







The latest creation from the Swabian luxury manufacturer Acoustic Signature is called Verona NEO. It's a mass-produced drive unit that has a completely unpretentious, classic look, doesn't flaunt its technology and yet is a (sensitive) powerhouse that outclasses most of what our author has heard so far.

A trip to Verona with no return ...

When I hear "silence", the first thing I think of is Jean-Louis Trintignant, who plays a gunslinger who has had his vocal chords cut in that bleakest of all Italian westerns, "The Great Silence". An entire village pins its hopes on silence to put a stop to the cruel activities of bounty killer named Loco (Klaus Kinski). Since good doesn't stand a chance in Sergio Corbucci's film, which is set entirely in icy snowy landscapes, he ultimately loses the duel.

The situation is quite different at Acoustic Signature. Firstly, company boss Gunther Frohnhöfer would win almost any duel (at least when it comes to record players) and secondly, he never pins his well-founded hopes in his battle against resonances (much more predictable than battling Klaus Kinski!) on just one silent accomplice: in the case of the Verona NEO, he has eight dampening "silencers" made of polished brass (they are also available gold-plated or in polished chrome for an extra charge) integrated into the turntable. These have not only been an unmistakable visual trademark for years, but also reduce the resonance peaks in the turntable by a whopping 80 decibels according to the recorded measurements.

A huge promise with a coat of black piano lacquer sits enthroned on my rack. Its high-quality workmanship is at the same time appealingly modest. But despite the overall understatement, there is something foreboding in the aura of the drive. In a manner of speaking, it's a bit like a battleship with concealed cannons. The first clue is provided by its considerable width, which can hardly be described as discreet (the drive barely fits on my rack). The second clue is provided by the two in-house TA-2000 arms, one of which is a 12-inch. Experience shows that if a person designs their drive for several arms, they are also convinced that it "deserves" several arms. However, the imposing turntable, weighing a good 10 kilos and made of anodised aluminium, makes it clear that this is a full-blown mass drive.

And what a drive it is! When Valerie Joyce and her outstanding combo play "I Fall In Love Too Easily" (New York Blue, Audio-Nauts Recordings, AN-2002, I 2020, LP), it expresses my feeling towards this drive, which mesmerises me from the very first notes. It also instantly shows what it can do: a pervasive dry-as-

