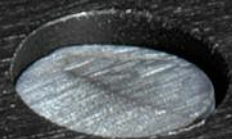


SoundSmith





AUTO-MUTE





Cartridge Soundsmith Strain Gauge

Words: Uwe Kirbach Photos: Rolf Winter

System questions: solved

Is the industry half-asleep? Or are there other powers at work preventing Peter Ledermann's Strain Gauge pickup from being the most hotly-discussed cartridge on the market? Either way, it's a scandal.

For weeks, I've been moved by two things in my immediate environment: there are the 1400-plus masterpieces from great artists, some of extremely dubious provenance, which the collector Cornelius Gurlitt had managed to keep hidden from public view not far from me in Munich for decades. Their value is said to be at least a billion Euro, which led to even greater oohing and ahing than the recent record figure of well over a hundred million Euro that a single Francis Bacon piece recently reached. Our copy-and-paste present is obsessed with originals, with the non-copied.

At the same time I was able to listen to the new version of the Soundsmith Strain Gauge (internally known as version 4). Here I was moved not only by the sonic quality, which, in short, well and truly shifts one's perspectives on modern vinyl replay. I was certainly far from indifferent that such a development, such a breakthrough, had, up to now, hardly had any reaction from the market. Was it ever, anywhere, hot topic number one during the great ana-



log revival of the last few years? Since the introduction of Soundsmith's first generation of Strain Gauge seven years ago has it ever been the cover story of any magazine? Not as far as I know.

Yet in our industry, for us sound freaks, the whole point is supposed to be all about getting the best possible fidelity to the original sound. And anyone who has ever spent a few moments listening to a Soundsmith Strain Gauge in a really good system will realize that in all important aspects it succeeds in precisely this. It possesses a level of detail resolution that even the best cartridges on the whole can't quite reach. And without any of the artifice of many a brilliant developer of MC cartridges, who transform their high frequency ringing into an overly revealing high definition, often described as "analytical." The Strain Gauge 200 has mastered its fine resolution without any tricks, as well as the bass, with huge orchestrations, and in the thickest of musical turmoil, with greater composure than others.

Reference equipment

Turntables: Brinkmann LaGrange 2-Arm/RöNt, Nottingham Deco **Tonearms:** ViV Rigid Float, Nottingham Anna II, Thales, Brinkmann 12.1 **Cartridges:** Kondo IO-M, Transfiguration Orpheus L, Ortofon Cadenza Mono, Air Tight PC-1 Supreme, Brinkmann EMT ti **MC step-up transformer:** Kondo KSL-SFz **Phono stage:** Kondo KSL-M7 **CD transport:** Jadis JD1 Pro MkII **D-A converter:** Jadis JA 80 (2010), Gryphon Reference One **Tuner:** Marantz 10B **Preamplifier:** Kondo KSL-M77 **Power amplifier:** Jadis JA 80 (2010), Gryphon Reference One **Loudspeakers:** Marten Bird 2 **Cables:** Kondo KSL-LPz, KSL-SPz2, KSL-ACz Signature/Furutech E50(R), Acoustic System Liveline RCA Special, Harmonix Golden Performance, Aural Symphonics Magic Gem v2t, Adagio Audio Digital Reference **Accessories:** Hensler Cablewave NL-7 + NP-1000, Magnan Signature power strip, Audioplan Powerstar, Antispikes, Acoustic System Resonators, Shakti Hallograph, Harmonix RFA-78i, RF-999 MT, TU-220 MT, TU-210 ZX, MY-TU-201, Tuning Spike Base RF-900, Shakti Stones, HRS Salamander Design cabinets, Shun Mook Valve Resonators, Mpingo Discs, L'Art du Son CD-Cleaner/Conditioner + Record Cleaning Fluid, Stylast

Perhaps the high price is one reason for Soundsmith's low level of brand awareness, "high end's best-kept secret," as its proprietor and developer Peter Ledermann put it. But in comparison to others, the Strain Gauge isn't as expensive as its price would at first suggest. As you connect the corresponding preamp (in this case the SG-200) directly to a line-level input on your amplifier, you dispense with the need for a phono stage. This alone, at the appropriate quality level, would cost more than the Strain Gauge including its preamp. And it's precisely here that I wish to stop being surprised at why this pick-up from north New York has found so few friends in the market thus far.

