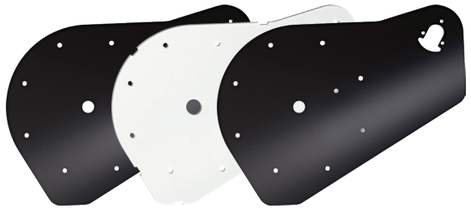
That involved examining every element of the design, rethinking the way record players work, and removing every superfluous element that got in the way of our ultimate aim: getting you, the listener, as close as possible to your music.

From the plinth to the tonearm and its bearings, everything has been redesigned and re-engineered, developing some of the basic principles of a record-playing system while completely rethinking others.

The result is an elegant record player that looks like no other, but draws on the engineering of our flagship models to deliver outstanding performance and ease of operation at a newly affordable price.

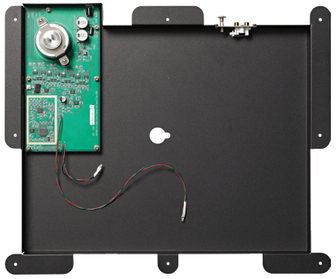


Bottom, Mid and Top Main Plinths



Bottom, Mid and Top Sub Plinths

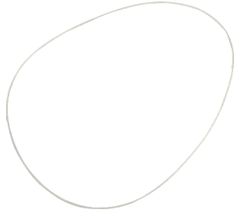
Motor Drive PCB
Stainless Shield



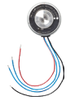
Main Chassis and Motor Drive Module

Cork Bonded Disk Platter Bonded Record Interface

Sub-plinth and Platter Assembly



Silicone Rubber Drive Belt



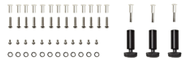
Synchronous Motor and Pulley

Tonearm Assembled

Flexible PCB Internal Wiring, Lift/Lower Mech and Clamp

Thread Bearings

Switch Button



Plinth Fixing Screws and Adjustable Feet

The Bearing

The Simplest Approach to the Best Possible Design

The Motor

The motor is arguably the most important part of any record player: it's the only source of energy for the signal generated by the cartridge and fed out to the amplifier, so quality and accuracy is vital. The DG-1 motor system is derived from that developed for the flagship RG-1 Reference Motor Drive: it uses the most advanced motor drive, delivering the best possible performance. The motor itself is a low voltage 24-pole Precision Synchronous design, individually tuned for the lowest noise and with an off-board power supply. It's controlled by a microprocessor PCB, addressable during manufacture to ensure accuracy and programmable for future upgrades, with copper/stainless steel shielding to avoid both inward and outward interference.

The Platter

Drive to the platter is via a precision machined aluminium alloy pulley on the motor and a bespoke silicone rubber drive belt, with electronic speed change for ease of use. The platter itself is also precision machined alloy, to which is bonded a PETG record interface mat and, on the underside, cork/Neoprene/nitrile bonded disc to control platter resonance.

The Bearing

The platter sits on a highly polished stainless steel spindle, which rides in a main bearing housing using a super precision tungsten carbide ball, avoiding the need for complex regimes of lubrication. That's another example of the simplification of this record player to optimise performance.

The Arm

The DG-1 arm is uniquely Vertere, and differs from established thinking in its use of a flat profile in place of the usual tube – conventional arms use tubes for stiffness, but these bring all kinds of problems with resonances, and thus the need for damping. The DG-1's three-layer, non-resonant tonearm beam avoids these problems and, in place of conventional tonearm cabling, uses a flexible PCB sandwiched into the arm itself to carry signal from the cartridge to the output terminals. It's a very neat and – if we say so ourselves – clever solution.

Thread bearings

The same goes for the bearings allowing the arm its horizontal and vertical movement: there aren't any – well, not in the conventional sense! Many solutions have been sought over the years for these precise bearings, but for the DG-1 we have developed a very simple solution: twisted nylon threads – one for movement in the horizontal plane, and two for the vertical axis.

These threads have many advantages, not the least of which is simplicity: they exhibit none of the stiction – or initial resistance to movement – of conventional bearings, are super-light and noiseless, and the twist of the thread controls and damps the movement of the arm.

Completing the arm are a stainless steel counterweight and tracking adjustment weight, giving a total solution that's as simple and elegant as it is innovative.

The Plinth

Like the tonearm, the DG-1 plinth is of a sandwich construction, using non-resonant cast acrylic to form the main plinth and the sub-plinth. This incorporates the speed selector switch, the speed indicator and user-selectable standby mood-lighting, and the silicone rubber isolation between the two sections – the plinth and the platter assembly. All are sandwiched between the layers of acrylic for a clean, sophisticated look to complement any home, while the whole assembly sits on a steel chassis, chosen for optimal stability, which houses the motor drive circuit and the motor, and is supported by three adjustable feet.

Oh, and remember what we said about simplicity? The DG-1 comes complete with a non-resonant acrylic dust-cover, its hinges integrated into the plinth for a clean look and durability.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Closer to the Original

Vertere founder and CEO Touraj Moghaddam's background in engineering gives him a unique understanding of the problems involved in the design of a record-playing system: "People often talk about cartridge tracking in terms of the handling characteristics of a car, but that's not what's happening.