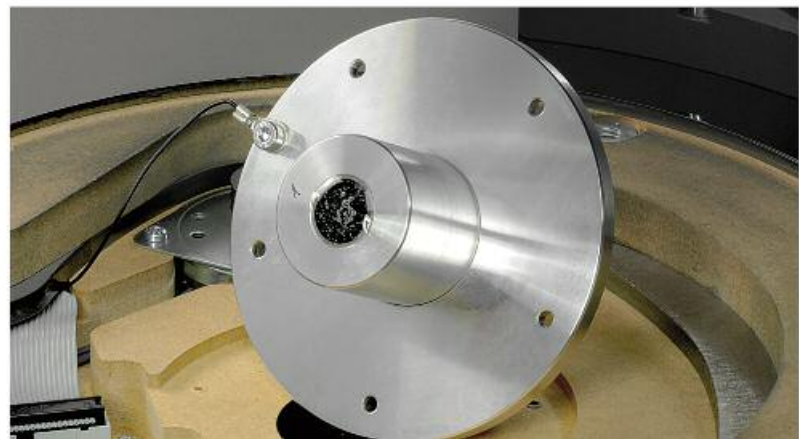
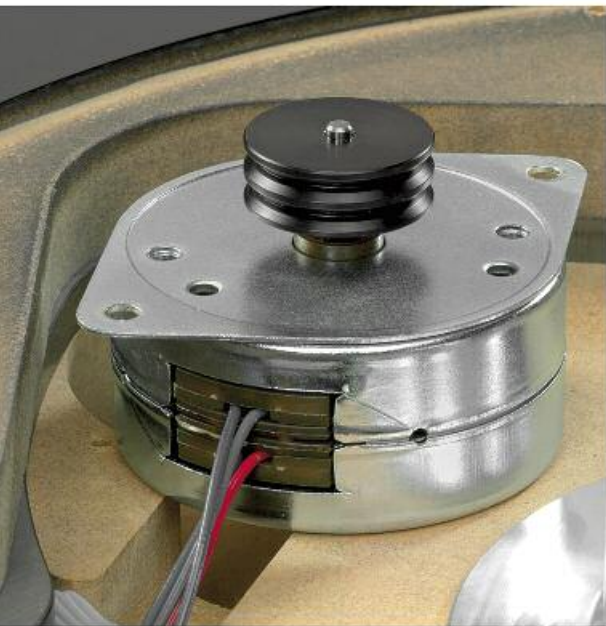
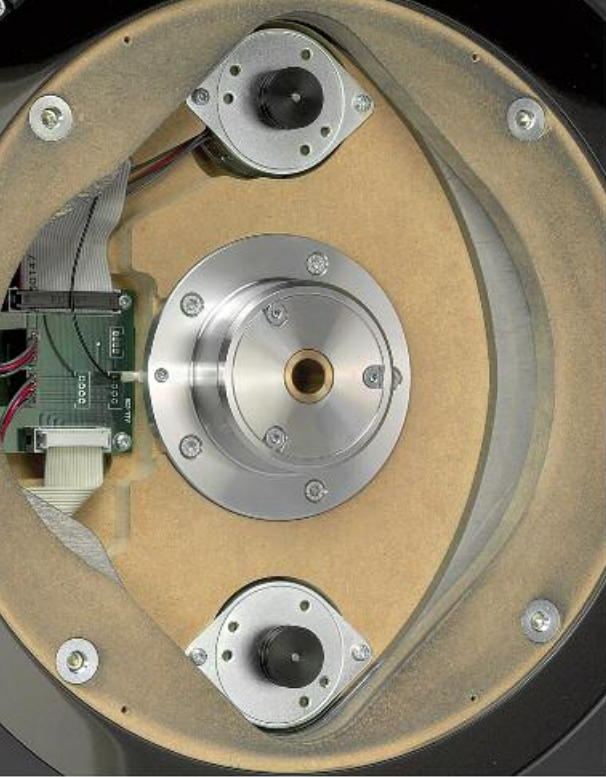


dust bass, impressively deep and wonderfully bouncy, used here as a melodic instrument oscillating between immense power and lyrical delicacy. A jazzy brush that hisses across the skins with precise impulses, the sparkling pared-down background piano and a voice that breathes with restraint, whispering darkly, softly and mysteriously. The drive presents the musicians in the room, you can see them almost physically in the richly ornamented wooden surroundings of St Peters Church in Manhattan; an intimate performance, absolutely compelling and with a silence that I have never before heard at home. This drive does something to me: I myself come to rest. But this peace is not, as is so often the case, at the price of a lack of dynamics, no, this drive opens up the music and enables us to experience a live performance as vivid as a firework display. An impressive amount of information, a wide range, excellent timing, rhythm to die for. I

listen to a single track with a record player that has barely had time to recover from being unpacked and I've already got "goose bumps".

This doesn't even change when I switch tracks and listen to the exciting arrangement of "Little Wing" (here completely without guitar). The vocalist, who has sometimes been accused of always singing in the same way and with little versatility, displays through this lyric (especially in this track) that she is more than just the "talent" she was labelled as back then. Amidst the subdued cymbals and small occasional swirls on the snare, she soars to impressive expressivity and radiance, embedded in the bass, which again leads the melody. On other turntables the piece often bored me a little, but now I find it downright magical.

Although significantly larger, the turntable is somewhat reminiscent of the Double X NEO, although that can only accommodate one tonearm.







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Production quality de luxe: the chassis alone weighs 22 kilos - a mixture of MDF and steel plates, screwed and glued together and enhanced with an elegant lacquered frame.

The designated places for mounting the tonearms and the gel-damped feet, which give the turntable a high degree of stability and additional silence, are clearly visible from below. On the left are the two load-independent AC synchronous motors and the pulleys over which the drive belts run. On the right-hand side is the disc bearing, which is second to none: vacuum-hardened with a diamond-coated axle, self-lubricating and practically indestructible. And thanks to a refinement to the sintered bronze sleeves, it is now capable of absorbing three times as much oil

Frohnhofer, whose turntables are usually pure industrial design, exceptional mechanical engineering and deliberately recognisable as such, wanted to expand its portfolio with a classically angular "retro" player that can accommodate two tonearms. The predecessor of the Double X was the larger Triple X. Although this was also designed for a 12-inch speaker, its 15 mm steel plates weighed well over 50 kilograms, making it unmanageable for many customers. That was ten years ago and is now history, for Frohnhofer says he has learnt a lot since then. Among other things, he now knows that you can achieve good resonance absorption with significantly less weight. This is precisely why the Verona NEO is now on the market.

