T4HD

CNC 4-axis contour and roughness measuring device

Contour and roughness measuring with highest accuracy in the range of 200 x 205 mm (X, Z) and 20 mm (Y) optimised for production measurement:

- Autocalibration as standard feature
- Impossible-to-confuse USB probe arms
- Automatic zenith search in X and Y direction
- 3D evaluation software for contour and roughness

In this picture: T4HD with contour probe arm and tilting-table, on which our centric clamping system is mounted.
Detail overview:

- **Auto calibration as standard**

  Problem: A reliable quality assurance system requires regular calibrations. Especially with contour and roughness measuring devices requiring manual calibration, this is often postponed. The reason: concern about the time required and operating errors in the calibration process. The T4HD with standard auto calibration eliminates the delayed consequences of incorrect operation.

- **3-D evaluation software**

  Problem: The 2-D evaluation software you have used up until now cannot process undercuts or rotate measurement series?
With its flexible 3-D evaluation software, the T4HD enables automated, reproducible contour and roughness tests even on turned, undercut and topographically scanned contours and saves you unnecessary head-turning.

**Automatic zenith search in X and Y**

Problem: A manual zenith search on a calibrating ball or a test piece is a difficult-to-reproduce activity. A manual zenith search is always subject to user influences. The T4HD with automatic zenith search saves you the delayed consequences of a measurement outside the ideal track.

**Impossible-to-confuse USB probe arms**

Patented Technology – only available at IMTS/Triebworx.

Problem: CNC measuring programs are indispensable in production measurement. Are you sure that the right probe was selected from a list of similar probes prior to the measuring sequence?
The T4HD with impossible-to-confuse USB probe arms prevents probe damage and measuring errors due to incorrectly selected or calibrated probes.

• **Slim Z-column**

Problem: Contour and roughness measuring devices with a solid Z-column can prevent an unobstructed view of the drillings and test pieces during the teach-in phase of the measuring programs. Longer test pieces, such as shafts or ball screws, must often be shortened for the measurement in order to avoid collisions with the measuring device. The T4HD with its slim Z-column also easily permits measurements of longer test pieces. And provides an unobstructed view of drillings and the measurement assembly.

• **Motorised 3-D measuring device design**

Problem: Double-sided scanning 2-axis contour measuring
devices generally violate the stylus principle with unavoidable 3-D alignment errors from the upper to the lower probe tip. Contour measuring devices with manually operated lateral adjustment cannot provide error compensation here. The T4HD with 3-D error compensation enables the stylus principle even with double-sided CNC measurements.

- 24“ 16:9 full HD monitor

Eliminate the need for tedious work on small 4:3 monitors and see extremely fine details on the 24“ 16:9 full HD monitor of the T4HD.

- Standard-compliant roughness measurement

Problem: Due to their unstable advance, stepper motor drives cause a broad range of resonances and vibrations in contour measuring devices. Especially roughness measurements can suffer a loss in quality and may have to be loaded with
nonstandardised and therefore excessively high tracking forces in order not to lose the probe contact to the test piece.


- **Speed-optimised CNC repeat measurements**

Problem: CNC measuring programs are often stored in the PC via teach-in processes. Running these programs can waste a great deal of time in the measuring sequence. For a fast measuring program, it is often necessary to run a very large number of teach-in attempts.

Relax while teaching in the T4HD and you will immediately save time with speed-optimised CNC repeat measurements.

- **Permanently stable probe force switching**

Problem: Servo-driven probe force switching is subject to wear and must be replaced at different intervals depending on the
degree of utilisation.
With its permanently stable, servo-free probe force switching, the T4HD eliminates high maintenance costs.

- **Auto calibration**

Problem: Necessary probe tip checks under a microscope.
With its auto calibration function, the T4HD always provides you with a visualisation of its probe tips.

- **Form-fitting HD probe tips**

Problem: Probe tips mounted twisted can result in measuring errors.
If necessary, you can change the form-fitting HD probe tips of the T4HD with a click without tools or even dangerous adhesive.
Technical data:
Measuring in the range of 200 x 205 mm (X, Z), 20 mm (Y)
Dimensions: 592 x 492 x 220 mm (B,H,T)
Weight: 45 kg
Table load capacity: 25 kg

T4HD with the calibration standard.