



ACOUSTIC
SIGNATURE
onearm alignment 9 inch



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TYPHOON NEO



turntable Acoustic Signature Typhoon NEO and tonearm TA-5000 NEO

Author: Amré Ibrahim Photography: Rolf Winter

I am definitely done with "vintage" turntables. The sonic superiority of some modern turntables is so great that I can no longer find any reasonable pleas for retro turntables. All the more so after I was allowed to spend time with the Acoustic Signature combination of Typhoon NEO and TA-5000 NEO.

Want to have ... for the third time!

I cannot say it often enough: development in the analogue sector is progressing at seven-league pace – regardless of whether we are talking about turntables, cartridges or phono accessories. This is partly due to the resurgence of vinyl sales, but to a large extent also to those analogue developers who unswervingly blaze their own trail, sparing neither effort nor expense. I count Gunther Frohnhöfer, for example, among such a species, who, in my humble opinion, has placed himself at the forefront of the "New Wave of Turntable Manufacturing" movement with Acoustic Signature. Acoustic Signature has been manufacturing turntables for over 26 years – strictly "made in Germany", in Süßen in the district of Göppingen to be precise. There, at Hillenbrand Straße 10, you won't find a hobby cellar with a nerd tinkering with turntables and tone arms, but ultra-modern production facilities with 32 employees and a fleet of machines and computers that is absolutely "state-of-the-art" and probably unparalleled worldwide in terms of vertical integration. I had the pleasure of a personal tour of the factory rooms and was able to see for myself what Gunther Frohnhöfer means by "innovative thinking" and "benchmark manufacturing quality". I saw how these are put into practice. The company's philosophy includes the constant development of new technologies and the optimisation of existing ones, as well as consistent adherence to extremely high standards of quality management. In this respect, there is definitely no "we'll turn a blind eye" with Mr Frohnhöfer. Of course, such high demands can only be implemented if a corresponding basis is available. Gunther Frohnhöfer has created this by setting up an infrastructure with the latest CNC technology and CAD systems and recruiting employees who can operate them competently. Materials and components are purchased from suppliers in the region or in Germany. In order to guarantee the high quality of the purchased raw materials and components, Gunther Frohnhöfer does not go via the Asian export markets and therefore has to expend considerably more financial resources than some of his competitors.

Unlike "others", Acoustic Signature also faced the first effects of the Corona pandemic: When the German government decided

