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Turndtable - Canadian Elegance Revisited

by **W2WDX** » August 14th, 2012, 7:42 am

I recently saw a new turntable called the Kronos at a show in New York City. This turntable is probably one of the best thought out machines I have seen come on the market in long time. It's one of the best tables in its price class at \$28,000USD.

You can check it out at : <http://www.kronosaudio.com>



This table uses counter rotating platters, which acts to cancel out torque usually exhibited on the sub-platter and tonearm assembly when using a suspension type table. This has always been the primary limiting factor in suspended tables. The torque presented by the platter as torsional forces causes the suspension to want to move opposite the direction of rotation of the platter (gyroscope effect). This causes smearing of the sound-stage and other problems. The counter-rotating platters act to cancel out these forces. This frees the suspension to not only work to equalize the force of gravity, but also negate the audio SPL, mechanical impulsive noise & vibrational forces acted upon it from the environment. This was easily demonstrated with a simple test ...

Upon walking in the room and seeing this turntable with an engineers eye, I was immediately draw to it. After a few minutes of looking it over, I turned to find the engineer who designed this well thought out table, Louis Desjardins, looking over my shoulder. I made a fist and held it over the cabinet top it was sitting and turned and looked at him and smiled. He read my mind and I read his. I began to pound hard on the cabinet much to the utter shock of the twenty or so people who were sitting quietly listening. Of course, not a sound came out of the loudspeakers nor did the cartridge mis-track even the slightest. The suspension did its job perfectly, even at extremes. I expected this, however the crowd wasn't and most were sitting there looking at me, mouth agape. The engineer was calm and just grinning from ear to ear, happy that someone could see what the point of his efforts were for, without having to explain it first. The isolation was complete and 100% effective.

The point of this design is to isolate the stylus from the environment, especially the acoustic sound pressure levels which always return to the needle, smearing the sound. This is particularly true for non-suspended turntables. Case in point: I walked up to another table being demonstrated at the show that had no suspension. A very well known one, which shall remain nameless. (It's not worth mentioning IMO). Basically I have always thought of these as logs with needles. I was approached by the designer who went on ad nausea using the all the audio buzzwords. I put my finger up saying, "one minute". I turned to the table and yelled "this table sucks" into the cabinet it was sitting on, and my voice came out loudly through the speakers. I looked at him, shook my head and said, "Buzz isn't gonna make up for that design flaw, is it?" I then walked out.

I admit I am a bit of a hard case when it comes to the lies told to consumers, but with good reason. More than any other industry in history, with the exception of snake oil sales, the amount of complete BS in the Hi-End audio business is and should literally be criminal. I remember back in the early 80's I attended a symposium on "*new hi-end audio cable technology*" at the Audio Engineering Society (AES) Convention being hosted by a now famous cable manufacturer. When the engineer from the company, who had already used about fifty pseudo-physics buzzwords, described his wire as "... *a proprietary purified fractal cupric lattice structure*", I stood up in the middle of the crowd of a few hundred people and pointed my finger at him and yelled, "**BULLSHIT! Thaaaaat's bullshit! ... you mean copper wire. That's the normal chemical structure of copper wire! ... Bullshit!**". The uncomfortable laughter by the room of engineers was notable, and it made me a little notorious in the Hi-End biz from then on.

As a member of AES and a long time design engineer, it was at that moment I realized the Hi-End industry was about to begin to perpetrate mass fraud on the public. And that's why we now have ordinary Teflon jacketed Belden cable designed for control cable bundles in Boeing aircraft being terminated, shrink wrapped and bundled in fancy webbed tubing being sold as speaker wire for \$32,000 per meter. You can buy the same core cable online from a Belden distributor (at retail prices) for about \$24 per meter. Ok ... so it's just wrapped in black rubber. So? It's Bullshit! And if anybody thinks a block of Myrtlewood under your CD player does anything mystical ... OH! Don't get me started!

Anyway ... I digress. All cynicism aside, every once and a while I do find products designed, marketed and priced that have real science and pragmatic physics applied in their conceptualization, implementation and actual performance. Turntables, being an electromechanical device used to isolate, detect & translate microscopic wiggles in a groove into music, require real science. In this respect The Kronos stands out.

