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Pro-Ject's polished flagship deck

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# Pro-Ject Signature 12.2

The Vienna-based hub for all things vinyl, and more besides, now has a new champion deck complete with a two-motor drive system and 12in 'three-point' bearing tonearm  
Review: **Adam Smith** Lab: **Paul Miller**

**I**t can be difficult for a manufacturer to successfully span a wide price range. History reveals a handful that have come unstuck by either trying to move upmarket from affordable roots, or attempting to develop trickle-down versions of expensive designs. However, those companies that get it right across the board tend to find themselves very popular, and Pro-Ject's new £10,599 Signature 12.2 is the latest offering from a brand that is a master of the art.

The Signature 12.2 is a development of the original Signature 12, originally introduced around ten years ago as Pro-Ject's flagship. And it transpires the '2' upgrades have moved the game on significantly, despite the new version retaining the visual cues of its predecessor.

## TWIN MOTORS

The most noticeable features are that the MDF plinth now has rounded corners, and the supporting feet are a lot more obvious. This is because they are a new design, spring-loaded and easily adjustable from the top of the deck using knurled knobs. The plinth is also now a solid piece, rather than being mass-loaded with a ring of steel pellets around the bearing assembly.

The Signature 12.2 still employs twin motors but these AC synchronous designs are updated here and driven via an internal waveform generator that accommodates the 33.3rpm and 45rpm speeds. As before, they spin an intermediate flywheel that rotates on a ceramic ball bearing, but they are both now mounted in a substantial block of aluminium to improve the damping of small vibrations. Drive is transferred to this flywheel by twin circular cross-section belts, and then onto the platter by another, longer belt.

The platter is still 10.5kg of CNC-machined aluminium with an insert of

TPE damping to, again, attenuate any ringing modes in the structure. The platter's vinyl top surface is fashioned from recycled records, the material glued to the top, baked and machined. The bearing comprises a ceramic ball atop a hardened stainless-steel spindle, located on an aluminium sub-chassis that's damped with more TPE to provide some isolation from the main plinth. The load on the bearing is 'lifted' using neodymium ring magnets around the shaft on the sub-chassis and under the platter [see boxout, p53].

The speed adjustment facility and rather natty touchscreen from the Signature 12 have gone, replaced on the 12.2 by three simple control buttons for off, 33rpm and 45rpm. These buttons, each with an inset LED, are mounted on a control panel at the centre-front of the plinth, whereas the previous touchscreen was on top of the plinth in the front right-

*'Once you start listening you won't want to stop'*

hand corner. Convenient this may have been, but it always struck me as requiring a hand position perilously close to a delicate and probably quite expensive stylus!

## ONE, TWO, THREE

The arm on the Signature 12.2 looks similar to that debuted on the '12 but there are changes within the rear bearing housing.

In Pro-Ject's new three-point arm bearing (the Signature 12's arm used a simple unipivot), the arm rotates laterally on a single point, but this supports a platform that contains two further 'unipivot-style' pins for vertical movement.

Pro-Ject claims a 'reduction in friction and enhanced stability' as a result.

A connector plugs into a socket on top of the bearing housing [see pic, right] and brings the arm wires down to a conventional five-pin connector at the rear of the arm mounting block. A high quality



**RIGHT:** The alloy 'islands' for the dual AC motor/flywheel drive [left] and tonearm outrigger [right] are isolated from the MDF plinth with TPE damping. The inset spirit level [green, top right] is a thoughtful addition



*'The Signature 12 arm had a simple unipivot, but the 12.2 has a brand-new three-point bearing'*





Connect It Phono DS lead is provided with the deck, but the socket allows the use of alternative interconnects if desired.

Bias correction is applied using a thread and weight system, arranged so that the force applied varies as the arm traverses the record. Tracking force is set using a thumbwheel, on the rear of the armtube, to move a carrier onto which the counterweight is locked. Additional weighted 'rods' are supplied that fit and lock into the counterweight to balance out cartridges weighing up to 26g.

Both VTA setup and downforce adjustments are uncalibrated, but a Pro-Ject Measure It S2 stylus pressure gauge is provided to aid with the latter. In fact, the deck comes with a feast of accessories including a cartridge positioning block for the headshell and an Align It cartridge alignment jig. These help with a setup process that is more involved than most, albeit the instructions are clear and logical.

The Signature 12.2 is good-looking and beautifully finished, but the aluminium surfaces, said to have benefitted from a two-day hand-polishing routine, are something of a fingerprint magnet. There's a cloth included in the packaging, so expect to use this a fair bit. Otherwise, my only gripe is that the 'wall-wart' PSU supplied with the turntable feels a little basic for a flagship product.

