

GOLD RING

*The Collection*

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CARTRIDGES DESIGNED AND HAND-BUILT BY BRITISH CRAFTSMEN



GOLDRING

## THE G1000 SERIES

Of all pick-up transducer mechanisms, the moving-magnet principle offers the best compromise between cost and performance. Advantages of MM design are high output (around 5mV), low moving mass giving improved tracing ability, and user-replaceable stylus assembly allowing immediate replacement of worn or damaged styli.

The new G1000 Series further extends those advantages. All three cartridges share the same extra-rigid body construction with firmly locating stylus assembly to eliminate resonance and energy loss.

The difference between models lies in their stylus geometry. Three different stylus shapes using top quality diamonds ground to advanced contour specifications give the three models their individual sound quality and performance. Finely polished to the highest standard and accurately aligned to ensure precise tracing of groove modulations, the user-replaceable styli are interchangeable for easy upgrading within the range.

### G1040

The G1040 is a cartridge for the perfectionist who demands the ultimate performance from his system. The extended groove contact of its van den Hul stylus profile gives the G1040 unsurpassed resolution of fine groove modulations, producing an

exceptionally detailed and musical sound quality.

### G1020

The G1020 is a mid-priced cartridge for the discerning listener. Because it is fitted with the less costly van den Hul type-2 stylus, it can offer the performance advantages and outstanding sound quality of an extended contact stylus at a comparatively modest cost.

### G1010

The G1010 is designed for owners who want to get the very best from their systems at a budget price. It uses a naked elliptical stylus and provides a more affordable route to Goldring's G1000 Series sound quality and performance standards.

### The choice of stylus

As the only part of the cartridge to make contact with the groove, the shape and quality of the stylus are crucial to the ultimate performance of the system.

The perfect stylus shape would be a replica of the cutter which originally carved the groove but this would cause irreparable damage to the record. The revolutionary van den Hul stylus was formulated to create a stylus shape which would closely model the cutter profile yet not damage the detail engraved in the groove. Because the extended vertical contact line and narrow radius (at 4.5 microns the tip radius closely approximates that of the recording cutter) remain constant over the whole line of contact, groove tracing is very precise and tip motion follows the recorded

FIG 1



G1040 VAN DEN HUL TYPE-1



G1020 VAN DEN HUL TYPE-2



G1010 NUDE ELLIPTICAL

FIG 2

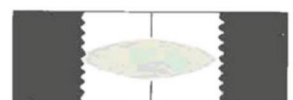


FIG 1: VERTICAL ELEVATION SHOWING CONTACT AREA. FIG 2: CROSS SECTION OF STYLUS IN GROOVE

modulations with unsurpassed accuracy.

