
HEITEC AG Press Release

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Automated measuring and testing equipment for all aspects of workpiece and tool testing

Testing faster, producing faster

Networked measurement technology plays an important role in quality assurance for tools and workpieces. Fast 2-D and 3-D inline testing techniques make it possible to detect quality defects or process inconsistencies right away, and also to feed the measurement results directly back into the process. Erlangen automation specialist HEITEC uses a variety of testing methods for this purpose.

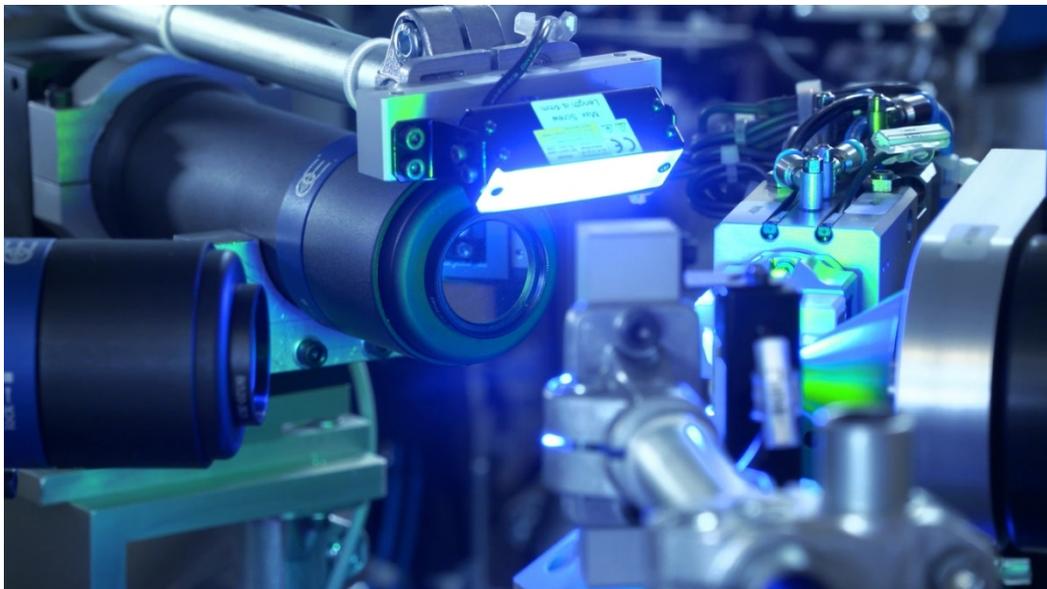
Modern testing methods have to be capable of automation, fast and robust. HEITEC has developed a variety of nondestructive methods for workpiece and tool measuring and testing equipment that is integrated right into production. One of the most notable among these techniques, the “shape from shading” method, permits fast, reliable 3-D surface testing. This technology uses shading on surfaces to gather information about an object’s three-dimensional shape. Differences in brightness make it possible to draw conclusions about protrusions or recesses. The computer builds a 3-D view of the local surface from direction-dependent inclination images in the x and y directions, a curvature image, and a texture image. The resulting images reveal topography, and from them one can draw conclusions about defects like scratches, dents, and so on. The resolution for flaws and defects extends down to the double-digit micrometer range.

Dimensions and geometries of drill holes and shafts with tight tolerances for shape and dimensions can be measured and compared entirely automatically

using pneumatic testing techniques. These permit analyses of such aspects as maximum, minimum and mean diameters, both over the entire measurement zone and in subzones. Measurements are accurate down to the triple-digit nanometer range, and can be used for pairing or classification of cylindrical workpieces.

Rotationally symmetric cutting tools, such as drills, milling cutters, etc., can be classified and tested in seconds with an inline surface test. The testing technology is based on the laser triangulation method. This testing technology can be used to identify tools by class, and to reliably detect surface breakouts with depths of as little as 100 μm .

Photo:



Optical testing of workpieces and tools (source: Heitec)

HEITEC AG company profile

HEITEC is known for industrial competence in automation and electronics and offers solutions, products and services in the fields of software, mechanics and electronics. More than 2000 customers increase their productivity and optimize their products with the help of HEITEC's state-of-the-art, reliable and economic system solutions. A work force of over 1000 employees at numerous sites worldwide provides high-quality industry skills close to the customer. Over 60 percent of our employees are university graduates or have technical training. In recent years, Heitec has recorded growth of well over 10 percent and has doubled its sales revenues in five years.

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