



Can a moving magnet cartridge get close to a moving coil that costs much more? Audio Technica's three new 700 series models show they can, thinks Noel Keywood.

# Magnetic Attraction

If you want more than just basic sound quality from LP, choice thins out with conventional (moving magnet) cartridges, Ortofon dominating with their Shibata tipped 2M Black (£450). Now Audio Technica

have stepped into this little-contested region of the market with no fewer than three new 700 Series cartridges, the VM740, '750 and '760, prices ranging from £196 to £522. It's a lot of money for a moving magnet cartridge, but you get breathtaking

sound quality I found – close to moving coils costing thousands.

In listing these new models I left off their suffixes for the sake of clarity. Their full titles relate to the biggest difference between them, the stylus. The least expensive VM740ML

has a MicroLine stylus shape, the next up is the VM750SH that has a Shibata shape, and finally comes Audio Technica's flagship model, the VM750SLC with Special Line Contact stylus. Because the stylus assemblies share a body you can upgrade from '740 to '760 if you so wish, perhaps when a tip wears out. Nothing else changes, including the tracking force, so the arm does not have to be re-adjusted.

The new ATs surprised me by being both simple and a bit outdated in some ways, yet very specialised in others. Both Ortofon and Goldring have moved to the use of captive nuts to ease fitment – a convenience I have become used to. After testing Goldring's budget but excellent V magnet E Series in our October 2017 issue – likely made by Audio Technica – I was expecting these new ATs to have a similar arrangement, but not a bit of it. Fitting was a fiddle, not for cack-handed or faint of heart. It was mildly challenging in fact, for reasons I will explain. What you get here are brazenly specialised designs, measurement revealing accordingly

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unusual properties, suggesting the designers have knowingly pursued technical perfection above all else.

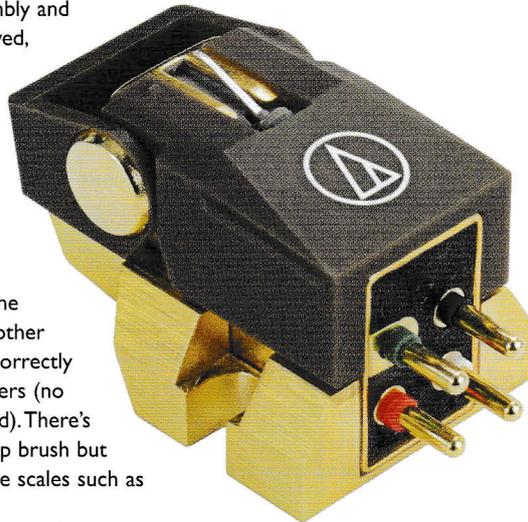
We were sent a VM750SH (that is directly pitched at Ortofon's 2M Black with Shibata profile stylus it would appear), plus replacement

styli to downgrade to VM740ML or upgrade to VM760SLC. These cartridges come in Audio Technica's traditional plastic case, held onto a plastic headshell-like carrier by a single screw. A small orange-coloured slider must be pushed sideways to unlock the assembly and the cartridge removed, using a supplied small screwdriver.

Also supplied are a set of fine headshell leads, three pairs of screws (short/medium/long) and two pairs of nuts, one pair hexagonal the other pair circular and incorrectly referred to as washers (no washers are supplied). There's also a small stylus tip brush but no plastic downforce scales such as Ortofon supply.

Prior to fitting this cartridge its stylus assembly must be removed by pulling it upwards, something that is unique to Audio Technica because of its unusual V magnet arrangement –

The VM Series have a rigid 8gm alloy body with mounting lugs and Audio Technica picture fixing screws pointing upwards in their instruction leaflet so as to place those hexagonal nuts on the headshell's top face – unsightly.