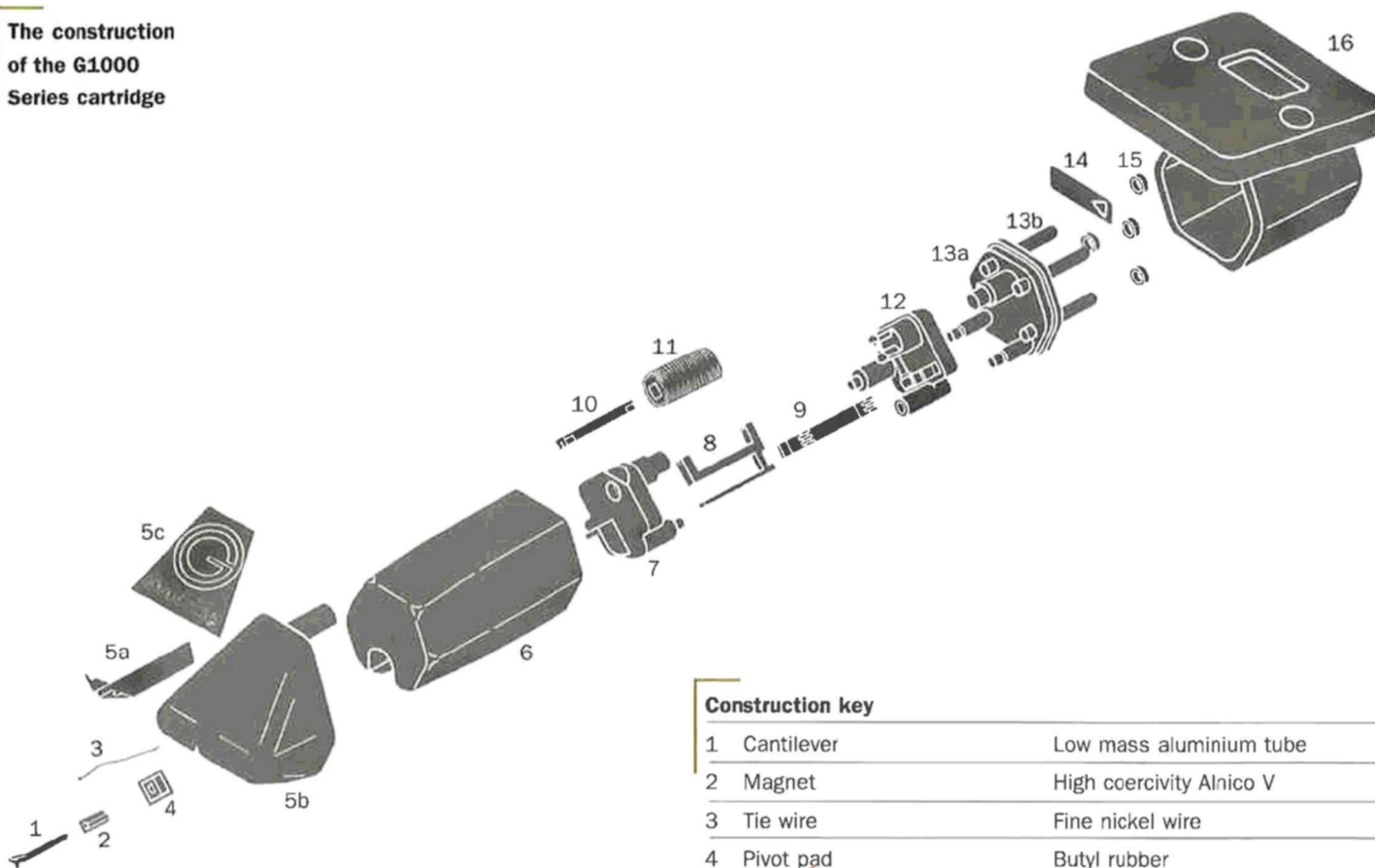
In addition, due to the extended contact area ( $128\mu^2$ ), pressure on the groove wall is diminished ( $0.976$  tonne/cm<sup>2</sup> compared to  $4.46$  tonne/cm<sup>2</sup> for a spherical tip). Both stylus and record wear are therefore much reduced.

The van den Hul type-2 stylus is simpler and less costly to manufacture. Its minor radius is enlarged to 5 microns and the major radius reduced giving reduced contact area yet sacrificing very little in terms of the groove tracing ability and sound quality.

The elliptical stylus fitted to the G1010 is a low mass nude diamond of high quality and excellent polish. Though pressure on the groove wall is greater than the van den Hul types, it is still considerably lower than that of a conventional spherical tip.



**The construction of the G1000 Series cartridge**



**Construction key**

1	Cantilever	Low mass aluminium tube
2	Magnet	High coercivity Alnico V
3	Tie wire	Fine nickel wire
4	Pivot pad	Butyl rubber
5a	Square tube	Precision drawn brass
5b	Stylus block	Molded from Pocan® for maximum rigidity
5c	Label	Electro formed copper
6	Shield can	Deep drawn mu-metal to screen coils from AC hum
7	Front pole shoe former	Moulded from ABS
8	Left pole shoe	Laminated mu-metal
9	Right pole shoe	Laminated mu-metal
10	Pole shoe core	Laminated mu-metal
11	Coil	Formerless wound fine copper wire
12	Rear pole shoe former	Moulded from ABS
13a	Contact former	Moulded from ABS
13b	Contact pin	24 carat gold-plated for high conductivity
14	Earth strap	Phosphor bronze
15	Colour code rings	Channel identification
16	Bracket	Moulded from Pocan® for maximum rigidity

**Rigidity**

All three models use the same strong, one piece body which holds the fixed parts securely in place. Made from an ultra-rigid, glass-reinforced polyester called Pocan® the body can be tightly bolted to the headshell for maximum efficiency and optimum sound quality.

The user-replaceable stylus carrier slots tightly into the body with a locating pin, preventing unwanted vibrations which would otherwise muddle the sound.