Instead, let's plunge straight into the Strain Gauge's product history and technology. In German, its name translates approximately as "stretch measuring strip," which gives a pretty good description of its mode of operation: instead of moving a coil or magnet, the other end of the cantilever is attached to one ultra-thin silicon semiconductor per channel. Each of these has a bias voltage flowing through it, and the tiniest of movements creates a corresponding signal. This has two principal advantages: firstly, the moving mass, without coils or magnets, remains very low, only about 20% of that of most high end cartridges. Mechanical and electrical advantages: in



the true sense of the word, literally “unburdened” following of the groove deflections, zero energy storage or resonance storage in the moving elements, no saturation effect, no non-linear magnetic fields. And secondly, this technology does not require RIAA equalization, which is the other sonic hurdle that conventional pick-ups have to overcome.

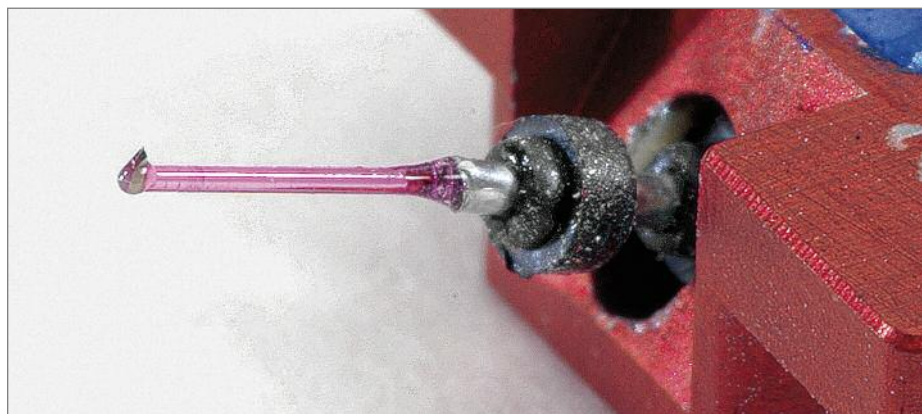
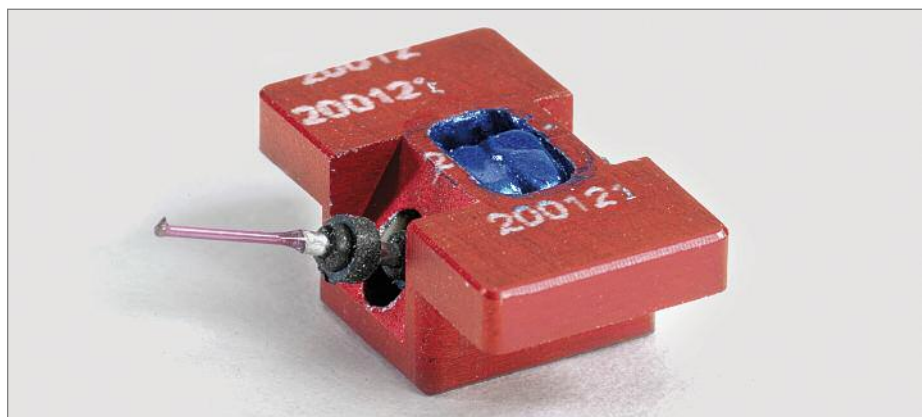
Understanding why the Strain Gauge requires no RIAA compensation network requires basic technical knowledge and is not intuitive: while conventional pick-ups produce their signal according to the speed of deflection of the needle in the groove, it's different with the Strain Gauge. Here, the absolute size of the groove deflection is what counts. That's why it delivers distinctly higher output voltages in the bass, which reduce as the frequencies rise. Accordingly, the Strain Gauge transmits signals with an inverted RIAA curve, the opposite of that with which the bass is re-

duced and high frequencies emphasized during the mastering and cutting process.

This incredibly elegant solution, to be able to recreate the original signal profile without the need for any RIAA EQ simply through the different technology employed in a Strain Gauge, is not Ledermann's invention, but he was first to perfect it. Sao Win professionally developed this technique for record reproduction with his SDT-10 in the mid-Sixties, followed by the commercially successful Panasonic EPC-450/451 in the Seventies.

When exotic exciter-type pick-ups from Audio Note Japan or Stax were making a splash in the early Eighties, I was also able to listen to the Panasonic Strain Gauge. Though that sounded incredibly fast and clean, it was so coloured and unbalanced overall that I quickly put it aside. Peter Ledermann reported that he'd been working on his own version of the Strain Gauge since the Seventies and had needed at least 500 prototypes before he could coax anything worthwhile out of it. He explained how tight the necessary tolerances are: far more critical than with normal pick-ups. Between 1980 and 1991 he conducted research in parallel with the IBM think-tank in Yorktown Heights.

