

Criterion + Copperhead

MARTIN COLLOMS EXAMINES A RADICAL UPMARKET VINYL SPINNER FROM AUSTRALIA

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In an era when £10,000 is considered a very hefty price for a high end analogue turntable, the idea of spending £50,000 on one made in Australia might seem pure fiction, never mind the £100,000 asked for some putative reference players, including Continuum's own *Caliburn/Cobra* (£115,000 including its dedicated *Castellon* stand). Indeed, a little web research will reveal a surprisingly large number of elaborate and seriously expensive turntables ostensibly on the market, though it's likely that only a modest percentage are real world products.

It was with some trepidation that we awaited the arrival of Criterion's £50,063 *Criterion/Copperhead* turntable/tonerarm combination, which weighs some 100kg when packed and crated: the player alone weighs 75kg! It took the first hour to get the primary components unpacked and brought up to my first floor listening room, and another five hours to install and calibrate. My heartfelt thanks to Brian and Allison Rivas of Pinewood Music, who journeyed up from Somerset in good time and then expertly assembled and aligned the player. They also lent a special Finite Element *Pagode Master Reference* stand, customised with an oversize top support to allow easy placement of this turntable with its inboard, baseboard located motor. This platform is a later version of my own and very satisfactory Finite Element *Pagode* stands. All were harmoniously installed together, and this synergy was to prove useful at a later stage of the auditioning. With the *Criterion* player on top, the electronic control unit was next down, and with the combined main power supply and vacuum unit placed on the lowest shelf. On my hardwood floor, matching Finite Element *Cerabase* supports were installed under the *Master Reference*.

In my view a customer will need to learn some set up skills, to avoid requiring the services of the local agent if, for example, the magnetically retained bias thread is accidentally displaced, or the alignment in its two curved, right angled paths is perturbed. To reset this assembly requires a delicate touch, good lighting and keen eyesight.

The layered counterweight requires a tray of matched weights to be used in carefully judged combinations for a given cartridge mass and desired downforce. The arm height may be also adjusted 'on the fly' via a calibrated micro-threaded rotating collar, but will need careful relocking thereafter. Continuum offers a 5 year guarantee, welcome in view of the complexity and potential performance of the design.



At its heart is a very powerful three-phase motor with 17kg of continuous torque and very low cogging. The 24V DC motor has internal sinewave electronics, and is almost silent electrically and mechanically, driving the platter via a rubber cord of modified, long life polyurethane (Pyrathene). (Two cords are supplied.) The motor is built into a massive machined housing, free standing on isolating feet and employs optical sensing feedback to the electronics to maintain the required speeds. The speed may also be offset in precise 0.1rpm increments, readily stored as required. Inherent speed stability is claimed to be 0.006%.

The self-lubricating main bearing is counter-bored to facilitate the vacuum that holds down the disc, and is carefully designed silently to maintain negative air pressure below the LP. The massive 30mm diameter bearing of special alloy runs in hardened tool steel bushings, with nitride and tungsten bi-sulphide nano-tech lubricants. This supports a huge 28kg two-part non-resonant platter assembly machined from precision castings of acoustically selected magnesium alloy. It employs a computer controlled vacuum pump with pulse and echo acoustic filtering. Not only is the air feed silent, the pump itself is inaudible in use/play mode. The very heavy composite and alloy plinth is singularly non-resonant, and features a version of the very stiff, magnetically-tensioned, Kevlar-cord-suspended armboard first seen on the *Caliburn*. While anti-resonance measures are contained within the die-cast plinth, control of external vibration is down to the point-contact machined feet, the overall mass and rigidity and the performance of the audio frame on which it is placed.

In danger of being overlooked in the face of the heroic *Criterion* turntable, Continuum's visually understated *Copperhead* tonearm (named after a venomous Australian snake!) also deserves close attention, and could well deserve a place on other



Brian and Alison ready to unload the *Criterion*