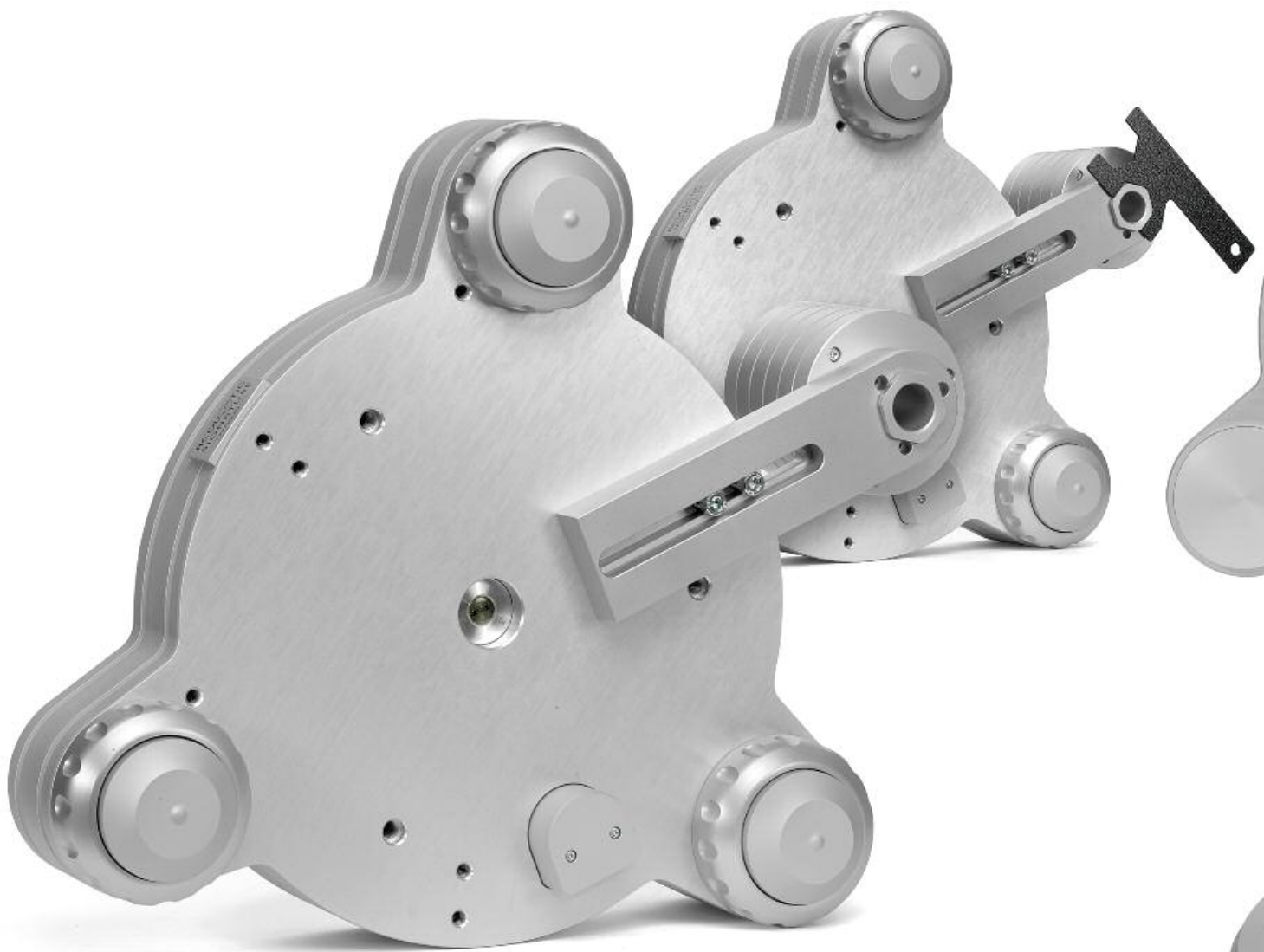




to send social life and thus also part of the economy into lockdown, Gunther Frohnhöfer and his wife Jacqueline, managing director of the Süßen-based audio manufacturer, took the challenging situation as an opportunity to review the company's past and present with a view to the future. In the process, every conceivable stone was turned and pretty much everything was critically scrutinised. To cut a long story short: the existing product portfolio was to be tidied up, their trade press award-winning innovations, such as the self-lubricating Tidorfolon® bearing or the "Silencers", were to be further optimised, completely new technologies introduced and the bar set even higher for production quality. As a result, the new and further developments, on which the company had already been working for some time, were massively accelerated and at the same time expanding Acoustic Signature's "circle of competence". For this purpose, the renowned industrial designer Burkhard Schlee was brought on board, who was given the task of refining the Acoustic Signature look without diminishing its

recognition value. Furthermore, from now on, the company no longer wanted to rely on measurement results and Frohnhöfer's ear alone, but also on the trained ears of professional musician friends and sound engineers, who were integrated into the new product development processes and now function as "acoustic quality management". The realisation of the chosen reorientation happened quietly and secretly. Unprepared visitors to the Swabians' new website may have rubbed their eyes in surprise: here you can now see an extremely successful, highly informative homepage that serves as a role model. Well done, Mr Frohnhöfer! Of course, the new Acoustic Signature product portfolio, which goes by the name of "NEO" and comprises nine turntables, six tonearms and various analogue accessories – including phono amplifiers, record clamps and weights, cartridges, belts, tools and small components – can also be found there.

