

Thales TTT-Compact

With its revolutionary take on tonearm tracking alongside a battery-driven motor, does this Swiss precision vinyl spinner show that great things come in small packages?

Review: Andrew Simpson Lab: Paul Miller

The tag 'Made in Switzerland' immediately puts your name amongst brands offering some of the most luxurious craftsmanship on the planet, while at the same time it implies a standard that you need to reach to be worthy of the association.

HiFiction AG's founder, owner and designer of all Thales products, is Micha Huber, a man with an enviable background in the mechanical engineering of high-end watch brands before he turned his hand to vinyl replay. Rather like SME (and unlike most turntable manufacturers) Huber started out by making top-flight tonearms, before expanding to include a range of equally unique partnering turntables.

A CONCEALED SOPHISTICATION

The £8795 TTT-Compact is the more costly of Thales' two decks, priced above its stripped-back TTT-Slim turntable and partnering Easy tonearm package (£8850). The Compact is graced with Thales' higher specification Simplicity II tonearm (£6190 as standard, or £6850 with 'direct' wiring, as per our review sample) and the deck's deceptively understated aesthetic hides some very sophisticated technologies.

Its elegantly shaped chassis is milled from an oversized slab of low-stress black anodised aluminium. Within this plinth sits the main bearing, comprising a hand-polished chrome-plated carbon tool steel main shaft, which runs against a hardened steel ball in two sintered bronze bushings – the preparation involving a specifically formulated oil.

And for the bearing's outer casing, 'spheroidal graphite iron' is the order of the day, given its noise and vibration absorbing qualities. Of course, all of this is fairly standard fare for a turntable of this calibre, and this is also where the Compact's homage to traditional turntable design largely ends.

RIGHT: Solid alloy chassis hides a battery-driven, suspended DC motor. Platter has a rubberised surface and note how the headshell's angle adapts as the twin arm tubes pass over the LP

Lifting the deck's 6.5kg alloy platter, which makes up a sizeable chunk of the deck's overall 16kg total weight, reveals its mass to be concentrated around the outer edge – which, says Thales, makes its effective mass equal to that of an 8kg platter. The platter's hollowed-out inner circumference hides a stepped sub-platter, 15cm across its lower section and with a groove around its periphery to receive a short precision-ground circular rubber belt. Drive is by a customised Portescap brushless DC motor with ironless windings.

Exploring the deck's inner workings further reveals exquisite levels of detail, including the gold-plated motor sited at the nine o'clock position, which is suspended between two decoupling towers via a flat metal spring to isolate it from the main chassis, while preventing it turning on its own axis under load.

To get the motor running, in place of a mains controlled supply, four LiFePo batteries are housed within the base of the plinth supplying the power within a closed loop system, which keeps the motor

speed constant by comparing its feedback to a precise reference voltage. When fully charged, the batteries have a claimed 16 hours of use, before needing a boost via a supplied charger which plugs into the back of the Compact's chassis.

GETTING A QUICK FIX

With the unit powered down, these batteries can hold charge for many months, while a recharge takes up to four hours, with the bulk-charge achieved within an hour. And if you need a 'vinyl fix' before a full charge is achieved, you can part-charge without worry, as the LiFePos don't suffer from any memory effect.

To get the Compact up and running, you first have to free the sub-platter that's raised from the bearing during transit via a pair of precision-made locking towers (turntable makers using cheap cardboard wedges take note). With their hex bolts removed, rotating these towers a half-turn allows the sub-platter to drop fully into the bearing, ready to receive belt and platter. You can then turn your attention to the





equally well finished partnering Simplicity II tonearm, which employs two chopstick style aluminium arm tubes (available in a range of finishes) to reduce tracking error [see boxout], alongside a wealth of adjustment options.

Armed with Thales' alignment tool and some of the smallest hex keys known to man, I couldn't help thinking its 'Simplicity' name

carried a certain sense of irony. But with a steady hand the arm allows degrees of fine adjustment you'd only expect from a precision watchmaker. Cartridge fitting is made convenient by a removable headshell plate (held fast with a minuscule hex bolt), and there's a supplied site stand to get your stylus aligned bang-on, before reinstalling and connecting the cartridge tags. These are joined to some of the thinnest wires I've experienced. This implied delicacy is further brought home by the lack of any clamp to secure the arm to its rest when not in use.

Azimuth and VTA can also be fine-tuned using more hex-key tweakery, which can be done on the fly, thanks a short threaded

'Stereo images are rendered with such an even-handed control'

rod which winds vertically against the base plate to lift the arm. Downforce is set using one of three supplied weights (7-23g) which clamp to the arm's rear via two sliding rods.