**The stylus housing sits over the fixing lugs and obstructs them, making screw length critical.**

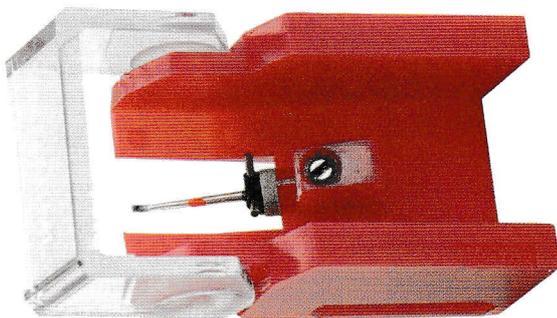
**It pulls upward for removal and when replaced must be fully seated against the body – not easy to ensure.**

However, inserting screws pointing downward as is common raises an issue I encountered: screw length is critical, to avoid obstructing the stylus assembly. In our SME 309's removable headshell the medium length screws were too long, preventing the stylus assembly bedding down fully. The short screws were too short, so I used our own (brass) screws. The hexagonal nuts supplied do not fit the recesses either; only the 'washers' do this. All of which is to point out that fitment is a fiddle; you may need to get a dealer to do it.

With the gold-anodised cartridge body installed it's time to connect up – and the pins are colour coded to assist. With a body weight of 8gms and recommended tracking force of 2gms the 700 series will suit all arms. However, these are specialised cartridges and really need something decent like a Rega or better to perform at their best.

Measurement showed all three cartridges (stylus assemblies) tracked superbly at the recommended downforce of 2gms, so the 1.8gm minimum figure is practicable for those who prefer as little force as

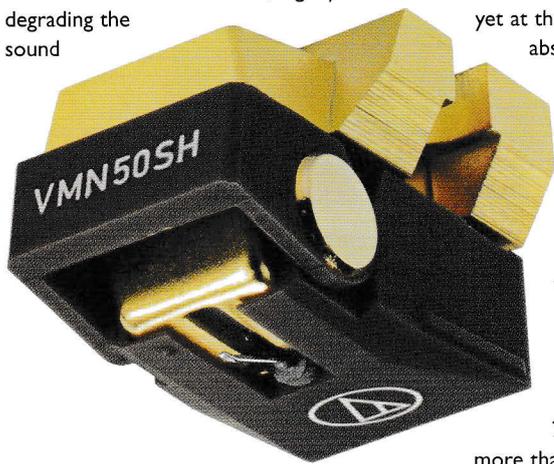
but not mentioned in the rather brief instruction sheet; there is a diagram but it could be better. Whilst I have owned and used ATs over decades and know this stuff, I wonder about newcomers. And these days fitment has become easier than this.



**Tiny cylindrical magnets sit just in front of the stylus hinge, lessening losses and improving dynamic contrasts.**

possible. However, long contact tip shapes apply less pressure to the vinyl than small-contact-area ellipticals so 2gms will do no harm, even if it does seem high compared to the 2M Black's low 1.6gms. Grooves are damaged by mis-tracking; there's little wear whilst the tip maintains contact with the groove due to lubricants in the vinyl and an effect known as plastic deformation where the vinyl springs back after pressure is removed.

The stylus assemblies have an integral swing-up guard – useful in some ways, not in others. The guard's front conceals the stylus beneath the cartridge body, frustrating accurate cueing into a groove, and these assemblies can vibrate, slightly degrading the sound



**The flip-up stylus guard is convenient, but it obscures the stylus.**

– that's why high-quality moving coil types have removable covers. However, since fitting a removable cover can cause damage, they have limitations too. No one has solved this conundrum, except Shure with their damped stylus brush in the M97xE.

Finally, with regard to usage, these new ATs run very close to the LP surface; clearance is minimal. And there's good reason – it keeps distortion down. All three stylus assemblies produced less distortion than all others our measurements showed. That's why I said earlier that sound quality has been placed above other considerations. The stylus tip is difficult to see – I had to peer closely to get needle into groove with precision.

## SOUND QUALITY

For listening tests, I fitted the 700 body to our SME309 arm and changed stylus assemblies. The arm

was mounted on a Timestep Evo-modified Technics SL-1210 Mk2 turntable fed from its external linear supply. The phono stage was an Icon Audio PS3 (valve) feeding a McIntosh MC152 power amplifier and alternatively an Icon Audio Stereo 30SE single-ended power amplifier, driving Martin Logan Classic ESL9 hybrid electrostatic loudspeakers fed from an Isotek regenerated power supply. Each stylus was run in using a locked groove to burnish it.

As measurement suggested, the sonic differences between the three stylus assemblies wasn't great, so I'll generalise first to set the picture.

The near perfectly flat response does translate in practice to a feeling of natural and smooth balance, yet at the same time there's

absolutely no sense of warmth in the sound: it is just crystalline clear and very forthright. There is also a slight sheen up top due to obvious upper treble, mostly with the 760SLC.

Starting at the top with the 760SLC I was

more than impressed by what Audio Technica have achieved here. The sheer projection, vivacity and resolution of fine upper treble was extraordinary. The tinkling bells preceding Jackie Leven's 'Inside This Clay Jug' had rich sonorous presence,

put a single magnet behind the hinge.

Playing the heavy and flat 180gm LPs of Mark Knopfler's 'Kill To Get Crimson' the 760SLC better illuminated the quality and dynamics within this recording against other LPs played beforehand.

In 'The Fish and the Bird' Knopfler's laconic drawl had well-hewn presence centre stage, sparse drum rolls punching out firmly in support. Surface noise was barely existent making silences convincing.

What I noticed with the 760SLC was that it had obvious bite, great high frequency separation yet seemed smooth with it all. It even made a good job of sorting out the Zuton's 'Tired of Hanging Around' that commonly sounds harsh. The 760SLC removed the muddle, simplifying things; it was harsh but cleaned up and more listenable.

Of the three, the 750SH ultimately struck the best balance I felt. It has less bite and top end presence than the 760SLC but wasn't less insightful. I heard no smearing or softening, just a slightly easier delivery with a less forceful top end. The de-emphasis of highs allowed lows to make their presence better known; my ear being less distracted. Bass lines now caught my attention, sounding firm and tight, if not large and fulsome.

And what of the VM740ML, the cheapy of the group? It had all the basic goodness of its more expensive stablemates but with the very merest trifle of a little softness, affecting delineation between instruments on

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jumping forward rather than inhabiting the background, as I know them with lesser MMs. Strummed guitar strings had plenty of bite, followed by rich twang.

As I noted in the Goldring E Series review (Hi-Fi World October 2017 issue) Audio Technica's V magnet arrangement puts the sensing element – twin magnets – in front of the cantilever hinge where sonic losses are lesser, where other MMs

the soundstage and events in the time domain. But this hardly mattered and was in some ways a salve; the 740ML was the easiest of the three, yet still far ahead in its resolution of high-frequency information than a typical moving magnet cartridge. I can recommend it as 'best value', because the price difference hardly reflects its small loss of quality against the 750SH and 760SLC.

All three cartridges made sonic

differences between LPs obvious: they have a wide dynamic palette that illuminated differences. 'Kill To Get Crimson' was more obviously a modern, high-quality recording well mastered and cut, strides ahead of hi-res through our big Martin Logan electrostatics that reveal all; my many re-masters, like Neil Young's

close, very close. MCs consistently have a tad more openness and stage depth, due to their low impedance/low noise generators, but the many budget MCs around don't have the fine treble resolution and insight of the 700s here, since most come with mediocre styli, often sounding quite fuzzy up top. Also, good MCs

and a stylus that is considerably easier to fit, so better suits fixed headshell arms when it comes to the practicalities of attachment.

**CONCLUSION**

All three of Audio Technica's new top-of-range moving magnet cartridges – VM740ML, VM750SH and VM760SLC – perform wonderfully.