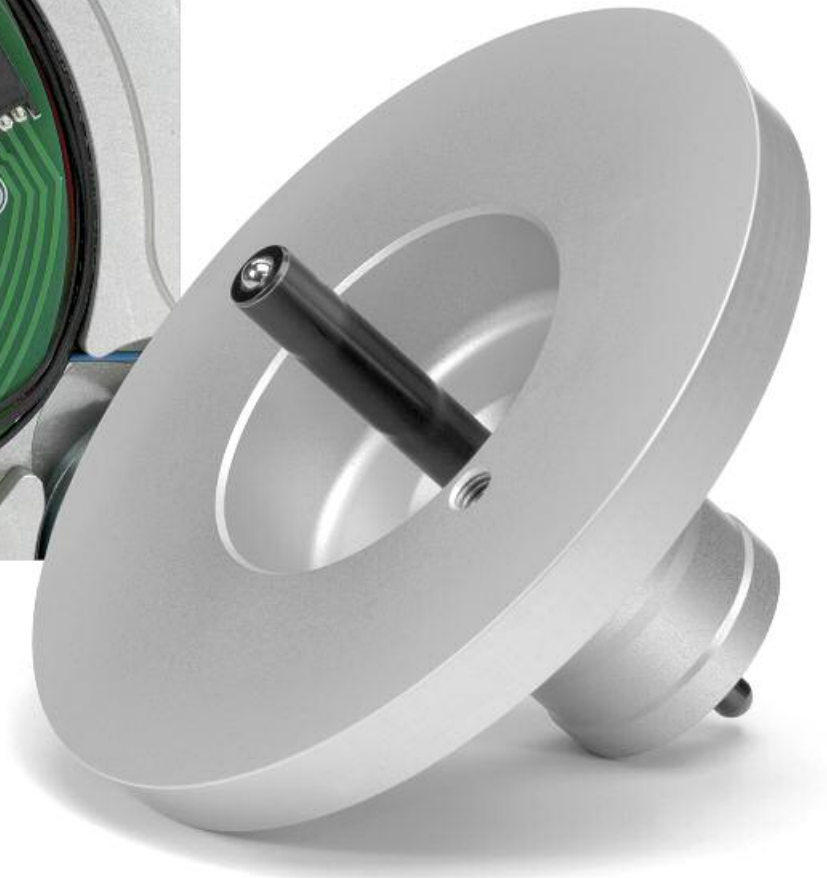
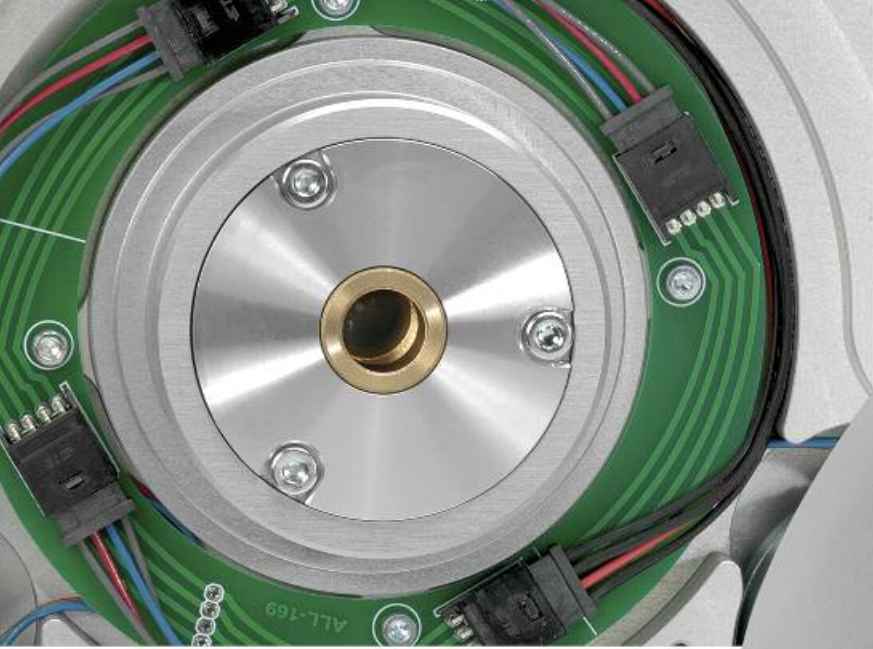
The true innovative joy of Acoustic Signature, however, is to be found in three exclusive "technology building blocks" that the Baden-Württem-



