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Ortofon

World leader in the cartridge industry

Ortofon has always been a company working with sound reproduction. It was founded in 1918 in Copenhagen and started by making soundtracks for movies. In 1948 the company developed its first moving coil cartridge, since then Ortofon has developed and manufactured more than 300 different cartridges. Today Ortofon is the world leader in cartridges. This is the result of combining design with technology.

Acoustics, materials technology and micro mechanics are key competences in Ortofon's technological prowess. Ortofon has its research and manufacturing facilities in Denmark. The production of cartridges and components is carried out at the company's factory in Nakskov, Denmark.

Production is based on experienced workers with a high level of craftsmanship. This assures the high uniform quality of Ortofon products. The cartridges are sold worldwide through a network of more than 60 importers and sales subsidiaries in the USA and Japan. Ortofon is today recognized among consumers and industry professionals as a quality brand.

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Per Windfeld

Ortofon's former chief engineer Per Windfeld falls into the category of true hi-fi visionaries. His massive contribution has been a feature of the development of cartridges all over the world ever since he emerged in the mid-1970s as head of development for the famous MC 20 cartridge, which became the modern successor of the SPU model.

The last 30 years have seen an incredible number of successes. This is why Ortofon is now paying tribute to Per Windfeld with a newly developed, state-of-the-art, moving coil cartridge in the absolute high-end class.

In terms of design technology, the Ortofon MC Windfeld is of course based on many of the most important innovations and patents that Per Windfeld secured for Ortofon in the course of his work stretching back more than 30 years.



Magnet



Neodymium magnet with FSE

The magnet system combines Per Windfeld's designs for the much-admired Kontrapunkt series and the MC Jubilee. It is based on an extremely strong, compact neodymium magnet, which makes the generator system both compact and through its minimal dimensions also lighter.

A so-called Field Stabilising Element, a small cylinder of conductive material strategically placed inside the magnet system, guarantees that the force field remains stable regardless of the movement of the armature. FSE improves the channel separation, while at the same time minimising dynamic distortion and intermodulation. The result: fantastic dynamics and even more elbow room between the musicians. You simply experience more drama and greater breadth, height and depth in the sound scenario between the high-end system's loudspeakers!

Damping

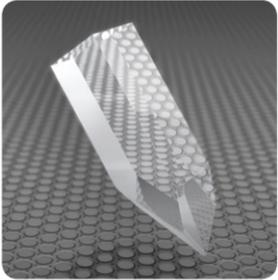


WRD system

One of the important components is the WRD system (Wide Range Damping), in which a small, heavy disc of exotic metal is clamped between two rubber absorbers with different properties. This makes sure that the tracking performance is maintained simultaneously with the perfect damping in the whole frequency range, with the effect that distortion and resonance are avoided.

The WRD system, which was originally introduced in the MC 20 Mk II in 1979 and was also used in the MC Jubilee and many of Ortofon's other top-class cartridges, is one contributory reason why the MC Windfeld, while achieving the most linear frequency response and the highest upper frequency limit ever, at the same time tracks a fantastic 100 μm at a vertical tracking force of 2.6 grams.

Diamond



The finest diamond in the world

Another precondition for linear reproduction with a wide frequency range and optimal tracking performance is a diamond, the shape of which is as close as possible to the original cutting needle. To achieve this, the Ortofon MC Windfeld uses an ultra-fine polished version of the unique Ortofon Replicant Stylus 100.

This diamond, which is already known from products such as the MC 3000 Mk II and MC 5000, is incredibly small and light, but has an extraordinarily large vertical contact surface despite its minimal radius of rounding. Correctly fitted at a vertical angle of 23 degrees, an Ortofon Replicant Stylus 100 will read the musical information in the grooves of a record with a greater degree of accuracy than any other kind of needle.

Material

New coil technology and expensive materials

Zero-loss transmission of the diamond's movements to the expensive Aucurum coils of gold-plated, 99.999999% oxygen-free, monocrystalline copper is achieved in the Ortofon MC Windfeld via a cantilever in boron (just as in the MC Jubilee), which combines a low moving mass with a very high degree of mechanical rigidity.

A special design of armature makes it possible to position the coil turns extremely precisely in several layers. This technology achieves higher channel separation, lower distortion and better channel balance. A low output impedance of 4 ohm and a medium output voltage of 0.3 mV makes the Ortofon MC Windfeld a perfect partner for most step-up transformers as well as active MC pre-amps.

Design

Zero resonance cartridge housing with “spikes”

Historically, Ortofon has always followed its own path with regard to the mechanical design of the cartridge housing, because mechanical rigidity and total freedom from resonance in the audible range is a precondition for optimal sound quality. In the MC Windfeld, Ortofon continues to build on the structure of the Kontrapunkt range, in which the cartridge housing's contact with the pick-up arm takes place through three hard, well-defined points, i.e. a kind of spikes. This means that the mechanical integration of the cartridge and the pick-up arm are always absolutely perfect.

