Medium output moving-coil pick-up cartridge
Made by: Ortofon A/S, Denmark
Supplied by: Henley Audio Ltd, UK
Telephone: 01235 511166
Web: www.ortofon.com; www.henleyaudio.co.uk
Price: £875

AUDIO FILE

hi-fi news OUTSTANDING PRODUCT

Ortofon MC X40

An entirely new, four-strong range of moving-coils from Ortofon should be enough to whet the appetite of every vinylista on the upgrade trail. We test the sub-£900 flagship

Review: **Ken Kessler** Lab: **Paul Miller**

With a selection of cartridges that runs to 90 models, you might wonder what a new range could bring to the Ortofon fold. That impressive figure includes the legendary SPU moving-coils, the once-futuristic but now-familiar Concorde and OM moving-magnet lines, the affordable 2M models, and high-end MCs costing well into the thousands [*HFN* Mar '22 & Jun '25]. This crowded house has now been expanded by the four-strong moving-coil MC X Series, and it will prove a relief to some that the truly exceptional top cartridge, the MC X40 reviewed here, costs £875. Yes: under a grand.

SILVER SERVICE

Common to all four MC X pick-ups are a distinctive black-coated stainless-steel honeycomb body (a dream to install), the mechanisms featuring newly developed suspension and dampers, a one-piece magnet pole cylinder, and silver-wound coils on a cross-shaped armature.

That word 'silver' tells you this is an example of how coil wire materials other than copper have entered the affordable mainstream. Ortofon uses the term 'Pure Silver Coil System', the ultra-fine silver wire being of high purity 'for exceptional signal clarity and detail'. As silver wire has been a big deal in high-end cartridges for at least 40 years, let's all agree it's not just an alternative to copper, but one with its own identifiable sonic characteristics.

LEFT: New generator system, with X-cross armature and cylindrical magnet, is bolted into the black-coated stainless-steel body. Stylus is sufficiently exposed to ease manual cueing

Inside each MC X series cartridge is an 'Optimised Magnet System', formed on a one-piece pole cylinder and rear magnet yoke. Ortofon attributes to this design 'maximum magnetic efficiency' but, arguably, the most distinctive feature of the MC X cartridge bodies is one that will not be seen once the cartridge is mounted in any headshell which covers the entire top surface [see p81]. That injection-moulded honeycomb stainless-steel frame undoubtedly increases body rigidity without adding to the weight. At 8.6g, the MC X40 will cause no issues with the majority of tonearms.

Where the fun really comes in is with the cantilever and stylus assembly. The base-model MC X10 (£269), is fitted with an aluminium cantilever and an elliptical stylus of 8/18µm. Step up to the MC X20 (£429) for a more refined nude elliptical stylus. In the MC X30 (£599), the stylus changes to a fine-line type, while the MC X40 under test is equipped with a nude Shibata stylus [see PM's boxout, p81] and a change of cantilever to boron.

RIGHT: Ortofon's custom suspension is designed to centre the boron cantilever when tracking at 2.0g. The MC X40's 'Nude Shibata' stylus is cemented into position [see inset picture, p81]

MATERIAL CONCERNS

As there is certainly a segment of the audiophile community which obsesses over cantilever materials and styli profiles, and – like all reviewers – I have observed these seemingly small differences within a model range, it would be interesting to learn if any presuppositions would be realised. Cutting to the chase, I was not disappointed, because the MC X40 categorically reaffirmed what I have been experiencing for at least the last five years' worth of listening to a wide variety of cartridges, notably including boron cantilevers.

> 'These takes took place in much larger halls than the Webster gig'

I am now ashamedly partial to those prohibitively expensive one-piece diamond cantilever/stylus assemblies (and I certainly cannot ignore the heart-stopping prices), and was intrigued by SoundSmith's cactus needle cantilever. But I otherwise admit to no biases *vis-à-vis* styli profiles. That's because there are primitive spherical types which blow away ellipticals, let alone lesser cantilevers which easily better their alleged superior siblings.

But do note that I am not assuming any upsets apply to the MC X series, because my confidence in Ortofon is such that I would expect audible gains with each step up the range, as I found with the four Ortofon 2M variants I have tried. I would posit, however, that a holistic approach is needed, and that one must not generalise about either styli shapes or cantilever materials.

MANUAL INTERVENTION

Ortofon is so thorough and seasoned at this that the MC X40 is as simple to install as any cartridge this side of a Denon DL-103. The pins are colour-coded and widely spaced, the flat top and pointed prow afford straightforward azimuth and VTA setup, and the well-protected stylus remains easily visible through a slot. The manufacturer supplies the most basic of instructions though, telling you only that the MC X40 tracks best at 2g.

What I didn't appreciate is having to go online via a QR code to find out the recommended loading should be above 50ohm. It would not have inconvenienced Ortofon to print that in the minimalist, emoji-esque, text-free booklet supplied with the MC X40.

That said, I found the cartridge sounded of its best at 100ohm, while the refined nature of the cartridge and its finely profiled stylus mean that it responds audibly to any changes you might care to make: varying the loading, playing with the VTA, and the move from one headshell to another all yielded vivid results.