The way Frohnhofer pronounces the word "retro" (as if he just wants to touch it with his fingertips) makes it clear that he is not particularly fond of the term because it could imply that technology also tends to reflect a past. The exact opposite is the case: visually reminiscent of players from the 70s and 80s, it represents a "state of the art" technology that has catapulted Acoustic Signature to the absolute top of the world, at least since the introduction of the NEO series.

A good six years ago I was invited to visit the factory and was even then very impressed by a pool of machinery that hardly any other manufacturer in Germany had at its disposal. In the years since then, the site has grown sevenfold, the number of employees has increased to 35 and CAD and CNC technology has become even more advanced. The new 5-axis milling machine, which is almost four metres high and weighs 22 tonnes (!), is not the only thing that shows that Acoustic Signature can today rightly call itself a "technology leader".

But what makes this technology so special, apart from the silencers already mentioned? Firstly, there is the so-called CLD (Constraint Layer Damping) technology, which is based on the fact that the addition of different materials massively changes the vibration properties of the material. Take a classic example: if you knock on a pane of glass it "rings". If you now glue a piece of wood on top, much of the tendency of the glass to ring has been eliminated, although the wood does not dampen the reso-



The external digital drive unit DMC-20, connected to the turntable via two Ethernet cables, ensures a permanent regulation of the phase shifts of the motor signals by means of an "Anti Vibration Control". As a result the two AC synchronous motors run with exemplary smoothness. And, in conjunction with the bearing and chassis design, the quiet operation is also transmitted to the listener





Turntable Acoustic Signature Verona NEO

nances. It is the combination of the two materials that causes a massive shift in the resonance response. In the case of the Verona NEO, the secret (besides the silencers) lies in a material mix of high-density MDF and steel plates that are screwed and glued together. All of this, mind you, inside the player. What you see on the outside, the frame, does not determine the sound, but is merely "cosmetic", to use Frohnhöfer's words. Admittedly a very successful solution, for the 10 layers of piano lacquer give the player its elegant appearance. Elaborate and expensive!

The next key technology is called AVC (Anti Vibration Control) and is available in the Verona NEO at its highest configuration level: The phase shifts of the motor signals are fed to the drive unit via a sensor and finely readjusted every 30 seconds by a software programme. This completely compensates for any slight wear on the motors, even after many years. Crucially, however, it ensures that the motors run exceptionally smoothly. "One not entirely unimportant factor," says Frohnhöfer, "is that the motors are mounted on the chassis." In typical Frohnhöfer fashion, he leans back as much as possible to suggest that others also mount their motors right there, of course, but are nowhere near as good at controlling the vibrations as he is.

The massive turntable is driven by the same AC synchronous motors that Acoustic Signature also uses in its largest turntables. Very briefly you hear a tiny creaking noise - not the motor itself, but the sound that occurs when the belts slip very slightly over the pullies - because the motor is given significantly more energy to warm up quickly when it is switched on. Frohnhöfer calls it a "compromise", because on the one hand he wanted a fast acceleration time, but on the other hand he also wanted to avoid subjecting the belts to undue stress. If you wanted to completely eliminate the noise, you would have to significantly extend the start-up time. "We didn't want that," says Frohnhöfer, who loves it when a drive gets down to work quickly. After five seconds, there is complete silence: the mo-

tors run practically vibration-free.

AC motors basically have an in-built cruise control, which means that the speed stability is significantly better than with DC motors. What's more, they are load-independent. If the needle is not in the disc groove, a DC motor rotates slightly faster, i.e. it varies its speed depending on the load. This is not the case with AC synchronous motors, which do not change the specified speed. In the past, hundreds of thousands of AC motors were used to drive the spindles on knitting machines. Since these are no longer needed, entire production lines have been scrapped. Frohnhöfer says that this now makes it very difficult to find these types of motors in acceptable quality. He found what he was looking for at a factory in Holland. In theory, there would even be room for a third motor, but the competitive price of just under 12,000 euros could no longer be guaranteed. The player was originally estimated to cost 15,000 euros, but now Frohnhöfer has lowered the price again - because this would allow him to achieve sales figures that he could not achieve with his more expensive players.

