MØRCH:

A UNIQUE CONCEPT IN TONEARM DESIGN.

OUTSTANDING DESIGN FEATURES OF THE MØRCH TONEARM

Anyone acquainted with today's Hi-Fi equipment will recognize that a number of outstanding products come from Denmark, products which are fine examples of high technical standards and attractive styling.

The MØRCH tonearms, the models DP-6 and UP-4, are such an example. To Hi-Fi circles all over the world the name MØRCH is not unknown, as their turnable manufacturing dates back some 25 years. This experience over the years led to experimenting with all types of tonearms in order to gain greater insight into the turntable/tonearm interface.

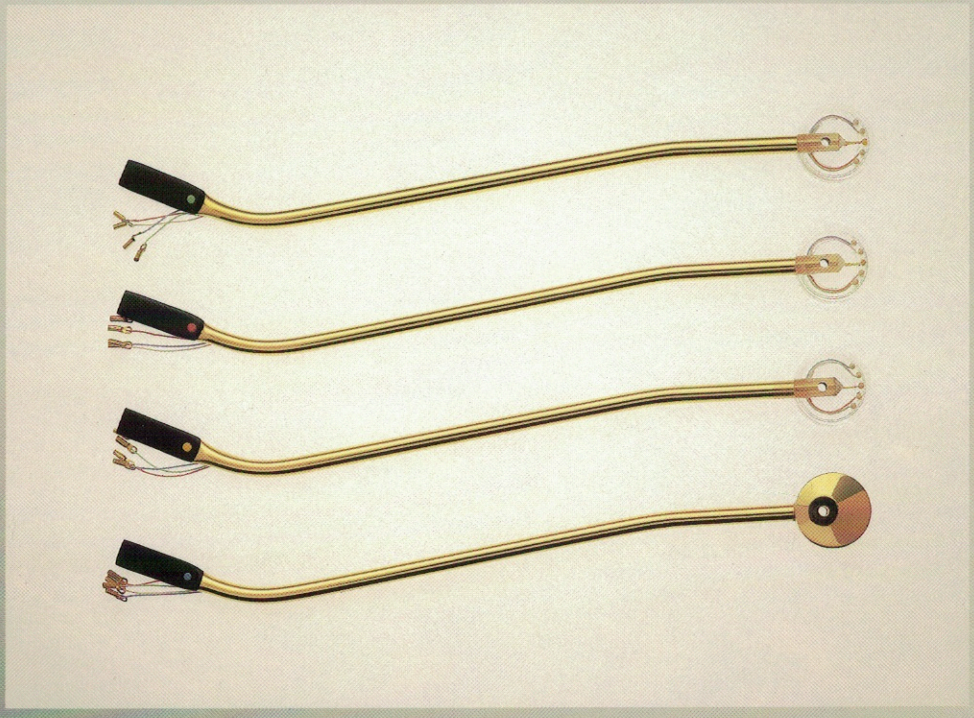
While observing correct design fundamentals, crucial parameters such as choice of materials, a new approach to mass distribution, and elimination of arm resonances, required in depth study for the design of an exceptional arm. This research resulted in the invention and patenting of an entirely new concept of tonearm. Applying the many lessons learned and translating these findings into a workable product was an arduous, albeit rewarding, task.

The MØRCH tonearms consist of an arm base with its mounting facilities, bearing assembly, balancing rod and weights, and the arm tube for the cartridge. One appealing feature of the MØRCH design is the arm tube, which can be separated from the arm base by removing a nut. Four arm tubes, each one of different mass (from ultra light to extra heavy), are available for specific cartridge requirements.

The fundamental tonearm resonance (present in all arms) is partly determined by the compliance and the weight of the cartridge that is to be used and partly by the weight of the arm, known as the "effective mass". However, the frequency of the fundamental resonance can be moved up or down by altering the mass of the tonearm. Thus, by choosing the correct arm tube out of the 4 available, the fundamental resonance can be moved to a frequency where it does not interfere with the audio signal.

