





LYRA DELOS

MC PHONO CARTRIDGE

Introduction

An analog LP played back with an MC cartridge can sound exceptionally good. Normally, the more cost put into the cartridge, the better the sound. However, sometimes what is required is not more cost but more clever engineering, as with the Lyra Delos.

A major problem with most cartridges is that the signal coils are located so that applying normal tracking force restricts performance. The reason is that the cartridge's signal coils should have the same angle as the magnetic circuit when the tracking force for playback is applied, but are nearly always designed so that applying normal tracking force pushes the signal coils out of alignment with the magnetic circuit. This impairs the sensitivity and linearity of the coils, and reduces the quality of sound.

The Delos solves this problem with a new body structure and pre-angled damping system. The pre-angled dampers work together with the angle of the body structure so that, when tracking force is applied, the signal coils are optimally aligned with the magnet circuit. The Delos also has a microridge stylus for outstanding tracking, a non-parallel solid metal body for low resonances, and nude construction for greater clarity. The result is clearly improved sound quality, particularly resolution, dynamic range, transient impact and immediacy.

Taking a more in-depth look

While vinyl records played back with an MC cartridge can sound exceptionally good, it is a surprising fact that the design of conventional MCs restricts the sound quality that can be achieved from LPs.

An essential factor for proper operation of an MC cartridge is the angle between the magnetic circuit, signal coils and core. Performance is optimal when the angles are all aligned, but any significant difference in the angles will cause the formation of a strong and directional flux that will flow constantly from the magnetic circuit into the signal core. This directional magnetic flux will orient the core toward a specific direction and make it impossible for the core to move with equal ease in all directions, which is necessary for proper cartridge performance.

Unfortunately, conventional MC cartridges have been designed so that the angles between magnetic circuit, signal coils and core become aligned only when tracking force is not applied. The result is that during playback, the required tracking force causes the angle between magnetic circuit, signal coils and core to become misaligned. This limits the cartridge's resolution, tracking ability and dynamic range.

The new Lyra Delos is designed to conquer this problem. Compared to conventional cartridges, the Delos has a new body structure with an unusually shallow angle, and this has been paired with a unique asymmetrical damping system. When no tracking force is applied, the shape of the asymmetrical dampers forces the signal coils and core into a more upright angle than the magnetic circuit.

However, no tracking force applied means that the cartridge is not operating, and therefore any angular



discrepancies between magnetic circuit, signal coils and core will have no effect on performance. When tracking force is applied, however, the force of the stylus pushing on the LP causes the asymmetrical dampers to be deformed into a symmetrical shape, and when this happens the angular discrepancies between magnetic circuit, signal coils and core all disappear. Since tracking force applied means that the cartridge is now operating, it should be clear that the design of the Delos is able to keep the angles between the magnetic circuit, signal coils and core aligned during playback.

Keeping the proper angular alignment prevents the formation of any strong and directional flux that could otherwise flow constantly from the magnetic circuit into the signal core, and enables the Delos' core to move with equal ease in all directions, for optimal performance.

Far greater than the sum of its parts

The Delos also has a microridge stylus on a boron cantilever for outstanding tracking, a non-parallel solid machined metal body for low resonances, and 6-N high-

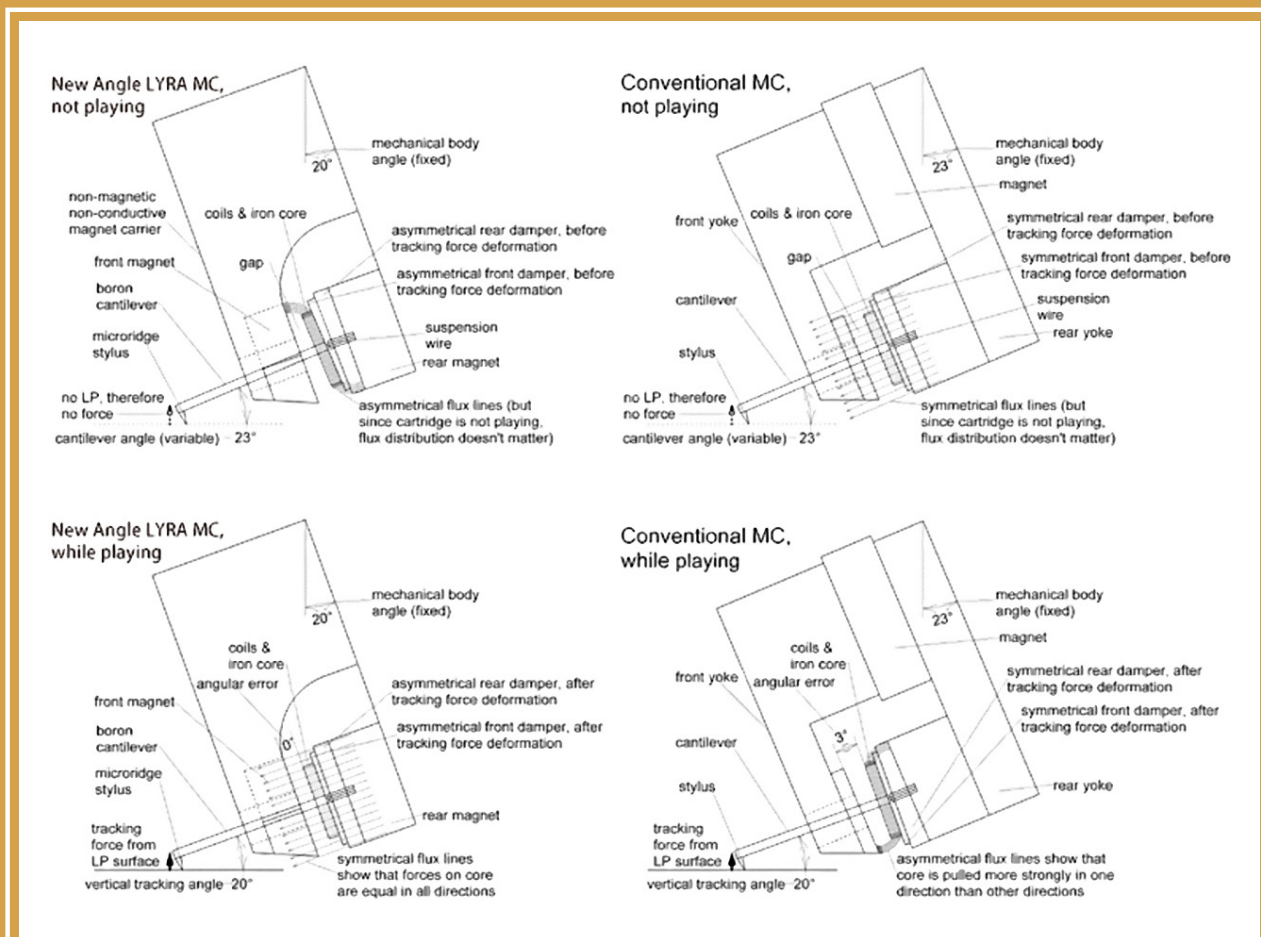
purity copper coils and nude construction for greater clarity. The result is clearly improved sound quality, particularly resolution, tracking ability, dynamic range, transient impact and immediacy.

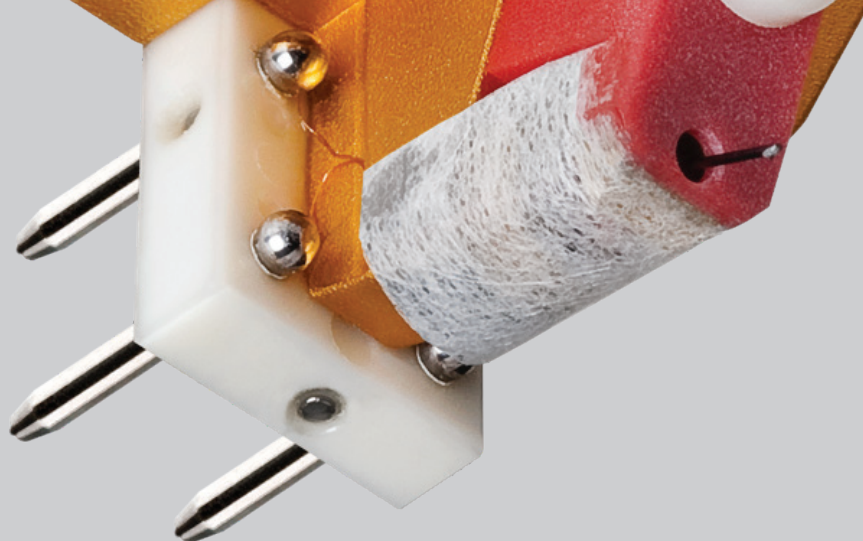
Setting a new benchmark in performance

Lyra offers a truly unique combination of advanced cartridge design by Jonathan Carr and expert construction by master cartridge builders Lyra's Yoshinori Mishima and his assistant Akiko Ishiyama*. This is an elite group of individuals that are capable of crafting the highest level MC transducers on the planet.

*only involved in the preliminary build of each Delos & Kleos cartridge

Lyra are very proud of the Delos and when you hear it for yourself, we are sure that you will agree that it sets a new standard in performance vs price.



**MODEL**

Lyra Delos

DESIGNER

Jonathan Carr

BUILDER

Yoshinori Mishima (final build, testing)

Akiko Ishiyama (primary build)

TYPEMedium weight, medium compliance,
low-impedance moving coil cartridge**STYLUS**Namiki microridge line-contact nude diamond
stylus (2.5um x 75um), surface-mounted**CANTILEVER SYSTEM**Solid boron rod with short one-point wire
suspension, directly mounted into cartridge body**COILS**3-layer deep, 6N high-purity copper, square-
shaped high-purity iron former, 6.3ohm
self-impedance, 9.5uH inductance**OUTPUT VOLTAGE**0.6mV@5cm/sec., zero to peak, 45 degrees (CBS
test record, other test records may alter results)**FREQUENCY RANGE**

10Hz ~ 50kHz

CHANNEL SEPARATION

30dB or better at 1kHz

COMPLIANCEApprox. 12×10^{-6} cm/dyne at 100Hz**VERTICAL TRACKING ANGLE**

20 degrees

CARTRIDGE BODYOne-piece machining from solid 6063 aluminum
billet, partially non-parallel shaping, body
threaded directly for mounting screws**CARTRIDGE MOUNTING SCREWS**

2.6mm 0.45 pitch JIS standard

**DISTANCE FROM MOUNTING
HOLES TO STYLUS TIP**

9.5mm

**CARTRIDGE WEIGHT (WITHOUT
STYLUS COVER)**

7.3g

RECOMMENDED TRACKING FORCE

1.7g ~ 1.8g (1.75g preferred)

**RECOMMENDED LOAD DIRECTLY
INTO MC PHONO INPUT**97.6ohm ~ 806ohm (determine by listening, or
follow detailed guidelines in user manual)**RECOMMENDED LOAD VIA
STEP-UP TRANSFORMER**5 ~ 15ohm (step-up transformer's output must be
connected to 10kohm ~ 47kohm MM-level RIAA
input, preferably via short, low-capacitance cable)**RECOMMENDED TONEARMS**High-quality pivoted or linear (tangential)
tonearms with rigid bearing(s), adjustable anti-
skating force, preferably VTA adjustment



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