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# Werth Messtechnik GmbH

Computed Tomography and Multisensor Metrology

- Leading company in 3D coordinate metrology with optics, probe, computed tomography and multi-sensor systems
- High speed and high accuracy CT measurement
- Customized turnkey solutions
- Very small probes, with a sphere diameters down to 20μm
- Most accurate Multisensor CMM in the world

# More information:



### COMPLETE AND ACCURATE MEASUREMENT INSIDE AND OUTSIDE

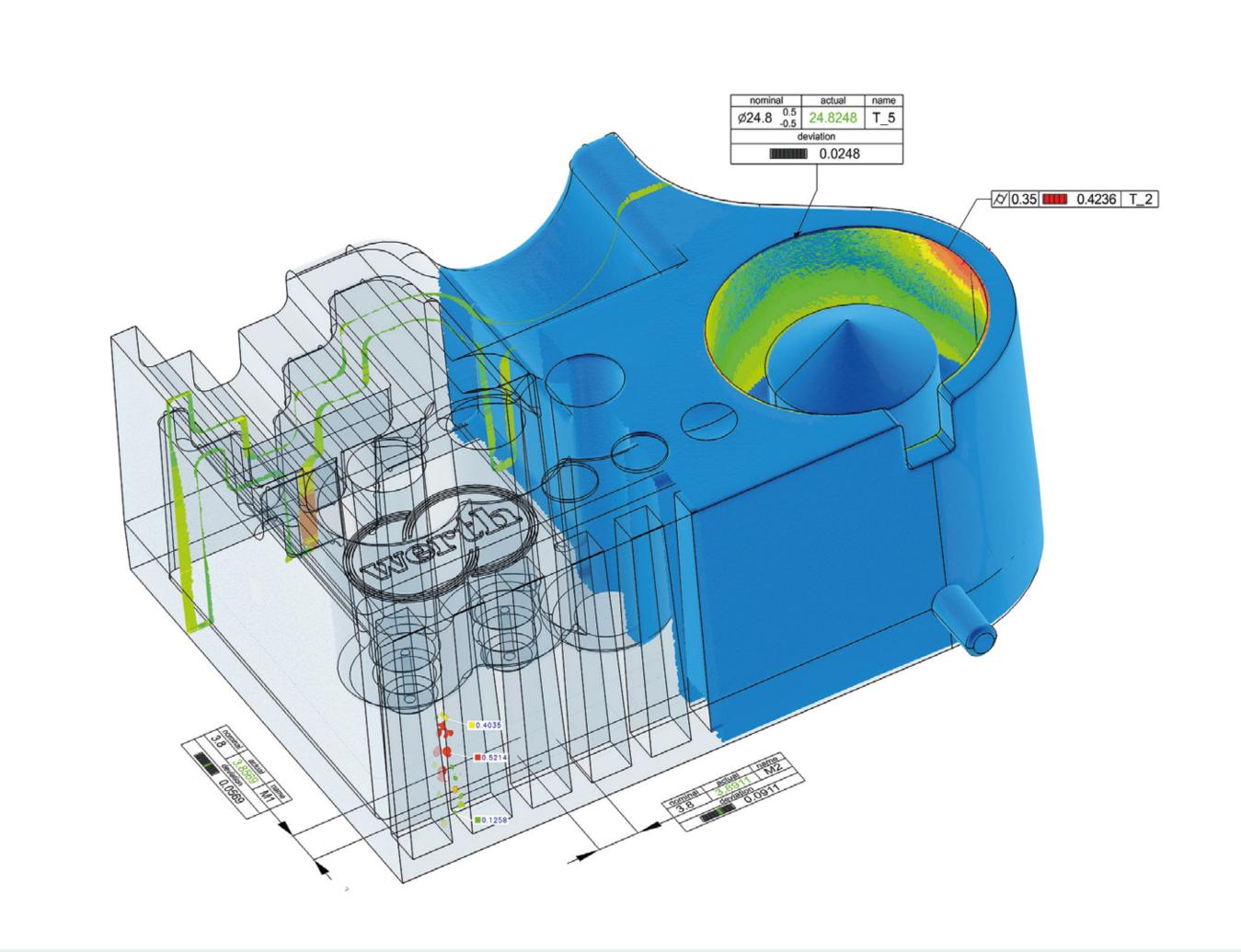
Author: Tristan Schubert, Marcel Weijs



## Principle

Coordinate measuring machines with computed tomography are used to measure geometrical characteristics of workpieces for industrial quality assurance.