Standard arm tubes available for both models:

light	3.8 g
medium	5.7 g
heavy	7.4 g
extra heavy	13.1 g



MØRCH DP-6 PRECISION
A special version of the arm tube is supplied with a large cartridge mounting platform having the underside precision ground for perfect contact with the cartridge.

With the lightest of the arm tubes you achieve the lowest effective mass, and with this particular arm tube the MØRCH tonearm is the lightest available today. This arm tube is designed for cartridges using a low tracking force, since they have a high compliance. For cartridges requiring a high tracking force (usually low compliant) one of the heavy arm tubes should be chosen. Users that own more than one cartridge can mount each of them in its proper arm tube. Changing cartridges then becomes a simple swap between arm tubes. Thus the mass of the arm is always optimized for its cartridge.

To counteract resonances the arm tube and its mounting platform for the cartridge are made out of one piece of metal angeled twice along its length, and internally damped with a foam-type material.

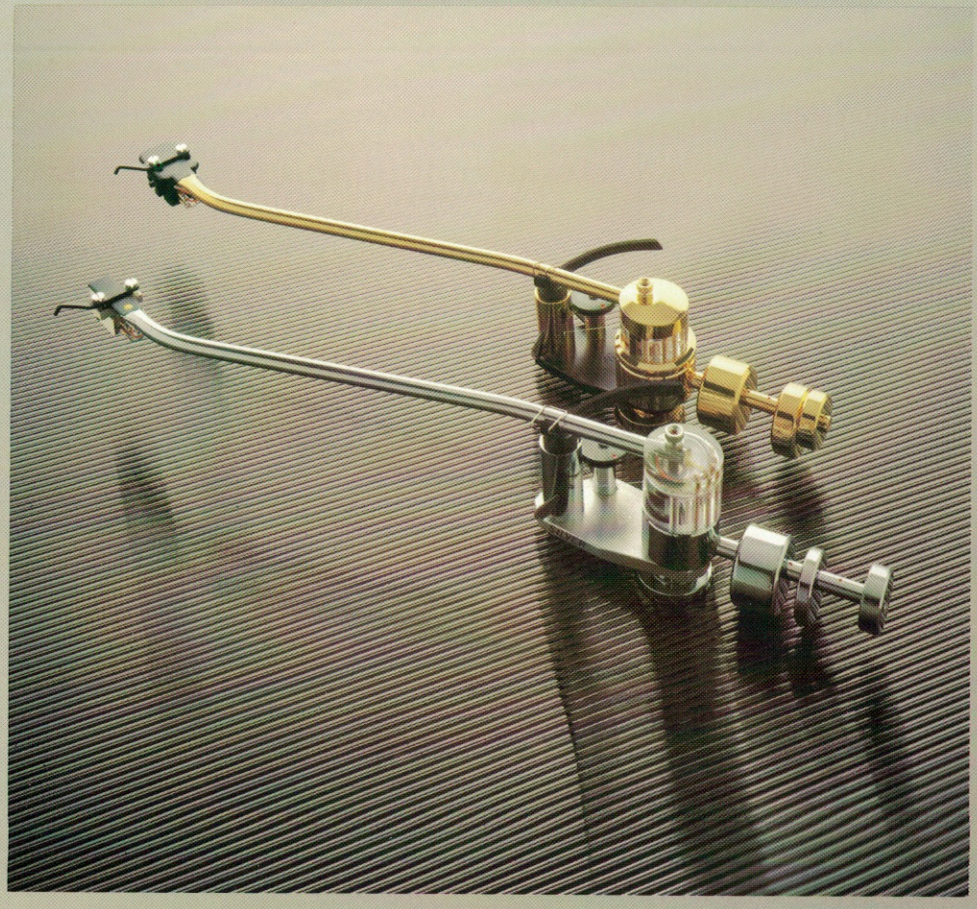
A cavity in the central body housing the bearings is off-centered in the forward direction, providing an asymmetric mass distribution for the prevention of symmetrical barrel resonances. Both the rod with its balancing weights and the arm tube are rigidly attached to the arm's central body. The body itself is solid and very heavy. Thus vibrations originating in the cartridge are efficiently damped before they reach the bearings, their stability being assured.

