

Ortofon MC 90X

The Danish pick-up perfectionist has added a new model to its 'Exclusive' range of moving-coils – the MC 90X replaces the MC A90 launched over 15 years ago
 Review: **Ken Kessler Lab: Paul Miller**

Is there a more outrageous-looking cartridge than Ortofon's radical MC 90X? By now we should be used to the shape since the MC 90X's form was first introduced 15 years ago in Ortofon's MC A90. This revised version, in a cool blue hue, still has that look of a Bizarro horseshoe from the side. Forgive the Superman reference, but this cartridge turned out to be something of a hero.

No longer surprising, too, is a price tag of £3999, which isn't even a quarter of the price of the most expensive cartridges on the market. Where to place this in the context of today's moving-coils I do not know, but calling it 'mid-level' might cause a few of you to choke when decent MCs are available for under £300. Be that as it may, what you have here is one of the best-constructed cartridges I've ever seen, with behaviour as composed as its flawless physical presence.

TIME TO SHINE

For a moment, I was confused and thought I was dealing with my alter ego as a watch journalist: the MC 90X is as much about its



LEFT: A next-gen 'MC A90', the MC 90X shares the same body shape, boron cantilever and top-tier Replicant 100 stylus profile, the latter first used in Ortofon's MC-3000 MkII and MC-5000

that suited the arms at my disposal, but it's something to consider if you have an extremely low-mass arm. Not wishing to repeat PM's detailed boxout [see p59], I'd only add that inside, the coil wires are made of a gold-plated 6N oxygen-free copper. These ultra-fine wires exit the underside of the top section for connecting to the backs of the gold pins and are visible to the user [see pics, p57 and p59].

HANDLE WITH CARE

Our pictures also clearly highlight the exposed nature of the boron cantilever, which has obvious downsides for those lacking the necessary caution and dexterity. Along with certain models from Clearaudio, Van den Hul and others that seem to enjoy testing one's nerves when setting up cartridges, the MC 90X must be handled with care – the owner's manual even shows you how to remove the stylus guard! It's in direct contrast to, for instance, the Koetsu Rosewood and Decca London Gold I've been using the past few months, both of which completely hide their cantilevers. But as PM pointed out, cueing a track doesn't get any easier than with the MC 90X.

Nor for that matter does setup, nerves aside. I had the MC 90X out of the box and making music in under ten minutes. Undeniably, its fully exposed cantilever matched the line on my overhang gauges while the chassis features parallel sides that fit perfectly into the grids on the gauges. VTA setting merited care as the Replicant 100 stylus responds so truly audibly to the finest adjustments. As expected, the best sound emerged with the top of the cartridge absolutely parallel to the LP surface.

At the back are four coloured pins which I found slightly undersized for the headshell

unique body material and manufacturing process as it is about the motor, cantilever and diamond which it contains, supports and protects. Just like watchmakers exploring different manufacturing techniques for their cases, from forged carbon to solid sapphire, Ortofon has employed its own sophisticated process – Selective Laser Melting (SLM) – to produce the MC 90X's body.

Unlike traditional methods of machining a block of a chosen metal, or of casting metal into a die, SLM laser-welds micro particles – stainless steel in this instance – to create the MC 90X's single-piece body. Ortofon says that this 'enhances rigidity, reduces unwanted resonances, and ensures optimal cartridge mass, resulting in superior sound quality and performance.' And it works in conjunction with other elements of the MC 90X's construction, including the in-house-developed rubber compounds found in this model's newly designed dampers.

The MC 90X is certainly solid, rigid, chunky and, indeed, hefty at 9.5g. Luckily,

'The opening suite was rich with differing textures'



ABOVE: Securely packed in an over-sized presentation box, the MC 90X is accompanied by mounting hardware and instructions



'SLM laser-welds micro particles – stainless steel here – to create the MC 90X's single-piece body'



LEFT: Threaded lugs and three-point headshell mounting are revealed alongside the exposed, gold-plated 6N copper coil and lead out wires. The Ortofon Replicant 100 stylus is glued onto the boron cantilever (see also inset shot, below)

leads in my assorted arms, but that was just a matter of pulling out my needle-nose pliers to squeeze them a bit. Tracking at the recommended 2.3g was spot on but I did fiddle about with impedance.

ALL CHANGE

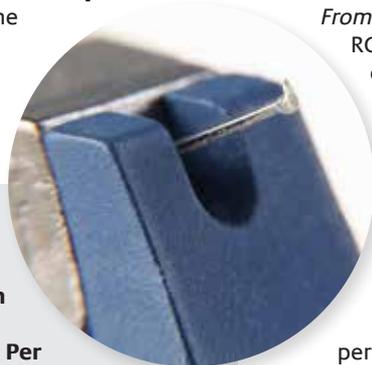
Ortofon's recommendation is a non-specific >10ohm, but one thing was immediately apparent, thanks to trying the MC 90X with a couple of phono stages, including one with completely variable settings. This Ortofon MC really does respond to changes in impedance settings and not just with variances in output level. In one system it worked ideally at around 15ohm, in another 30ohm and in a third 100ohm. You probably do this already, but with the MC 90X you will want to set the load impedance by ear.

It is not on my bucket list to become a member of the 'which cantilever material sounds best' brigade, but this cartridge is yet another boron-cantilevered design that exhibited absolutely superb stability, tracking and transient attack. So, with

the exception of single-piece diamond cantilevers, I really can't think of much that improves on solid boron.

OH, YES!

Sorry to start out with a cliché but I have to admit I was absolutely dazzled by the beginning of Yes's 'Roundabout' [*Fragile*; Atlantic/Rhino RCV1 727097], and it wasn't even the One-Step pressing from Mobile Fidelity. The opening notes positively sparked,



LONG-PLAYING LEGACY

The evolution of Ortofon's moving-coil mechanism is an iterative 'work in progress' spanning not just years but decades. For example, the wide-range damping (WRD) system – two dissimilar rubber discs, with a metal insert between, placed behind the coil armature – was patented by Ortofon's Per Windfeld and first seen in the MC20 MkII [*HFN* Dec '80]. The damper is designed to deal with cantilever resonances and improve tracking not just at HF, but at all frequencies, a claim reinforced by the exemplary groove handling witnessed during our lab tests [see p61]. And this, I might add, achieved with the low compliance typically associated with MC cartridges. In this respect, the MC 90X is about as good as it gets. Another innovation is its Field Stabilising Element (FSE), a conductive cylinder that surrounds the armature in an attempt to unify the lines of flux 'cut' by the (quad) coils between the poles of the powerful neodymium magnet. The poleshoes of the magnet can be seen in our pictures [above, and p57] while the inset picture here shows Ortofon's Replicant 100 diamond – minor radius is 5µm and major radius 100µm – bonded to the end of a boron rod cantilever. Note that Ortofon's press shots (likely used online) are actually computer renderings, and do not show the glue... PM

the attack so clearly delineated that it attested to the MC 90X's impeccable groove-tracing abilities.

This was especially noteworthy because heavy, low-compliance MCs rarely track as well as this blue wonder – you don't normally find 'coils that appear to match the best MMs. Somehow, Ortofon has endowed the MC 90X with such skill in the tracking stakes that even worries about end-of-side distortion were dispelled.

This wasn't at the expense of the bottom end. When the rest of Yes joined in, the fullness, weight and mass of the sound was elevated to a level which justifies the decades of audiophile devotion to this album – and I say this as one who doesn't even place Yes in his top 500 bands. So room-filling and involving was the sound that I even followed it with *Close To The Edge* [Atlantic/Rhino R2 727100], the opening suite rich with differing textures positioned across the room, all of which attested to the MC 90X's superb resolution.