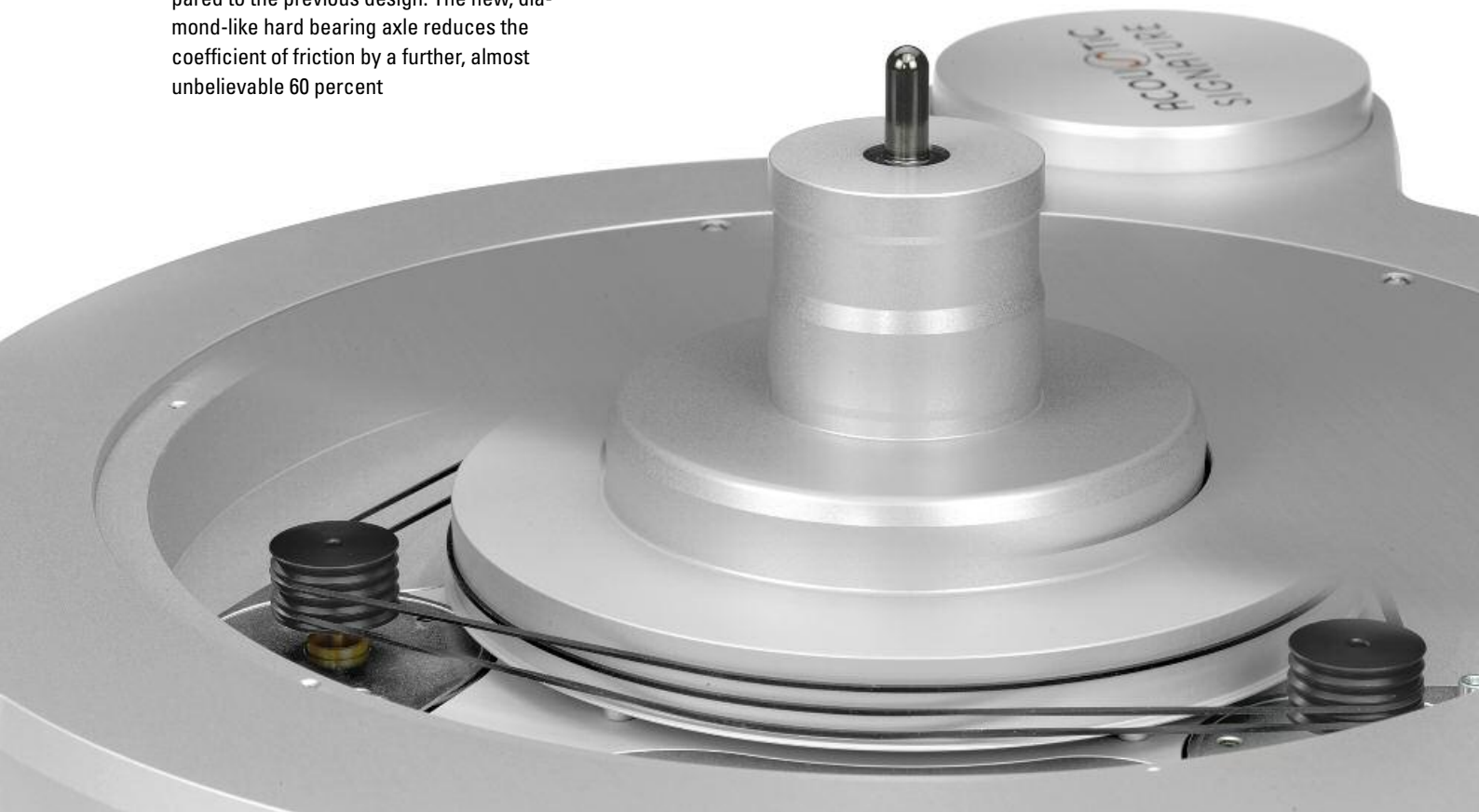
berg-based company uses in its turntables. First, there is the "CLD" technology (Constraint Layer Damping) – the result of a constant search for new, vibration-minimising material mixes. In this respect, the Swabians are taking a multi-pronged approach by going beyond the purely classic sandwich construction. The Typhoon NEO has a 75-millimetre-thick chassis weighing 22 kilograms and a 50-millimetre-high platter, both of which are made of a relatively soft aluminium alloy – CNC-milled, polished and brushed several times by hand. 24 so-called "silencers" are embedded in the turntable platter. These are hand-pressed, mirror polished brass damping elements whose number, arrange-