In addition three countreweights of different size, and one tracking force weight contribute to the ideal concentration of the arm's mass close to the fulcrum. The lateral balance is adjusted by way of the counterweights, which are eccentrically positioned on the counterweight rod.

The bearing assembly in the above mentioned cavity is in height located as an extension of the horizontal plane of the record surface. Therefore with warped records the motion of the stylus will remain vertical when "bumps" are negotiated and warp wow will not be heard.

MØRCH DP 6

MØRCH UP 4



MØRCH DP-6

The top model.

A further development of the well-proven concept of the model UP-4. Technically refined with clearly higher level of performance.

Completely new way of making bearings.

One high precision ball-bearing for the horizontal plane of motion and two precision sapphire bearings for the vertical mode of motion. Independent damping of the two modes of motion is possible.

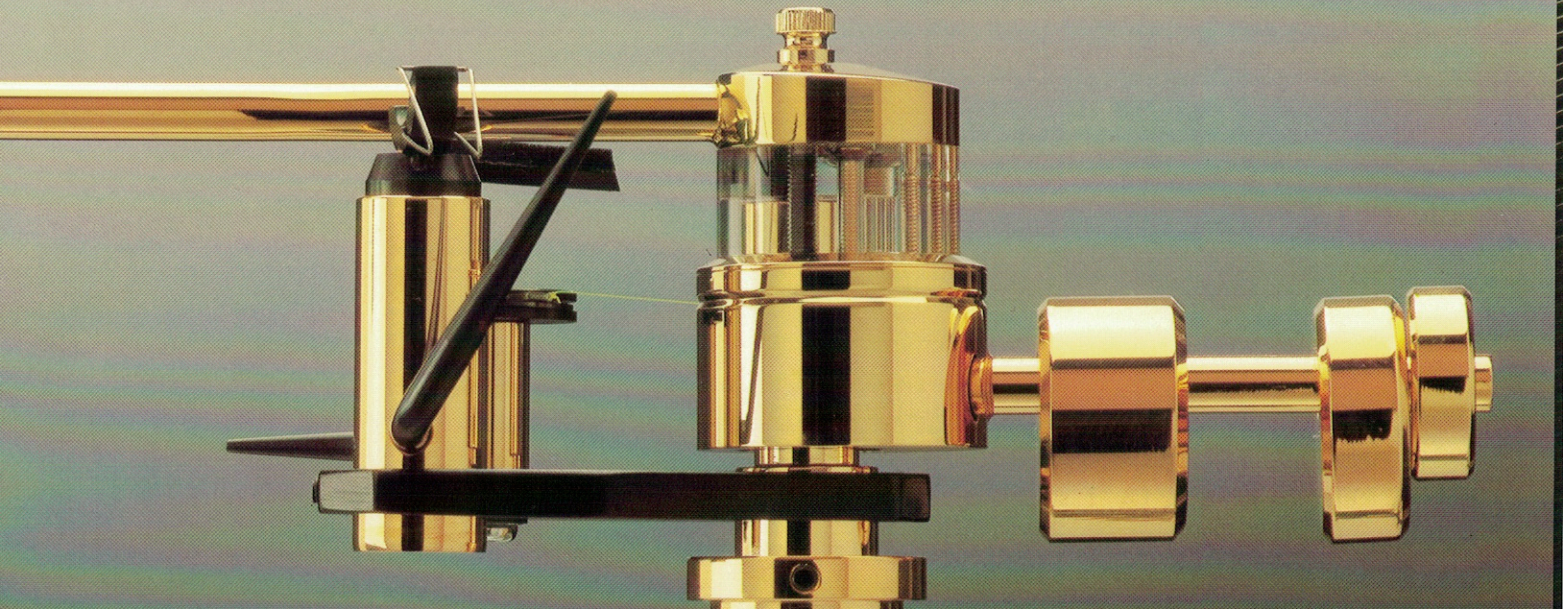
Internal wiring is made with extremely pure silver, insulated with teflon. This wiring was developed to ensure a perfect transmission of the tiny signals from the cartridge.