"What we're doing here is very different: it's more like a train following a track, except we're effectively hanging the cartridge from a crane – the arm – and then asking its point of contact, the stylus, to follow something rushing past it at getting on for a metre per second. The cartridge doesn't 'see' a record revolving, but rather a straight – with lots of wiggles and bumps to which it must respond – going past it at high speed."

It's all a matter of applying precision engineering to facilitate the reading of the subtlest of deflections, and to make sure we're doing that as accurately as possible, we need to know what accurate is. Fortunately, we have access to some of the best mastering engineers in the business, and so we're able to benchmark our record players, arms and cartridges against the original cuts of the LP, and in so doing gain an understanding of the art of cutting, and how the process can be adjusted to suit the music.

Our collaboration with music industry engineers has given us invaluable insights into the art of cutting and has advanced our record player design in order to achieve extracting the maximum from the vinyl.

For example, to check his recent remixes of the Beatles albums, Giles Martin – son of the late Sir George – used a Vertere MG-1 record player including SG-1 tonearm and PHONO-1 preamplifier throughout for checking and approving acetates and test pressings.

And we've worked closely with the multi-award-winning mastering engineer Miles Showell: since February 2017 Miles has been using his own extensively customised Neumann VMS 80 lathe, incorporating Vertere cables, to cut normal and half-speed masters for the likes of ABBA, Cream, The Police and The Rolling Stones, and also the 50th anniversary release of The Beatles' Sgt Pepper's Lonely Hearts Club Band and The Beatles (otherwise known as 'The White Album').

Working closely with Miles has led to the first releases on our own record label, Release: a three-track EP and first album by Scottish band We Are Caezar, and the first album by Dutch singer/songwriter Elles Springs, which was specially tape-transferred and then half speed mastered and cut by Miles for our label.

It's only by involving ourselves at every stage of the record-making process that we can ensure our players bring you as close as possible to what the artists and engineers wanted you to hear – and that, simply, is what the Vertere DG-1 is all about.

RG-1 Reference Groove

SG-1 Super Groove

MG-1 Magic Groove

The Vertere Range

At the pinnacle of our range of record players is the flagship award-winning RG-1 'Reference Groove' record player, complete with Reference tonearm. Like all our record players, it's built on our understanding of how the recording, mastering and pressing processes work, and our belief that the amazing truth about vinyl records is that they can just go on sounding better, given the right playback equipment.

To ensure that quality is maintained through the audio chain, we've also designed and built our own electronics, from control systems for the motors driving our record players through to our moving coil/moving magnet phono stage, the PHONO-1 MkII. This award-winning model offers a huge range of adjustments, with more than 10 gain settings, 15 resistance and 9 capacitance settings to enable it bring out the best in any cartridge.

We also have a range of essentials for making the most of any record player, from levelling and adjustment devices to easy to use thumb screws for cartridge mounting.

And then there are cables, which we consider a vital consideration in any audio system, be it analogue, digital or both. Our Pulse range of cables brings the same combination of engineering and no-nonsense thinking to connecting your audio system. We're not claiming any magic effects for them, but rather our philosophy here is the same as that for all our products: any cable can only degrade the signal, so the best cable is the one that degrades the signal least.

Specifications Vertere DG-1

Type	Belt Drive
Motor	24 Pole Synchronous
	Acetal Spindle Thrust Bearing
Motor Mount	Axially De-coupled
Pulley	Aluminium Alloy
Drive Belt	Bespoke Silicone Rubber
Platter	Precision Machined Aluminium Alloy
	PETG Bonded Record Interface Mat
	Underside Bonded Resonance Control Disc
Bearing Spindle	Stainless Steel
	Super Precision Machined & Polished
Roundness / Concentricity	< 5 Microns
Bearing Housing	Brass
	Super Precision Machined
	Bore Tolerance < 5 Microns
	Super Precision Tungsten Carbide Ball
Plinth Structure	3 Layer Acrylic
	Top and Sub-Plinth, Internally Illuminated

Isolation System	4 Point, Bespoke Silicone Rubber
	Support Structure
	Steel Chassis
	Three Adjustable Feet
Motor Drive	Advanced Microprocessor Controlled
	Fully Programmable & Motor Noise Reduction
Speeds	33.3 & 45 rpm (+/- 0.2%)
	Electronically Selectable
Dust cover	Non-resonant Acrylic
Dimensions	469 x 384 x 130mm
	W x D x H (Including Dust Cover)
Power Supply	Wall Adaptor Type
	UK, US, EU & AUS Exchangeable Plugs
	100 - 240 Vac with 1.5m Cord
Weight	8kg

Specifications Tonearm

Type	Fixed Axis Bearing	
	Effective Length	240mm
	Overhang	17.5mm
	Offset Angle	22.9°
Tonearm Beam	Aluminium/Polymer Sandwich	
Bearing Structure	Twisted Nylon 6.6/6 Thread	
Counterweight	Stainless Steel	
	With Adjustable Tracking Weight Block	
Internal Wiring	Gold Plated Flexible PCB With Gold Plated Cartridge Tags One Piece From Cartridge To Output RCA Sockets	
Weight	280g	

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