

hi-fi news

THE HOME OF REAL HI-FI

& Record Review

Exclusive

DYNAMIC DUO

T+A's sparkling HV pre/power combo



Titanium TechDAS

The flagship MC pick-up

'We make 1000s of tubes a year'

HFN visits EAT's Czech HQ

Geek Out USB

Pocket-sized DAC hit



Focal's finest

On fire - the Grande Utopia EM

GROUP TEST

Hi-res streaming
Network players rated

Oppo HA-1

High power headphone amp - and more!



• PLUS 18 pages of music reviews & features • VINYL RE-RELEASE Bob Dylan's *Oh Mercy* on 180g LP
• OPINION 11 pages of letters and comment • VINTAGE REVIEW Sony's TTS-8000 direct-drive deck
• SHOW BLOG We report from California's T.H.E. Show • READERS' CLASSIFIEDS Hi-fi bargains galore

UK £4.50 US \$10.99 Aus \$10.99



9 771472 256233

09

TechDAS TDC01 Ti

A mere six months after releasing its debut moving-coil cartridge, the TDC01, TechDAS has issued a titanium-bodied sequel. So how do they compare?

Review: **Ken Kessler** Lab: **Paul Miller**

Because of the résumé of TechDAS's Nishikawa-san, the company – known best for its sublime Air Force One and Two turntables – is certain to be delivering other than LP spinners in the future. I suspect a tonearm is in the offing, while an own-brand phono stage is not implausible, given that the company produced electronics before it unleashed its record decks. Transducers, too, loom large in Nishikawa-san's history, thanks to his days at Stax [see *HFN* Apr '14].

Inspired by the business model that affects a number of turntable manufacturers, which is the inevitable drive to produce one's own tonearms and cartridges, few were surprised at the Tokyo High End Show in November 2013 [*HFN* Feb '14], where TechDAS released the TDC01 moving-coil cartridge. Although its launch was overshadowed by the earth-shattering news that a second turntable had been completed and would sell for a third of the cost of the Air Force One, some of us were privileged enough to spend time with the TDC01, which turned out to be blindingly good.

TITANIUM LIVERY

In short order, TechDAS has now unveiled a second moving-coil, the TDC01 Ti, its suffix denoting the use of titanium for the body. Its price of £8750 represents an increase of around £800 over its sibling, the extra money paying for different materials, but absolutely nothing else about the TDC01 looks to have changed [see box out].

This makes it an ideal candidate, then, for those audiophiles who are captivated by the audible differences wrought solely by materials, when all else remains constant. Think of

RIGHT: TechDAS specifies a 'pure boron' rod for the cantilever of its Ti-bodied moving coil, the 3x30µm line-contact diamond both beautifully polished and mounted, free of excess glue, at its tip

the two in tandem as your old school 'lab experiment'. However, comparing them is also an exercise in masochism, because we are dealing with subtleties so fine that isolating these audible differences is inherently frustrating. But this has always been the case for moving-coil cartridges joined by new models that add to the mix a new cantilever, or revised wiring.

One imagines that this also plagues potential Koetsu owners, who are free to specify many of the ingredients in their own 'bespoke' purchases, which are customisable to the degree that it's hard to know what is the definitive version of a given type.

Luckily, I was able to install both the TDC01 and the new Ti simultaneously on two SME turntables, both auditioned

through the EAT E-Glo phono stage. It was a simple matter of swapping the cartridges to account for the differences between SME 30 and SME 30/12. Aside from the need to re-balance the Series V and V-12 tonearms, I could leave the E-Glo settings intact thanks to the MCs' identical specs.

It's not just titanium that captured the attention of the cartridge's designer: the cantilever is now pure boron, chosen for 'super high strength and light weight'. The lower mass relative to the TDC01's super duralumin cantilever is negligible vis-à-vis the 5g increase in cartridge weight but the reduction in *moving mass* may be key.

SUPERLATIVE TRACING

The use of solid titanium accounts for the entire egg-shaped carcass of the Ti, a blob vaguely reminiscent of other almost-amorphous forms such as the late, lamented Mr Briar/Goldbug. Unfortunately – and although the surface between cartridge and headshell is a massive plate made of the same material as the body (like the TDC01's) – it follows the same egg shape, so alignment is a touch tricky compared to parallel-sided MCs.

