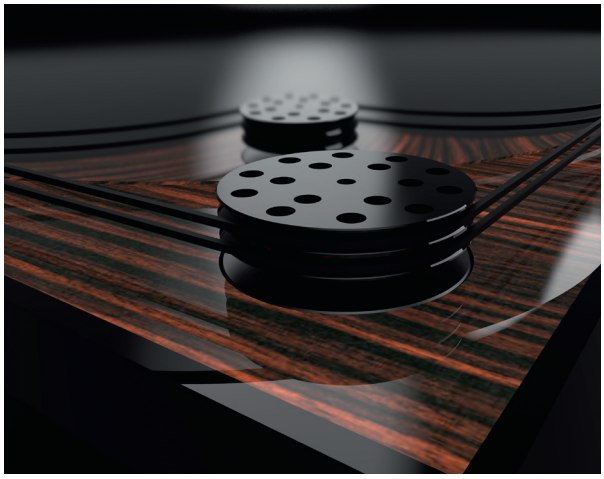


Not one, but two square belts run in separate grooves in the pulley to ensure an absolutely clean drive with no elongation or compression.

Eight gold-plated brass silencers, which are decoupled from the platter by rubber rings, dampen the platter optimally.

FRESH START

The premium league in the turntable sector is as fiercely contested as the entry-level class. Who wants to score here must, in addition to finest sound, also throw in some technical goodies. Since its update the Double X has done it aplenty..

The Corona pandemic has also affected the hi-fi industry. A lot of makers were having great sales figures, others are not doing well. Acoustic Signature, the turntable manufacture of Gunther Frohnhoefer, started with only little euphoria into the year 2020. When orders were declining, Frohnhoefer was faced with the question: short-time work or not? He decided against short time and called his 25 employees for a brainstorming. What die we always want to make even better? On which drive do we still have tweaking potential? Which drives shall be discontinued? The ideas kept bubbling and the resulting improvements were all so good that from now on they would be incorporated in all devices. Discontinued, however, were the two "small" turntable units Wow and Wow XL. On the other hand, in close cooperation with Frohnhoefer, an industrial designer gave all turntables a serious facelift (and also to the homepage which is now definitely one of the best websites in the hi-fi world). Another consequence of Corona: The money spent here was actually supposed to pay the booth at the High End 2020 tradeshow ... And so we see a technically and cosmetically fully revised turntable fleet since autumn 2020 – and incoming orders like you wouldn't believe.

Second from bottom

Since the price tags for the turntable models Ascona, Invictus and Co. are already rather unpleasant, we ordered the "second smallest" model for a review, the Double X for about 7000 euros together with the

Included in the delivery of the still compact Acoustic Signature Double X is a leather mat with small gaps for the silencers. This makes the visual appearance a bit more discreet. An optional very high-quality dust cover (300 euros) is also available.

Acoustic Signature arm and pickup. Yes, this is also big money, but an encounter in real life with this machine will instantly put the price into perspective. Such a quality of craftsmanship and so many "brilliant" details are rarely found in such a coherent constellation.

The Double X relies already on the gold-plated brass silencers for the platter damping. The brass has no actual contact with the platter, only the two rubber rings surrounding the silencers. This approach is admittedly a lot more costly than a platter with just an underside soothed by rubber layer (the Double X has this as well), but metrologically clearly superior, as Frohnhoefer says. And in case of doubt the boss will rather opt for the better way, even if this should lead to a moderately higher price. This intransigency runs like a golden thread through the entire turntable.

The platter made of anodized aluminum puts ten kilos (22 lbs) on the scales or the bearing, respectively. The latter answers to the name of Dura Turn Diamond and avoids a typical bearing problem: when a heavy platter applies pressure onto a bearing ball which, by its very nature, has only minimum contact with the bearing bottom, it will displace the oil that was filled into the bearing for lubrication which results in a higher level of bearing noises. Moreover, in the long run the ball will also grind itself into robust plastics like Teflon, thereby increasing the contact zone and hence the noises. For this reason the Dura Turn Diamond bearing does not only use a bearing bush of sintered bronze for a permanent lubrication (the oil quantity picked up by the bronze could be markedly raised in the course of development), but also a self-lubricating plastic bearing bottom. So even at this crucial point lubrication is not an issue which the customer will ever need to think about.