X-ray images of the workpiece are taken at various rotated positions. They can be used to calculate a complete, high-resolution volumetric model. The measurement points are determined at the material boundaries. A uniform measurement software enables traceable dimensional measurement, 3D nominal-actual comparison and inspection.



## Advantages

- Digital sample of complete workpiece for subsequent evaluations.
  Measuring a large number of geometrical characteristics independent of
- the measurement time minimizes first article inspection and mold correction times for rapid product validation and reduced development costs.

   Non-destructive measurement of internal geometries and mounted as-
- Measurement at the push of a button.
- Calibration in compliance with ISO 17025 is optionally available from the first DAkkS laboratory in the world for CT coordinate measuring systems.

### Disadvantages

 For needs of extremely high measurement speed, for example SPC applications for just a few features, best combined with a multisensor CMM.

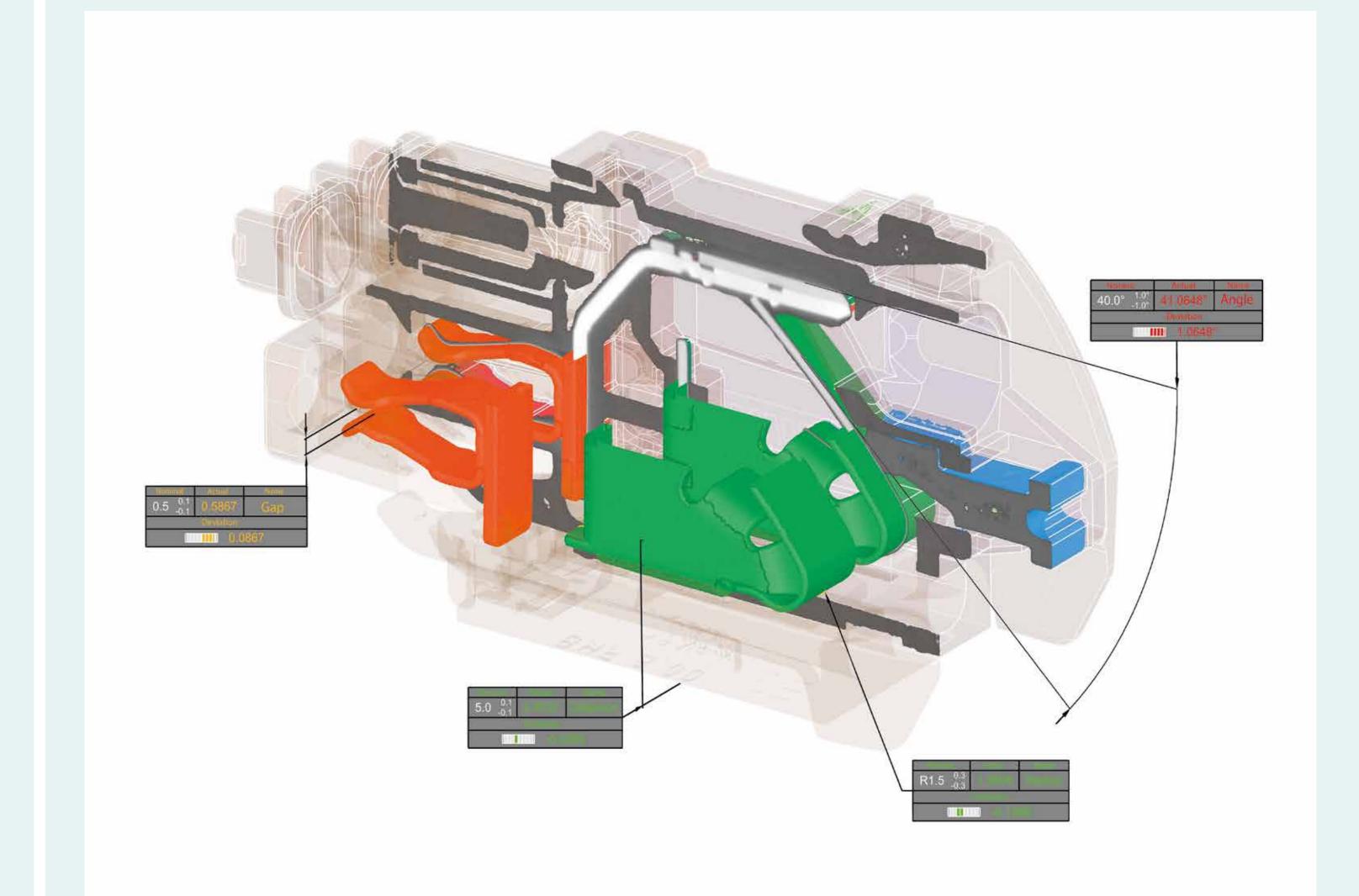
Resolution reaches limits for complex micro-structures on large workpieces.

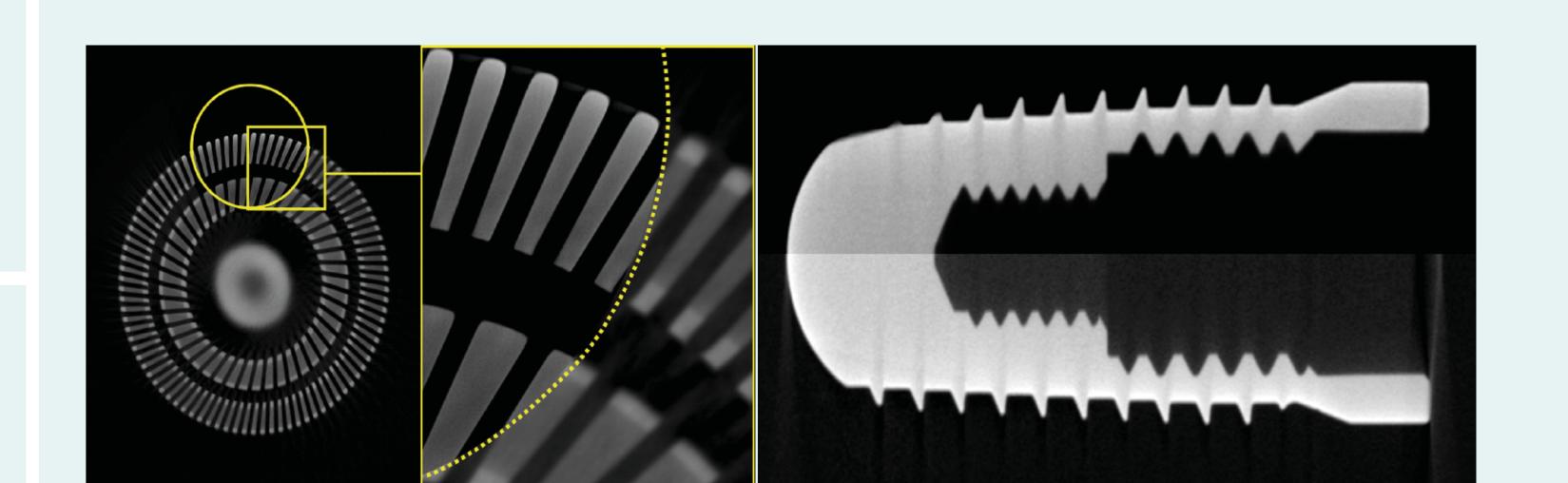
### Production boundaries and limits

- Fully automated atline and inline measurements with robot loading or in-
- tegrated workpiece changer.

   Measurement times down to a few seconds per workpiece.
- Suitable for plastic, metal and multi-material workpieces with tight tolerances as well as high density.
- Very large and dense workpieces cannot be penetrated by X-rays.









### Cost

- Compact machines with pricing in the range of conventional CMMs for widespread launch of this technology.
- State of the art technology offers low maintenance costs for rapid return of investment.
- On the other side of the spectrum large machines enable high-accuracy measurement of engine blocks and battery components.



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