We have reinforced the construction by allowing one central structure, made in a special alloy, to reach from the 2.5 mm threaded holes at the top all the way down around the motor system at the bottom. This makes the MC Windfeld Ortofon's strongest and most resonance-free cartridge yet, with a direct mechanical connection between the motor and the tonearm. What this means for the dynamics, resolution and richness of detail in the sound simply has to be experienced.

But the Ortofon MC Windfeld is also unique in cosmetic terms: the parts of the cartridge housing are produced with matt and polished black surfaces. The underside facing the record is covered by a new shield, which reinforces the mechanical structure. Per Windfeld's characteristic initials in gold, which decorate the sides of the cartridge housing, stand as a signal to the outside world that this technologically advanced cartridge is Ortofon's finest, most accurate and in our own opinion also best-sounding design.



Setup

Connecting - Fig. 1

Please correlate the colour code for the terminals on the drawing with the colour codings on the cartridge. The terminals for right and left channel have the same position as normal for Ortofon cartridges. We recommend to mount the enclosed lead wires on cartridge and tonearm before fixing the cartridge. The length of the enclosed lead wires will fit a distance between cartridge and tonearm terminals of 35mm, which will work with most head shells.



Fig. 1

Mounting

For mounting the cartridge to the head shell you have 3 pairs of screws at your disposal. It is of great importance to use the right length of screws when mounting the cartridge. Using too long screws may stop the screws inside the cartridge resulting in insufficient mounting in the head shell. The choice of screw length is depending on the thickness of the head shell, and a maximum of 3mm free screw length under the head shell: For head shells up to 2mm use 3mm screws. For head shells between 2mm and 3.5mm use the 5mm screws from the packing. For head shells between 3.5mm and 5mm use the 6mm screws. Mount the cartridge loosely to the head shell at this moment.

Antiskating

For the MC Windfeld stylus types just set normal antiskating, according to recommended tracking force.

Adjustment

Azimuth adjustment - Fig. 2

With the MC Windfeld cartridge it is possible to adjust azimuth, even when the cartridge is mounted on tonearms with fixed head shell. The adjustment is very important for achieving maximum channel separation and may be necessary when the cartridge for some reason is not perpendicular to the record surface. Because of the little rise on the clamping plate between the screw holes, you can tilt the cartridge approx. 2 degrees, when you fasten or unscrew either of the screws. Correct azimuth is then established by observing the reflected image of the 2 parallel cartridge frontlines, in the record surface. The cartridge frontlines must form a straight line with the reflected lines. Do not over-tighten the screws when adjusted. The tonearm must be parallel with the record surface at recommended tracking force.



Protection

Stylus Guard

To avoid accident to the stylus or cantilever please mount the enclosed stylus guard onto the cartridge before you unscrew it and leave it on until the cartridge has been mounted into the headshell.

A new stylus protection guard can be purchased on the Ortofon webshop www.ortofon-shop.com.



Maintenance

Stylus care

Ortofon do not recommend the use of solvents of any kind for cleaning of either record surface or stylus. If necessary, records may be washed in handwarm demineralised water with a dash of sulphonic soap. Clean record surface carefully from dust by using fine antistatic brush or cloth before every use. The use of solvents on stylus and cantilever may damage stylus cement and 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 fibre brush several times along the cantilever in the direction of the stylus, whenever you play. This will take all normal dust and most of the slicky release agent from new records.

Cartridge break-in

Please allow the cartridge to play for some hours before it reveals its full potential of sound performance.

Ortofon exchange service

Owing to the design of the Ortofon moving coil cartridge, the stylus is not part of a replaceable assembly and therefore Ortofon offers, through its dealers, an Exchange service, please contact your dealer if you need this service.

Ortofon also offers Special Repair service for the MC Windfeld cartridge, please contact your local Ortofon Authorised dealer if you need this service.

Special Repair service is also available on the Ortofon webshop:
www.ortofon-shop.com.

Warning

This phono cartridge is only for mounting on tonearms and must not be used for other purposes.

MC Windfeld Technical Data

TECHNICAL DATA	MC Windfeld
Output voltage at 1000 Hz, 5cm/sec.	0,3 mV
Channel balance at 1 kHz	< 0,2 dB
Channel separation at 1 kHz	> 28 dB
Channel separation at 15 kHz	> 22 dB
Frequency range at - 3dB	20-80.000 Hz
Frequency response	20-20.000 Hz + / - 1 dB
Tracking ability at 315Hz at recommended tracking force	100 µm
Compliance, dynamic, lateral	16 µm/mN
Stylus type	Nude Ortofon Replicant 100, special polished
Stylus tip radius	r/R 5/100 µm
Tracking force range	2,3-2,8 g (23-28 mN)
Tracking force, recommended	2,6 g (26 mN)
Tracking angle	23°
Internal impedance, DC resistance	4 Ohm
Internal inductance	700 mH
Recommended load impedance	> 10 Ohm
Cartridge body material	Stainless steel/special alloy
Cartridge colour	Black/Black
Cartridge weight	13 g



Get more information about
the MC Windfeld cartridge.

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Date:

Approved by: