

HOT TIPS

Alt Joulk van den Hul has, in just a few years become a world authority on stylus design. Simon Davies has been trying to prise the secrets from the man himself



You may well think that a small farmyard somewhere in the backwoods of Holland is an unlikely place to find a highly specialist cartridge re-furbishment operation — but you would be wrong. Miles from civilization, one man re-tips some of the most expensive cartridges on the market with little more than a microscope, a pair of tweezers and his own hands and eyes to help him.

The gentleman concerned is one Alt Joulk van den Hul, a Dutchman who first came to the notice of UK hi-fi enthusiasts following reviews of the EMT moving coil cartridge which he has extensively modified. Eagle eyed hi-fi nuts will also have spotted that Goldring's 900 Series cartridges use van den Hul styli.

What is not so commonly known is that van den Hul operates a cartridge re-tipping service whereby he will replace your standard stylus with his own patented van den Hul tip and optimise the mechanical and magnetic performance of the cartridge. The address where further details may be obtained is provided in a separate panel over the page.

Just before Christmas, van den Hul made a flying visit to this country to see his representative here from the Automation Sciences Company (*former UK distributor*), and also to have a word with a number of his UK dealers and the press. Thus it was that I came to visit Mr van den Hul one bleak Friday in November to discuss with him his cartridge refurbishment service, the intriguing tip shape and its theoretical and practical applications.

From an early age van den Hul was surrounded by all sorts of electronic equipment thanks to his father who worked for Philips and Decca where he was involved in recording work. 'Hands on' experience of all sorts of electronic gadgetry was there on a plate for the young van den Hul.

It was during his military service that van den Hul learned to speak English so fluently and afterwards he put this to good use by teaching physics, the subject in which he qualified, at a whole range of educational establishments, particularly polytechnics and secondary schools.

After writing an article on loudspeakers in the early 1970s, van den Hul found himself in demand as a reviewer. This involvement made him ever more conscious of the importance of his stylus tip to the performance of the hi-fi system.

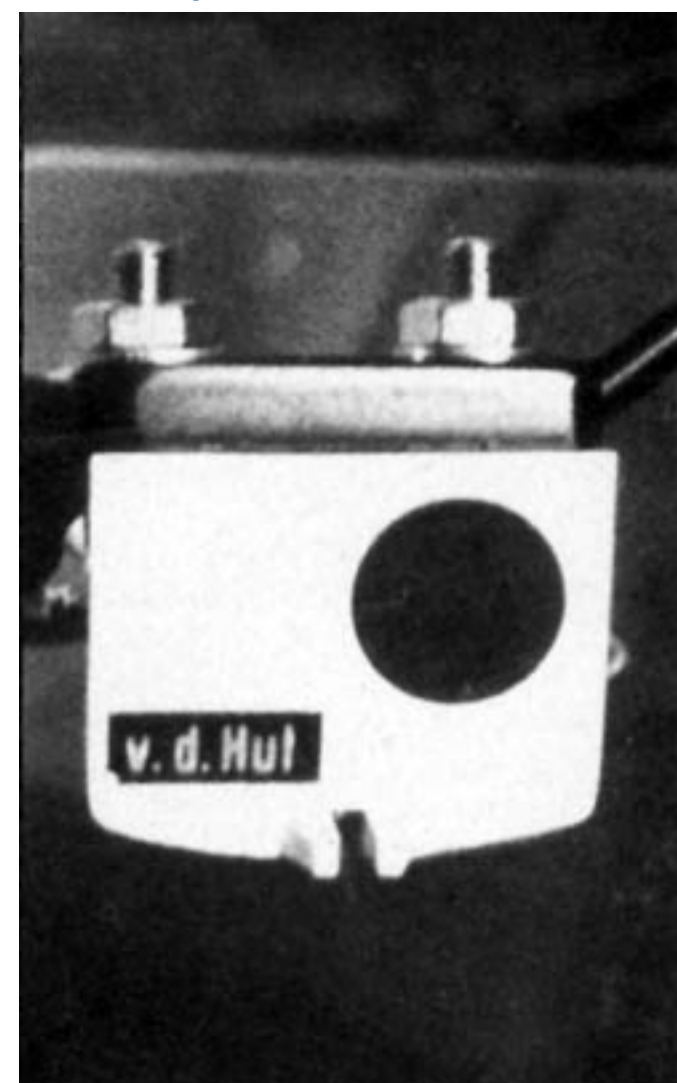
His interest aroused, he visited a certain German diamond polisher involved in the production of stylus tips. The manufacturer concerned was producing a tip shape like a screwdriver head because he felt that this was the optimum shape. Van den Hul disagreed and the manufacturer concerned challenged him to produce a superior tip, promising van den Hul a 'very nice position' with his company if he did.