LIVE AND KICKING

Another unexpected revelation came with, of all things, a live album not recorded in a concert hall. For those who judge a system's performance by the way it recreates a real space, *Fleetwood Mac Live From The Record Plant* [Reprise/Rhino RCV1 727098] provides the kind of experience which audiophiles adore. The drier space of a radio station's studio isn't all that different from a recording studio but it is completely unlike that of a concert hall. The overall layout of the band was also quite dissimilar to that of a typical live gig.

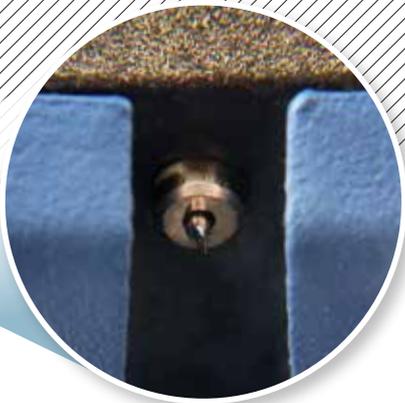
Instead it was about the performers operating as a band and playing 'for real' rather than producing a song instrument by instrument. Mick Fleetwood's powerhouse drumming was captured in a manner quite different from the albums represented by this 1974 gig, such as *Bare Trees*, with more air, more punch. Another strength was Christine McVie's voice, reproduced with such utter clarity that I was reminded of a properly installed Decca Gold. 'Spare Me A Little Of Your Love' was savoured with all the intimacy it needed, with warmth not anticipated when a cartridge is as precise and almost clinical as the MC 90X. ➔

LAB REPORT

ORTOFON MC 90X

The MC 90X's forerunners include the Anna [HFN Oct '12], the Windfeld Ti [HFN Jan '18] and Anna Diamond [HFN Oct '19], although the MC 90X's design story starts with the MC A90 [HFN Sep '09] and includes a little of the DNA introduced with the Windfeld Ti and newer MC Verismo [HFN Mar '22]. Comparisons with the MC A90 are instructive – the latter afforded a 310µV/100ohm output (re. 1kHz/5cm/sec) with a channel balance error of 0.3dB. The MC 90X's output is only fractionally lower at 290µV and while its stereo response [dashed trace, Graph 1], including the characteristic ±0.5dB 'wobble' at HF, is almost identical, its stereo separation is improved to 35dB through the midrange [see boxout, p59].

The MC 90X's in-phase response remains slightly 'brighter', benefitting performers that sit centre stage, while its superb rail-like tracking brings further confidence to the sound. Holding on to the top 80µm test track at the recommended 2.3g, it realises a low 0.4% distortion at +15dB (315Hz lateral cut, re. 11.2µm) and just 1% on the final +18dB groove modulation (2% from the MC A90 at this point). This is a rare performance from a low-ish compliance MC destined for medium/higher mass arms – incidentally, the MC 90X matches the MC Verismo's 9.5g bodyweight, both 1.5g up on the original MC A90. New dampers also ensure the MC 90X's 11/13cu vertical/horizontal compliance is now more symmetrical and the VTA better aligned at 23° VTA (12/16cu and 28°, respectively, in the MC A90). A final word on the distortion vs. frequency trend [see Graph 2] which follows the same 'shape' seen with the MC A90 but is now a little lower here at <1% up to 3kHz (re. -8dB re. 5cm/sec). PM



stage in between the analogue master and this vinyl pressing.

Via the MC 90X, the even-wetter-than-November-in-England 'She's Out Of My Life' was palatable. The anguish in Jackson's voice sounded so sincere that I had to temper my dislike. For those who believe a system or component can convey emotion – or, that is, what's in the recording – the MC 90X will have you digging out Janis Joplin and Etta James LPs for a night-long binge.