Supplied in 24 carat GOLD finish, the arm tube gold-plating being made without the use of magnetic materials.

Available also in CHROM and at special order in BLACK finishes.

MØRCH UP-4

Special unipivot concept with hardened steel pivot resting on a concave, polished sapphire, and damped with silicone fluid. Same assortment of arm tubes as for model DP-6. Supplied in CHROME finish. Internal wiring is copper or, at an additional charge, silver as in the DP-6. All arm tubes are interchangeable between the two models.



The antiskating force is applied by a watch spring. Its tension is adjustable for maximum accuracy even while a record is playing. The tension is transferred via a nylon string which is attached to the outside wall of the arm's central body. As the arm tube moves over the record, the correct geometry between the spring/filament assembly and the central body's rotation provide for the exact variation of skating compensation over the entire playing surface of a record.

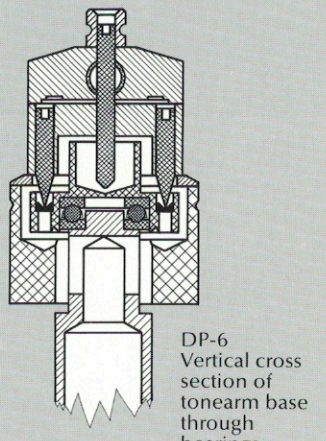
The tonearm is adjustable for the vertical tracking angle as well as the azimuth.

The top model MØRCH DP-6 has a unique combination of bearings. A silicone-damped, high precision ball-bearing assembly is used for the horizontal plane of motion. Two precision sapphire bearings are incorporated for the vertical mode of motion, which may be damped also, if desired, by injecting silicone fluid into a well for vertical damping. The damping of the horizontal plane of motion is independent of the damping of the vertical mode of motion, and the latter can further be adjusted to all intermediate levels of damping.

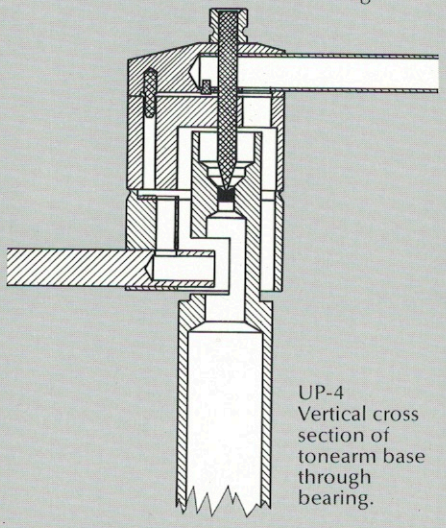
In model DP-6 the azimuth adjustment for perfect channel separation is accomplished at the pivot of one of the sapphire bearings.

The MØRCH UP-4 incorporates a special concept of the unipivot principle. The bearing consists of a hardened steel pivot resting in a concave, polished sapphire. The bearing is damped in all directions with silicone fluid. The low positioning of the bearing provides for a greater stability compared to other unipivot arms, since a considerable part of the moveable mass of the arm is positioned above the pivot point.

