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Brinkmann's Balance 2 turntable

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Belt-driven turntable with electronic speed control, 10in and 12in arms
Made by: Brinkmann Audio GmbH, Achberg, Germany
Supplied by: Symmetry, Herts
Telephone: 01727 865488
Web: www.brinkmann-audio.com; www.symmetry-systems.co.uk
Prices: £17,495 (deck), £2895 (tube PSU), £4195 (12.1 tonearm)

AUDIO FILE

Brinkmann Balance 2

Germany's Brinkmann Audio introduces its new flagship turntable, the Balance 2, featuring a wealth of innovative technology to extract the very best from your vinyl
Review: **Adam Smith** Lab: **Paul Miller**

British visitors to the annual Munich High End Hi-Fi Show (full report next month) can sometimes be disappointed to find that not all companies with products on display plan to export them to the UK, which makes buying the components complicated. One company that does *not* fall into this category is Brinkmann Audio, whose new flagship turntable, the Balance 2 – a masterpiece of stylish understatement – is available in the UK via importers Symmetry.

The Balance actually dates back to 1984 and has remained the company's flagship despite the arrival of the Oasis and Bardo models that utilise Brinkmann's in-house designed direct-drive motor. You might have thought it logical for the company to use this system again for a new top model, but Helmut Brinkmann decided it was better to use his Sinus motor and a belt-drive system as a way to update the Balance. The result is a brand new model aimed at customers who had requested a two tonearm option (a gap created by the discontinuation of the company's LaGrange model).

Although not physically larger than the Balance, the Balance 2 takes up rather more space when fully loaded. The plinth is CNC machined from aluminium and supports both arm bases plus the bearing. It sits on three spiked feet that are adjustable for levelling, and the screw closest to the bearing has a copper insert that helps dissipate unwanted resonances from the bearing into the plinth.

The bearing is made of hardened stainless steel and rotates in sintered brass bushings. It is fixed into its housing, is non-removable and is maintenance free, but it's unusual in that the bearing assembly is heated in order to ensure the bearing operates at a steady temperature independent of the owner's room conditions. This is achieved by a power MOSFET device located in the chassis that dissipates a steady 15W when active.

VALVE PSU UPGRADE

The platter that rides atop this bearing is 90mm high and made from a solid block of machined aluminium. Brinkmann has chosen a polished crystal glass mat, rather than one fashioned from acrylic as is more common thesedays, and this is recessed into the top surface of the platter. A small plastic disc sits around the spindle and a screw-down record clamp is fitted which presses the LP across the glass mat. The key here is not to over-tighten the clamp. It's equally important to keep that mirror-flat glass surface scrupulously clean, if only to avoid forcing specks of dust into the underside of the record.

The Sinus motor stands in its own pod and has exquisite touch controls for Off, 33.3 and 45rpm selection, each with a small red LED in the centre to indicate the unit's status, while trim-pots at the rear permit fine adjustment of each speed.

The motor is Brinkmann's own design [see box out, opposite] and was a further development of the company's direct-drive unit, which brings the platter up to speed in a relatively short time, given its substantial 18kg mass.

I was also pleased to note that Brinkmann's manual offers some guidance as to the placement of the motor pod in relation to the platter. All too often with designs of this type it is left entirely to the user, which does not help performance if the belt is then too tight or too slack [see PM's Opinion, p98].

RIGHT: The freestanding motor pod sits to the left of the chassis and has a lid to cover the pulley; the belt exits through a thin slot in the side and sits in a groove around the platter

As standard, the Balance 2 comes with a neat transformer pack that provides power for both the motor and the heated bearing assembly. An upgrade for the motor is available in the form of the RöNt II power supply – one of the few such units I can think of that uses valves to achieve its ends.

In this case, the valve line-up is one 5AR4 rectifier feeding two PL36 power pentodes. (The PL36 was released originally in 1956 and was designed for driving the line timebase output of television sets, so providing the necessary power for a motor is well within its capabilities.)