**Low body weight**

Because Pocan® has a high strength to weight ratio, the overall mass of the G1000 Series cartridges is kept below 6.5 grams. Low mass and moderate compliance keep the natural arm/cartridge resonance within safe limits for easy matching to a wide range of arms.

**Efficient magnetic circuit**

Finely etched mu-metal is laminated to form the pole pieces on which are fitted formerless coils, each of 4000 turns of very fine wire. This construction not only gives a very efficient magnetic circuit yielding a higher-than-average output, but also endows the cartridge with a smooth and extended frequency response.

**Low moving mass**

The combination of a very small, light, precision-ground Alnico magnet, light-weight aluminium cantilever and tiny nude diamond tip keep the total mass of the stylus assembly to a minimum. This improves tracing, reduces record and stylus wear, extends the frequency response and improves separation and distortion.

**Versatility**

The G1000 Series has been designed for compatibility with a wide range of ancillary equipment. The cartridges can be safely matched with virtually any arm below 18 grams effective mass.

Additionally, unlike some magnetic pick-ups, the G1000 Series cartridges produce a desirably flat frequency response without the need for any added capacitance which means they will give trouble free matching with most amplifiers.

of production ensuring a final product that provides an exceptionally high standard of performance and reliability. Every Goldring cartridge carries a 12 month guarantee against manufacturing faults.

**Quality control**

G1000 Series cartridges are rigorously tested at every stage





GOLDRING

## THE EROICA SERIES

The Goldring Eroica series of moving coil cartridges is the result of recent developments in magnetic circuitry which has enabled Goldring, Britain's premier cartridge manufacturer, to produce a small, low mass model with sonic qualities found only in much higher priced cartridges.

### Why a moving coil cartridge?

Low internal inductance and resistance mean that the moving coil cartridge is less sensitive to load impedance presented by the pre-amplifier and connecting cables.

It has very low distortion and consequently the original recorded sound is clearly defined and the full dynamic range is retained.

### Built for fidelity

In the ideal pick-up the groove tracing stylus should be a close replica of the original cutting stylus and should be fitted to a short, rigid and lightweight cantilever to reproduce perfectly the detail contained in the disc groove.

The voltage generating mechanism should be absolutely linear to obviate non-linear distortion. The cartridge body should also be perfectly rigid and clamped solidly to the headshell to keep energy losses to a minimum.

The Goldring Eroica cartridges with their van den Hul stylus and Pocan® body clearly

achieve these ideals.

The high output of the Eroica - 2.5 millivolts at 5cm/sec - is similar to that of many magnetic cartridges and therefore sufficient to load most pre-amplifiers without the need of a step-up device. The motor has four coils, each wound with 75 turns of incredibly fine enameled wire

15.7 microns in diameter - and the total moving mass is kept down to 0.6mg.

The low output Eroica L with less turns has a lower inductance and lower tip mass giving an even smoother response. It is suitable for amplifiers with a high performance moving coil input or alternatively will be at ease with

pre-amplifiers or step-up transformers with a gain of about 26dB.

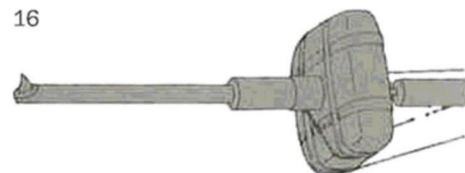
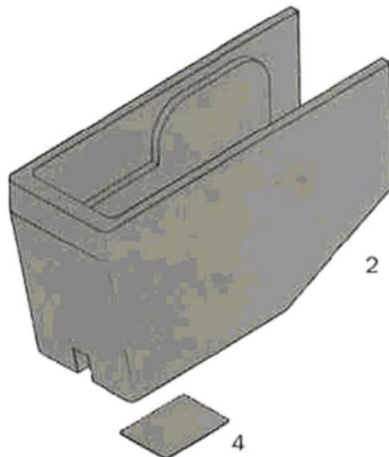
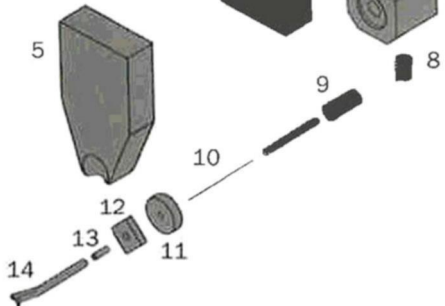
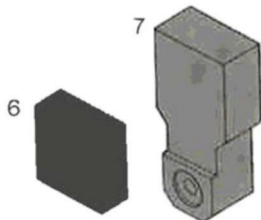
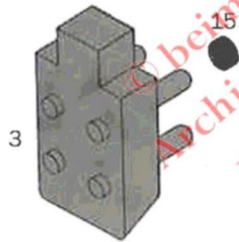
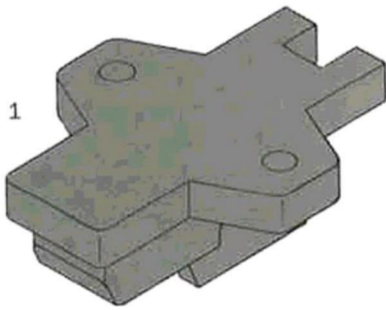
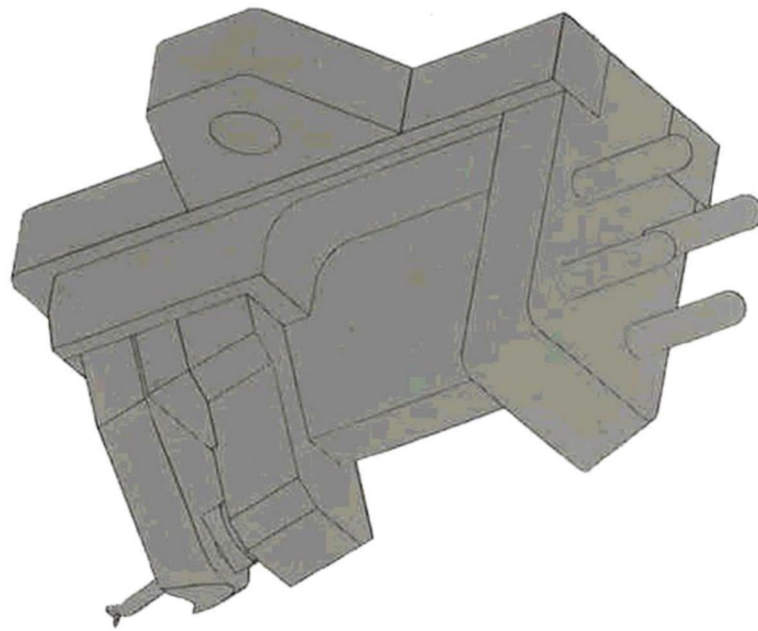
The magnet used in these cartridges is of neodymium, a very powerful rare earth material, the properties of which enable Goldring to shorten the magnetic path and concentrate the field in the pole shoe gap. The use of a neodymium magnet also enables Goldring to reduce the amount of iron in the cartridge and keep its total weight down to a mere 5.5 grams.

As with other Goldring models the housing of the Eroica cartridges is made of Pocan®, a glass-filled polyester resin which is very rigid and tough. Its strength permits the cartridge to be tightly bolted to the headshell with the engineering screws provided, eliminating possible energy losses which tend to make the signal lose its precision. Pocan® is also acoustically inert and so does not introduce any colouration into the signal.



### Quality control

The Eroica models, like all Goldring Cartridges, are rigorously tested at every stage of production ensuring a final product that provides an exceptionally high standard of performance and reliability. Every Goldring cartridge carries a twelve month guarantee against manufacturing faults.



### Construction key

1	Cartridge chassis	Pocan® for rigidity and strength
2	Outer case	Pocan® - acoustically inert
3	Contact block and pins	Pins gold plated for high conductivity
4	Dust cover	Protects internals from dust
5	Front pole	Soft iron for permeability
6	Magnet	Neodymium for power
7	Back pole	Soft iron for permeability
8	Screw	Retains stylus assembly
9	Tubes	Retain tie wire
10	Tie wire	Fine spring steel
11	Damping pad	Specially formulated Butyl rubber
12	Armature	Carries four coils
13	Tube	Couples stylus to armature
14	Cantilever/stylus	Aluminum tube with van den Hul type-2 diamond
15	Colour code ring	Identifies connections
16	Stylus and coil assembly	