The bearing is maintenance-free: the oil must never be replaced and will always stay put since it's stored in the material. Although it would actually not be necessary, the vacuum-hardened stainless steel shaft is given an elaborate plasma coating as it's also used for industrial milling tools. The 3/1000th of a mil¬limeter (0.000019 in.) thin coating makes the surface as hard as a diamond with even less friction (the developer speaks of a friction coefficient reduced by 60 per cent). Finally the pressfit tungsten carbide bearing ball couples the axle to the noise-damping bearing bottom. On the whole this is simply one of the best platter bearings one can imagine – a 15-year guarantee says it all.

Motor & belt

More special features can be found in the drive. Let's begin with the belt. Plain driving belts are usually made of rubber or silicon strips the two ends of which are simply glued or tied together (there are also rubber belts with glued upper and lower sides). So normally there's a point where the belt

The axle made of vacuum-hardened stainless steel features a plasma coating and rests on a tungsten carbide ball.

has a little bump which can be detrimental to synchronization. Acoustic Signature relies on square instead of round rubber belts which are cured as if they were a stocking. So we get some kind of hose which is then cut into "slices". These slices, which are actually rings, are the driving belts: free from impurities, knots and glued areas. In addition the belts run in a downward opening V-groove on the pulley. Thus the belt makes contact with the groove on its sides, but doesn't touch the groove at the edge. Result: the unattractive moving up and down of the belt on the transmission zone of the platter is no issue here. To minimize compression and elongation effects of the rubber before and after the pulley (buzzword: wow and flutter), Frohnhoefer also relies on using two belts which run in separate grooves and by no means stand out as dual belts at first sight.

Sinus & cosinus

It's not unusual that the energy supply in high-priced turntables is optimized and, as the case may be, works fully detached from the mains grid, for example by generating an independent sine. Also in the Double X a mi¬crocontroller generates sine and cosine artificially. Since Acoustic Signa¬ture sells worldwide, this is also very convenient because the motor will always function perfectly irrespective of the mains voltage and frequency. An oscillator is not used here, but a digital power amp which amplifies the signal generated by the microcontroller so that it's strong enough to drive the motors. But there is more. In the course of the brain¬storming the idea for the AVC came up. The three letters stand for Automatic Vibration Control. How does it work and what's the point? Even very high-grade motors have production ¬tolerances which cause coils and poles to be aligned not 100% correctly. This results in vibrations which are captured again at Acoustic Signature in other ways: the distortions are measured in real time and offset in real time by adapting the phase shifts to the mo¬tor signals. This control/correction takes place every 30 minutes. For this purpose the electronics determines the ripple current on the DC voltage and steps in, if need be. This ensures that the motor will not lose any of its precision during its service life.

The multi-layer chassis features three layers of MDF, steel and multiplex glued together by a flexible adhesive.

Frame & arm

Platter bearing and drive sit in a sophisticated heavy "multi-layer chassis". It features three layers of MDF, steel, and multiplex which are glued together using a flexible adhesive. The top side shows a macassar veneer, one of the few ingredients which are not of German origin (one can also buy the device in black allover). With 6.4 cm (0.25 in.) the frame is high, but not obtrusive. Seven layers of piano lacquer finish round out the high-class appearance of the 14 kg (30.9 lbs) chas¬sis.

At 1350 euros the mounted TA-500 NEO arm is the entry-

Perfectly crafted and equipped with a superb lift, the TA-500 Neo is very pleasant to operate.

level door into the Acoustic Signature arm range. A fair price. Equipped with a dual-layer carbon tube, a smooth-running arm lift, internal Mogami copper wiring and a very decent 5-pin phono cable from Audioquest, the arm doesn't miss out on anything. Nine inches long, a gimballed bearing system, a brass counterweight and Rega geometry should also be mentioned, but to me the highlight was the included adjustment template which makes both the arm installation and pickup adjustment a breeze. It's the "smallest" of the four (actually equal-sized) MC pickups which are made by Ortofon to Acoustic Signature's specifications: for 900 euros the MCX1 offers an elliptical stylus cut, copper coils and a CNC-milled, resonance-optimized housing that was developed pursuant to the finite element method. It delivers 0.55 millivolts and would like to be terminated with 100 ohms.

Frohnhoefer produces nearly all parts inhouse. Only a few components are supplied, e.g. the motor electronics. But almost none of the supplied parts travels more than 50 km (31 mi).