LEFT: The MC X40's honeycomb top plate brings added stiffness without added weight while the threaded lugs ensure easy and secure connection to the headshell

GREAT EXPECTATIONS

As if to prove the worth of my many hours spent comparing cartridges strictly because of their styli and/or cantilevers, the MC X40 from the first notes exhibited exactly what I hoped for… exceptional speed and attack, the retrieval of ultra-fine details, and – as is a by-product of styli which track deeply – the need to ensure that LPs are cleaned well into the groove. Equally, there was a surprise in that the tracking ability was way above the often so-so moving-coil norm, nudging into classic Shure MM territory, especially at the inner grooves [see PM's Lab Report, p83].

Two contrasting LPs let me know that I was listening to something special, both superbly recorded live albums capable of providing the listener with a massive stage. PM's testing confirmed precisely what I heard, if expressed differently: in both cases, the soundfield 'shape' was deeper rather than wider in absolute terms, the depth more precisely defined than the left/right edges. But it hardly mattered.

First up was Ben Webster's *At The Renaissance* [Craft Records/Contemporary CR00388], the quintet recorded at a small Hollywood club in 1960. It covers all bases for a jazz album of the era, especially one which features five maestri performing familiar melodies. The lure for me, besides wanting to experience how the MC X40 would recreate a small space, was to hear saxophone to the fore.

Retrieval of detail was so natural-sounding that those who absolutely insist on detecting the sound of the saxophonist's breathing will have no grounds for complaint. More exciting, though, was the image specificity *within* the soundstage, the edges counting for little because the five players were so solidly portrayed from left to right.

STARDUST SMOOTHIE

As for moments that added to the musicality and authenticity, there were occasional bursts of Frank Butler's drums to make you sit upright, their impact arriving during quiet moments to demonstrate just how fast the MC X40 handles dynamic contrasts and moves from soft to loud. On 'Georgia On My Mind' and 'Stardust' ⇨

DIAMOND LIFE

Budget pick-ups may still employ a spherical/conical stylus but the tracing footprint – the contact patch between the diamond and walls of the vinyl groove – is far removed from the near-vertical edge of the original cutter stylus. The 18µm major radius (the vertical dimension of the diamond/groove contact patch) of Ortofon's 'elliptical' and 'nude elliptical' styli – MC X10 and MC X20, respectively – is similar to that of a basic conical diamond, but their 8µm minor radius (the horizontal dimension of the contact patch) is considerably smaller, offering superior tracing ability. The MC 30X's 'nude fine line' stylus further elongates this footprint with major/minor radii of 40µm/8µm, but it's the Shibata diamond fitted to the MC X40 that wins out with its even finer, blade-like 50µm/6µm profile. The facets [see inset picture] are ground onto the end of a diamond shank and glued to the tip of the MC X40's boron cantilever.

The origins of the Shibata, and other elongated line contact profiles, can be traced back to the 1970s and JVC's CD4 four-channel record format which demanded the ability to trace grooves up to 45kHz. Although ultrasonic extension is not strictly necessary with today's stereo LPs, the desire to reduce tracing distortion has kept development alive. The most advanced 'micro-ridge' profiles may have a mere 2µm minor radius but their vertical contact area must be limited to avoid the stylus tip dredging the very bottom of the groove. PM

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LEFT: Typically well spaced and clearly colour-coded cartridge pins make for a secure connection with your headshell leads. The standard of construction, alignment and finish is in the top drawer

in particular, Webster's sax oozed warmth and expressiveness. This is one smooth cartridge.

At the other extreme is *Jeff Beck With The Jan Hammer Group: Live* [Mobile Fidelity MFSL 1-547]. Although no specific venues have ever been credited, one can tell by the sound that the recordings took place in much larger halls than the Webster gig, including the Astor Theater in Reading, Pennsylvania.

FENDER FLUID

From the outset, this was about high levels, rapid attack and the kind of transients which will challenge any system. After the Webster LP, it enabled the MC X40 to reconstruct a completely different acoustic, with all-amplified instruments. Beck's playing is known for fluidity as much as it is for sheer speed, so finesse is the order of the day, hard rock playback levels notwithstanding.

This may seem the antithesis of what best reveals the subtlety of the quieter Webster performance, but Beck and Hammer were playing jazz as much as rock so the conceptual gap is narrower than you might think. When it came to Beck's legendary interpretation of The Beatles' 'She's A Woman', the liquidity of his Fender Stratocaster possessed character as much in keeping with a human voice as with metal strings. This cartridge has no problem juggling such textures.

For actual vocals, I chose to test the MC X40's midband prowess with the familiar tones (at least to aged Boomers) of Donovan, with the stunning reissue of *The Hurdy Gurdy Man* [Impex IMP6055]. Like Ben Webster's sax playing, Donovan's singing is breathy, especially from the very opening of the title track.