Van den Hul accepted the challenge and in order to design his tip, he '...blew up the groove very large, imagined myself very small, walked through the groove and visualised in my mind all the shapes that would work well in the groove and those shapes that would work less well'. In other words, he looked at the problem from the stylus tip's point of view.

Further to this mental eye view of the stylus tip, van den Hul also perfected a computer programme to generate numerous permutations of stylus tip. From these permutations he finally chose what was to become the van den Hul tip, both for its optimum shape and its ease of production.

The key to the tip shape lies in the polishing process. Van den Hul produced yet another computer programme to calculate the exact amount of material to be removed during the grinding and polishing process. Needless to say, van den Hul was very reticent about the precise nature of this process but he did reveal, that it hinges on maintaining the natural

The £575 MC-1 cartridge (below) created by A.J. van den Hul (above)



curve of the diamond used in the tip and also that he obtains his diamonds from a firm producing diamond lenses for satellites — close tolerance specialists in other words!

Once he had perfected his stylus profile, the first major company to take any real interest in the tip was the British company Goldring. They used the van den Hul tip in their 900 Series cartridges and have maintained a close relation with van den Hul since that time.

The actual stylus refurbishment service operated by van den Hul himself almost started by accident! Once he had developed his tip, only Goldring took a chance with the tip in full scale manufacture and van den Hul was desperate for 'hands on' experience of working with the tip. Consequently, he offered to put the tip into friends' cartridges and so successful did the venture prove that he found himself with a full scale business on his hands stemming from word of mouth recommendations for the tip.

This is a totally one-man operation carried out from van den Hul's own home in Holland. He completes all the stylus re-tipping and cartridge modifications — rewinding the coils, changing the rubber and so on — by hand with no mechanised aids whatsoever. He has attempted to train apprentices in his skills but the last such person to be taken on managed to ruin 11 out of a group of 20 cartridges. Van den Hul has since carried-out all the work re-tipping cartridges himself!

This highlights another aspect of the van den Hul refurbishment service, the unwritten guarantee to replace any cartridge damaged in the re-tipping process with a brand new unit. His personal service also means that he is constantly plagued with people turning up on his doorstep for running repairs! One gentleman drove through the night to see van den Hul and have the MC-1 stylus he himself had damaged repaired by van den Hul at midnight — and free of charge!

But to return to the tip itself, van den Hul sees the stylus tip as being the most important link in the musical chain. The more information you can extract from the groove, then the greater the listener's pleasure in reproduced music which is, as van den Hul was at pains to point-out, 'my main aim in offering the service'.

To this end, van den Hul feels that, ideally, the stylus tip should be the same profile as the record cutter itself. Unfortunately, this is impossible in practice because as the lacquer is cut by the cutter, the two sides of the cutter should have exactly the same opening angle as the groove. However, as there are no set values for this angle and the cutters vary so much, there is no set tip value to work to.

The tip produced is inevitably, therefore, a compromise between a smooth, rounded tip which is able to follow the groove and a shape approximating to that of the original groove as cut in the lacquer itself.

Van den Hul considers the tip he has now optimised far superior to the tips installed in most cartridges — even expensive moving coil designs which tend to feature the best tips — by the various specialist manufacturers.

As he pointed out, '...a lot of cartridge manufacturers pay a lot of attention to the design and construction of the cartridge body but very little attention to the design and construction of the stylus tip'.