According to Frohnhöfer, the difference between this and a 3-motor drive is also extremely small. "Two motors are significantly better than one," he explains, but a third motor would not add "a world of difference". With two, "95 per cent of what is possible is already achieved". What's more, when I listen to the drive, there's no question of adding another motor. It plays so staggeringly well as it is that at first I can hardly sleep for several days. Which is very rare for me when it comes to a record player ...

I don't want to get involved in the debate as to whether Roger Waters' reinterpretation of *The Dark Side Of The Moon*, now labelled *Redux* (Cooking Vinyl, SGB50LP, Europe 2023, 2-LP), is musically superfluous given the enduring power of the original recording. In any event, it is an excellent production that dispenses with some of the effects of the classic (unfortunately including David Gilmour's guitar), and instead makes greater use of

electronic strings. In "Brain Damage" (which you might occasionally assume from Waters' political statements), the voice of the great artist, which of course he still is, is doubled by a female singer who lends additional power to his vocals. With the Verona NEO, the bass is assertive and full of nuances, the high-hat runs through; a cymbal sounds, present but not intrusive, delicate and almost laid back. For all its tranquillity, the track on this magnificent drive is always lightning-fast in its impulses, vibrant, open, yes, genuine. In its calmness, which the Verona NEO emphasises so wonderfully, the piece seems almost appropriate to its age - although in Waters' case the term really only applies to his music.

Incidentally, the two excellent arms are in no way inferior to the high quality of the drive unit. The long arm plays a little more quietly than the short one, and picks up the bass even more effortlessly. In return, the short arm is almost more dynamic. If I had to choose just one, I would probably go for the long one. Those who can afford both arms should consider themselves lucky. The large MCX4 (which costs 2,348 euros and sounds considerably more expensive to my ears!) also does an excellent job, playing very clearly and quickly, but never too analytically. It always centres on the flow of the music. I

Players

Turntable: TW Acoustic Raven LS with 3 motors **Tonearm:** Aquilar Acoustical Systems **Pickup:** Soundsmith Hyperion + Hyperion MKII, Kiseki Blue **Phono-Pre:** Aurorasound Vida Supreme **Pre-amplifier:** Funk MTX Monitor V3b-4.3.7 (modified by Sehring) **Power amplifier:** Acousence pow-amp, Audiophil Class A **Loudspeaker:** Sehring S 916 curved **Cables:** Sehring Pro 1 (mains), Gutwire Uno-S (XLR cable), Rike Audio Nr. 4 (RCA), Sehring LS 4 + Cardas Clear Speaker (speaker cable) **Accessories:** CT Audio Resonanztechnik Mirage Bleu power strip, Furutech FT-SWS NCF wall socket, GigaWatt G-C20A automatic fuse and LC-Y MK3 + 3X4 flush-mounted cable, Quadraspire Reference rack, CT Audio Resonanztechnik - Steppness I + II, Doppio, Pace, Songer, Woopies, Acoustic System resonators, Audiophile room resonators, Audiophil Schumann generator (version 2023 with Audiophil power cable), Acoustic Revive RR-777 Schumann generator (with improved power supply), Audio Replas acoustic module RAC-100. Fine fuses: Refine-RA fuses + Hifi Tuning Supreme 3 (silver gold), Flux Hifi Sonic vibrating needle cleaner, Lyra SPT needle cleaning fluid, Acoustic Revive ECI-50 contact spray

also took the liberty of screwing my (slightly cheaper) Kiseki Blue onto the arms: it has a completely different character, plays a little less clearly, but a



touch "rougher". Ultimately it's a question of taste like most things in the high-end, even if we often forget that.

