New
2024

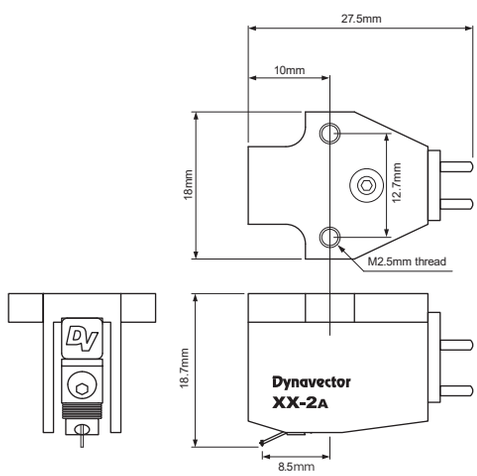
Dynavector

Specially Annealed Magnetic Circuit

MC Phono Cartrige

XX-2A

sounds more natural and dynamic



< Specifications >

Type	Low output moving coil cartridge with Alnico magnet and Flux damper	**Output Voltage**	0.28mV (at 1KHz,5cm/sec.)
Channel Separation	30dB(at 1KHz)	**Channel balance**	1.0dB(at 1KHz)
Frequency response	20 - 20,000Hz (±1dB)	**Compliance**	10 mm/N
Tracking force	1.8 - 2.2g	**Impedance**	6 ohms
Recommended load imperance	> 30 ohms	**Cantilever**	6mm length 0.3 mm dia.solid boron
Stylus tip	PF Line contact shape, stylus radius : 7x30 micron	**Weight**	8.9g

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Dynavector's Cartridge Tradition

Since its founding in 1978, Dynavector has been a high-end audio manufacturer that has released numerous high-performance cartridges to the world. During development, we take an approach based on academic engineering theory, a tradition that has been passed on by our founder(1). Starting with the unique development of our high-performance vibration systems such as ultra-fine wire high-output coils and gemstone cantilevers, we have focused on the importance of magnetic circuits since the 1990's. As a result, Flux Damper(2) to stabilize magnetic flux and Softened Magnetism(3) to reduce magnetic flux fluctuations were developed and installed into our cartridges.

In 2024, we have succeeded in dramatically improving sound quality by refining the magnetic circuits physical properties to give the best possible performance.

Newly Developed Special Annealing Magnetic Circuit

An excellent vibration system is inevitable for a high-performance MC cartridge. The cantilever, coil, damper and rigid body are all important elements to ensure outstanding performance. But we strongly believe that the magnetic circuit in the cartridge is also a crucial element that should not be overlooked. A cartridge's output signal is generated by the movement of the vibration system within the magnetic circuit. Electricity is generated when the coil vibrates within the magnetic flux produced by the magnet.

A good output can't be obtained unless the magnetic flux has high density and stability. For our magnetic circuit we use pure iron which has high magnetic permeability and maintains high density in the magnetic flux. Its stability is particularly excellent, making it the optimal material to obtain a distortion-free output. However, when processed to make parts, at the atomic level the metal crystal structure is distorted due to plastic deformation, resulting in a significant loss of magnetic permeability.

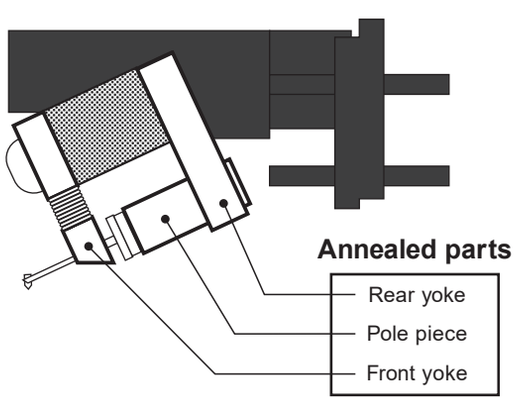
To regenerate a distorted metal crystal structure annealing is necessary. The process of restoring magnetic permeability is called magnetic annealing, a process done by heating and cooling processed parts. But a generic magnetic annealing cannot completely restore distortions in the crystal structure thus the magnetic permeability also cannot be completely restored. Also, magnetic annealing conditions vary depending on the material, size, shape, etc. of the part.
Therefore, for our new development we focused on finding the best magnetic annealing process by optimizing the annealing temperature, annealing environment, heating duration, heating and cooling rate. As a result, we now can successfully exhibit the full potential of the unique magnetic performance of pure iron.

The new ideal magnetic circuit has drastically improved sound quality with top-notch resolution without distortion, smooth wide-range expression and great spaciousness in the sound field.
Enjoy the more natural and dynamic sound of the Dynavector XX-2A cartridge with true harmony created by an excellent vibration system and an optimum magnetic circuit.

Benefits of Magnetic Annealing

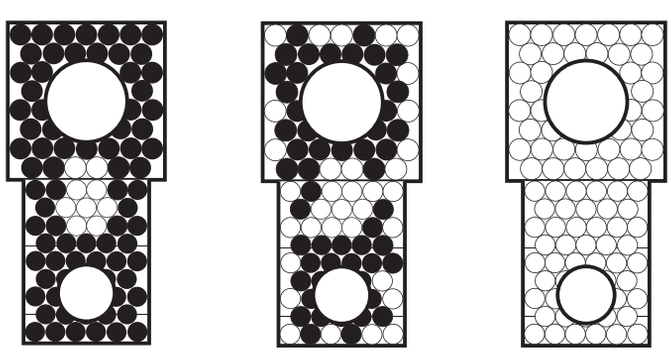
The crystal structure distorted during the processing is regenerated by magnetic annealing resulting in a restored magnetic permeability.

< MC cartridge basic structure >



<Front yoke(image)>

○ Maintained areas in the crystal structure
● Distorted areas in the crystal structure



Before Annealing	Generic Annealing	Special Annealing
sound quality	sound quality	sound quality
poor	**fair**	**excellent**

(1)Founder: Dr.Noboru Tominari(1927~2002), Doctor of Engineering Tokyo University,
Former Professor at the Department of Mechanical Engineering Tokyo Metropolitan University

(2)FLUX DAMPER: By wrapping a closing coil on the front yoke, the flux damper stabilizes flux disturbance caused by the vibration power from the cantilever and coil, giving a more natural sound.(Patented)

(3)SOFTENED MAGNETISM: High-power magnets like neodymium have extremely high internal magnetic resistance, which causes large fluctuations in magnetic flux density and deteriorates sound quality. A highly permeable material is attached to the magnet to reduce the magnetic resistance of the magnetic circuit while maintaining magnetic force, preventing magnetic flux fluctuations and improving sound quality.(Patented)