The Typhoon NEO chassis is made of a soft aluminium alloy and weighs 22 kilograms. It can accommodate three tone-arms with a length of up to 12 inches and is equipped with three adjustable feet filled with a special damping gel. At the same time, it is home to the bearing for the sub-platter and three AC synchronous motors, which are controlled by external fully digital motor electronics. When it comes to customer service, Acoustic Signature doesn't let itself down either: the registration of a newly purchased turntable includes a 15-year warranty and, in addition, a free replacement of the drive belts every three years – free delivery included. A great thing, since different room temperatures and humidity, UV light and, last but not least, mechanical stress have a negative influence on the precision of the belts





Above (right and left): The Tidorfolon bearing was already a statement, but the successor – the Dura Turn Diamond Bearing – is even better, according to the manufacturer: the self-lubricating DTD bearing made of vacuum-hardened stainless steel with bearing ball made of tungsten carbide is ground with high precision and elaborately plasma-coated. Newly developed sintered bushings store three times the amount of lubricating oil compared to the previous design. The new, diamond-like hard bearing axle reduces the coefficient of friction by a further, almost unbelievable 60 percent



ment and construction have been continuously optimised for over 20 years and vary from turntable to turntable. Together with the bitumen layer on the underside of the turntable, this absorbs resonances extremely effectively. The Typhoon NEO passes the well-known "knock test" with flying colours. Platter ringing? No chance!

The Swabian company's second technological building block concerns the bearing. In best Star Trek fashion, Acoustic Signature is boldly going into construction galaxies where no human being has ever been before: the new platter bearing is called Dura Turn Diamond Bearing (DTD) and, like its predecessor, the famous Tidorfolon bearing, is self-lubricating in nature, but has a 60 (!) percent lower coefficient of friction. This was achieved by using vacuum-hardened, ground and subsequently plasma-coated 1.4571 stainless steel – a rather elaborate and above all cost-intensive process, especially when you realise that this only pays for part of the "bearing rent". The cost factor is increased by the artificially aged, rolled and split sintered bronze sleeves of the bearing bush, which laterally guide the diamond-like hard stainless steel mandrel. After the sintering process, the sleeves are immersed in a special oil bath and heated under vacuum. This is to "suck up" the oil and store it inside the sleeves. The latest iteration of the sleeves has a sponge-like structure and is capable of holding three times the amount of lubricating oil in terms of capacity. Depending on the turntable, a variant of the DTD bearing is used that is adapted to the platter weight – this is also the case for the 13-kilogram platter of the Typhoon NEO. I had already mentioned in my review of the Montana NEO (*image hifi* 2/2022) that Gunther Frohnhöfer doesn't think much of conventional bearing designs in high mass turntables, nor of inverted bearings in general. I find his explanations about this so plausible that I definitely want to remind you of them: "Under the heavy weight of the platter and the very small ball surface, conventional bearings simply push the lubricating oil away. In-

Bottom left: The sub-platter is driven by three enclosed synchronous motors specially manufactured to Acoustic Signature specifications. These are arranged at a 120° angle so as not to allow any lateral pulling forces on the bearing. Extremely precisely ground square rubber double belts with no surface irregularities are guided around the pulleys, ensuring that smoothness does not suffer. If only every manufacturer were so conscientious!