Let's get back to the technology: no less important than the choice of motors is the choice of disc bearing. Surprisingly, this is no different from the bearing in the largest turntable, the invincible "Invictus". Of course, it is not a conventional bearing, where the oil is simply pressed away under the heavy weight of the turntable and the very small spherical surface. And certainly not an inverted bearing, because Frohnhöfer considers such a bearing to be "gross nonsense" for a number of reasons (oil runs off the contact surface, unavoidable noises unnecessarily move closer to the pickup). His bearing is still made of the tried and tested Tidorfolon, but has been significantly refined since the NEO revision in the pandemic and is now called "Dura Turn Diamond Bearing" (DTD). The bearing ball is made of tungsten carbide. The bushings in which the axle is inserted and guided were previously purchased as a standard component, but are now manufactured by a supplier specifically for Acoustic Signature. The sintered bron-

ze sleeves of the bearing bush act like a sponge: the pores are filled under vacuum with warm oil, which is securely contained within. This counteracts the tendency of the oil to flow downwards in a stationary bearing, and ensures constant lubrication from the very first rotation. This process also has the advantage that the oil is not exposed to atmospheric oxygen - and therefore does not age. Compared to the pre-NEO era, the pores are now significantly larger and can absorb three times more oil: less material, more oil, more lubricating effect.

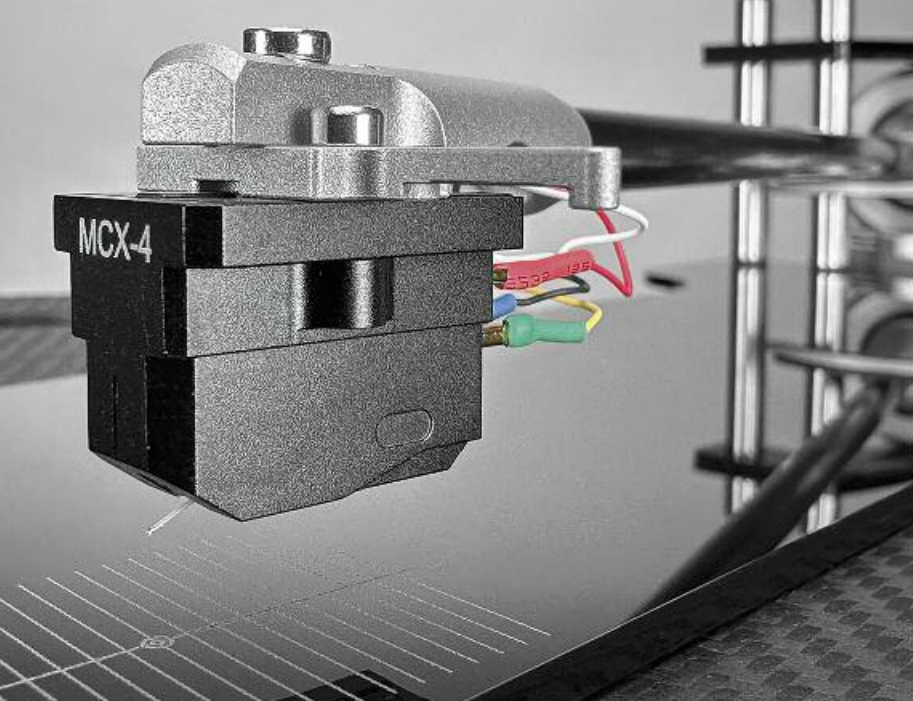
A vacuum is also used to harden the stainless steel axle in the bearing. Compared to being hardened in a flame, this has the advantage of being more controllable; and, as Frohnhöfer says, there are no "mess-ups". A flame can leave behind ugly discolorations and the air can also contain impurities, both of which are impossible in a vacuum. The vacuum procedure is the most complex (and the most expensive!), but it causes the least change to the material structure. The hardened steel is then honed so that the dimensions and rounding are correct and then - and this is also a first - coated with a black, low-friction diamond coating, which



further increases the degree of hardness as well as dramatically reducing adhesion: "Anything that glides better has less friction and therefore less noise." In combination with the higher oil content, this is a clear step towards absolute silence. What's more, the bearing becomes so hard that consumers can no longer accidentally damage it. Normally, you can crash a bearing if you accidentally bang the

turntable onto it. But now it's practically indestructible, self-lubricating and maintenance-free for life.