BLISS 'N' BOMBAST

Is there anything even remotely remiss about this cartridge? If pushed, and were I to draw a Venn diagram, the MC 90X does veer toward the brighter end of the spectrum. Occasionally, one could detect minuscule traces of sibilance on vocals, such as during the fourth movement of Yes's *Close To The Edge*. But minuscule is the word. When the huge organ passage emerged, it was back to bliss.

No, you haven't witnessed an epiphany. I'm not suddenly seeking out a copy of *Tales From Topographic Oceans* [see p86] or being wooed by prog rock. But wow, can this cartridge deliver the scale of bombastic pomp as well as the finer moments of an introspective Jacko. ☺

HI-FI NEWS VERDICT

Multiple personalities in hi-fi ain't a bad thing. Along with still-futuristic looks after a decade-and-a-half and construction worthy of a high-end wristwatch, the Ortofon MC 90X charms with a performance that can deal with Van Halen and Van Cliburn. It strikes this listener as the beneficiary of a legacy which endows it with hints of an SPU, plus the precision of cutting-edge research. At the price? A champ.

Sound Quality: 88%



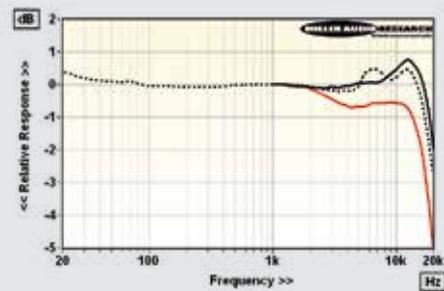
ABOVE: The MC 90X's pins are clearly marked and separated. Open body exposes the pole cylinder normally hidden behind the cantilever [inset pic]

With both the Yes and Fleetwood Mac LPs, it delivered another quality more redolent of its past than of the modernity of the design. So wide and deep was the soundstage that I was reminded of the original SPUs, launched in 1959, which were (and remain) as stellar in this area as even the Denon DL-103, introduced in 1964. In both cases, you could listen into the songs, mentally calculating how many feet (er, sorry, metres) were in the layers of sound and between the players, left to right.

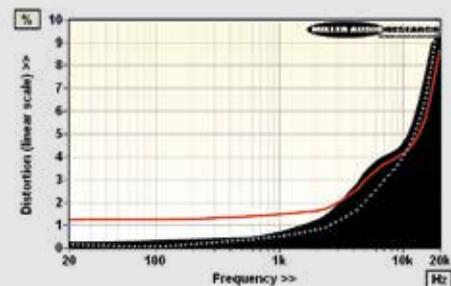
Steely Dan's *Katy Lied* [Geffen/Universal 00602445394944] reaffirmed the naturalness of the MC 90X's midband and the way it handled voices. Donald Fagen's is one of the most distinctive in rock and Ortofon's cartridge perfectly revealed his inimitable nasality. And with the bottom end, which has always been part of this group's foundation, the MC 90X dug deep and remained in full control. If you think a sound system (and not the correct speed on the turntable) produce 'pace, rhythm and timing', this MC will support your delusion.

SONIC SPECTACULAR

It says much of a system, let alone just the cartridge, if it makes you listen to an entire album that you utterly detest. Admittedly, the new One-Step of Michael Jackson's *Off The Wall* [Mobile Fidelity UD1S 2-061] is a sonic spectacular by any measure, regardless of the DSD



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 / 9.5g
Recommended tracking force	22-24mN (23mN)
Sensitivity/balance (re. 5cm/sec)	290µV / 0.3dB
Compliance (vertical/lateral)	11cu / 13cu
Vertical tracking angle	23 degrees
L/R Tracking ability	>80µm / 80µm
L/R Distortion (-8dB, 20Hz-20kHz)	1.0-12.5% / 0.4-11.2%
L/R Frequency resp. (20Hz-20kHz)	+0.4 to -4.7dB / +1.1 to -2.6dB
Stereo separation (1kHz / 20kHz)	35dB / 25dB