Like the TDC01 on which it is based, the Ti features a magnetic circuit that combines a healthy output voltage with low internal resistance, and it fed the E-Glo with sufficient signal to enable me to experiment liberally with the EAT's abundance of settings, while also allowing me to lower the gain on my Audio Research REF 75. This in turn fed a D'Agostino Momentum Stereo power amplifier, driving Wilson Alexias [*HFN* Aug '12 and Mar '13], the entire system wired with Transparent Reference.

As for the rest of the Ti's details, it carries a semi-line contact stylus tip with (claimed) superlative tracing ability, and ample clearance between body and LP surface to ensure that the remainder of the set-up regimen – curvy body aside – was painless. I set the VTA so the line along the SME V's arm tube was absolutely parallel to the LP.





LEFT: The exposed cantilever makes for easy cueing but while the solid titanium body promises a secure fit to all substantial tonearms, its curved profile is no aid to initial alignment

Anti-skating proved to be less of an issue than one might imagine with so high resolution a transducer as this. Equally, the cartridge responds vividly to even the slightest changes in tracking force, as does the 'normal' TDC01.

Fortunately, the TechDAS cartridges arrive with a full and generous complement of accessories, including a hyper-accurate digital electronic stylus force gauge for tracking force setting to satisfy the most fastidious of users – to 0.01gm, as well as a set of excellent 8N lead wires, should your tonearm feature detachable types, non-magnetic tweezers, titanium screws for mounting the cartridge and a non-magnetic screwdriver.

Aside from making use of the SME V's alignment protractor, this was the first

time I recall not having to dig out my trusty cartridge tool kit. (Yes, I still have my Technics stylus balance...)

COMMANDING PRESENCE

With last month's LPs to hand, I put the two MCs through their paces – having first equalised the amount of usage, because I respect run-in times. I had played but a dozen LPs with the TDC01, so I ran a dozen with the Ti (burn-in grooves on various test LPs). I did not, however, listen

while the Ti was bedding in, because I know the inescapable impact of a first impression – and I wanted these to be on an equal footing.

This review's repertoire included Chuck Jackson's *I Don't Want To Cry* [Sundazed LP5426] for its pure

'TechDAS has voiced the TDC01 Ti to exhibit little or no coloration'

of usage, because I respect run-in times. I had played but a dozen LPs with the TDC01, so I ran a dozen with the Ti (burn-in grooves on various test LPs). I did not, however, listen

analogue brilliance and his distinctive vocals, Daryl Hall & John Oates' *H₂O* [Mobile Fidelity MFSL 1-413] as an example of (then) state-of-the-art modern sound that still delivers the goods. *The Lowdown Back Porch Blues* by Louisiana Red [Pure Pleasure PPAN R25200] I chose for its sparseness; and – although the sonic qualities are hardly audiophilic – The Savoy Brown Blues Band's *Shake Down* [Decca Deram 375 066-5].

It was clear from the outset that TechDAS has voiced the TDC01 Ti to exhibit little or no coloration, blinding attack and the ability to retrieve the smallest details, as if given a brief that said: 'deliver a cartridge so transparent that vintage hardware guys will hear the unsullied "personalities" of their valves and horns, while modernists with "high-res" systems possessing limitless dynamics can exploit all their amplifiers and speakers can muster.' If this sounds schizophrenic, you'll understand why TechDAS has released the Ti in the wake of the original.

Masochism isn't my preferred attitude, but I couldn't resist that Savoy Brown debut, if for no other reason than my own love for the blues being a by-product of the British revival. What characterised every blues band of the era was a slavish adherence to the original techniques, such that Great Britain delivered – in what was an unbelievably short time – a generation of stunning guitarists, including Savoy Brown's Kim Simmonds.

Throughout the LP, his playing possesses both speed and fluidity, the latter surviving what could be a clinical portrayal by refusing to exhibit any brittleness. The liquidity worked in tandem with the attack, the earlier cartridge favouring the former and the Ti revelling in the latter. This also worked with the piano on 'I Ain't Superstitious', which tinkled with authenticity without acquiring any kind of ragtime piano-type glassiness.

Considering that my first listening to the two in a 'duel' revealed this characteristic so consistently, I was provided with a form of shorthand that remained true regardless of the recordings: the TDC01 is the 'gentler' of the two, while the Ti is the more commanding. That probably sounds

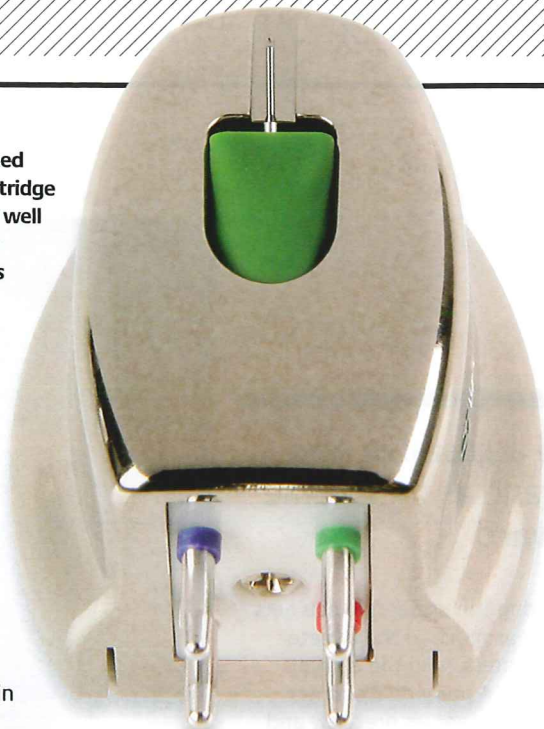


SPECS COMPARED

Choosing between the TDC01 and the Ti may boil down to the tonearm/MC resonant frequency, because the main difference is weight. The solid titanium-bodied Ti weighs 17g, compared to the 12g of the TDC01's super duralumin body. The Ti's housing gets its finish from a 'special processed hard surface treatment', while the original's finish is stated specifically as 'DLC', short for 'Diamond-Like Carbon'. The only visual clue (Ti logo aside) is the original's black finish compared to the metallic grey/silver of the Ti. Cantilevers differ, too, the Ti's pure boron, but both are fitted with the same 3x30µm semi-line contact stylus. Factory (electrical) specs are identical, including the stated frequency response of 10-50kHz, internal impedance of 1.4ohm, recommended load impedance (I preferred 200ohm), output voltage (0.45mV), channel balance and separation. The recommended tracking force is 2.0-2.3g – I found 2.1g best suited the Ti, while the earlier TDC01 needed a marginally higher 2.2g.

TECHDAS TDC01 TI

RIGHT: Another view of TechDAS's precisely aligned boron cantilever. The cartridge pins are silver-plated and well spaced to accommodate most tonearm leads/tags



so emphatic that I must apologise and provide a caveat.

In practice, the sonic chasm between these two cartridges is so small that one could probably find two identical products with consecutive serial numbers that differed more due to quality variations within the test parameters.

SO WHICH TO CHOOSE?

So will you get to hear the two side-by-side, to hear the £800-or-so difference? I have no idea what retailers keep on demonstration, so let me move on to the words of Messrs Hall and Oates, who managed to produce gloriously 'natural'-sounding recordings even in an era of studio excess.

The most expressive part of the portrayal is probably the artifice, rather than those glorious voices: the synth-y sounds, the crisp bass – we've all heard 'Maneater' so often that it's part of the collective consciousness, but via the TechDAS cartridges, it acquires a new gloss.

Trouble is, which gloss do you prefer? Bear in mind that I use an all-valve phono amp, a valve/hybrid preamplifier and a solid-state amp, so my set-up should provide an ideal middle ground. Thankfully, it's revealing enough to make me cautious. While the Hall & Oates recordings favoured the TDC01 for the slight tempering of the album's coolness, the Ti added a slight sense of increased airiness.

What the pure analogue of Chuck Jackson and Louisiana Red brought to the sessions were older recordings and distinctive voices. The former is slick, uptown soul, the latter a form of the blues somewhere inbetween urbane and rural. Jackson's material begs a layer of polish, Red's is raw, but both are gutsy. The original TDC01 maintained a commonality to

both, giving each recording equally convincing soundstages, natural and extended bass, and lifelike vocals.

Switching to the Ti, it was possible to hear *slight* variations in the recordings' absolute purity that were not exposed with the same brazenness as through the TDC01. The Ti is scalpel-like in its precision, and this manifests itself in a more warts'n'all manner.

At this level, and for well-heeled music lovers, the price difference is negligible. But then so are the sonic details that the extra money and the alternative materials deliver. To be blunt: you could mask them with a change of cables. To decide if the TDC01 Ti is a better choice than the 'vanilla' TDC01, you'll need the same mind-set you exercise when going for a hearing test. ☺

HI-FI NEWS VERDICT

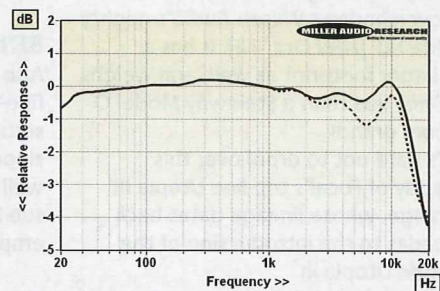
If a division exists between classic moving-coils such as Koetsus and Denons versus the 21st century school, TechDAS's TDC01 Ti decisively falls under the latter heading. It is super-precise, ear-openingly detailed and blindingly fast. Warmth is not as big a part of its sound as for old MCs, the Ti eschewing romance. But it is a perfect mate for valve phono stages, behaving as should a true reference cartridge.

Sound Quality: 88%

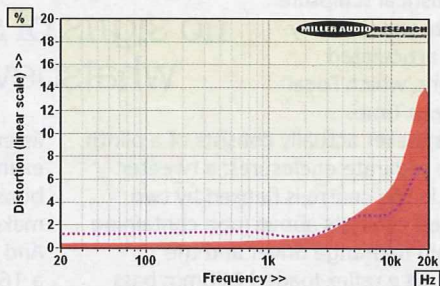
0 - - - - - 100

With a recommended tracking force range of 2.0-2.3g and tested at 2.2g, this heavyweight MC proved to be a more than adequate tracker, surmounting the 70µm groove pitch while just showing signs of mistracking on the right channel at +12dB (315Hz lateral cut, re. 11.2µm). As befits its 17g bodyweight, the TDC01 Ti's dynamic compliance is low and reasonably symmetrical at 11/14cu (vertical/lateral) although tonearms with an equal or higher effective mass than SME's Series IV/V are most appropriate if the arm/cartridge resonance frequency is to be held around 9Hz. Matching TechDAS's spec. almost precisely, this medium output MC offers 440µV (re. 1kHz/5cm/sec) into 100-200ohm loads with an acceptable channel imbalance of 0.53dB but slightly weak 26dB stereo separation.

Distortion is low through bass and midrange, achieving an unequalised 2-2.1% (re. 1kHz/5cm/sec) – a healthy 1% lower than typical and almost purely 2nd harmonic in character. Distortion does increase sharply at high treble frequencies however, in line with the MC's response above 10kHz, reaching 14% (lateral) and 9% (vertical) at 20kHz [-8dB re. 5cm/sec; see Graph 2 below]. Despite the very slight loss in energy through the presence band and -4dB drop from 10kHz-20kHz, the *symmetry* between lateral and vertical cuts [see Graph 1, below] is clearly excellent and augurs well for consistently solid stereo imagery across the soundstage. Meanwhile, it's the peak in output at 10kHz that gives the TDC01 Ti its subjective 'bite'. Readers may view a comprehensive QC Suite test report for the TechDAS TDC01 Ti MC pick-up by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: Frequency response curves (-8dB re. 5cm/sec) lateral (L+R, solid) versus vertical (L-R, dashed)



ABOVE: Lateral (L+R, solid) and vertical (L-R, dashed) tracing and generator distortion (2nd-4th harmonics) vs. frequency from 20Hz-20kHz (-8dB re. 5cm/sec)

HI-FI NEWS SPECIFICATIONS

Generator type/weight	Moving coil / 17g
Recommended tracking force	2.0-2.3mN (2.2mN)
Sensitivity/balance (re. 5cm/sec)	440µV / 0.53dB
Compliance (vertical/lateral)	11cu / 14cu
Vertical tracking angle	26 degrees
L/R Tracking ability	65µm / 70µm
L/R Distortion (-8dB, 20Hz-20kHz)	0.55-13.5% / 0.56-15.8%
L/R Frequency resp. (20Hz-20kHz)	+0.2 to -4.2dB / +2.1 to -1.1dB
Stereo separation (1kHz / 20kHz)	26dB / 21dB