This is a feast of assorted droning instruments (including a tambura), militaristic drumming, and air around the vocal. I'd already heard how sublime was Impex's remastering via a cartridge priced ten times that of the MC X40, so I knew what the LP offered. Such is its performance, Ortofon's newest model turns out to be an exemplar of the Law of Diminishing Returns!

TICKING ALL THE BOXES

Less mystical in both content and the choice of instruments is the late Dan Fogelberg's *Souvenirs* [Impex IMP6064]. Midwesterner Fogelberg's output was firmly in the West Coast troubadour tradition, and the presence of Joe Walsh as both producer and guitarist assure this LP's place on an Eagles family tree.

Here was an opportunity to hear layered acoustic and electric guitars, while Fogelberg's voice was of a higher register than Donovan's. 'Part Of The Plan' ticked all the singer-songwriter boxes, as well as arresting backing vocals, Ortofon's MC X40 giving each voice its own space. How clearly? I swear I could pick out Graham Nash.

HI-FI NEWS VERDICT

Tired as I am of apologising for high-end prices, it's a privilege to hear a new moving-coil which does everything right, nothing wrong and even looks upmarket. If I were churlish enough to ask for a wider soundstage or a tad more bass weight, I'd still guess the MC X40 cost around £3000. If this is an undeniable bargain at £875, what are its siblings offering for even less? The MC X series looks to be a triumph.

Sound Quality: 90%

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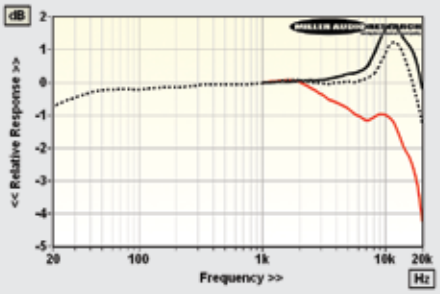
LAB REPORT

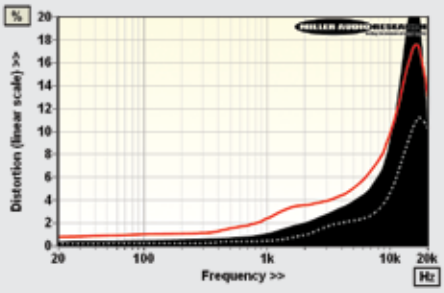
ORTOFON MC X40

All Ortofon's four new MC X pick-ups share the same silver-wound coils (on a cross-shaped armature), custom suspension and dampers, one-piece magnet pole cylinder and black-coated stainless-steel honeycomb body. However, as the apex model of the range, the MC X40 boasts the stiffest boron cantilever and finest 6/50µm Shibata stylus plus, I imagine, a degree of selection during production that enables Ortofon to claim slightly superior stereo separation and response flatness for this flagship. In practice, the 'X40 meets its specified 0.4mV output at 0.44mV (re. 1kHz/5cm/sec into 100ohm) while its channel balance is tighter than the spec'd 0.5dB at 0.2dB and stereo separation a fabulous 35dB through the midrange. Furthermore, tracking at the recommended 2g downforce, it sailed through the top 80µm groove pitch and navigated the maximum +18dB groove (re. 315Hz/5cm/sec) at just <0.5% distortion. That said, the MC X40's compliance looks closer to a slightly 'softer' 22cu than the quoted 15cu (resonance will be ~8Hz in a 10g effective mass arm) so medium/light arms are recommended.

The stereo response [dashed trace, Graph 1] is both flat and extended to within ±1.2dB (re. 20Hz-20kHz) although the slight asymmetry between lateral vs. vertical responses [black vs. red, Graph 1] will emphasise strong central stereo images at the expense of presence/treble details on the periphery of the soundstage. Stereo distortion (–8dB re. 5cm/sec) is very low at 0.1-0.3% through bass frequencies and <1% up to 2kHz [dashed trace, Graph 2] while the abrupt increase to ~22% at 12kHz on lateral cuts [black infill, Graph 2] is simply a reflection of the mild cantilever mode and extended response of the cartridge. **PM**



ABOVE: Freq. resp. curves (–8dB re. 5cm/sec) lateral (L+R, black) vs. vertical (L–R, red) vs. stereo (dashed)



ABOVE: Lateral (L+R, black), vertical (L–R, red), stereo (dashed) tracing and generator distortion (2nd-4th harms) vs. freq. from 20Hz-20kHz (–8dB re. 5cm/sec)

HI-FI NEWS SPECIFICATIONS

Generator type/weight	Moving-Coil / 8.6g
Recommended tracking force	19-21mN (20mN)
Sensitivity/balance (re. 5cm/sec)	443µV / 0.2dB
Compliance (vertical/lateral)	22cu / 24cu
Vertical tracking angle	22 degrees
L/R Tracking ability	>80µm / >80µm
L/R Distortion (–8dB, 20Hz-20kHz)	0.3-10.7% / 0.1-12.5%
L/R Frequency resp. (20Hz-20kHz)	+0.15 to –3.2dB / +1.2 to –1.2dB
Stereo separation (1kHz / 20kHz)	35dB / 28dB