

ortofon

MC Anna

MC Anna Diamond

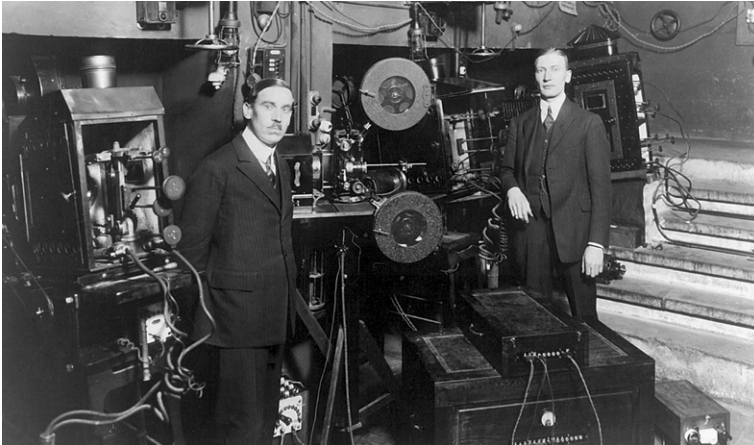


MC *Anna*



Ortofon

A century of accuracy in sound



Ortofon has always been a leading company in the field of sound reproduction. Founded in Copenhagen in 1918, Ortofon started by creating technology which served as the basis for adding a soundtrack to the silent movies of the early 1920s.

In 1948, the company developed the first moving coil cartridge, and since then Ortofon has developed and manufactured more than 300 different cartridges with our latest being the MC Anna Diamond.

Today Ortofon is the world leader in cartridges. This is the result of combining design with technology and the highest level of engineering in the audio industry. Acoustics, materials technology and micro mechanics are key competences in the company's technological prowess. Ortofon has its research and manufacturing facilities in Denmark: the production of cartridges and components is carried out at the factory in Nakskov. Production is based on experienced operators with a high level of craftsmanship. This assures the high uniform quality of Ortofon products.

Ortofon is today recognized among consumers and industry professionals as a quality brand. Our products concentrate not only on providing the best sound, but more importantly the faithful and correct reproduction of the recorded sound. Ortofon's world-class engineering and manufacturing continually raise the bar for accurate sound reproduction, with a vast array of products that provide both exceptionally high performance and value for all listeners – music lovers and highend audiophiles alike.



MC Anna

The story behind the MC Anna cartridges

The Ortofon Exclusives series of our highest-performing Moving Coil cartridges has now been expanded to include a new premier model - the MC Anna Diamond. The MC Anna and the MC Anna Diamond models represent the highest echelon of Moving Coil cartridges. As its name suggests, the MC Anna Diamond uses a Diamond cantilever that in combination with Ortofon Replicant 100 diamond offers extreme transparency, speed and responsiveness beyond that of any other combination.

These state of the art products, representative of numerous Ortofon design elements and ideals, are truly exemplary of the highest degree of performance possible in contemporary analogue playback technology.

Ortofon dedicates these flagship cartridges to the operatic soprano Anna Netrebko, a virtuoso whose performance displays a formidable technical arsenal of endless versatility. With the dedication of the MC Anna, Ortofon once again emphasizes the company's unchanging commitment and devotion to the music and to the purest delivery of recorded sound. Much like Anna Netrebko, Ortofon aspires to provide the ultimate musical experience through a mixture of innovation and technical expertise, combined with inspiration that goes beyond mere thought to reveal true inner emotion.