Without naming names, van den Hul told me that a whole range of cartridges with a special selling price of between £20 and £30 have a stylus tip worth perhaps 10 or 15 pence to the manufacturer. For this reason, van den Hul sees his re-tipping process as an easy way of wresting a significant improvement from otherwise well-made cartridges. On the other hand, as van den Hul told me with a wry smile, some cartridges are so poor that re-tipping would prove a futile exercise anyway!

For this reason, very few moving magnet cartridges receive the van den Hul treatment, one notable exception being the Technics EPC205 which van den Hul considers one of the very best moving coil cartridges from a construction point of view.



The mounted van den Hul tip and boron cantilever



The 'Vital' elliptical tip from a Supex cartridge



The conical tip of a Denon 103



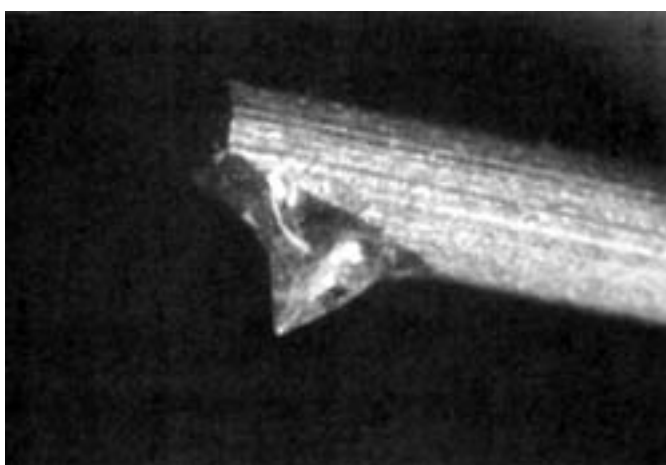
A standard elliptical tip



The Shibata tip was a spin-off of quadrasonic recording



The Pramanik tip used by Bang and Olufsen



The hyper-elliptical Shure tip featured in the V15 range



A front view of the Paroc tip first used by Mission

I imagined myself very small, walked through the groove and imagined the shapes that would work

Most moving magnet designs have, in van den Hul's eyes, an unacceptable amount of stray field in the gap where modulation of the flux generates a 'disturbance' flux strong enough to take out the exact flux variation. In more simple terms, van den Hul believes that the 'disturbance' flux takes away the dynamics of reproduced music and the feel or timbre of the various instruments being played.

As van den Hul's avowed aim is to give people enhanced listening pleasure, his reluctance to consider moving magnets for re-tipping is thus understandable. Which

brings us neatly round to the moving coil cartridges the man prefers and, more importantly, why.

Van den Hul has not special relations with any moving coil manufacturer. His long-standing involvement with EMT is simply because he regards the EMT cartridge as being superior to most other moving coil designs currently (1984) available. The 'flux modulator of the EMT is more linear than many others ... it transforms mechanical inputs into electrical outputs more efficiently than most'.

In consequence, van den Hul took what was essentially an old design — the EMT is basically the old Ortofon SPU design which they sold to EMT — and modified it with the van den Hul tip and other mechanical and magnetic modifications to produce the van den Hul MC-1. The major improvements claimed for this cartridge include greater dynamics, depth of image and instrument timbre or, as the creator termed it, '... the DDT effect: dynamics, depth of image and timbre'.

Other than this particular cartridge, van den Hul has no particular favourites and will re-tip any of the most popular moving coil cartridges. The Linn Asak is one British cartridge van den Hul is happy to modify owing to its popularity and reputation in this country.

Even more interesting than the cartridges van den Hul refurbishes is the fact that he adopts a different re-tipping method depending on the type of music the owner listens to. He is of the opinion that the classical music lover cares more about timbre and the precise reproduction of music than the rock listener. The latter cares more about the tonal balance of a work and the pronunciation of lyrics.

Consequently, careful positioning of the coil, correct magnetisation, changing the rubber and straightening of the wire — all of which minimise crosstalk — are of paramount importance for the classical, or 'C', music lover's cartridge. With the popular music or 'P' cartridge crosstalk is less important but other considerations more so. Further to this, precise sound reproduction requires a light cantilever and so, if the cantilever is changed, its replacement becomes critical for the classical music lover.