'A PSU upgrade for the motor, the RöNt II, uses a trio of valves'

Each arm base for the Balance 2 is connected to the chassis using a sturdy single-point fixing and different effective lengths may be accommodated by simply loosening the screw and rotating the whole mount as required.

For review, the Balance 2 was loaded with two models from Brinkmann's own range, the £2495 10.0 and the £4195 12.1. (A 10.5in version is also available at £3895.) The 12.1 is, as the name suggests, a 12in design based around a double gimballed bearing. The counterweight and bearing housing are made from steel, with all other essential items in aluminium.

The counterweight is uncalibrated and also unthreaded so a stylus balance is required for setting the correct tracking. The magnetic bias compensation fitted is similarly undefined and so bias adjustment must be done by ear – better still by using an oscilloscope together with a suitable test LP, so as to monitor and minimise distortion in each channel.

'NEAR UNIPIVOT' OPTION

The second arm fitted to the deck, the Brinkmann 10.0, is a newer design that was originally developed for the Oasis and Bardo turntables and is slightly different from the 12.1 and 10.5 in its execution. This arm is what Brinkmann describes as 'effectively a unipivot' as it has a miniature bearing mounted on a stainless steel tip for horizontal movement, although a second ceramic bearing lower down the shaft provides stability for the assembly which means that the arm does not wobble like a conventional unipivot. Vertical movement is provided by a second array of conventional bearings.

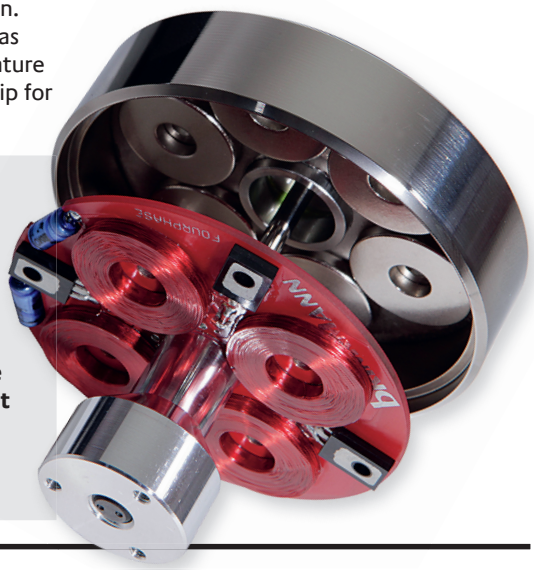
Both arms have screws beneath their headshells that can be loosened for cartridge azimuth adjustment and both also have a hex-headed screw running vertically through their mounting plates. Once the screw clamping the arm into its base is loosened, this hex item can be adjusted to increase and decrease VTA.

The 12.1 arm was supplied with Brinkmann's £2495 open-bodied EMT-Ti cartridge; essentially an updated version of the classic EMT low output moving-coil.

ABOVE: The optional isolation platform accommodates the turntable's component parts very effectively. The two arms are easily aligned with the adjustable mounting bases

SINUS 'DIRECT DRIVE'

The Sinus motor came about as a result of Helmut Brinkmann's research in the development of the direct-drive motor for the Bardo and Oasis models. Previously the company had used Papst motors in conjunction with its own analogue speed controller, but the direct-drive unit gave greater insight into magnetic fields and how they can be controlled to reduce cogging. Helmut duly applied this to a new motor that could be used to turn a belt and the Sinus was the result. Here, the unit uses a four phase drive arrangement involving four coils 90° apart. Neodymium magnets ensure great efficiency and are arranged such that the drive circuit achieves 12 pulses per revolution. The rotor is then topped by a 500g flywheel that evens the pulses out and culminates in a motor that is smooth, silent and has plenty of torque.



HELMUT BRINKMANN

We asked Helmut Brinkmann why he'd not used his direct-drive motor for the Balance?

'We don't think that direct drive is in principle better than belt. The Balance's new Sinus motor uses many of the technical aspects of our direct-drive motor, transferred to the needs of a belt drive.

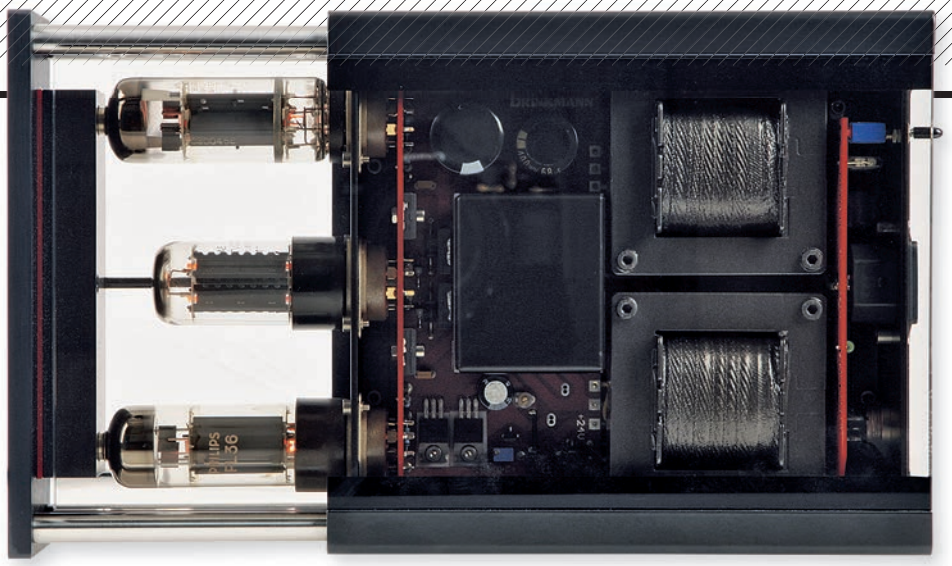
'That way we can add some aspects – good speed stability, low wow and flutter and cogging – to the belt drive that are usually a strong "plus" of the direct drive. On the other hand, we can keep a heavy platter without the need for a very powerful motor to drive it.'

What are the advantages of utilising valves in the RöNt II PSU?

'The tubes in the RöNt II act like a mains power conditioner, due to their vacuum. Additionally, they add all the sonic advantages of tubes like better texture and musical flow, just as in a good amp. Our circuit works similarly to a Class A single-ended amplifier, the motor in this case being the output load.'

What about the heated bearing?

'We have very low play in the bearing to provide stability for the heavy platter but the aluminium bearing housing can change this small gap as its temperature varies. The bearing heating helps to provide the tolerances for flawless working. This is only given when the oil gap and the viscosity meet exactly, and this is the case only in a small temperature window.'



ABOVE: The RöNt II power supply uses PL36 valves to drive the motor. It is supplied with its own granite base in order that heat from the valves does not affect the supporting surface

For the review I fitted my own Ortofon Kontrapunkt B to the 10.0 tonearm.

A WEALTH OF DETAIL

The final item making up the review deck was Brinkmann's M3X isolation platform, developed by Harmonic Resolution Systems in the USA. This consists of a black granite plate located within a black anodised machined aluminium billet. Four sprung isolation feet then firmly support this structure – there is no alarming feeling of instability, which is reassuring given the weight and price of the turntable itself!

Starting with the 10.0 arm and Ortofon cartridge and the deck powered by the standard PSU it was interesting to revisit a truly high-end turntable design. Some might wonder if every record played is a jaw-hits-floor moment, with the feeling that every song sounds completely different from what you've heard before. Well, this can occur on occasion, but generally the truth is somewhat different and rather more complicated – but I *was* aware that the Brinkmann was bringing things to life that I had previously been unaware of, with a sense of solidity, focus and scale only hinted at by more affordable, albeit competent, designs.

> 'Brinkmann's 12.1 tonearm could rock with the best of them'

With my regular first test-track of The Eagles' 'Long Road Out Of Eden' from the album of the same name [Universal 060251749243 1], all the artefacts of the piece were present, correct and highly detailed, but I was rather surprised by the way in which the bell that tolls quietly in the background during the intro to the song had real weight to its strikes. Usually this is evident but is very much something that lurks in the distance. The Balance 2 shone a spotlight on it and really dragged it into the main action in an uncanny way.

The reason for this was simply that the Brinkmann has some seriously weighty bass behind it. The kick-drum strikes punched out with real force and bass notes were solid but without making everything sound boomy and overblown. It never seemed to be trying to thump and bang its way into grabbing my attention: rather the whole performance had a big, enthusiastic gait to it and presented an overall feeling of commanding effortlessness.

To accompany this, Don Henley's vocals projected from my loudspeakers in a most gratifying manner, giving the whole song a commendable sense of depth and scale, with backing instruments around him easily placed within the soundstage. I did feel that this soundstage appeared not to have a great deal of lateral extension beyond the limits of the loudspeakers themselves, but the Brinkmann certainly made the most of the central area, filling it with great precision.

WITH THE HEAT ON

Equally impressive was the Balance 2's rendering of instruments, whether acoustic or electronic. Each was pushed out into my room as it took up the main action and then dropping back as attention re-focused elsewhere. The Brinkmann's midrange is definitely an appreciable quality.

At this point, I decided to see what some thermionic assistance might bring and so connected up the RöNt II power supply which had been quietly warming up. My stopwatch told me that the start-up time was now a second or so quicker – which does not sound much but revealed ⇨

ABOVE: The chassis-mounted power plug is for the bearing heater. Both arm leads are terminated in easily accessible phono sockets within the arm mounting bases

that there were indeed changes afoot. Not all supplies are equal, it would seem.

This proved to be true when listening, as the RöNt II made some interesting changes to the sound that initially seemed subtle until the original power pack was re-connected, whereupon their absence was notable.

I observed an even greater sense of bass weight and was a little concerned that this was becoming a little too much at times, particularly with fulsome tracks such as 'The Painter' from Sara K's *Water Falls* album [Stockfisch SFR 357.8025.1].

In this, Hans-Jörg Maucksch's fretless bass is the driving force behind the whole performance and the addition of the RöNt II seemed to blow it *slightly* out of proportion.

Playing the song a second time though revealed that, in fact, it was simply allowing the deck to dig deeper into the texture of the notes, fleshing them out better.

An interesting side-effect of this was that Sara K's vocals seemed more vivid and slightly crisper. All in all, the RöNt II power supply certainly brought worthwhile changes to the overall presentation.

SWAPPING ARMS

The final swap-around of the session saw me re-connecting the leads from my phono preamplifier to the 12.1 tonearm with its EMT-Ti cartridge, and this proved to be something of an ear-opener. The relative lack of soundstage width I had noted with the 10.0 arm was suddenly a faint memory since the Brinkmann now filled the width of my room with a superbly cavernous recreation of the studio.

The character of the music seemed to shift back a gear slightly, with the 12.1 having a more relaxed feeling to it, rather than the more up-front presentation offered by the 10.0 – which is not to say it was in any way soporific. Rather, it made songs such as Deacon Blue's 'When Will You (Make My Telephone Ring)' from their *Raintown* album [CBS 450549 1] clearer, whereas with the 10.0 in charge this track was a little splashy sounding.

A SONIC BALANCE

Some of this was of course down to the cartridge, as a subsequent swap across between the two arms revealed. The EMT-Ti definitely added smoothness and a slightly more cerebral hint of authority to proceedings, but it was never less than joyously musical and rhythmically proficient.