turntable Acoustic Signature Typhoon NEO and tonearm TA-5000 NEO



The clock signals in the Typhoon NEO are generated by the "DMC-20" motor electronics. Its microprocessors have a quartz reference in which the sine signal is continuously calculated from the signal from the quartz oscillator. A 90° phase-shifted signal and a sine wave supply the motors, which are each designed with two coils and 24 poles. The latest innovation from Acoustic Signature comes in the form of the so-called "Anti Vibration Control": this measures – via sensor, in real time and with imperceptible latency – any distortions that occur and automatically adjusts the phase shifts to the motor signals

verted bearings are nothing but gross mischief. By inverting the bearing, you merely bring the noise generated at the pivot point of the platter axle and bearing mirror closer to the platter surface and thus into the direct sphere of influence of the sensitive pickup. Furthermore, gravity ensures that the oil runs away from the contact surface." For my part, I can only agree with his views and am all the more pleased about an extremely low-noise, robust and

virtually maintenance-free bearing as well as the warranty period that Acoustic Signature grants every NEO turntable: a whole 15 years after registration! That's what I call confidence in one's product.

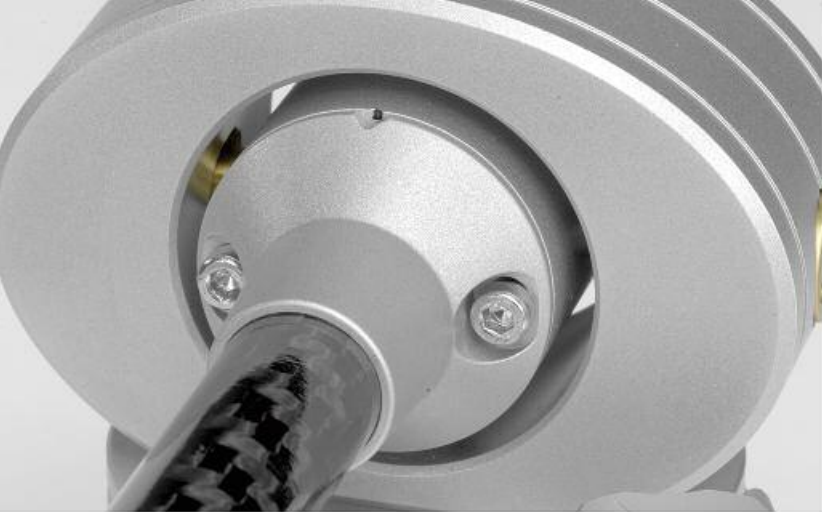
I now come to the third technology building block, the so-called "Anti Vibration Control" (AVC): this is a new development which received particularly intensive effort and which arose from the desire to



effectively counteract the vibrations which arise due to the unavoidable manufacturing tolerances of the motors and the "displacement" of the coil and pole positioning which inevitably goes hand in hand with this. For the Typhoon NEO, this means in concrete terms: the distortion caused by incorrect phase positions are reflected on the DC voltage line and can be measured there. The measurement is carried out via sensor permanently as well as in real time and fully automatically compensated - by adjusting the phase shifts to the motor signals. The AVC technology is implemented in three different levels depending on the drive. "Level 3" stands for the highest level of Anti Vibration Control and is reserved for the reference turntables "Montana NEO", "Ascona NEO" as well as the "Invictus Jr. NEO" and

"Invictus NEO", while Level 1 of AVC is used in the "Maximus NEO", "Double X NEO", "Tornado NEO" and "Hurricane NEO". The Typhoon NEO is currently the only drive in the Swabian product portfolio to feature Anti Vibration Control Level 2. In the case of the Typhoon NEO, the AVC is an integral part of the "DMC-20" fully digital motor electronics. The external housing of the "DMC-20" connects to the AC synchronous motors and to the small, freely-positionable control panel by means of two Ethernet cables. As you will certainly have noticed, the effort that goes into a Typhoon NEO is immense. I know of quite a few turntables that come with a similarly salty price tag of 13 998 euros. However, none of them can come close to matching the build quality of the Typhoon NEO – the incredibly fine finish of the anodised surfaces alone speaks volumes – and the technology commitment behind it. Even if you are tired of hearing such statements: considering the massive development and production costs, the Swabian turntable seems quite affordable.

It's time to turn our attention to the partner for the Typhoon NEO that Acoustic Signature has chosen for my report – the TA-5000 NEO. The nine-inch tonearm, which is also available in a 12-inch version, is in no way inferior to the turntable in



Top: The TA-5000 NEO from Acoustic Signature is sophisticated in every detail and a useful addition to the Typhoon NEO. In terms of VTA, azimuth, anti-skating and tracking force, the nine-inch tonearm (which is also available in a 12-inch version) is child's play to adjust. With an effective mass of 12.4 grams and designed for cartridges weighing between six and 16 grams, it offers optimal guiding qualities for high-end cartridges of all kinds. The scope of delivery includes an "Equator Achromatic" from Atlas Audio. The buyer decides whether he wants RCA or XLR plugs fitted to the premium tonearm cable made of high-purity copper

Top right: Acoustic Signature wouldn't be Acoustic Signature if the TA-5000 NEO didn't come with a high-quality and super-easy-to-use pick-up adjustment template. The brass counterweight can be adjusted and fixed in no time by means of a super fine thread (M12 x 05)



terms of technological innovation, feel and build quality. The stiff, low-resonance tonearm tube is made of braided carbon. So far, so good. But inside, things get really exciting: here, a 3D printed component is inserted lengthwise into the outer tube and is both plugged in and glued on the inside. This "3D damping" is intended to help the tone arm achieve even greater stiffness and provide optimal vibration absorption. A preloaded, high-precision ceramic and steel gimbal hybrid ball bearing, which Acoustic Signature has manufactured to its own specifications, as well as a stainless steel tonearm axle are intended to help maximise smoothness and provide optimal guiding properties for top end cartridges of all kinds. It goes without saying that the bearing design meets chief developer Frohnhöfer's "zero tolerance" requirement for freedom from friction and bearing play. But that's not all: especi-

ally thin 4N pure silver strands for the internal wiring are supposed to ensure "unbraked" movement and perfect signal flow. Of course, the TA-5000 NEO has an anti-skating control. The adjustment of azimuth, VTA and tracking force are child's play thanks to the fine mechanical perfection of all components and the mounting template included in the delivery. By the way, you have to shell out 6298 euros for the TA-5000 NEO – which is a fair price for a world-class tonearm, which it undoubtedly is: with the Koetsu Rosewood Signature, it's similarly lively as my VIV Laboratory Rigid Float Ha MK2 in the seven-inch version with the magnesium-aluminium tonearm tube, but a touch more authoritative leading. Both arms are head-to-head in terms of coarse dynamics on Hollywood Isn't Calling (Neuklang/in-akustik, NLP4247, Germany 2021, LP), the sixth album by the great Israeli jazz



The shiny polished silencers have become a real trademark of Acoustic Signature. Together with the bitumen layer on the underside, they serve to dampen the platter. In the Typhoon NEO, 24 such silencer modules are pressed into the platter by hand for a precise fit. According to Gunther Frohnhöfer, the use of only eight silencers reduces resonance peaks by about 80 decibels above 2.5 kilohertz. For the coupling of the record with the platter, Acoustic Signature now uses a stiffer leather platter mat with a carbon surface

singer Efrat Alony, but the TA-5000 NEO knows how to appreciate what's going on with a little more calmness in the sound image. Compared to my Pear Audio Analogue "Odar" turntable, which I use with the VIV Lab-Koetsu pairing, the combination of Typhoon NEO and TA-5000 NEO is much more powerful and defined. Heinrich Köbberling's playing on the cymbals and snare drum is better resolved across the entire frequency spectrum, more clearly defined and with a fair bit more "attack". I clearly remember the performance of the Montana-NEO-TA-7000-NEO duo on the Bach Prelude "Un-accompanied Cello Suite No. 1 in G Major, BWV 1007" by Yo-Yo Ma's Six Evolutions-Bach: Cello

Suites (Sony Classical/Sony Music, 19075854651, Europe 2018, 3-LP): the Acoustic Signatures produced the "blackest" background ever laid out before me. It's little different with the Typhoon NEO and its partner the TA-5000 NEO. Here, too, I was immediately drawn into the intimacy of the cello playing. The sound image is as if carved in stone, the dynamics are extremely finely graduated and the mid-range colourfulness of the Koetsu pickup is celebrated in all its splendour. This is partly due to the fact that the Typhoon NEO is more controlled in the lower frequencies than my Pear Audio, so that the upper bass frequencies do not overpower the lower midrange frequencies in any way.

