Rondo

MOVING COIL CARTRIDGES

ortofon
accuracy in sound



Rondo a cartridge made of wood, this natural and unique material for acoustic products

Wood is an excellent material for a cartridge but difficult to use.

Therefore when we were informed from Japan about a new moulding material based on 55% grinded wood in a resin matrix to be processed by injection moulding just like thermoplastic material, the chance of making even complicated structures in design became of high interest.

Also well known Japanese experience in decorative art and lacquering techniques became of interest for the presentation of a quite new look for the Rondo models.

Surface colours and decorations were chosen to be basic Bronze – Blue and Red lacquer modulated by black shadows.

Tooling process was decided to take place in Japan based on drawings and specifications made by Ortofon engineers. The integrated Ortofon MC-systems used for the 3 models would involve new and well known components responsible for the exclusive Ortofon sound quality and easy mounting.

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Introduction

Use of Neodymium magnets are implemented for achieving 500uVolt high outputs – to obtain best signal to noise ratio for customers.

Combination of diamonds and cantilevers with individual developed damping systems for the models was arranged for very linear frequency response and high tracking ability.

Over the years Ortofon has built up its own factory for developing and producing the essential and very small rubber elements responsible for long life controlling of frequency responses and tracking ability - in the various cartridge models.

Very close mechanical contact between wood-based housings and motor-units has resulted in new homogeneous sound quality.

2 years ago Ortofon celebrated its 80 years anniversary by launching a new SPU-cartridge with a new GM-housing machined in pure oak-wood.

By using wood we have learned about the amassing non-resonant influence wood could make to the sound image.

A very special genuine copper-wire with a two-layer gold plating was chosen for the armature windings.

The material named Aucurum shows excellent resistance to corrosive elements from the environment and thereby stabilise conductivity of the small number of armaturewindings in the systems - again very important for the quality of sound.

Mounting of the Rondo cartridge is easy and firm using 2,5 mm screws in threaded half inch basis-holes.

Small bars on top of the base-plate make tilting of the cartridge within plus/minus 2 degrees possible for max. channel separation.

Members from the Ortofon Golden Ear Panel working among musicians in Denmark as well as among members of the Vienna Philharmonic Orchestra have released their very much alike remarks about the individual characteristic qualities in sound for three Rondo models.

TECNICAL DATA	*MC RONDO Bronze*
Output voltage at 1000 Hz, 5cm/sec.	500 µV
Channel balance at 1 kHz	< 1 dB
Channel separation at 1 kHz	> 25 dB
Channel separation at 15 kHz	> 18 dB
Frequency range at - 3dB	20-40.000 Hz
Frequency responce FIM distortion at recommended	20-20.000 Hz +1,5 dB
Tracking force, DIN 45.542	< 1%
Tracking ability at 315 Hz at recommended tracking force	90 µm
Compliance, dynamic, lateral	15 µm/mN
Stylus type	Nude FG8o, tapered Al. cantilever
Stylus tip radius	r/R 5/80 µm
Equivalent stylus tip mass	0,30 mg
Tracking force range	2-2,5 g (20-25 mN)
Tracking force, recommended	2,3 g (23 mN)
Tracking angle	20°
Interal impedance, DC resistance	6 Ohm
Recommended load impedance	10-200 Ohm
Cartridge body material	Grinded wood/Resin comp.
Cartridge colour	Bronze
Cartridge weight	10,5 g

Rondo Bronze



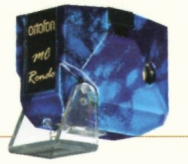
The Nude FG 80 diamond is mounted on a conical aluminium cantilever yielding very linear frequency response over the entire frequency range - at the same time ensuring very high tracking ability.

The sound from the Rondo Bronze cartridge is very detailed in its spectrum and differentiates the sound source in a refined and homogenous manner.

Big orchestral music will be reproduced powerful yet well controlled and open up space around the instruments.

Recommended load resistance between 50 and 100 Ohm depending on personal preference of openness.
Higher load resistance will always tend to more liveliness and space in sound-image.

Rondo Blue



The Nude FG 70 diamond is here mounted on a cylindrical aluminium cantilever again revealing a very flat frequency response passing 20 kHz - including very high tracking ability at recommended tracking force of just 2,3 gram.

The Rondo Blue cartridge sound is defined to be more expressive and will distinguish higher from lower pitched instruments - yet well controlled by the influence of wooden material.

We find the sound picture will tend to suit customers liking orchestral music as well as smaller groups of instruments like chamber music, smaller choirs and solo instruments.

Recommended load - depending on volume or dynamic in music – might be around 50 Ohm or even lower.

Rondo Red



The Ortofon Nude very fine polished elliptical diamond is mounted on a cylindrical aluminium cantilever.

The Rondo Red is a very homogeneous all round cartridge meaning that sound image will tend to less dynamic strength and more smooth reproduction - working perfect with all sorts of not very complex music.

The cartridge is clearly out of the same family of sound as Bronze and Blue - all of them taking benefit from the wooden housings.

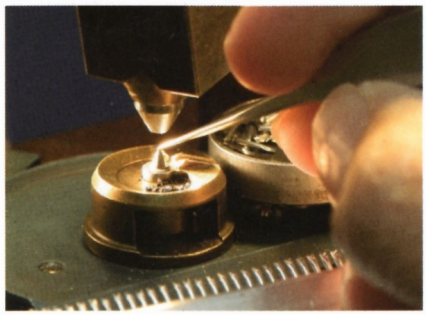
Recommended load around 100 Ohm or even higher if added "air" might be preferred.

MC RONDO Blue	*MC Rondo Red*
500 µV	500 µV
< 1,5 dB	< 2 dB
> 25 dB	> 22 dB
> 18 dB	> 15 dB
20-35.000 Hz	20-30.000 Hz
20-20.000 Hz ±1,5 dB	20-20.000 Hz ±2 dB
< 1%	< 1%
85 µm	80 µm
15 µm/mN	15 µm/mN
Nude FG70, Al. cantilever	Nude elliptical Al. cantilever
r/R 5/70 µm	r/R 8/18 µm
0,30 mg	0,30 mg
2-2,5 g (20-25 mN)	2-2,5 g (20-25 mN)
2,3 g (23 mN)	2,3 g (23 mN)
20°	20°
6 Ohm	6 Ohm
10-200 Ohm	10-200 Ohm
Grinded wood/Resin comp.	Grinded wood/Resin comp.
Blue	Red
10,5 g	10,5 g

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Winding of very small moving-coil armatures processed by hand under microscope - using copper-wires with a thickness like human hair.



Orientation and mounting the delicate small diamond under microscope on the cantilever.



Final testing of each moving-coil cartridge by using several test-records and recording equipment.

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