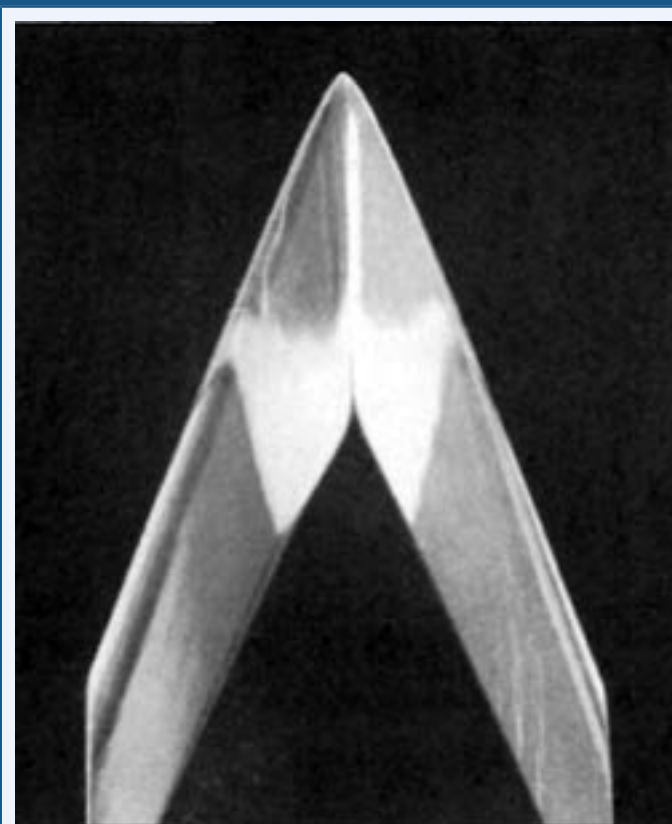
As far as cantilever replacement is concerned, van den Hul chooses to use boron for cantilever replacement because, although not as light as aluminium, it is a more rigid material. However, as van den Hul is well aware, boron is in itself a tuned mechanical circuit and must, therefore, be damped using an aluminium cantilever sleeve. This damps out the high frequency oscillations of the boron which inevitably occur.

The size of the cantilever is also critical. The longer the cantilever, the better the tracking, but the greater mass brings down the rise time and the top end frequency response. (Rise time is a particular obsession of van den Hul's. He believes that the feel and punch of the music depends on a fast rise time and illustrates the fact by pointing to the EMT's rise time of 4.7msecs compared to the much slower time of its rivals). A shorter cantilever improves the rise time and frequency response but tracking ability suffers. A case of horses for courses.

As van den Hul admits, all cartridges have a built-in cantilever resonance in order to flatten-out the overall frequency response. So does the re-tipping process disturb the balance of the original cartridge design?

Not according to van den Hul. Apparently he 'de-tunes' the cartridge after re-tipping and brings down the resonance peak. He then refers to his measurements of the cartridge taken before re-tipping in order to discover the original amount of lift. If this degree of lift has been altered by re-tipping, he restores it to the original value by changes to the cartridge suspension, rubber and so on.

Other advantages claimed for the van den Hul tip are reduced record wear and a longer life for the tip itself. Clearly, as

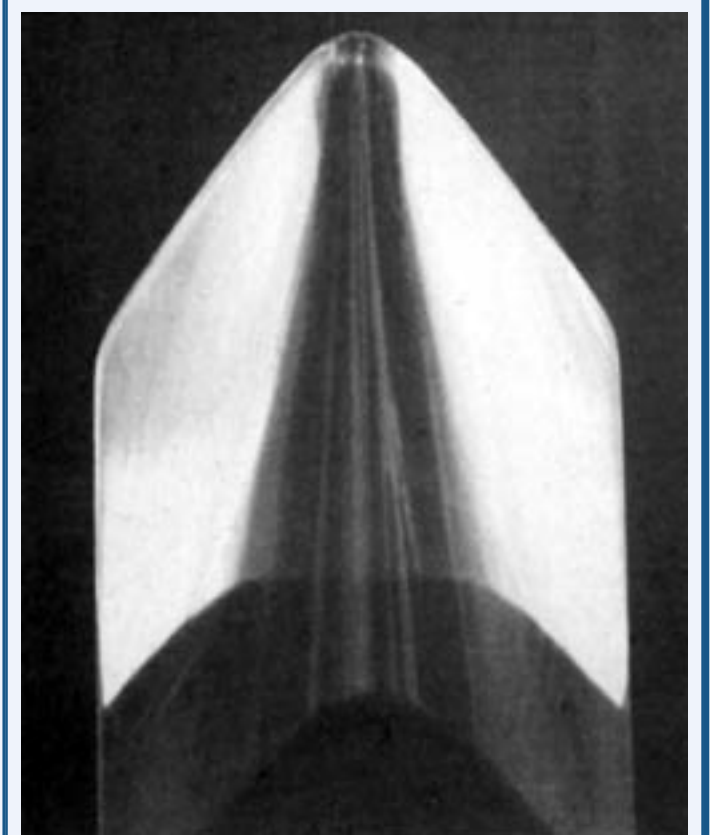
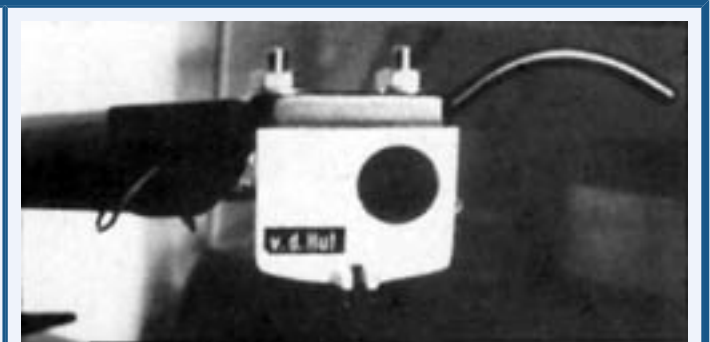


The van den Hul Treatment

In addition to the extensively modified EMT cartridge produced by A.J. van den Hul — the van den Hul MC-1 shown above — van den Hul also offers a range of re-tipping services on any pick-up cartridge.

The service involves the mounting of a van den Hul stylus, cleaning the magnetic material within the cartridge and recalibrating the cartridge to optimise performance. The typical return time is around four weeks.

Further information may be obtained from the van den Hul distributor in your country.



Models of the van den Hul stylus fitted to the MC-1 moving coil cartridge (top right) show tip profile clearly. The very acute angles of the side view (above left) are necessary to prevent uneven wear of left and right groove walls. The front view (above) indicates the radiused bottom of the tip — necessary to stop the stylus touching the groove bottom.

Van den Hul sees the stylus tip as being the most important link in the musical chain

the tip allows lower tracking forces and follows the groove more closely with lower friction levels, your average vinyl disc is bound to last longer. Van den Hul is very fond of demonstrating one particular cartridge with a recommended tracking force of 1.8 grammes actually tracking at a mere 0.25 grammes to prove his point!

The lack of friction in the groove because of the van den Hul shape also greatly increases the life of the cartridge. This is one way van den Hul answers his critics who

claim that you may as well spend the extra money on a better cartridge in the first place. With the van den Hul tip, you should recoup your outlay in terms of the number of re-tippings you will not need to pay for. Since his re-tipping business got underway in 1977-78, he has received back less than 20 cartridges for re-tipping due to wear out over 100,000 cartridges re-tipped during that period. Perhaps there is something in all the claims after all!

As to the future, van den Hul sees considerable potential in the British market. He sees Britain as a discerning hi-fi country which he himself likes very much indeed. Although his operation in this country via the Automation Sciences Company is still in its infancy (1984), he has high hopes that the cartridge refurbishment service will prove popular in the UK.

On the basis of the genuine enthusiasm and commitment van den Hul displayed when I met him, I can only say that he surely deserves the recognition so far denied him on these shores.

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