Design elements

- The housing and the body of the cartridge are made in Titanium with the Selective Laser Melting technique
- High-performance iron-cobalt alloy is applied for select parts of the magnet system.
- The Wide-Range armature damping system provides complete elimination of unwanted resonance.
- The Ortofon Replicant 100 diamond, thin and light, with an extraordinarily large contact surface, provides tracing accuracy unparalleled by any other needle in existence.
- The use of Diamond cantilever in the MC Anna Diamond has prompted a paradigm shift in our understanding of analogue reproduction. The improvements found in the use of a Diamond cantilever have redefined the boundaries of analog reproduction, presenting greater inner detail, subtlety, and depth like never before devotion to the music and to the purest delivery of recorded sound. Much like Anna Netrebko, Ortofon aspires to provide the ultimate musical experience through a mixture of innovation and technical expertise, combined with inspiration that goes beyond mere thought to reveal true inner emotion.



Advancements in technology

An engineering feature adding to the damping capability of the MC Anna and MC Anna Diamond cartridges is the Selective Laser Melting process in which fine particles of Titanium are welded together, layer-by-layer, to construct a single piece body devoid of unnecessary material. Using this technique the density of the body can be precisely controlled, allowing for extremely high internal damping. The final result provides absolute freedom from resonances existing in the cartridge body material and allows for the MC Anna and MC Anna Diamond cartridges to be perfectly matched with an extremely wide array of different tonearms.

The use of Titanium in the MC Anna and MC Anna Diamond cartridges has provided a further improvement to the overall rigidity of the structure, the cartridge weight and its dynamic capability. Because of the nature of SLM-based construction, each cartridge body is cosmetically unique and will show small dimples or lines under close examination.



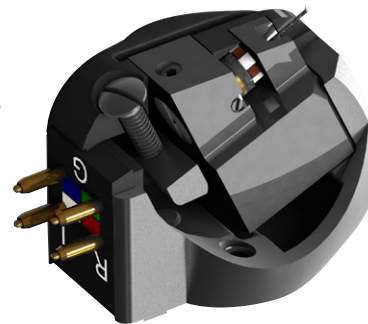
Magnet system

Arguably one of the most significant advancements in the MC Anna and the MC Anna Diamond is our dramatically higher efficiency **magnet system**. The optimized geometry of the magnet system combined with choice materials like neodymium and iron-cobalt offers an unprecedented consistency of the flux density within the system's air gap. Due to an increase of active material inside of the magnet system, the magnetic field strength is delivered more uniformly, allowing each coil to sense identical flux density regardless of its position. Because of this, dynamics and impulse linearity are preserved to an overwhelming extent.

The use of this new optimized magnet system allows for the use of **a lightweight, non-magnetic armature**, which also provides noteworthy benefit to the dynamic capability of the MC Anna and the MC Anna Diamond cartridges. The reason for this is that our specially designed precision moulded non-magnetic armature does not alter the magnetic field during movement. Hence when combined with ultrapure oxygen-free copper coil wire, it delivers perfect reproduction of the cantilever movements without compromise. The material applied for the armature has very high strength and rigidity.

Because the new magnet system delivers a tremendous magnetic flux density, the need for design compromises is effectively eliminated. It is due to this aspect that the amount of coil windings required to achieve significant output voltages is reduced to a minimum, resulting in a further reduction in moving mass.

The new magnet system has also allowed for more spaciousness within the air gap, allowing for coil windings to be done completely independent of each other, without any overlap or interaction between them and with an extreme precision in each coil turn in all layers. The cumulative result of these improvements simply delivers more lifelike reproduction, with nearly boundless imaging, dimensionality and dynamics.



Damping



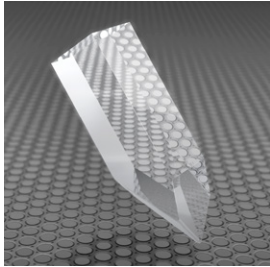
One of the important design components is Ortofon's Wide Range Damping system (WRD), in which a small, heavy platinum disc is sandwiched between two rubber absorbers, both with different properties. This ensures not only an exceptional tracking performance, but also creates a perfect damping through the entire frequency range. Because of this, distortion and resonance are virtually eliminated.

