NASOTEC SWING HEADSHELL…The Headshell of the Century?!

By Dato' Danon Han on Wednesday, June 3, 2020
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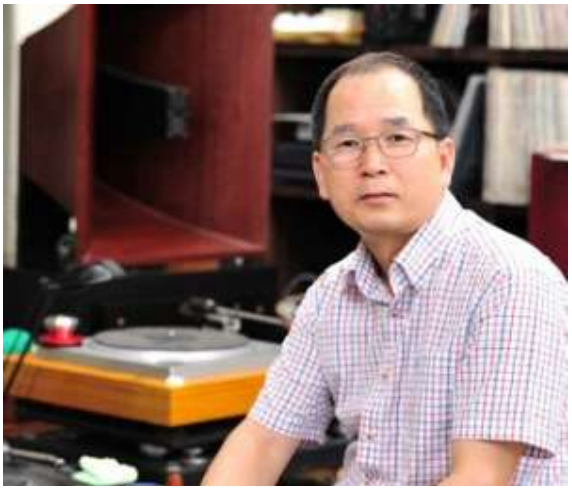
NASOTEC SWING HEADSHELL 202A1 (Patented)

Korea has established themselves as a major player in a number of industries which involve many areas of our life. Chances are there that we have at least one of those Korean made product in our home. I think the brand *SAMSUNG*, *LG*, *KIA*, *HYUNDAI*, *DAEWOO*,…might ring a bell(?!).

Is no surprise that Korea have their own number in the audio industry. However, these audio brands (*Silbatone*, *PyonSound*, *Nasotec*,…) may not enjoy the familiarity of their brethren of other industries, except to certain audiophile.



Dong-chan Son, the Chief Designer of **Nasotec,** was attached to a major industrial player, *LG Electronics* before he established *Nasotec* in *1999*. He started the company by producing **D**o **I**t **Y**ourself audio parts and kits including *OP amps, amplifiers,* and then progressed to *connectors (**Namoo** Binding Post), spike shoes, record clamp, tweezers, headshell alignment block, loudspeakers binding posts, isolation spikes and shoes, record flattener* and*cables*.

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Then a fateful day came when a friend/ audiophile asked him to have a look at his *Clearaudio Master Reference TQ1* Linear Tracking arm. As *Dong-chan Son* looked at the behavior of the arm assembly, especially at its headshell's movement that affected the entire arm assembly,..an idea sparked in his head!

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Imperfect Medium

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Dong-chan Son is no stranger to the inherent problems of the playback of the imperfect medium, the analogue vinyl record, which has been with us for more than a *hundred years*.

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Over those many years, many turntable, tonearm and phono cartridge manufacturers have attempted to create a system where the cartridge ***stylus could track the record as close as possible to the way the grooves were originally laid.***

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The vinyl records are cut using a ***tangential cutting lathe*** such as the *Neumann VMS80*. However, most playback of those vinyl records use the common pivot tonearm where mathematically **only two points** on the records that the stylus will be perpendicular to the grooves. Whereas at other points, it won't be able to track the grooves in the same manner as the record is cut using a tangential cutting lathe.

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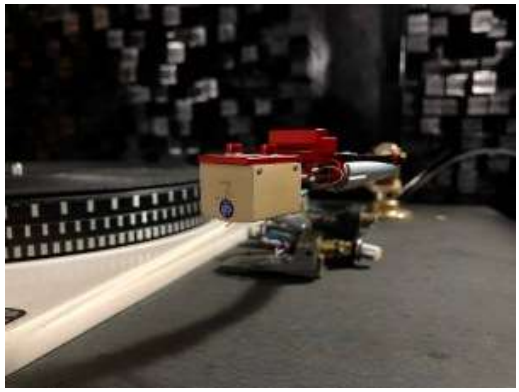

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Obviously the best solution will be a ***tangential arm*** *to track the grooves as they are originally cut(?!)*. No less audio companies have ventured into producing such arm; *Air Tangent, B&O, Brinkman, Reeds, Kuzma, Goldmund, Clearaudio, Cartridge-Man, Harmon Kardon, Revox*,…(estimated there are *fifty eight companies(?)* altogether…not all companies are still operational though). However, these arms prove to have their own set of problems.
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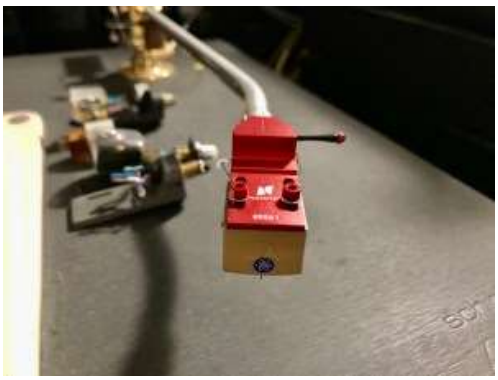

Others having realized the problems of tangential arm, decide to produce tonearm that have the attributes of both pivot and tangential arms. That realization started in the late *1950s* with a *British* company, ***Burne Jones*** with **a pair of parallel arms** that constantly change the angle of the headshell as it traverses the record to provide zero tracking error. Then, it was copied by ***Garrard*** in their famous *Garrard Zero 100SB* and then in their *GT55P* at the year *1971*. Now, in the early twenty first century, we have ***Thales, KL Audio, Reeds,****...etc* to pick up where the others left off, to produce the pair of parallel arms with swivelling headshell.
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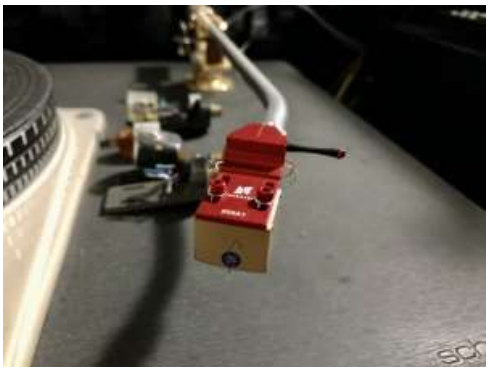

(Even) the swivelling headshell, like any other arms' headshell have the following considerations…remember the imperfect medium (?!).
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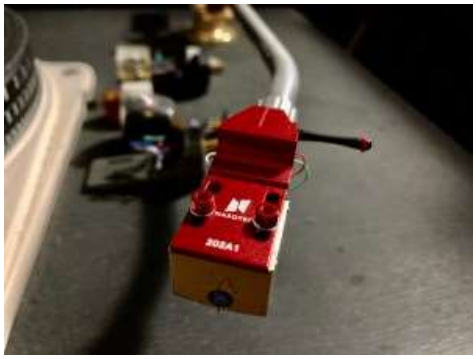

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Given the circular grooves on a round record rotating at a certain fixed speed (33.3 / 45 / 78 rpm) mean ***where the record is being tracked***require slightly ***different angle at the headshell*** *to track accurately*. The first track's or the start of the record's velocity is higher than the last track's or end of the record's. Therefore, slightly more angle or swinging at the headshell where the record is traveling with more friction or faster movement (eg; at the start of the record).

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In addition, at the start and at the end of the record, *even the* ***stylus*** ***tends to track at an angle***. Therefore, one leg of the signal will be slightly earlier adding *phasing* issues, *distortion* and ultimately, *straining the life of a common stylus*. Thus, over the years, that finding resulted in a number of different **contours of stylus**, and **tonearm length** (majority preferred the 12″ length) to tackle the tracking error problem.

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Finally, the vinyl record's ***center hole may not be cut perfectly centered*** with the spiral of the groove…off-center to some degree, that will contribute to tracking error. Comparatively, even with a swivelling headshell, there will be *more movement* and *angling* to compensate for the tracking error.

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Swivelling Headshell's **Other Considerations**

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I have not stress enough to many analogue enthusiasts the importance of a ***leveled turntable***, especially its ***platter*** where the stylus traverses across the vinyl record. The stylus has enough friction and resistance as it travels the grooves…it does not want the unnecessary friction and resistance from an unleveled platter. Not to mention that an unleveled platter will damage the turntable's bearing. Without much imagination, a swivelling Headshell's movement equally require ***leveled azimuth*** and ***overhang*** (which are affected by the **V***ertical* **T***racking* **A***ngle* and **V***ertical* **T***racking* **F***orce*).