## SCALE FORCE

Sometimes, a piece of hi-fi has a performance that matches its looks, and that's the case here. Pro-Ject's Signature 12.2 appears big and bold, and this is how it sounds, offering a soundstage scale and feeling of weighty authority that makes the most of any kind of music. Once you start a listening session you won't want to stop.

**ABOVE:** The MDF plinth is finished in gloss black with polished alloy fittings, including four adjustable sprung-suspension feet and an inset speed control panel. The 10.5kg platter rides on a magnetically assisted bearing set into a hefty, circular alloy subchassis

Nor does it seem to be straining to deliver these huge musical pictures. There's an effortlessness to the way in which it fills the space between the loudspeakers, and it can make you feel quite small and insignificant in your own listening room with the right material.

Without hurling images far left and right, the Signature 12.2 still offers a great sense of acoustic space, including a superb feel of height. You get that 'front row' concert perspective, which can make live albums in particular a truly immersive experience. 'Trouble Me', from 10,000 Maniacs' *MTV Unplugged* set [Rhino Records 603497823932], arrived with a vivid sense of atmosphere. The Signature 12.2 put me in the audience, almost looking up at Natalie Merchant as she sang, backed by gently strummed acoustic guitars and softly plucked

violins. At the end, when the applause rang out, I felt obliged to join in.

Initially, I had the Signature 12.2 setup with my regular Clearaudio MC Essence [HFN Aug '17], and deck and cartridge combined to give a sound of consummate smoothness. That's not to say it was lacking in top-end detail – far from it. The delicately tapped percussion on 'Secret' ➤

## MAGNETIC MOMENTS

Magnetically assisted bearings may feel like an exciting new idea but, as with many things in hi-fi, they have a history stretching back further than many realise. The first turntable to use this technology was the Pickering Unipoise 800 of 1958, with a pair of opposing ferrite magnets placed around its main bearing, under the platter. In Pickering's words this resulted in 'NO RUMBLE!... the turntable floats on a bearing of air – in magnetic suspension'. After the departure of Walter Stanton in 1961 and the formation of Stanton Magnetics, the design was used in several Pickering and Stanton turntable models, including the Stanton Gyropoise 8004 of 1976 [inset picture].

The ferrite magnets available in those days were larger and less powerful than the rare-earth types used today. This was perfectly adequate for the lighter platters of the Gyropoise models, but it was the advent of far stronger neodymium magnets that have made modern bearing solutions possible. These latest magnets are smaller but will maintain a far higher magnetic field strength – they go a long way in supporting the 10.5kg platter of the Pro-Ject Signature 12.2 and the 13.5kg platter used by Clearaudio on its Reference Jubilee model [HFN Oct '22], in both cases reducing the load on the bearing point.

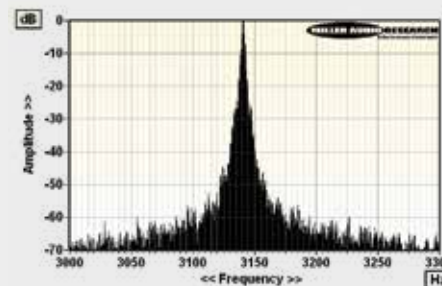


## LAB REPORT

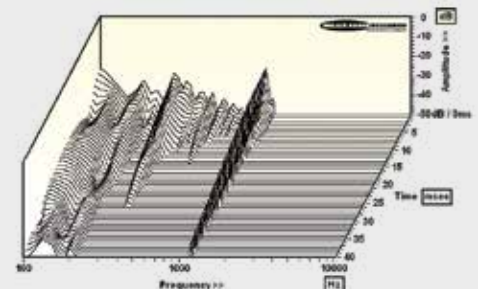
### PRO-JECT SIGNATURE 12.2

The Signature's massive circular alloy sub-chassis and arm outrigger is decoupled from the polished MDF plinth with a layer of TPE. This, in turn, holds the inverted bearing spindle and magnet at its centre while the main platter – all 10.5kg of it – locates overhead, the load on the ceramic ball and thrust pad reduced by the upwards magnetic repulsion. As a result, through-bearing rumble is very low at  $-71.3\text{dB}$  (20Hz-20kHz, DIN-B wtd, re. 1kHz/5cm/sec) but is exceptionally so when measured through-the-groove (which is where it really matters) at  $-73.8\text{dB}$ . This is a state-of-the-art result. The dual-motor/flywheel drive system also delivers a fast  $\sim 5\text{sec}$  start-up time although the absolute speed was initially  $-0.29\%$  slow in our sample. Speed variations are better managed, the Signature 12.2 holding peak-wtd wow to 0.03% and higher-rate flutter to 0.06%, the latter largely noise-related rather than correlated to discrete sidebands [see Graph 1, below].