Mary Halvorson's collaboration with the Mivos Quartet on "Moonburn" on Amaryllis & Belladonna (Nonesuch/Warner, 075597912708, USA 2022, 2-LP) once again illustrates the sonic value of being able to follow the bow strokes of the strings and the "clean" guitar, played wildly in places, individually without losing sight of the "big picture". Better said: without being torn out of the emotional involvement. Arooj Aftab's voice on Vulture Prince (New Amsterdam Records/Verve Records/Universal Music, B0035138-01, Europe 2022, 2-LP), the grandiose debut album by the Pakistani-born, Brooklyn-based musician and composer, is a bit more airy with the Acoustic Signature duet than the Pear Audio. On "Baghon Main", the Odar also presents the vocals a little more in the foreground, while the Typhoon NEO gives the voice a somewhat more central and corporeal role, without assigning extras to the graceful sounds of the harp, violin and double bass. This is already, please forgive the street language, f***ing awesome!

My first encounter with Acoustic Signature was many years ago with the Ascona turntable and TA-5000 tonearm. At the time, I would have liked to have had this combination at home – had it not been far beyond my financial means. After my second encounter with a drive and tonearm combo from the Swabian audio manufacturer – the Montana NEO and the TA-7000 NEO – I would also have gladly bought both components if it hadn't been for the money. The Typhoon NEO and TA-5000 NEO combination also makes me want to buy. The price for this is now at least within reach. Perhaps you are now asking yourself whether I have no sonic ideals or am even addicted to gear acquisition? Absolutely not, I can deny both with a clear conscience. The "Want to have ... for the third time!" can be taken as proof that Acoustic Signature does not develop random products. The more money one is willing to invest in an Acoustic Signature turntable and/or tonearm, the greater the performance value one receives. But the "basic level" is already so high with the "smaller" Swabian turntables and tonearms that

some competitors' reference turntables should start worrying. You have read my review of the Montana NEO and are now asking me what the difference is between it and the Typhoon NEO? Quite simply, the world class starts with the Typhoon NEO! □

Turntable Acoustic Signature Typhoon NEO

Functional principle: three-part, resonance-optimised high mass turntable with external control panel **Speeds:** 33 1/3, 45 rpm **Drive:** square double rubber belts (ground), three AC synchronous motors with plastic pulleys and conical, speed-regulated aluminium sub-platter **Motor control:** external, digital motor electronics "DMC-20" with microcontroller for sine wave generation, electronically controlled and mains decoupled **Power supply:** 100 – 260 V **Special features:** external motor control, 3 height-adjustable, gel-damped aluminium feet, up to 3 tone arms (9" to 12") can be mounted (278 Euro surcharge for each additional arm board according to customer requirements) **Finishes:** Black anodised, silver anodised, bi-colour, silencer modules in polished brass, optionally 24 carat gold-plated or in polished chrome (surcharge 1498 euros) **Dimensions (W/H/D):** 45/19/46 cm (turntable without tonearm) **Weight:** 35 kg **Warranty:** 15 years (with registration) **Price:** 13 998 euros

Acoustic Signature TA-5000 NEO Tonearm

Functional principle: 9" tonearm with adjustable VTA, azimuth and anti-skating **Mass:** 13.9 g **Overhang:** 17.3 mm **Length:** 289 mm **Effective length:** 239.3 mm **Mounting distance:** 222 mm **Weight:** 573 g **Tonearm internal wiring:** 4-N pure silver **Tonearm cable:** Atlas Audio Equator Achromatic (OCC pure copper, 1.5 m, 5-pin DIN plug) **Tonearm mount:** Rega or SME possible **Finishes:** Silver anodised, black anodised with counterweight 24 carat gold or chrome plated (surcharge 894 euros), "Full Gold" (surcharge 2302 euros) **Warranty:** 5 years (with registration) **Price:** 6 298 euros

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