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EXCELLENCE IN 3D MEASUREMENT

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TRITOP Fact Sheet

Optical 3D Coordinate Measuring Machine

The portable TRITOP^{CMM} system measures coordinates of three-dimensional objects quickly and precisely. Measuring tasks that traditionally were performed by tactile 3D coordinate measuring machines can now easily be carried out with the TRITOP^{CMM} system. It does not require any complex, heavy and maintenance-intensive hardware. The measuring machine comes to the object!

As with tactile coordinate measuring machines TRITOP^{CMM} records the coordinates and their orientation in space for any feature of interest:

- Surface points and sections
- Primitives

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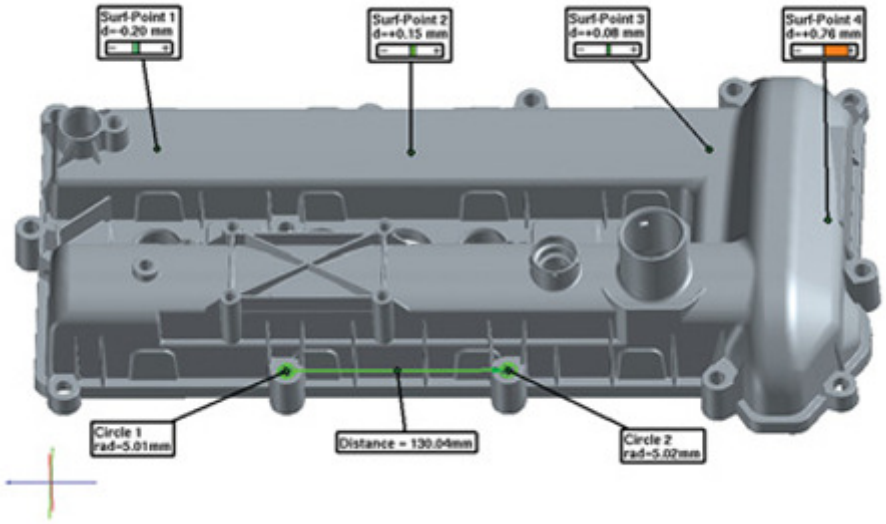
- Holes, punch holes and edges
- Diameters, lengths, angles ...

After the 3D coordinates have been determined, the measurement mathematically is transformed into the coordinate system of the component:

- RPS
- Gage alignment
- Best-fit ...



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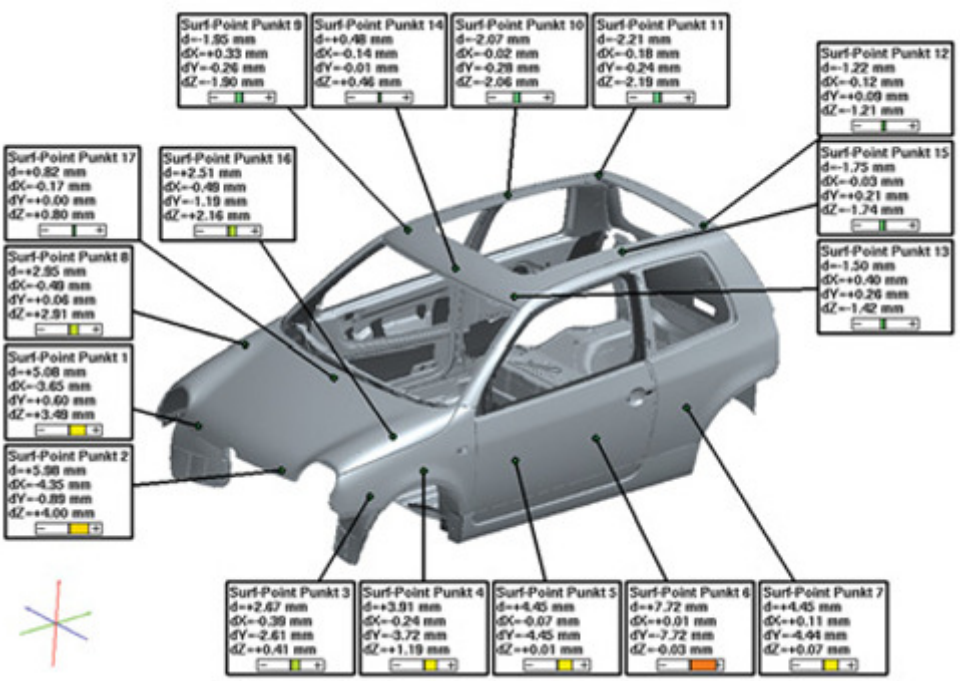