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## THE EPIC-II

### Design brief

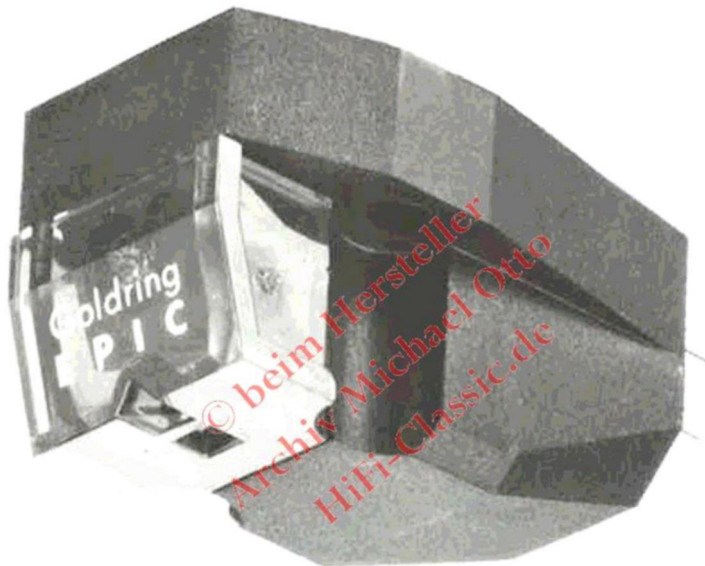
With the concept of the Epic-II Goldring set out to achieve an optimum balance between performance and price. The result is a new magnetic cartridge of radical design which delivers the performance and quality of models costing substantially more yet bears a price tag that is surprisingly modest.

### A cartridge with wide appeal

Such a cartridge must be extremely versatile in its applications. The Epic-II will deliver its fullest performance with the widest variety of tone-arms. Virtually any good quality medium mass arm (5g - 20g effective mass) will mate perfectly with the Epic-II due to its unique body profile. By increasing the proportions of the contact area to maximise the cartridge/headshell interface surface, Goldring achieve rigid coupling with minimal energy loss; and Goldring mould the cartridge body in a tough reinforced polyester resin so that it can be screwed tightly to the headshell without danger of cracking.

### The stylus

The chief variable in performance and price between cartridges is dictated by the material and shape of the stylus. Low stylus mass is vital for accurate high



frequency tracking. Goldring fit the Epic-II with a nude elliptical diamond stylus which yields a much lower tip mass than the steel-bonded diamond usually found in inexpensive cartridges. The stylus block incorporates a locating plug which slots firmly into the body moulding, simulating the all-in-one structure of a non-removable stylus whilst retaining the user-convenience of a replaceable one.

Dispensing with the traditional tube-within-a-tube technique, the cantilever and damping hinge fit directly into the stylus block, eliminating another point of energy loss.

### The Goldring Epic-II speaks for itself

Goldring believe that fitting a better cartridge to your system is the quickest way to improve the sound quality. But no amount of rhetoric or technical jargon can replace the experience of listening for yourself. Ask your Goldring dealer for a demonstration and let the Epic-II speak for itself.



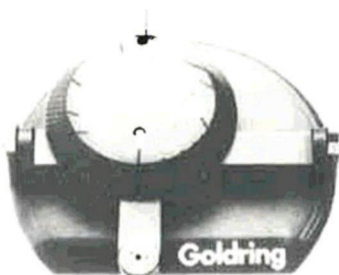


GOLDRING

## AUDIO ACCESSORIES

### Stylus tracking force gauge

This ingenious device accurately measures tracking force with the aid of computer calculated calibrations. It has two ranges: from 0 - 1.50g and from 1.50 - 3g with increments of 0.10g enabling you to measure tracking force with extreme precision.



### EXstatic disc cleaner

A highly effective record cleaning brush consisting of one million carbon fibre filaments. These fine conductive filaments not only reduce the static charge on the disc but can penetrate deep into the groove, dislodging dirt and dust particles trapped there. The swivel handle acts both as a stand and as a cleaning edge for the filaments.



### Electronic stylus cleaner

A sophisticated battery-operated device to clean your stylus 'in-situ'. The oscillating pad will dislodge even the hardest encrusted dirt leaving your stylus really clean and extending the life of both the stylus and your records.



### Super EXstatic disc cleaning pad

A double-action cleaner which combines two rows of conductive carbon fibre filaments with a central velvet pad. The carbon fibres extract dust and grime from deep down in the grooves and the velvet pad then lifts the loosened dirt from the record surface.



### EXstatic mat

A conductive mat which dramatically reduces static, the cause of disturbing pops and crackles. Dust, grit and hairs are released making it easier to remove them from the record. The EXstatic mat also provides a flat surface area for greater record contact and damps the record from unwanted resonance.