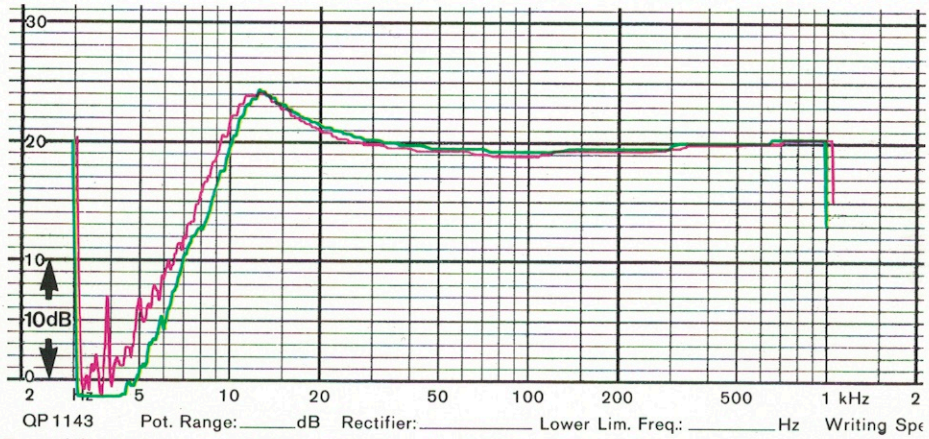
With the model UP-4 the azimuth adjustment is made by way of the counterweights.



DP-6
Vertical cross section of tonearm base through bearings.



UP-4
Vertical cross section of tonearm base through bearing.



Typical frequency response 3 to 1000 Hz. Left and right channel completely identical. Perfectly damped fundamental resonances – spurious vibrations eliminated.
DP-6 with horizontal and vertical damping. Left channel green. Right channel red.

In spite of the slender appearance, the MØRCH tonearms have an amazing mechanical strength and stability. They are the result of the best precision mechanics, the finest craftsmanship, and realize technical and tonal claims without compromise. What has been achieved with the MØRCH tonearms enables the cartridge to accomplish its task with extraordinary motional ease while maintaining a very high degree of stability. The proof of their superiority lies in the listening! The MØRCH arms have received high acclaim from both critics and skeptics, simply because their sonic superiority can be easily demonstrated.

Technical specifications MØRCH DP-6/UP-4.

Construction: Radial arm with interchangeable arm tubes.
Bearing principle: DP-6 Dual bearing UP-4 Unipivot.
Effective mass of complete tonearm with arm tube:

Light	(green)	3.8 g
Medium	(red)	5.7 g
Heavy	(yellow)	7.4 g
Extra heavy	(blue)	13.1 g

All arm tubes can be used with both models.
Fundamental resonance (depending on arm tube): 8 – 16 Hz
Tracking force (when using calibrated scale): 0 – 3 g
Bias compensation: Watch spring with string – adjustable while playing.
Azimuth is adjustable for correct channel separation.
Cueing mechanism: Piston in U-pipe, damped with silicone fluid.
Distance between pivot and center of turnable platter: 212 mm (8 5/16")
Diameter of hole for mounting arm base: 20 mm (13/16")
Rear overhang from pivot: 70 mm (2 3/4")
Effective length: 230 mm (9 1/16")
Offset angle: 24°
Lateral tracking error 0° at 66 mm and 120.9 mm from center of record.
Pivot point is level with the record surface.
Bearing friction less than 0.04 mN in all directions.
Four (4) different balancing weights.
Internal wiring: DP-6 Ultra pure silver cores with teflon.
UP-4 High grade copper, or silver as in the DP-6.
Capacitance per channel: 28 pF for both models.
Tonearm Cable: Several insulated cores and gold plated phono plugs. Capacitance per channel: 100 pF.
All terminals throughout the arm are gold plated.
Bearing concept of model DP-6: One internally damped, precision ball-bearing assembly for the horizontal plane of motion. Two pivoted sapphire bearings for the vertical mode of motion which can be damped also, if desired, and then adjusted to different levels of damping.
Bearing concept of model UP-4: Hardened steel pivot resting on a concave sapphire, and damped for all motions with silicone fluid.
A special version of arm tube is available having a large, precision-ground cartridge mounting platform.
DP-6 finish: 24 carat GOLD, CHROME, or by special order BLACK.
UP-4 finish: CHROME.
The right to change specifications without notice is reserved by the Manufacturer.

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