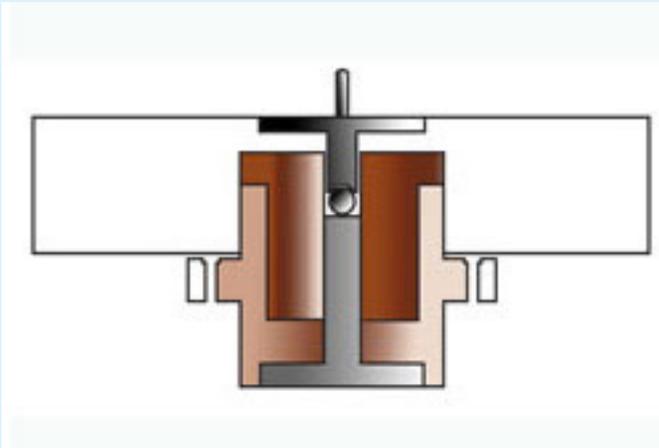
I always have preferred suspended tables for this reason. The most pervasive and destructive forces transferred to the stylus during playback is the music itself. And of course it always returns with slight delay, and with unpredictable phase relationships. The smearing from nulls and peaks, as well from time and phase return inconsistencies is always present in a non-suspended table. And this is regardless of the stand it's sitting on. The tables plinth itself becomes mechanically excited by the acoustic SPL and transfers this energy right back to the stylus. It's simple physics and can't be avoided with the "needle on a log" design.

Mr. Desjardins, the designer of the Kronos was delighted to see someone who obviously had an intuitive insight into his table. He quickly grabbed me and we went out into the hallway and spoke about engineering for about an hour. He's quite brilliant and also very pragmatic in his approach. He is also quite the historian of table designs. He has done his homework very thoroughly, like any good engineer should. He described every detail and the engineering principles (not audiophoolery buzz) around the design of this table. I have a great deal of respect for what he has accomplished and the proof is in the performance. The table just sounds amazing and does most things correctly. If I can quote Stereophile who said in its review, "*The sound was ... fucking amazing!*".

Yes ... They put that in print. That's how good this table is.

The execution of this counter-rotated, suspended concept revisited not only works well, but the Kronos also has an elegant design; both from an engineering perspective as well as aesthetics. It is very reminiscent in appearance and concept to the Oracle Delphi (another Canadian turntable joy). The Delphi is one the best sounding tables ever made, but it very difficult to set-up if you don't know what to do and how to do it. Most Delphi's are not set-up properly, and many people have never heard one that is. This most likely accounts for so many people not being impressed with it. It's not the Delphi's fault, it's the users and especially the dealers fault. The Kronos is much less problematic, since the Delphi was used as one of the points of comparison. Mr. Desjardins understands the Oracle (and many other tables BTW) as well as anyone I have met in the biz. So he made sure his Kronos would not fall into that same set-up trap and designed ease of assembly and adjustment right into it. It's not a "tweaky" table. The Kronos is massive but still sits on a table top or shelf. Incidentally, **when designed properly** like this table, one of the great advantages of suspended tables is the fact that where it sits becomes much less of an issue. The only important issue is level and weight handling, of which the Kronos has adjustable feet anyway. You can use standard furniture with little negative affect on performance; as long as it is strong enough to support the weight safely.. Try that with a Sota, or even a hot-rodged Linn.

With my engineers eye & brain and my musicians ear, I can find very little to fault (if anything) regarding this table; something I rarely can say. It employs two identical high mass platters, one above the other rotating in opposite directions and moving at precisely the same speed. This engineering completely eliminates torsional forces. It uses advanced DC motors with highly precise electronics for control. It employs a CPU which reads speed data optically directly from the separate platters. The CPU makes real-time corrections in nanoseconds. Not milliseconds like in pulse-width modulation syncing schemes that have no reference to the actual rotation of the platters themselves. Most PWM systems take their data from the motors. Since the measurements are taken from the platters, the real objects of interest, the platters counter-rotate precisely in opposition in terms of rotational speed. This is required under Newton's Third Law of Motion, expressed as $\Sigma F_{a,b} = -\Sigma F_{b,a}$. To this end, achieving this precise speed control effectively cancels any torsional forces via precise counter-rotation. Elegant and simple. Not to mention reliable for the life of the table. This truly is the Holy Grail for suspended turntable design achieved. The bearings, one for each platter have their contact points exactly at the center-line of each platters mass & rotational plane.



The wood accents & brushed aluminum finish is very pleasing. It will accommodate just about any standard tonearm. It looks & sounds great with an SME V. This table sounds superb. **ME WANTS!**

Check it out.

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