### Stainless steel cartridge mounting kit



This kit comprises 2 x 12mm and 2 x 8mm stainless steel cap head engineering screws together with matching stainless steel full nuts, an Allen key and a spanner. The screws being non magnetic will not influence the magnetic field in moving coil cartridges and so will not affect the sound. They are very strong and will enable you to effect a good bond between arm and cartridge to eliminate energy losses due to vibration.





## GOLDRING

Technical specifications	G1010	G1020	G1040
<b>Transducer characteristics</b>			
Cartridge type	Moving magnet	Moving magnet	Moving magnet
Frequency response	20Hz - 20kHz $\pm$ 2dB	20Hz - 20kHz $\pm$ 2dB	20Hz - 22kHz $\pm$ 2dB
Channel balance	2dB @ 1kHz	2dB @ 1kHz	2dB @ 1kHz
Channel separation	25db @ 1kHz	25dB @ 1kHz	25dB @ 1kHz
Sensitivity	6.5mV rms $\pm$ 1.5dB @ 1kHz & 5cm/s	6.5mV rms $\pm$ 1.5dB @ 1kHz & 5cm/s	6.5mV rms $\pm$ 1.5dB @ 1kHz & 5cm/s
Static compliance	24mm/N lat. 16mm/N vert.	24mm/N lat. 16mm/N vert.	24mm/N lat. 16mm/N vert.
Equivalent tip mass	0.45mg	0.45mg	0.45mg
Vertical tracking angle	24°	24°	24°
Stylus geometry	Elliptical (.0007" x .0003") (18 $\mu$ x 7 $\mu$ )	van den Hul Type-2	van den Hul Type-1
Stylus type	Replaceable	Replaceable	Replaceable
<b>Electrical characteristics</b>			
Load resistance	47k $\Omega$	47k $\Omega$	47k $\Omega$
Load capacitance	150 - 200pF	150 - 200pF	150 - 200pF
Internal inductance	570mH @ 1kHz	570mH @ 1kHz	570mH @ 1kHz
Internal resistance	660 $\Omega$	660 $\Omega$	660 $\Omega$
<b>Mechanical characteristics</b>			
Cartridge weight	6.3g	6.3g	6.3g
Fixing centres	0.5" (12.7mm)	0.5" (12.7mm)	0.5" (12.7mm)
Playing weight	1.5 - 2.5g (1.75 nom)	1.5 - 2.5g (1.75 nom)	1.5 - 2.5g (1.75 nom)

Technical specifications	Eroica	Eroica L	Epic - II
<b>Transducer characteristics</b>			
Cartridge type	Moving coil	Moving coil	Moving magnet
Frequency response	20Hz - 22kHz $\pm$ 3dB	20Hz - 22kHz $\pm$ 3dB	20Hz - 20kHz $\pm$ 3dB
Channel balance	1dB maximum	1dB maximum	2dB @ 1kHz
Channel separation	25db @ 1kHz	25dB @ 1kHz	20dB @ 1kHz
Sensitivity	2.5mV @ 5 cm/sec	0.25mV @ 5 cm/sec	6mV $\pm$ 2dB @ 1kHz
Static compliance	18 mm/N	18 mm/N	20 mm/N
Equivalent tip mass	0.6 mg	0.5 mg	0.6mg
Vertical tracking angle	20°	20°	26°
Stylus geometry	van den Hul Type-2	van den Hul Type-2	Nude elliptical .0007 x .0003 (18 $\mu$ x 7 $\mu$ )
Stylus type			Replaceable
<b>Electrical characteristics</b>			
Load resistance	47k $\Omega$	100k $\Omega$	47k $\Omega$
Load capacitance	100 - 500pF	200 - 1,000pF	150 - 400pF
Internal inductance	0.2 mH	3 $\mu$ H	400 mH
Internal resistance	77 $\Omega$	8 $\Omega$	700 $\Omega$
Absolute phase	Positive	Positive	
<b>Mechanical characteristics</b>			
Cartridge weight	5.5g	5.5g	7.0g
Fixing centres	0.5" (12.7mm)	0.5" (12.7mm)	0.5" (12.7mm)
Playing weight	1.5 - 2.0g (1.7g nom)	1.5 - 2.0g (1.7g nom)	1.75g (nom) $\pm$ 0.5g

Goldring's policy of continuous development means that the specification of the products described in this publication may vary.