

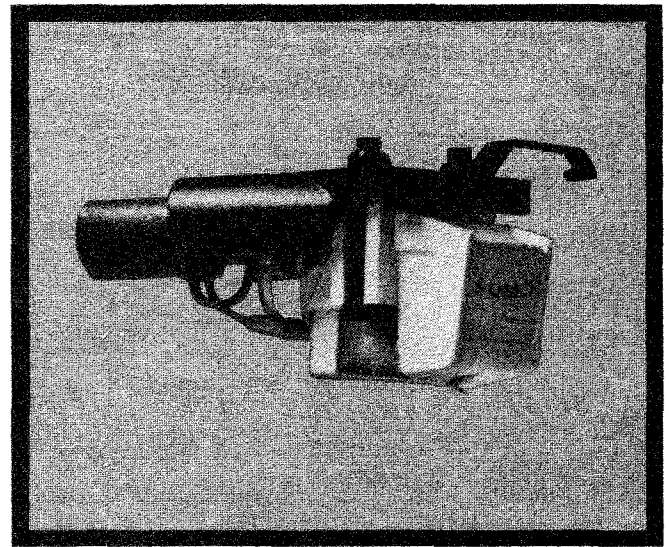
# The SUMO I

## ATTENTION SUPER AUDIOPHILES!

Wrestling with the thought of improving your high performance audio system to match the quality of today's special audio-connoisseur super-discs? Then approach a SUMO with confidence. It cannot be beaten.

SUMO's spectacular cartridge never wrestles with your records. It caresses them and extracts the most delicate and bold sounds possible with a magnetic cartridge because it moves.

The SUMO I moving magnet cartridge really moves.



## FEATURES

- **Metallic beryllium cantilever**

A smaller effective mass for the vibration system is necessary in order to expand the reproduction range to the point where it is wider than the audible frequency range and also to minimize the mechanical impedance at the stylus tip. In addition, a higher rigidity is required to allow the cantilever to eliminate deflection vibration, which influences the response in the medium and high ranges as well as the extent of mechanical impedance. In order to satisfy these conflicting requirements, metallic beryllium, an epoch-making new material, has been employed for the cantilever.

The high mechanical strength and light weight of metallic beryllium has made it possible to reduce the diameter of the cantilever down to the minimum that is just sufficient to withstand vibration, thereby successfully decreasing the weight of the cantilever to the absolute minimum. The mass weight is only about half that of conventional high-quality cartridge cantilevers, making the SUMO I cartridge the lightest and strongest available. Moreover, the propagation velocity of sounds is more than double that of aluminum cantilevers. And rigidity is more than three times greater.

Additionally, the use of a super high-performance samarium cobalt magnet and a micro-diamond tip contributes to a further reduction of the weight of the vibration system.

The SUMO I is thus capable of providing a wide frequency response well beyond the audible frequency range, excellent tracing performance, and the reproduction of sounds with less distortion.

The ideal characteristics of the cantilever are supported by the fine properties of beryllium as shown below (in comparison with aluminum):

Material	Density (g/cm <sup>3</sup> )	Young's modulus (kg/mm <sup>2</sup> )	Propagation velocity (m/sec.)
Beryllium	1.84	28,000	12,600
Aluminum	2.7	7,400	6,420

- **High-energy samarium cobalt magnet**

Minimizing the weight of the vibration reed oscillator is an essential requirement for improving cartridge performance. The vibrator of the SUMO I uses a samarium cobalt magnet, which has a low degree of specific gravity and a high degree of energy, permitting an extremely small-sized magnet to generate a large voltage and provide many other excellent characteristics.

- **One-point vibration reed suspension**

A suspension wire supports the magnet center at the rear end of the vibrator. The movement of the vibrator therefore can be definitely restricted, allowing only a very small non-linear vibration and minimizing harmonic and intermodulation distortion.

A special damper and a special design that enables fine adjustment of the vibration damping capacity permit outstanding damping characteristics, high compliance, and superb frequency response for the reproduction of clear and rich sounds.

- **Micro-elliptical stylus**

The stylus tip of the cantilever uses a micro-blocked natural diamond measuring 0.15 × 0.15mm square, further contributing to the reduction of the weight of the vibrator. The stylus tip is elliptically shaped, measures 0.2 × 0.5mil, and is thoroughly and smoothly ground.

## SPECIFICATIONS

Type	..... Moving magnet
Cantilever	..... Metallic beryllium
Magnet	..... Samarium cobalt
Frequency response	..... 10 ~ 45,000Hz
Output voltage	..... 4.5mV (1kHz, 50mm/sec., horizontal)
Channel balance	..... 1.0dB (1kHz)
Channel separation	..... 30dB (1kHz)
DC resistance	..... 350 Ohms
Impedance	..... 2,100 Ohms
Compliance	..... 15 × 10 <sup>-6</sup> (cm/dyne, 100Hz)
Stylus force	..... 0.9 ~ 1.2g
Load resistance	..... 47 ~ 100k Ohms
Load capacity	..... Below 200PF
Stylus tip	..... 0.2 × 0.5mil, elliptical
Weight	..... 5.5g
Mounting distance	..... 1/2" (12.7mm)
Output terminal pin dia.	..... 1.2mmφ
Inductance	..... 380 millihenries
Stylus life	..... 2000 hours