

# TW-Acoustic Raven AC – setting new trends.

*By Holger Barske, Editor in chief, LP magazine (Issue 6/06)*

Today, the Raven AC has found its way to Duisburg, along with an exquisite tonearm by the name of Grandezza from the Swiss manufacturer Da Vinci, which TW-Acoustic currently distributes in Germany.

The big Raven carries the suffix “AC” and proudly shows off the three motors it uses to drive the platter. This combination is by no means cheap: the turntable alone costs €7,800, the three motor version a further €2,000, making it nearly ten big ones. The Da Vinci goes for a cool €4,800, so that’s not exactly bargain basement either!

Let’s just call to mind once more the Raven’s construction details: we are dealing here with a thoroughbred solid chassis turntable whose frame is machined from a specially developed polymer, a mixture that Woschnick has cast into thick billets from which the curvaceous baseplates are milled. Each corner has a stainless

steel dais, each of which is capable of carrying a tonearm – and there have actually been sightings of Ravens with four arms. Today, the armboards are thick bronze plates screwed to the four towers of steel. Tom Woschnick is a self-confessed fan of Stillpoint feet and often equips his turntables with three of the American resonance dampers (tested in LP2/06) – as was the case with this test sample. Meanwhile, all Ravens come as standard with the relevant mounting points. Height adjustment is no problem as each of the three feet is individually adjustable by a screw thread. In the centre of the mighty baseplate rests a thick stainless steel plate, which carries the monumental bearing shaft. This shaft does not contain a single ball bearing, instead it is machined to a convex dome which fulfils the same function. The platter that is borne thereon is also turned from the solid polymer (at least in the case of the ‘ordinary’ Raven).



***Monumental: The fully equipped Raven AC takes up serious shelf real estate and considerable capital investment, but plays like a dream.***

The AC version marries this with a solid copper disc. This increases the moment of inertia considerably and changes the structure's resonant characteristics noticeably. Tom Woschnick wouldn't be the perfectionist he is if the copper disc were simply plonked on top. Rather, the copper disc is thoroughly screwed to the polymer platter and only when it is immovably joined to the platter does it go to the lathe for finishing. According to Woschnick, such tight rotational tolerances are indispensable and this is the only way to achieve them. By the way, the abbreviation AC stands for *Ars Cyprium*, Latin for "ore from Cyprus", or copper. A coat of varnish gives the precious metal a long term protection from oxidisation, while the final contact to the record itself is via a "Millennium M-Mat" record mat – a wafer thin carbon fibre disc coated on one side with velvet.

This combination of materials is unusual and did not originate at the drawing board. Rather, Tom Woschnick spent years trying different things out in his quiet little room before the Raven took shape. That, in combination with the fairly unique manufacturing extravagance – TW-Acoustic has practically no suppliers and each part is hand-made by the boss himself – may well be the reason that the Raven has made such a splash both nationally and internationally. Meanwhile, there are pretty serious delivery times – demand has outstripped the capacity of the painstaking manufacturing process by a considerable margin. The Raven is driven by a high torque DC motor, controlled by a microprocessor based motor control. Even a single motor is capable of spinning the platter up to speed in under a second, yet here, no fewer than three of the motors (from specialists Pabst in the Black Forest) pull on a flat belt machined to a thickness accuracy of one hundredth of a millimetre. I said that the motors originated from Pabst – Tom Woschnick leaves no stone unturned in his pursuit of perfection – he's even made changes to the magnets, which I am reliably informed is no walk in the park! A central controller provides the three motors with a unifying beat, allowing these three heavy power units to run in total synchronicity. Yes, there are a couple of turntables on the market with three motors, but I've never seen a configuration like this before: the motors are situated to the left, right and centrally in front of the turntable.

A single belt runs round the platter and over each of the motor pulleys in succession, which surprised me at first. One of the usual arguments for a three motor solution – symmetrical drive without radial forces on the bearing – collapses. I can't really believe that a noticeable increase in torque would result, because for that, dividing the forces across three drive belts would make more sense. Actually, considering the low contact angle of the belt against the platter, I'd expect this configuration to *lose* torque. Tom Woschnick simply grins when confronted with this objection: "I've tried everything – it simply sounds better like that." We shall see... (or should I say hear...)

The Raven AC can be used with almost any tonearm imaginable thanks to its flexible armboard system, and Woschnick doesn't push the use of the Da Vinci tonearms he distributes. However, the beautifully crafted Da Vinci arm practically sells itself. We're dealing with a gimbal mounted construction here, braced between ruby-tipped bearings with zero play – pure watchmaker's craft, which is precisely where the Swiss manufacturer's bearing technology originated. Every metal part of this precious jewel is made from shimmering matt bronze. Tom insisted on aluminium for the headshell alone, and even so the Grandezza has an effective mass of 18 grams, with the normal bronze headshell it's even heavier (the aluminium version is only available in Germany). The arm tube of the twelve-incher – there are also shorter versions with 9 or 10 inch effective lengths – is made from wood according to current trends. In this instance the wood is Grenadilla (African blackwood). This material, when sufficiently dried, is one of the hardest woods there is. Three sliding counterweights serve to set the tracking force, and normally you will need all three – only when using real flyweight cartridges will you be able to leave one of the rings in its fine wooden box.

The Grandezza possesses an "over-and-under" output terminal with two phono sockets, naturally these are the excellent NextGens from WBT. This means that to connect to the preamp or phono stage you only require a normal phono lead and an earth lead, thereby simplifying cable experiments greatly. The arm base is reminiscent of the classic SME, and fits the relevant base – the Da Vinci's geometry is the same as the British

classic (with the exception of the 10" version). The Swiss arm implements magnetic anti-skating, the force is altered with a simple adjustment screw. Assembling the equipment isn't the easiest thing in the world, because the three motor version of the Raven takes up serious shelf space: you'll need to clear 67cm width and 57cm depth in order to accommodate this monumental turntable. Also, that shelf had better be sturdy as the whole thing weighs something in the region of 70kg (154 US pounds). It never ceases to amaze me with what energy this apparently delicate turntable resists any attempt to move it! With the 'basic' Raven from the test in LP still in my ears, the Raven AC (initially with one motor and equipped with an SME M2-12) competed against my tried and trusted Transrotor Fat Bob. Whilst the 'little' Raven made life difficult for my aluminium title defender, especially in its favourite discipline – an emphatically dry and dynamic style – the Raven AC goes a different way. The AC's style is less brutal and spectacular, but noticeably more balanced. Where the Transrotor – and especially the original Raven – in terms of raw dynamics can sometimes overwhelm the sensibilities of more sensitive souls, the Raven AC scores with its composure and more subtle form of stamina which, though it pains me to criticise my beloved classic, is simply more correct. The Rotor irons out some of the nuances, where the big Raven casts a spotlight on even the finest detail, and that's with just the affordable SME M2-12. Once the Grandezza takes up the reins, the sound loses every trace of technicality and opens up a truly wonderful window into the music, as long as the

cartridge is suitable. 18g effective mass requires a pretty tautly clamped cartridge, something along the lines of a Denon DL103 or Ortofon SPU. Unfortunately, my ideal partner for the Grandezza isn't quite so affordable, it goes by the name of Clearaudio Goldfinger (LP 1/06) and goes for a somewhat immodest €7,500. That said, the top flight cartridge from Erlangen really is magical in harmony with the Swiss arm. The Da Vinci tends to sound delicate, thereby taming the merciless Goldfinger perfectly. Not a trace of sharpness, outstanding tracking across the entire frequency range and an overflowing, precisely calculated spatiality. I wouldn't like to bet that I've ever had such a fantastic combination of turntable, arm and cartridge in front of me before.

So what more can one expect from a Raven with an extra motor or two? With a second motor, absolutely nothing. I have to confess that I was unable to notice any reproducible difference. But add a third motor and the thing starts to take shape. The changes aren't dramatic but they are perceptible, the icing on the cake of an already perfect performance. Here a little more fervency in the vocals, there a tad more resplendence in the brass section, or perhaps during the really quiet passages, you simply get the impression of more peacefulness. Is that worth the extra €2,000? Let's not kid ourselves: when you're in this league, you'll spend the extra, and rightly so: then you'll have removed any doubt that you have acquired the finest turntable money can buy.

*Holger Barske*

### **TW-Acoustic Raven AC/ Da Vinci Grandezza**

- Price from 7,800/4,800 Euro
- Distribution TW-Acoustic, Herne, Germany
- Telephone +49 23 25 668 484
- Internet [www.tw-acoustic.de](http://www.tw-acoustic.de)
- Guarantee Lifelong/2 years
- Weight approx. 70kg (154 US pounds)
- Dimensions (W x D x H mm) 670 x 570 x 210

## **LP the bottom line...**

"... The simple truth is: there is nothing better.

The big Raven offers a perfectly balanced synthesis of power, subtlety and tracking. Tonal idiosyncracies are totally alien to it, as are any forms of limitation.

The Da Vinci Grandezza has somewhat more character and when combined with the right cartridge, will transport you to sonic Nirvana."