They track well, produce far less distortion than all rivals and sound sparkingly clean, clear and forthright. Differences between them are, surprisingly, minimal – being only tip profile, which in use introduces subtle sound quality differences best spotted by aficionados. That makes the least expensive '740ML easily best value. The 750SLC had a tad more ability and would be my choice, whilst the '760SLC is more for those that want its top end brightness – but it doesn't justify its price differential.

"All three of Audio Technica's top-of-the-range moving magnet cartridges perform wonderfully"

'After The Goldrush', still sounded impressive but earlier production standards and equipment were now exposed by these ATs.

Are they as good as moving coil (MC) cartridges? With tapered aluminium cantilevers and sophisticated stylus shapes all three get

like the Ortofon Cadenza Bronze I commonly use have better stated, stronger bass.

And Ortofon's Shibata tipped 2M Black? There's little in it here, the ATs sounding a little cleaner and clearer – a tidier sound if you like. But the 2M Black has captive nuts

**MEASURED PERFORMANCE**

Tracking at 2gms as recommended, all three cartridges cleared all tracking tests of CBS-STR112 test disc (300Hz) and B&K2010 test disc (1kHz). It is rare for cartridges to clear the top 25cm/sec track of B&K 2010, where low tip mass is important. None will mis-track and cause damage as a result, nor produce distortion on drums (high groove excursions) or vocal peaks (high accelerations).

Frequency response (JVC TRS-1007 test disc) of all three stylus assemblies was much the same, our analyses show. The green trace (outer grooves) shows no upper mid-band roll-off from generator losses suffered by cartridges of yore, so the 700s will not have a warm sound – not even a hint of it. A response like this ensures a forthright and projectional delivery with intense detail.

Upper treble remains smooth and peak free, but there is a small amount of lift in the top VM760SLC. Treble will be obvious, but not sharp in quality.

There was no loss on inner grooves either (red trace) – a tribute to the effectiveness of the profiles, all of which read short mechanical wavelengths perfectly. Inner groove dullness, muddle and distortion are minimised to a degree few other cartridges manage.

Output measured 5mV at 5cms/sec rms (3.5mV at 3.54cms/sec rms), a normal enough value, if on the low side.

Channel separation was also typical at around 24dB.

Distortion on lateral modulation was very low at 0.5% second harmonic – 1% is common. On vertical modulation an unusually low measured vertical tracking angle (VTA) of 18 degrees gave a theoretical distortion value of around 0.3% after modulation slant angle correction for STR-112 test disc – extraordinary. All three stylus assemblies produced lower distortion than all other cartridges by a large margin.

All three stylus assemblies produced similar measured results, and all were class leading. Only the flagship VM7560SLC differed by having a tad more high treble. **NK**

**Tracking force** 2gms  
**Weight** 8gms  
**Vertical tracking angle** 18 degrees  
**Frequency response** 20Hz - 20kHz  
**Channel separation** 24dB

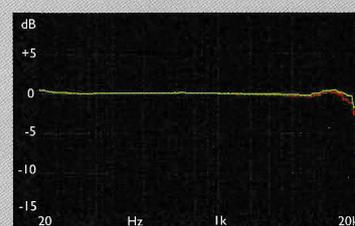
**Tracking ability (300Hz)**  
**lateral** 90µm  
**vertical** 45µm  
**lateral (1kHz)** 25cms/sec.

**Distortion (45µm)**  
**lateral** 0.6%  
**vertical** 0.3%  
**Output (5cms/sec rms)** 5mV

**FREQUENCY RESPONSE 740ML**



**FREQUENCY RESPONSE 750SH**



**FREQUENCY RESPONSE 760SLC**



**AUDIO TECHNICA VM700 SERIES**

**VMN760SLC STYLUS** £522

**VM750SH CARTRIDGE** £389

**VMN740ML STYLUS** £196



**OUTSTANDING - amongst the best.**

**VERDICT**

A brace of superb top-end MM cartridges, with low distortion and super clear sound.

**FOR**

- clear and detailed
- super low distortion
- bold dynamics

**AGAINST**

- difficult to fit
- easy stylus misalignment
- poor instructions

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