Once set, all that's left to do is place your LP of choice onto the platter's proprietary high density surface, before adding the short, yet surprisingly heavy, clamp which

sports the same rubbery finish on its base. This material affords it impressive amounts of grip for a non-threaded record clamp.

BEGUILING VOCALS

After cueing up the opening track, 'Stop Your Tears', from Aldous Harding's self-titled debut album [Lyttelton Records LR-006], and with the Compact hooked up to my Primare R32 phono stage [HFN Jan '12], feeding Musical Fidelity M6PRE/PRX amplifiers [HFN Nov '13], I depress the deck's 33.3 button and watch an inset orange ring rapidly cycle through a dozen flashes, before settling to a static glow with the platter up to speed. Continuing the refined Swiss theme having fitted a

ABOVE: Three threaded feet with captive ball-bearing tips give firm support. Speed change is via plinth-top buttons for 33.3/45rpm with fine adjustment through two fascia holes.

Benz Micro ACE high-output MC cartridge [HFN Sept '11], the music that greets me is immediately defined by a broad and dense soundstage. The Compact lets my Dynaudio Focus 260 speakers simply fall away as both stereo channels combine to ensure Harding's voice and plucked acoustic guitar sound clear and confident.

What's apparent from the outset is the Thales' ability to render a stereo image with such even-handed control across the board that you're at once made aware of nuances and details which could have previously passed you by. Gone is the slight hardness that I'm used to hearing as Harding's vocals become more firmly projected, replaced by a gentility that allows all the emotion to come through as her singing gets more powerful, leaving her sounding frankly beguiling – more so than with most other turntables I've heard.

This ability to bring each performance to life is further underlined by how the Thales reveals the haunting background vocals within the track to steadily grow from deep within the soundstage, and with all the sonic drama of a large choir in a cavernous cathedral acoustic.

Many high-end machines can create a sonic landscape that catches your attention, but with the Thales there's an added sense of *harmony* within the soundstage it conjures, suggesting that very little, if anything, is being compromised as it throws open a grand window onto the music. Fleetwood Mac's 'Caroline' from their *Tango In The Night* album [Warner Bros 925 471-1] has plenty going on in the mix, which can leave even the most measured decks a little ➔

TWIN TONEARM

From 12in pivoting tonearms to parallel trackers floating on beds of air and mimicking the travel of the mastering cutting head, tonearms come in many shapes and executions in their attempts to minimise variations in tracking angles, as the stylus sweeps its way to the run-out groove. Thales' 'tangential' approach uses two separate arm tubes, independently attached to a fixed rear bearing of inner/outer rings and precision micro ball bearings, which determine the pivoting headshell's angle, keeping it tangential to the LP groove. Using two tubes in this way has allowed Thales to adopt the compact proportions of a standard 9in arm while replicating the behaviour of a more substantial parallel-tracker. Hi-fi historians may also recall tonearm designs of decades past using the twin-tube method: Garrard's Zero 100 leading the charge in the '70s.



ABOVE: The Simplicity II tonearm wires can be terminated via block connections with DIN/RCA/XLR sockets or direct wired phono (RCA) leads which cost extra. Rocker switch next to its charger input caters for standby/off/charge settings

flustered. With the Thales taking charge there's no sense of it being in anyway overwhelmed by the track's complexity. Instead it seems to revel in the challenge, going beyond simply pulling out all the musical detail, and presenting it with a cohesion that brings it all together as the recording engineers intended.

As the track's dazzling intro drums and vocals make way for the opening lead and bass guitar riffs, you can hear how each instrument feeds off the other, while being granted lots of their own air and space within the soundstage.

The Thales sound isn't forward or too centrally focused, so no instruments or parts of the audio spectrum are to the fore or shown obvious favour. Instead, you get a soundstage that's more evenly formed, affording you greater access to *all* that's going on within the mix.

END OF SIDE CHALLENGE

As it's sited so close to the run-out groove, the last track on the A side of Airport Convention's *Unhalfbricking* LP [Island ILPS 9102], 'A Sailor's Life' has caused many a turntable gracing my reviewing shelf to 'cower', as the threat of the those low rumbling bass notes and Denny's majestic vocals lay down a challenge for pitch-perfect tracking.

But with the Simplicity tonearm I'm treated to a sure-footed performance, which allows me to spend less time concerned with the physicalities of playback and more time to simply enjoy the music.

