

Press Release

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New Ultra-Precision Touch Probe for Coordinate Metrology

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The Triskelion Tactile Probe System is an extremely high-precision, fully three-dimensional contact probe suited for point measurements or scanning with a CMM or in other applications. The probe is designed and manufactured by IBS Precision engineering in The Netherlands and sold in the United States by Lion Precision.

The Triskelion probe uses noncontact sensors from Lion Precision to measure, within a few nanometers, the deflection of the stylus when it contacts the part being inspected. This measurement is used in the final calculation of the surface location. Conventional CMM probes do not measure this deflection resulting in an error in the measurement often greater than 0.5 μm .

An extremely thin and stiff stylus, connected to a very flat leaf spring allows the stylus to work in three dimensions with very low contact forces of less than 0.3 mN. This small force prevents damage to delicate parts and is the same in all three dimensions. The tiny 0.5 mm ruby tip enables the system to probe and scan very small features. Such small probes deflect more than larger probes which increases error on conventional systems, but the Triskelion probe removes these errors by use of the embedded precision displacement sensors. The majority of the probe body is constructed of Invar to remove thermal sensitivity.

The Triskelion probe is the product of 15 years of research and design by IBS Precision Engineering (www.ibspe.com). IBS Precision Engineering is a global leader in the design of ultra precise machines for metrology.

Triskelion Specifications:

Stylus length	8.5 mm
Stylus ball radius	250 μm
Moving mass	160 mg
Probing stiffness	70 N/m Isotropic
Typical measuring force	≤ 0.3 mN
Measuring range X, Y	+/- 10 μm
Measuring range Z	+ 10 μm
Measurement resolution	3 nm
Measurement errors in 3D for probe deflections up to 5 μm (k=2)	<15 nm

Lion Precision, an IBS Precision Engineering partner, sells the Triskelion in the United States. The company was established in 1958 and pioneered commercially available noncontact sensing systems. The company provides high-performance capacitive and eddy-current displacement sensors for industries such as machine tool, semiconductor, disk drive, automotive, packaging, and university and national laboratory research.

For more information, visit www.ibspe.com and select the Contact Probe section, or contact:

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