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Similarly, the ***type of record*** being played also affect the freedom of movement of the swivelling headshell. The ***thickness*** and ***weight of the records*** co-relate to the **VTA** and **VTF** that ultimately, affect the free movement of the swivelling headshell (eg; *180*g-*220*g can cause the cartridge to *play slightly heavier if a very low centre of gravity at the weight-end*).

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Next, the ***mono*** and ***stereo records*** require different movement of the cantilever of the phono cartridge. The *mono records require but horizontal movement* of the cantilever whereas the stereo records require vertical movement of the cantilever of the same phono cartridge. Therefore, it can be assumed that the *vertical movement of the cantilever for stereo records does not affect the movement* of the swivelling headshell (however, the other above mentioned factors do affect the movement of the swivelling headshell!)

Nasotec own **Swing Headshell**

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Dong-chan Son knew that the swivelling headshell is not a new concept therefore further thoughts need to be given in order for the Nasotec Swing Headshell to be commercially viable…

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Most swivelling headshell feature is part of a total tonearm package thus its higher costing and price. Nasotec Swing Headshell is only sold as a headshell which can be connected to any tonearm with the common ***SME head-shell connector***, thus it will be available to a wider audience and, at a much lower cost and price. Now, Nasotec is offering its Swing Headshell for ***SPU*** *cartridge* and ***Clearaudio*** *Linear Tracking arm*, and in a *number of* ***colors****,…with screws and nuts color matched (Alan key is supplied too).*

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The other tonearms featuring a swivelling headshell may involve multiple moving points/bearings and multiple (dis)connecting components. Comparatively, the Nasotec Swing Headshell itself only involved a ***single low-resistance pivot***, with ***a*** *21st century technology* ***bearing***, and a *couple of* ***miniature springs***, where their tension can be adjusted with the *supplied screwdriver*. (It is recommended to **loosen the springs** at the back of the Swing Headshell that supposedly control the swing movement, before connecting the cartridge, and then tightening them up once the Swing Headshell is affixed to the tonearm).

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Nasotec allow the ***friction from the grooves*** *and/or* ***natural skating force*** to pull the Swing Headshell to *change angle and into perfect alignment with the grooves, as it traverse the record*.

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Therefore, it is important to obtain ***effective swing balance*** where *both side weights are similar*. It is recommended to hit both sides of the Swing Headshell with a *thin stick* and check if *both movements are nearly identical*.

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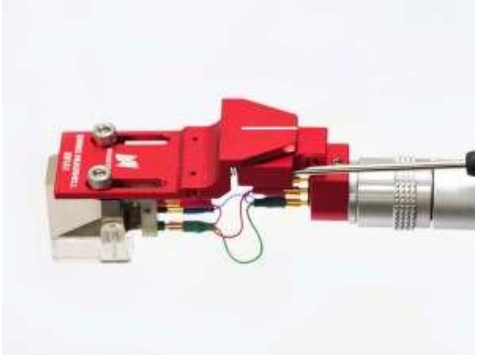

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Make sure that the connection of the ***Cardas Litz Connectors*** of **1.2**mm *go to the* <u>cartridge</u> *and* ***1.0****mm go to the* <u>*tonearm*</u>, and the ***copper wiring*** *(with added* ***insulation****)* between the cartridge and the Swing Headshell does not hinder the swing movement (which is not easy as there is but a <u>*short distance*</u> between the pins of the cartridge and those of the Swing Headshell). It is recommended to make sure that connection is *secured*as ***off centered records*** will cause a lot of movement to those delicate connectors. It is best to allow a ***few days*** *of use* for the Swing Headshell to be more *flexible*.

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Swing to **Sing**, the **Nasotec** Headshell

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I have installed the ***Nasotec*** *Swing Headshell* with the ***Jan Allaert*** *MC100* phono cartridge, at the ***Thomas Schick*** *12' tonearm* on the *Thomas Schick modified Garrard 301 turntable*. That analogue transport is connected to the ***Kronos*** *Phono Amplifier*, which its signal is passed to the ***FM Acoustics*** *268C* preamplifier, then connected to the ***BSG Technologies*** *QOL "Signal Completion Stage"* before to the ***Vitus Audio*** *Masterpiece Mono Amplifier, MP-M201*(**A***nalogue* **F***ellowship* **E***dition*), and finally to the ***Gryphon Audio*** Flagship Loudspeakers, *The Kodo*…cables used are from ***Skogrand***, ***Echole***, ***Vermouth***, ***StraightWire***,*…etc*.

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Playing a record of massive endeavor such as *Eiji Oue* conducting *The Minnesota Orchestra* in **Aaron Copland "Fanfare/ Third Symphony" (Reference Recordings RM-1511, 200g Vinyl)**, where at **"Fanfare for the Common Man"**, I find the presentation *reminded me of my Clearaudio Statement Linear arm on its Statement turntable*. Especially in the area of presenting the ***width*** *and the* ***height*** *of the soundstage*,…and the ***airiness*** of the recording hall of Minneapolis Orchestra. Within that '***dimensional*** *soundstage*', the images of the musicians are well ***focused*** and ***defined***. Their *playing and handling of the instrument* are well ***delineated***. There is a ***distinct*** *and* ***stable*** *separation* among the musicians' seating that it's easy to *imagine the* ***size***, ***scale*** *and* ***depth*** *of the hall*.

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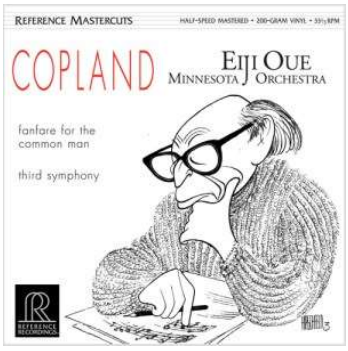

Here, during the play of the **"Third Symphony",** when the big symphony drums are put into action, the ***low bass*** *has the '****quality****' of right quantity*,…and with *articulation, snappiness* and e*xtension*. Remember the above mentioned *'****dimensional*** *soundstage'*…and (imagine) couple that with the *'****quality****' bass* from the drums located at the ***depth*** *of the orchestra hall*…resulted in the *bass charging from the deep depth and break beyond all boundaries of a three dimensional soundstage, to the listening seat*.

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Equally, I find the *humbler endeavor* of a vocalist accompanied by a few instruments is given ***similar*** *treatment of certain expansiveness, separation and airiness*. This is apparent in the play of **Tong Li "Folk Song" (YueSheng Records YSLP-006, 180g Vinyl)**, where even at the last track of side B, **"Velvet Flowers"**, the vocalist, (Ms.) *Tong Li* is ***spaced away*** *from the accompanying musicians*, within an *appropriately scale, expansive* and *airy soundstage*.

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I find the ***Thomas Schick*** analogue transport with the *Nasotec* Swing Headshell has a certain ***attractiveness*** when presenting instruments of natural material as in **Yao YingGe "Wine of Daughter to be Married" (Guangzhou Fenglin Culture Communication Co Ltd FLLP-C15, 180g Vinyl)**. Here, there are so much detailing that bring about a clear awareness of naturalness in those instruments. It is *not just the* ***almost*** **analytical detailing** *of each natural instrument that attract, but the presentation of* ***organism*** *of the natural material* of the bamboo pipe (by *Yanjian Tan*), the Oboe (by *Sihui Liao*) and the Zitar (by *Ying He*).

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That same attribute of organism is evident in the presentation of the voice/singing of **Nah Youn Sun** in **"Voyage" (Silk Road Music SRM008LP)**. It is not so much about the ***detail*** in her voice alone that captured my attention, but the ***control*** *she exerts over the constant* ***fluidity*** *of her breath and its flow*, as clearly evident in **"Calypso Blues"**. Hearing all her

exertions throughout the song make me feels her *struggle* and *emotion*…in a way, makes me ***know her as a person***.

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THE HEADSHELL OF THE CENTURY?!

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I appreciate the many ***thoughts***, ***technicalities*** and ***executions*** spent into the production of the *Nasotec*wing Headshell. It is a ***high quality*** product at a ***compact package*** (instead of an entire tonearms that price many thousands US dollar), that is *connectable to a wide selection of available tonearm*s (with an ***SME connectivity***), with the performance that *reminded* me of the ***sound quality*** **of the** ***Clearaudio Statement Linear arm***…at an asking price around ***US$300***…an easy recommendation,…

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…and winner of the **Analogue Fellowship Analogue Accessories 2020!**

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Website: highendcity.com

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