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New Multi-Sensor 3D Metrology System sets new standards for inspection of gears and other complex shapes

BRIGHTON, MI. April 28, 2011 . [Nikon Metrology](#) introduces the HN-6060, a next-generation non-contact inspection system providing the latest in metrology capabilities. Advanced laser scanning, 5-axis synchronized hardware control, ultra-stiff design and powerful processing software, the HN-6060 sets the standard for fast, ultra-precise inspection of complex shapes. This includes gear teeth, turbine blades, appliance housings and much more.

The HN-6060 multi-sensor system builds upon the Nikon Metrology portfolio of vision systems and 3D solutions. says Hajime Kosawa of Nikon Metrology, % addresses the need for fast, high-accuracy 3D inspection of complex shapes by combining innovative optical technology with the highest precision measurement hardware.+ The newly designed laser scanning sensor extracts the surface form and waviness data in one scan. Previously tactile gear-inspection tools needed to rely on 2D sections of data. This new advancement provides better inspection possibilities, revealing all shape and waviness information in one simple measurement.

What the HN-6060 provides is a much easier, quicker and more precise method of 3D data capture than metrology systems have demonstrated before, says Robert Wasilesky, Vice President of Sales for Nikon Metrology. The demand for high-accuracy 3D surface metrology systems continue to increase as the automotive, aeronautics and home appliances industries also implement higher precision.

For the HN-6060, Nikon combined leading-edge optical and hardware control technology, developing a laser scanner system that acquires point clouds a rate of 120,000 points per second with an accuracy of 5µm. Kosawa adds: In specific gear measurement benchmarks we have achieved less than 1 micron repeatability with non-contact measurement, which is comparable with the performance of contact type CMMs.

The metrology system's laser scanner and SFF (shape from focus) sensor use active texture projection to perform high-precision measurement of shapes even with glossy surfaces or no surface texture. Touch probes and optical heads with built-in TTL laser AF complete the multi-sensor system. This allows it to perform shape measurements of parts such as complex automotive and machined components, molded parts, and medical devices.

Another core element of the HN-6060 is its five axes synchronized hardware control. This allows optimum part orientation to the sensor and can measure the part from different angles. The system is not only designed to measure complex surfaces such as hypoid gears, worm gears and helical gears, but it also inspects turbine blades, digital camera housings, complex closures and more. The HN-6060 software seamlessly

integrates with the measurement hardware and is designed for user operability and safety. It features macro-based teach in, simulation for collision avoidance, easy acquisition of point clouds from 2D and 3D shapes, and insightful part-to-CAD comparison.

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Nikon Metrology offers the most complete and innovative metrology product portfolio, including state-of-the-art vision measuring instruments complemented with optical inspection and mechanical 3D metrology solutions. These reliable and innovative products respond to the advanced inspection requirements of manufacturers active in consumer, automotive, aerospace, electronics, medical and other industries. For more information, visit www.nikonmetrology.com.

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