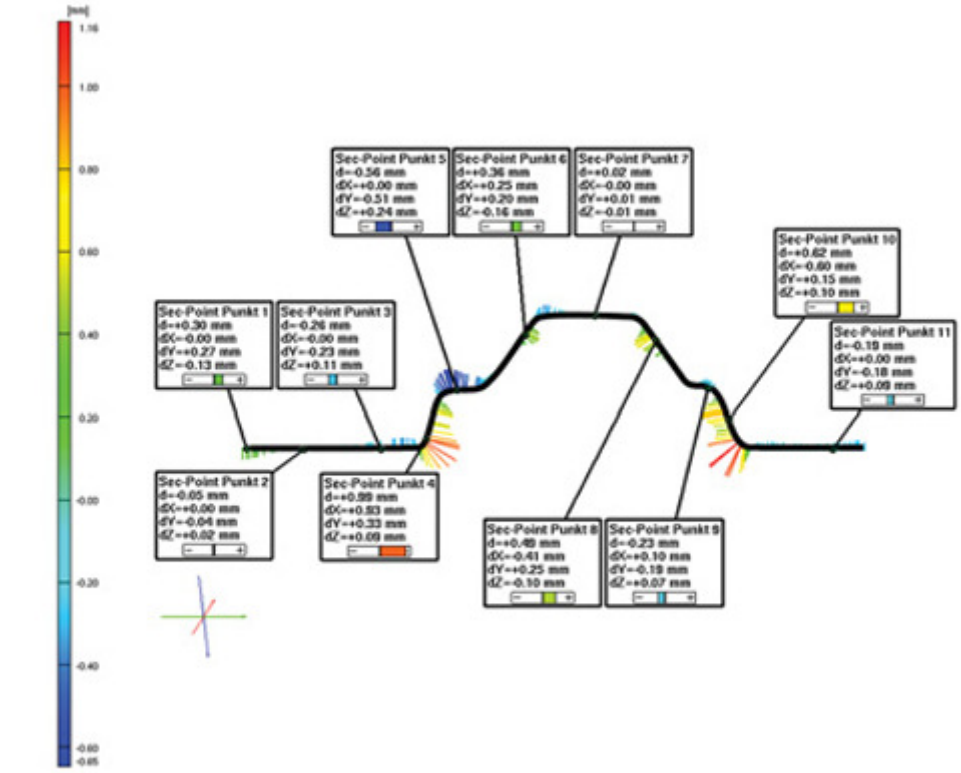

The measured and aligned data is used for various tasks:

- CAD comparison
- Verification of shape and position tolerances
- Verification of specifications from drawings, files or tables

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- Initial measurements

When comparing the measuring data with CAD data (IGES, VDA, STEP, Catia, ProE, UG ...), the corresponding measuring reports are created in the familiar formats:

- False-colour representation
- Deviation of individual points as labels
- Sections, angles and distances
- Diameters and flatness
- Tables and lists

Advantages of the TRITOP Technique

- Complete 3D measuring machine with minimum hardware requirements (2 cases with a total weight of 23 kg)
- The object is not touched during measuring
- Very high accuracy also for large objects
- No wear and tear, no decrease of accuracy
- Easy handling
- Independent of environmental conditions (climatic chamber, open air ...)

Fields of Application

- Inspection of sheet metal parts and car bodies, e.g. in pilot production, process optimizing, tool try-outs, start of series production or during random samples
- Quality control of large objects, e.g. aircraft, ships, wind turbines, etc.
- Verification of plastic parts, e.g. for first article inspection
- Verification and recording of jigs and fixtures
- Measuring of models and prototypes, e.g. vehicle interior and exterior design
- Verification of tubes and wires with respect to their three-dimensional shape
- Measuring trimming edges of two-dimensional sheet metal blanks
- Deformation analysis of car and climatic chamber tests
- Measuring of reference point fields

Technical Data

Using TRITOP, objects of up to some 20 m can be measured. Depending on the measuring task, different camera systems are available. All TRITOP systems are self-calibrating and self-checking.

System Configurations	**HR / Std**
Camera Resolution	up to 21 million pixels
Data Transfer	wireless or flash card
Measuring Area	0.1 x 0.1 up to 10 x 10 m² 4 x 4 up to 400 x 400 inch²

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System Configurations	**HR / Std**
Calibration	self-calibrating
Certification	according to VDI 2634/1
Operating Temperature	-40 to 120°C -40 to 250°F