The partnering 12in tonearm is not only a sight to behold but is also best suited to substantial, low compliance MCs thanks to its high 22g effective mass. To mitigate the mechanical loading inherent in such a massy design, Pro-Ject has opted for a three-point rather than unipivot bearing for the arm's vertical and horizontal movement, reducing the load on the fulcrum without increasing friction/stiction beyond  $\sim 10\text{mg}$ . S-shaped arms typically have more complex sets of bending, torsional and harmonic resonances than straight tubes, although the main mode here is deferred to a high 120Hz with associated modes at 193Hz and 310Hz all at a low level and quickly damped [CSD waterfall, Graph 2]. The sharp, distinct 'ringing' here at 1.2kHz, presumably inside the tube, is not commonly observed. PM



ABOVE: Wow and flutter re. 3150Hz tone at 5cm/sec (plotted  $\pm 150\text{Hz}$ , 5Hz per minor division)



ABOVE: Cumulative resonant decay spectrum for the Signature 12.2's 12in tonearm (100Hz-10kHz for 40msec). Note unusual high-Q mode at 1.18kHz

### HI-FI NEWS SPECIFICATIONS

Turntable speed error at 33.33rpm	33.24rpm ( $-0.29\%$ )
Time to audible stabilisation	4-5sec
Peak Wow/Flutter	0.03% / 0.06%
Rumble (silent groove, DIN B wtd)	$-73.8\text{dB}$
Rumble (through bearing, DIN B wtd)	$-71.3\text{dB}$
Hum & Noise (unwtd, rel. to 5cm/sec)	$-66.9\text{dB}$
Power Consumption	12W
Dimensions (WHD, with lid) / Weight	580x220x480mm / 37kg



ABOVE: The rear of the plinth carries the 15V PSU input [right] while the delicate tonearm wires exit the top of the bearing and are terminated in a secure 5-pin socket at the base of the arm [left]. This is a standard fitting supporting aftermarket cables

Smile', from Black's *Wonderful Life* album [A&M Records AMA5165], still rang out clean and strong within the mix, and the saxophone accompaniment was strikingly lifelike, even if the customary sparkle of the Clearaudio cart seemed ever so slightly curtailed.

Suspecting this was down to the Signature 12.2's high-mass tonearm [see PM's Lab Report, right] not quite partnering optimally with the MC Essence, I switched over to a lower compliance Denon DL-103 [HFN Jul '09]. With the old-timer in place, some of that crisp, treble sparkle was restored and I was able to mentally add the Signature 12.2 to the list of turntables and arms that bring out the best in Denon's legendary pick-up.

All the other good things I had enjoyed with the Clearaudio MC Essence stayed firmly in place with the DL-103 – that addictive sense of scale, dynamism and depth was not affected in the slightest. The Signature 12.2, therefore, has a solidly defined character, and your choice of cartridge just allows you to add your preferred flavour of icing to what's a very tasty cake.

### GO WITH THE LOW

Contributing to this moreish sound is the turntable's superlative bass. The Signature 12.2's innovative drive system and bearing, plus that weighty platter, combine to give good speed stability [again, see PM's Lab Report] and a low end that is precise and richly textured. The rhythm section in Caro Emerald's 'Back It Up' [Deleted Scenes From The Cutting Room Floor; Grandmono Records STEMRA GM006] bounced along, snappy and tight and deep. Meanwhile, Caroline van der Leeuw's vocals stood proud of the accompaniment, and the Signature 12.2 brought bags of scale, punch and drive to the whole piece.

Even better, Neil Peart's drums on Rush's 'Leave That Thing Alone', from 1993's *Counterparts* [Atlantic 7567825281], had floor-shaking impact. Geddy Lee's basslines were sinuous, fluid and distinct. Turntables with less accomplished drive systems can cause the notes here to subtly merge into each other, but Pro-Ject's deck was having none of it.

The new Night Flight LP, *Exit Stage Left* [Roof Jump RJR001LP] has musical magic in its grooves but the recording is somewhat 'thick' and stodgy. With the Signature 12.2 in charge, however, tracks like 'A Song Upon The Window' still had heart and soul. Again, the kick drum pummelled my speakers' bass drivers, and the turntable stretched out the dense recording well.

The result was a surprisingly open and spacious performance. The Signature 12.2 didn't hide the fact it was doing its best with less than stellar pressings – its performance is too revealing for that – but neither did it fall apart completely, as some can when faced with source material that needs a bit of coaxing into life. This all makes Pro-Ject's flagship deck a fine choice for audiophiles with varied vinyl collections.  $\odot$

### HI-FI NEWS VERDICT

Pro-Ject's new Signature 12.2 is a fitting flagship for a company that offers a range of turntables to suit pretty much anyone. The deck is intelligently designed, beautifully finished and offers a bold, dynamic and big-hearted sound. Setup is a little more involved than with some similarly priced rivals, but the instructions are clear and the effort is well worth it. It has both a sonic and visual presence that's captivating.

Sound Quality: 88%