On the other hand, the 12.1 tonearm was responsible for the superb opening-up of the soundstage and could still rock with the best of them when fitted with my own Ortofon cartridge. In the past I have found some 12in arms to be a little over-smooth for my taste, particularly when heard alongside their 9in or 10in brethren, but the Brinkmann 12.1 strikes a very capable sonic balance and was thus my preferred choice of the two pick-up arms evaluated.

HI-FI NEWS VERDICT

The Balance 2 is a fitting flagship for the Brinkmann range and a true high-end product, offering intelligent engineering and superb sound. Both tonearms tested offer their own slightly different takes on proceedings and can be used to fine-tune the end result desired by the user, as can the addition of the RöNt II power supply. Choose each by audition and this could be the last turntable you'll ever need.

Sound Quality: 82%

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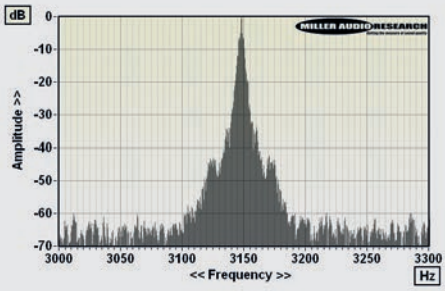
LAB REPORT

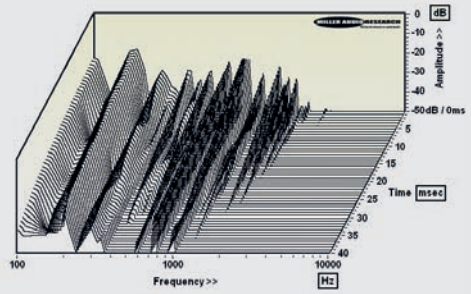
BRINKMANN BALANCE 2

The Balance 2 turntable's intriguing heated bearing assembly claims to maintain the tolerances of its stainless spindle and brass sleeve despite rotational friction and variations in environmental temperature. Left to run-in over a 24-hour period the Balance 2 achieved a fine DIN B-wtd rumble of –71.5dB via the bearing and –68.3dB via the LP groove, the latter more reflective of 'real world' use. Excellent speed accuracy is possible via the 33.3/45rpm trimpots, the deck offering exceedingly low wow (~0.01%, peak-wtd) and only slightly higher flutter [see Graph 1, below]. It's worth fine-tuning the deck's speed once the bearing has fully warmed-up, after which any residual drift is exceptionally low.

Brinkmann's 12.1 tonearm looks quite 'lively' – the cumulative decay waterfall [Graph 2] indicating the main beam resonance of its long (anodised aluminium) tube is either sub-100Hz or higher at 183Hz, followed by a series of breaks at 280Hz, 420Hz, 570Hz and 765Hz. The midrange/higher frequency 'chatter' is seemingly associated with the bearing yoke, arm lift device *etc* [see Graph 2, below]. Otherwise, the needle-point bearings are perfectly adjusted for minimum friction (<10mg in both planes) while suffering no perceptible play, although the high 14g effective mass necessarily confers compatibility with MC's offering a combination of low compliance and modest bodyweight (Brinkmann's partnering EMT-Ti is rated at 15cu and 11g, respectively). Readers may view full QC Suite reports for Brinkmann's Balance 2 turntable and 12.1 tonearm by navigating to *www.hifinews.co.uk* and clicking on the red 'download' button. **PM**



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted ±150Hz, 5Hz per minor division). Some flutter but very low wow (excellent pitch stability)



ABOVE: Cumulative tonearm resonant decay for the 12.1, illustrating various bearing, pillar and 'tube' vibration modes spanning 100Hz-10kHz over 40msec

HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.45rpm (+0.34%)
Time to audible stabilisation	7sec
Peak Wow/Flutter	0.01% / 0.03%
Rumble (silent groove, DIN B wtd)	–68.3dB
Rumble (through bearing, DIN B wtd)	–71.5dB
Hum & Noise (unwtd, rel. to 5cm/sec)	–62.6dB
Power Consumption	75W (65W idle)
Dimensions (WHD)	550x140x430mm