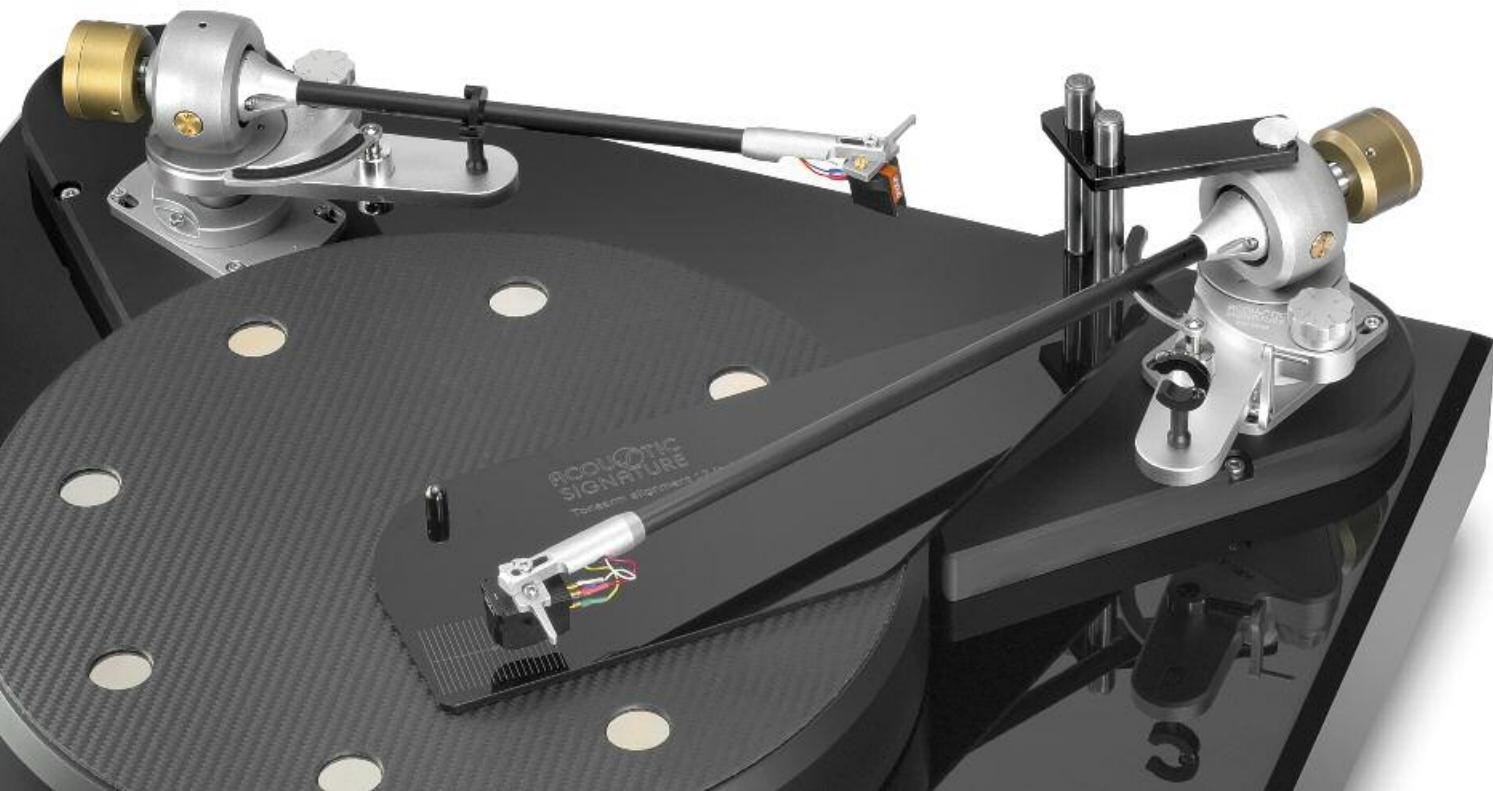
The feet also show how well thought-out Acoustic Signature products are. I usually put my own feet under devices almost as a reflex, because this benefits most products. (It also has to do with the fact that many manufacturers don't pay any particular attention to the feet on their equipment). But here



Previous double page and this page: One short, one long. Of course there are more expensive tonearms, also from Acoustic Signature, but in this price segment there are hardly any better ones: The two included TA-2000 NEO precision instruments with Rega base, dual-carbon tube, agreeably solid adjustment template and a pickup that you wouldn't complain about even at twice the price

it's so well thought out that I don't even need to think about it. The feet are not only made of aluminum, are gel-damped, and add extra quietness to the drive, but also have a stabilizing effect. Part of a ball is screwed on at the bottom to prevent the rack from being "stamped" like a spike. Here too, Frohnhöfer follows his motto: "We want to offer products where the customer can concentrate on listening to the music and doesn't have to constantly think about where they need to tune the sound to make it better."

This attention to detail is even reflected in the new turntable mat. Unlike before, it is now "basically made from shredded natural leather": very small pieces of leather glued together again with a binding agent and embossed with carbon, making it slightly harder



than normal leather. The result is excellent damping and a very dynamic sound.

Do you want to hear the sound you can conjure from a Stradivarius? Then just put on the new LP by Anne Sophie Mutter (Bach, Bogne, Previn, Vivaldi, Williams Deutsche Grammophon 4865432, Europa 2023, 2-LP). Here she is accompanied by an outstanding ensemble called "Mutter's Virtuosi" (although the choice of name is somewhat less virtuosic). The way she moves into the "Andante" in Bach's Violin Concerto No. 1 is out of this world. What a tone! Creamy soft, warm and full. While Mutter performs the baroque showpieces on this double album with consummate beauty, she reveals a different side of herself in the "Nonet" by her ex-husband André Previn. Here her violin is entwined with the double bass in a blaze of colorful timbres in counterpoint patterns that at times become "screamingly" dissonant. Dynamic fireworks, moving and beautiful. At no point do you get the impression that the Verona NEO is unable to cope with this demanding music. Like a good referee it always keeps up with the state of play, is never out of its depth and anticipates the next development. It guides us through music that it opens up and brings to us with complete ease. In the process it makes no demands on the listener but rather shares its power with us. We don't have to make an effort to see the Stradivarius in all its beauty. It materialises spontaneously before our minds' eye. That is truly breathtaking. Utterly awesome.

Acoustic Signature Verona NEO turntable

Operating principle: Mass turntable with belt drive **Speeds:** 33/45 rpm **Drive:** Belt, two integrated AC synchronous motors, sub-platter technology **Motor control:** external digital motor electronics "DMC-20" **Power supply:** 100 - 260 V **Special features:** High-precision DTD bearing, sandwich chassis with 19 mm MDF top plate, aluminium turntable with silencer technology, height-adjustable gel-damped aluminium feet, up to two tonearms (9" to 12") can be mounted **Finish:** in piano lacquer black/aluminium silver; piano lacquer black/aluminium black; macassar/aluminium silver; macassar/aluminium black; silencer modules in polished brass, optionally 24 carat gold-plated or in polished chrome (surcharge 798 euros each); extra armboard according to customer requirements: 278 euros **Dimensions (W/H/D):** 54.4/16.6/44.9 mm **Weight:** 34 kg (incl. aluminium turntable) **Warranty:** 15 years (with registration) **Price:** 11,998 euros

Acoustic Signature TA-2000 NEO tonearms

Operating principle: Rotating tonearms with adjustable VTA, azimuth and anti-skating **Mass:** 9.6 g (9"), 12.6 g (12") **Overhang:** 17.3 mm (9"), 13.2 mm (12") **Effective length:** 239.3 mm (9"), 309 mm (12") **Mounting distance:** 222 mm (9"), 295.8 mm (12") **Internal tonearm cabling:** studio-quality copper from Mogami **Tonearm cable:** 5-pin phono cable (1.5 m RCA) from AudioQuest included **Tonearm recording:** Rega or SME possible **Finishes:** in silver or black, with counterweight in 24 K gold coating (surcharge 998 euros), "Full Gold"/Chrome (surcharge 3,747 euros) **Contents:** operating instructions, mounting template, phono cable **Weight:** 545 g (9"), 560 g (12") **Warranty:** 5 years (with registration) **Price:** 2,998 euros (9"), 3,348 euros (12")

Pickup Acoustic Signature MCX4

Operating principle: Moving Coil **Pick-up diamond:** Nude-Shibata **Stylus:** Boron **Needle compliance:** 15 µm/mN **Terminating resistor:** 100 Ohm **Frequency range:** 20 - 25000 Hz (at -3 dB) **Output voltage:** 0.3 mV **Tracking weight:** 2.3 g **Weight:** 12.6 g **Warranty:** 2 years **Price:** 2,348 Euro

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