Later, he was supplying friends with improved versions of his Strain Gauge. But it wasn't until 2006 that he deemed it sufficiently developed to bring to market. So it's understandable that he keeps pretty schtum about his technical solution. In the discussions I had with him about the Strain Gauge, and



Long front projection: the cantilever sits unusually far back in the system body

Interchangeable: replacement stylus modules can be produced for each individual system

Neat workmanship: ruby cantilever with perfectly oriented line contact diamond



RIAA equalization: not necessary, a gentle smoothing of the curve happens here



From the output connectors straight to a line-level input

in all the e-mail correspondence between us on the subject, his answer as to what was so extravagant about the development and manufacture was always just “Everything!”

His extraordinary accomplishment cannot therefore be described in detail. However, to ascertain it acoustically should be a matter of a few minutes in any really good system. For me, even during the setting up phase it was clear where this was leading: to adjust the VTA (vertical tracking angle), that is to say, the tonearm height, I like to use a piece by Sara Marie Anderson, “Jerry, who runs the wine shop” (on Bergen Havn, Opus 3, 8103). Particularly with styli and cartridges that are sensitive to VTA, you can very quickly hear on this track whether the voice sounds near, full and intimate in front of you, or whether its sounds strangely uninvolved, cool or distanced. It never ceases to amaze me how the accompanying bass can either give this piece such speed and energy, or becomes so lame that you start to think the bassist is threatening to fall asleep; if the VTA is badly adjusted it really does give you the feeling that the bassist is actually playing slower. And right at the beginning of the recording there’s a kind of rustling sound on the right. With lesser systems it’s hardly noticeable, or is just a short toneless noise. With the Strain Gauge, after a quick adjustment it became a completely three-dimensional rustle that was barely distinguishable from a genuine rustle in the room. And the guitar that the track immediately kicks off with didn’t just come in smooth and fast, its body was also not smeared, nor slightly cumbersome, there was simply – a real guitar body.

That’s why setting up the Strain Gauge is easy – any change unquestionably translates into a yes or no. This is thanks to its ultimate transparency – the magic word that I so hate to use because so many people misinterpret it as exaggerated or hard treble. But how else could a single word describe this incredible clarity and spatial structuring, this absence of any “fatness” or excess resonance? And no, it really is far from bright, harsh or artificially analytical. The Strain Gauge is streets ahead of the tricks of so many moving coil cartridges. To make things even easier, Peter Ledermann engraves the correct tracking force for each individual stylus assembly on its transport packaging. On the test sample this was given as 2.3 grams, which was bang-on on various tonearms – after aural optimization it was always pretty much exactly 2.33 grams; with considerably higher tracking forces, the sound gradually got more limp. As one would expect, with lower tracking force, the metrological value

for bass trackability suffered. However, in reality these losses were hardly noticeable. I attribute that to the extraordinarily low tendency towards resonance storage. The high values found on test records are only there to simulate more complex signals. As the Soundsmith SG remains more stable and clear than any other cartridge I know, it need not survive these extreme depth excursions, which will never be found on any record in any case.

From a purely mechanical viewpoint the Strain Gauge is very adjustable, even in difficult cases. Namely, even when the tonearm has no azimuth or VTA adjustment. The interchangeable stylus unit sits on a carrier that can be adjusted by up to 4 degrees in each direction by turning the two large screws in the cartridge housing. Peter Ledermann recommends that adjustments should be carried out on the arm where possible, as adjusting at the cartridge requires a high degree of skill and care. But even so, it's great to have the option. Likewise the ability for the user to replace the stylus himself, which also happens to be cheaper than it otherwise is with normal MC systems. However, the exchange units are always made especially for each individual system. If you want to have a spare to hand quickly for emergencies, you should order a replacement stylus at the same time as you order the complete system.

There are six different styli to choose from, among others, for shellac and wide-grooved mono records, an affordable one with a bonded Shibata tip and aluminum cantilever, and the most expensive model, the SGS6 with a

nude "Optimized Contour" Contact Line profile and ruby cantilever, – a particularly "sharp" version. Our SGS5 test model had a nude Contact Line, also on a ruby cantilever like the SGS6. At no time did I have the need for a different version, as on good, balanced records the Strain Gauge played fabulously, it crept into the recordings, opened up spaces like no other, and presented the interplay and communication between musicians wonderfully clearly.

The Soundsmith gave an exemplary demonstration of how well the chemistry worked between Nils Petter Molv  r and Moritz von Oswald on their new album 1/1 (EmArcy/Universal 06025 3743672, double LP): here the lyrical, sometimes thrusting trumpet sounds of the Norwegian, there the dubmeister's sometimes dissonant spaces. As club music, trumpet juxtaposed with tonal space may well work more simply reproduced. But the way the Soundsmith gives the bleak soundscape a sense of space and unexpected depth, how it imbues the bass with similarly unforeseen inner structures and in so doing, further develops the style pioneered by the likes of Jon Hassel – despite the high class of the other cartridges I've used, I've only heard this with the high-flyer from New York. Yes, the trumpet does possess a little more melodiousness and richness with an Audio Note Kondo IO-M with KSL-SFz transformer and KSL M-7 phono stage. But this is one of the core qualities of the Strain Gauge: it really adds nothing, no mellifluous midrange, no comforting wooly bass, no over-incisive treble. It reads grooves. And since a good many records were mastered and produced for average turntables and cartridges, so it sounds sometimes more, sometimes less compensatory, sometimes more, sometimes less linear with this cartridge.

For example: I have two pressings of Charles Mingus' wonderful CBS Sessions. Nostalgia in Times Square (Columbia JG 35717) always sounded a tad bright, but all the clearer and well-defined for it, which benefitted the perceived interplay, and the full, invariably more balanced Mosaic 3 LP box set that only begins to show its true class as the quality of the system increases. Wanna hear a drum set accurately defined in space? It'll be a while before you get better than Dannie Richmond's drum solo in "Pedal Point Blues" with the Soundsmith. And Mingus' bass in "Strollin'", the trumpet harmonics in the room – here the Strain Gauge reveals the excellent balance of the Mosaic pressing. It shows what it can do even more starkly with two pressings of The Freewheelin' Bob Dylan, an original pressing (CBS SBPG 62193) and a re-issue (Columbia PC8786). Actually the original



Cartridge Soundsmith Strain Gauge

sounds fantastic, but unfortunately fairly worn and scratched. The strain Gauge demonstrates capabilities here that seem almost magical: it acknowledges the crackling impulses much more calmly, “hands them over” so to speak, without them becoming virtually independent due to mechanical and electrical effects in the pick-up – ideal for second hand records. Instead it gives previously unheard contours and physicality – magnificent. The re-issue, on the other hand, is dire: the Strain Gauge deals with it mercilessly, the pressing sounds by comparison thin and lifeless as if it had been made from a bad cassette copy.

No, Peter Ledermann’s cartridge certainly doesn’t produce a generally comforting surrounding, it never artificially ingratiates itself with the listener. As such, the journey through the record collection resembles a roller-coaster ride. From the majority of records, the Strain Gauge extracts more reality – the impression that the sonic proceedings are happening in vivid three-dimensional depth in front of you – than any other pick-up I know. As for the not insubstantial minority of less accomplished LPs, or simply those that were produced for far poorer systems, I’d rather listen to them on other systems. Perhaps that’s one reason why Peter Ledermann also makes similarly expensive cartridges based on the moving iron principle.

What still puzzles me is this: why hasn’t the community of high-efficiency speaker listeners discovered the Soundsmith Strain Gauge for itself yet? Its unbelievably fast start-up would benefit them just as much as its

complete freedom from noise and hum, even with the volume control turned up well beyond normal listening levels. I stuck just slightly below these with R Plus Seven, the new album by Oneohtrix Point Never (Warp LP240, double LP): an incredible soundstorm, electric organ cascades that shake the room with high-speed staccato, with a percussive clattering that the Strain Gauge retrieved from the back of the room through all the madness of this soundtrip with total clarity and structure. It’s astounding what comes under the description of “pop music,” because I’d actually classify this as experimental avant-garde. What’s even more astounding however, is how the Soundsmith Strain Gauge processes all this with such exciting clarity, how it locates each tiny fibre of sound perfectly in space even in the midst of such great turmoil and in so doing manages to generate a pop delight out of all these exertions.

Whether the 1400-plus artworks from the collection in Munich will ever see the light of day, no-one can say. That with the latest version of the Soundsmith Strain Gauge cartridge, you come closer to the original sounds on the LPs than with other pick-ups – of that I am quite sure. □

Soundsmith Strain Gauge pick-up.

Functional principle: Strain Gauge **Output:** 0.7 Volt / 5 cm/s (for line-level input)

Stylus profile: Line Contact **Tracking force:** 2.3mN **Compliance:** 10 µm/mN

Terminating impedance: 47 kΩ **Frequency response:** 0–70kHz **Features:** interchangeable stylus: 750 EUR, SG-6 Contour Contact Line: 950 EUR **Weight:** 10g **Guarantee:** 2 years **Price:** 8590 EUR (includes SG-200 and with the SG-5 Contact Line diamond and ruby cantilever)

SG-200 preamp/demodulator unit

Dimensions (W/H/D): 15 x 8 x 21 cm (5.9" x 3.2" x 8.3" approx) **Weight:** 1kg

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