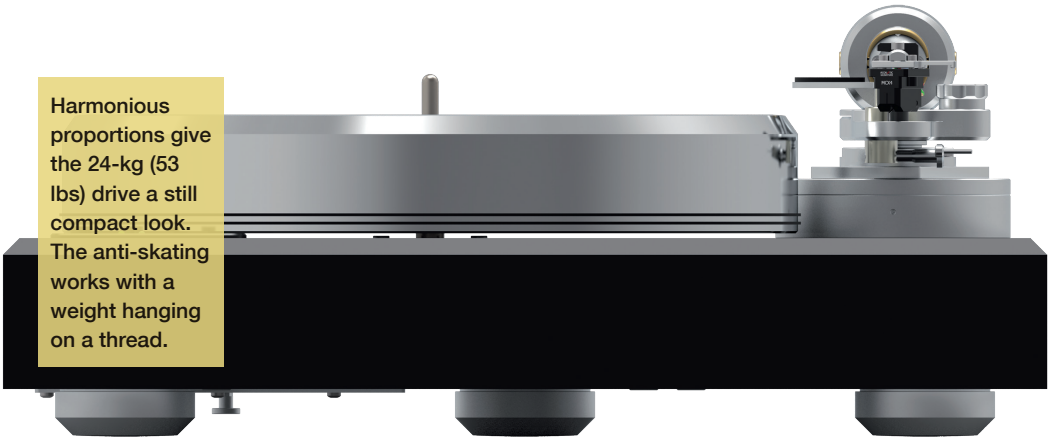
Laboratory & listening room

In the lab the turntable did just great. For such a heavy platter the rumble values are very good and although there would have been more in it, this won't matter in practical use. Wow and flutter as well as the nominal rotation speed are likewise flawless.

The 10-kg (22 lbs) platter takes 16 seconds to reach its nominal speed. And the same time again for you to realize how good this trio is. The delicately resolved cymbal on Nirvana's "Lithium" made us prick our ears, the deep imaging of "Blueprint" by the Rainbirds raised the bar, and "Mama Look A Boo Boo" from Belafonte's first concert at the Carnegie Hall finally took the cake: dynamics, imaging, separation – everything on world-class level, an absolutely thrilling trumpet which showed no trace of edginess plus very cleanly articulated sibilants.

But the three of them can also put forward sentiment: with a very natural voice rendition and a superb feeling for atmosphere "Bright Horses" by Nick Cave's "Ghosteen" moved us to tears. At that the excellent clarity of reproduction always benefited the experience. A turntable for a long, happy hi-fi life.

Alexander Rose-Fehling ■



Harmonious proportions give the 24-kg (53 lbs) drive a still compact look. The anti-skating works with a weight hanging on a thread.

stereoplay Highlight

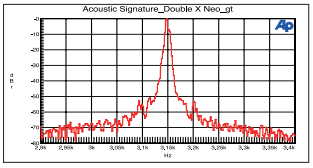
Acoustic Signature
Double X NEO + TA-500 NEO

6.350 Euro

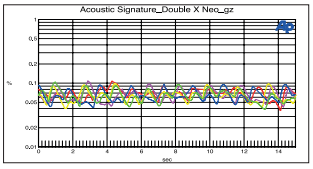
Distribution: Acoustic Signature
Phone: +49 (0)7162 / 20 79 70
www.acoustic-signature.de

Dimensions (W × H × D): 44 × 15 × 35 cm
Weight: 24 kg (53 lbs)

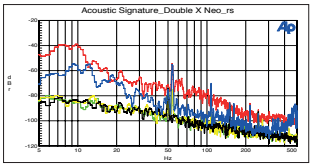
Measurement diagrams



Wow & flutter tonal spectrum
Very good constancy, the Double X also keeps the nominal speed very well



Wow & flutter vs. time
No anomalies, no regularities, no problems



Rumble spectrum
Considering the mas¬sive 10-kg platter the rumble values are very good

Measured values

Wow & flutter , bewertet	±0,10%
Nominal rotation	+0,19%
Rumble, (weighted) record/coupler	73/77 dB B
Tonearm weight class	medium
Power consumption (standby/operation)	0.9/4.5 W

Evaluation

Bottom line: The Acoustic Signatures Double X is a joy for the eyes: perfect engineering meets first-class finish and (optionally) macassar wood. However, with its uncompromising design the Double X is also a feast for the ears: the elegant, noble tonearm guides any pickup safely, the platter rotates in a stoic, controlled manner – the sonic result is beyond any doubt. The combo plays in an easy, transparent way, remains always clean and bullet-proof even with dynamic peaks. This is money well spent.

Measured values	Field test	Value
8	9	10

stereoplay test verdict

Sound 60

0 10 20 30 40 50 60 70

Overall score	**87 points**
Price/performance	**high-end**