The MC Anna and the MC Anna Diamond also employ a greater degree of control over vibrations by a way of a newly-improved Wide-Range armature Damping system (WRD). By extending the armature beyond the coils, it can interface directly with the rubber dampers, which sandwich a small heavy disc of platinum. This offers more consistent movement, and thereby better stereo perspective and transient delineation. System resonances are also damped by the use of the Thermo Plastic Elastomer (TPE) compound which comprises the bottom cover assembly.

The WRD system, which was originally introduced in the MC 20 Mk II in 1979 and was also used in the Exclusive Series cartridges, is one significant reason why the MC Anna Diamond, while achieving the linear frequency response and the high upper frequency limit, at the same time tracks a fantastic 80 μm at a vertical tracking force of 2.4 grams.

Diamond

The finest diamond in the world



As in the entire Exclusives series cartridges, the MC Anna and MC Anna Diamond make use of Ortofon's Replicant 100 diamond, known for its thin and light profile and extraordinarily large contact surface. Since the Replicant 100 is closest to the shape of the cutting stylus, it can trace with accuracy unparalleled by any other needle in existence.

Special polishing of the diamond along with the use of a Boron cantilever in the MC Anna model offer extreme transparency, speed and responsiveness. The addition of a solid Diamond cantilever found in the MC Anna Diamond provides the best possible interface between the stylus and armature, owing to its hardness and crystal structure. The improvements found in the use of a Diamond cantilever have redefined the boundaries of analog reproduction, presenting greater inner detail, subtlety, and depth like never before.

Stylus protection guard

The stylus guard provided for MC Anna and MC Anna Diamond is designed to be easily replaced and removed without risking contact to the fragile stylus assembly. To avoid accidental damage to the stylus or cantilever please mount the enclosed stylus guard onto the cartridge whenever the cartridge is not in use. The stylus guard should also be attached during mounting or removal of the cartridge.



The stylus guard is simply removed by holding the sides between the thumb and forefinger and pulling straight along the orientation of the cartridge. Affixing the stylus guard is of course accomplished by the reverse movement yet still using a straight movement.

Please read our recommendations for stylus care on our HiFi FAQ:

www.ortofon.com/support/support-hifi/faq-installation

Stylus guard is available in Ortofon webshop:

www.ortofon.com/hifi/products/styli-guards

Set-up

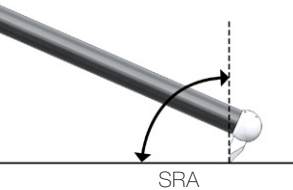
As with any cartridge, setup is absolutely crucial in order to ensure the best sound reproduction capabilities. Although there are many valid paradigms that exist with regard to cartridge setup, Ortofon does not endorse a specific methodology and encourages users to explore the options as suggested by their High-End Audio dealer, including professional setup.

In addition to alignment, consideration must be made to adjust azimuth, anti-skating and VTA in order to maximize the potential performance of any high-end cartridge.

Please find our recommendations for set-up and alignment on our HiFi FAQ:

www.ortofon.com/support/support-hifi/faq-installation

Stylus Rake Angle (SRA)



With a complex stylus shape like the Replicant 100, there must be special attention paid to positioning the diamond in the groove.

The Stylus Rake Angle (SRA - see figure) is very important to the performance of the Replicant 100 stylus, and the long

contact surface (the sharp edge) of the diamond should be almost perpendicular to the record surface when viewed from the side. The angle between the record surface and the cantilever is close to 23 degrees when SRA is 90 degrees.

A perfect starting point is to set the tonearm parallel to the record surface and to use the recommended tracking force. The contact surface will be close to perpendicular to the record surface with this setting. The SRA can now gradually and carefully be changed by adjusting VTF and, if necessary, the tonearm height. The target should be an SRA around 92 degrees, determined by the listening experience. In other words, the point of the stylus should point slightly towards the tonearm base.

Azimuth adjustment

In order to attain maximum channel separation, it may be possible to adjust the azimuth. Should the cartridge not be perfectly perpendicular to the record's surface, the tonearm or headshell may require to be tilted a few degrees.