Denny's voice sounds without constraint as it swoops within the soundstage uninhibited, and when the rumbling low bass kicks in, there's no sense of erring towards bloom or bluster at the extremes (which I have had with the Benz mounted on lesser tonearms with this particular track).

Via the Thales, bass sounds lithe, well rounded and of a depth you perhaps wouldn't expect from such a tidy package. The lower notes on Daft Punk's 'Giorgio By Moroder' [*Random Access Memories* – Columbia 88883716861] underpin the music with plenty of punch in the upper bass, seamlessly reinforced with lots of body in the lower registers.

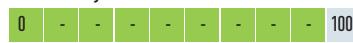
There's lots of bass texture too for my Dynaudio drive units to chew on, which shows how this deck isn't just about moving lots of air to show off, since it can define each note and instrument in a lifelike manner. In a similar vein, the stripped-back piano of REM's 'Nightswimming' from *Automatic For The People* [Warner Bros 9362-45055-1] reveals how the Thales' sound is nicely balanced through midrange and treble.

The midrange piano notes have more sustained weight in their echo compared to the upper ones, highlighting their differing reverberation qualities and offering an insight into the way the piano was played during recording. It's these qualities that set the Thales TTT-Compact apart. ☺

HI-FI NEWS VERDICT

Rival superdecks can command prices in this bracket, but few can equal the Thales for its Swiss watch build quality, or offering such a small and stylish package. The jewel in its crown is of course the gorgeous 'tangential' pivoting tonearm, which offers the usability of a standard 9in arm while providing a longterm cure for tracking paranoia. The result is a sound that's exceptionally open and balanced.

Sound Quality: 83%

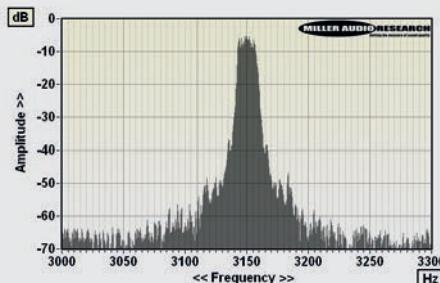


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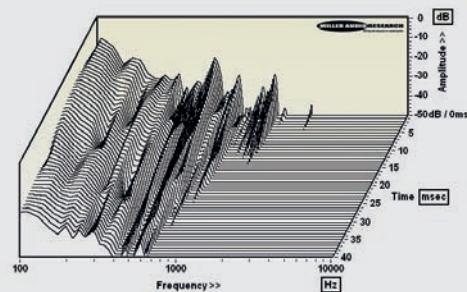
THALES TTT-COMPACT

Thales' TTT-Compact is an undeniably innovative, very finely engineered and finished deck but it was not without technical issue on the lab bench. The main bearing employs a hardened and 'hand-polished' shaft running in a graphite sleeve but the DIN-B weighted through-groove rumble was an acceptable, but not exceptional, -66.6dB (re. 5cm/sec), a figure which actually fell slightly to -65.5dB once the LP was coupled more closely to the heavyweight platter via Thales' clamp. Measured through the bearing, rumble components at ~75Hz and particularly ~112Hz held the figure to -67.4dB. The onboard DC supply, decoupled motor with 'short belt and flywheel' are other innovations and while flutter is kept low at 0.04% (peak weighted) the wow figure is mildly influenced by a low-rate drift [see Graph 1, below]. We have reported the same phenomenon with other DC motor-driven turntables [see HFN Apr '08].

The partnering Simplicity II tonearm is an exquisite piece of design that succeeds in minimising tracking error throughout the arc it describes across the LP radius. Friction within the fine gimbal bearing is very low indeed at <10mg (both planes) and achieved without play. However the necessary complexity of the structure encourages a more complex resonant behaviour [see Graph 2, below]. The various bending and torsional modes of both arm tubes are reflected at the headshell from 105Hz-450Hz with higher-Q modes (possibly from the bearing or arm lift structures) at 580Hz and 1.4kHz. Readers may view full QC Suite reports for Thales's TTT-Compact turntable and Simplicity II 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). Note very low rate drift as the W&F signal is averaged over time



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	33.31rpm (-0.08%)
Time to audible stabilisation	5sec
Peak Wow/Flutter	0.10% / 0.04%
Rumble (silent groove, DIN B wtd)	-66.6dB
Rumble (through bearing, DIN B wtd)	-67.4dB
Hum & Noise (unwtd, rel. to 5cm/sec)	-49.2dB
Power Consumption	1W
Dimensions (WHD)	435x100x313mm / 16kg