Correct azimuth is established by observing the reflected image of the 2 parallel cartridge front lines. The cartridge's front lines must form a straight line with the reflected lines. A flat mirror may also be used to facilitate this process.

Terminal connections

Please correlate the colour code for the terminals on the drawing with the colour coding on the cartridge.

The terminals for right and left channel have the same position as normal for Ortofon cartridges. We recommend the enclosed LW-800S leadwires to be mounted on the cartridge and tonearm before aligning and calibrating the cartridge. The length of the enclosed lead wires will fit a distance between cartridge and tonearm terminals of 35 mm, which will work with most headshells.



Antiskating

Correct bias or anti-skating adjustment is important in order to achieve optimal tracking ability and thereby minimum record wear and distortion. For the Ortofon Replicant stylus used in MC Anna and MC Anna Diamond just set normal antiskating according to recommended tracking force.

Cartridge break-in

Although the MC Anna and MC Anna Diamond will provide top reproduction right out of the box, the cartridge may slightly change character during the first tens of hours of use. This is completely normal and you may, in fact, find that this adds further refinement to your listening experience.

Maintenance

Stylus care

Ortofon does not recommend the use of solvents of any kind for cleaning of either the record surface or stylus. If necessary, records may be washed in lukewarm demineralized water with a dash of sulphonic soap. Remove dust carefully from record surfaces by using a fine antistatic brush or cloth before every use. The use of solvents on the stylus and cantilever may damage stylus cement; interior parts of the cartridge can be affected seriously by the intrusion of solvents. The Ortofon warranty will not be valid in cases where such treatment has caused malfunction.

For cleaning the stylus, use the enclosed fiber brush a few times along the cantilever in the direction of the stylus, whenever you play a new record or change sides. Record care should also be performed regularly and is of paramount importance to prolong the life and condition of the stylus. Because of this, a record cleaning machine may be considered for ease and quality of record cleaning.



Repair service

Ortofon MC Anna and MC Anna Diamond are exclusive cartridges of very high quality. To support our customers who have accidentally damaged their cartridges, Ortofon offers a special Repair service and/or Exchange service. Should you have a need for any service, please contact your local Ortofon authorized HiFi partner for further assistance: www.ortofon.com/where-to-buy.

Special Repair service is also available through the Ortofon webshop: www.ortofon.com/hifi/products/repair-service.

Warning

Ortofon MC Anna and MC Anna Diamond phono cartridges are only for mounting on tonearms and must not be used for other purposes.

MC Anna Technical Data

Technical Data	MC Anna	MC Anna Diamond
Output voltage at 1 kHz, 5cm/sec.	0.2 mV	0.2 mV
Channel balance at 1 kHz	0.5 dB	0.5 dB
Channel separation at 1 kHz	25 dB	25 dB
Channel separation at 15 kHz	22 dB	22 dB
Frequency response	20 Hz - 20 kHz / - 1.5 dB	20 Hz - 20 kHz / - 1.5 dB
Tracking ability at 315 Hz at recommended tracing force	80 μ m	80 μ m
Compliance, dynamic, lateral	9 μ m/mN	9 μ m/mN
Stylus type	Special polished Nude Ortofon Replicant 100 on Boron Cantilever	Special polished Nude Ortofon Replicant 100 on Diamond Cantilever
Stylus tip radius	r/R 5/100 μ m	r/R 5/100 μ m
Tracking force, recommended	2.6 g (26 mN)	2.4 g (23 mN)
Tracking angle	23°	23°
Internal impedance, DC resistance	6 Ohm	6 Ohm
Recommended load impedance	> 10 Ohm	> 10 Ohm
Cartridge body material	SLM Titanium	SLM Titanium
Cartridge colour	Silver / black	Silver / black
Cartridge weight	16 g	16 g



Get more information about
the Ortofon cartridges

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Date:

Approved by: