ConturoMatic

Just measure

T&S GMBH
ConturoMatic T
A family of contour measurement systems with outstanding performance characteristics:

ConturoMatic T1
Our highest performance contour measurement station. Test objects of up to 320×250 mm can be measured without the restrictions imposed by previous measurement devices. The T1 allows measurement probing from above and below without losing the reference points. This allows the testing of (e.g.) inner and outer diameters.

- The probing speed over the contour is continuously regulated during the entire measurement process. This provides an even density of measurement points over the entire profile.
- The probe arms of the ConturoMatic T series can be changed without special tools, and their geometry makes them extremely resistant to bending and torsion.
- The high system accuracy is achieved through non-contact linear encoders, together with high-accuracy feed mechanics.
- Single or multiple measurements can be performed on one or more test objects, over the entire measurement range (250×320 mm).
- Even production personnel without a basic knowledge of measurement technology can perform complex measurement and analysis tasks by using the automated repetition features.

Just measure ...
Intelligent contour recognition routines allow automatic determination of all useful elements of a test object, with a single mouse click.

Just measure ...
The software can perform repeated measurements completely automatically, without operator intervention, and is thus capable of performing analyses and tolerance comparisons without operator dependent errors.

ConturoMatic T2
Our proven standard. Probing is done from above. Measurement range and accuracy reflect that of the T1.

Advantages of the ConturoMatic T family
- Necessary elements, such as the Y-positioning table with its 235×200 mm surface area, are integrated into the system and must not be separately purchased.
- The robust mechanical construction of the equipment in the T-family allows problem-free operation, not only in a climate controlled measurement room but also close to the production line.
Functional overview
- Automatic fitting of all elements is possible with a single mouse click
- Manual element fitting and region optimization
- Determination of radii, offsets, angles and segments
- Intersection creation for any desired elements
- Regression lines and curves over an element
- Regression fitting to pre-defined curves
- Multi-segment regression lines and curves over different contour sections
- Multi-segment regression fitting to pre-defined curves
- Single or multiple reference systems can be created
- Fitting of test spheres with a pre-defined radius in a definable direction
- Toroidal fitting with pre-defined radii and offset
- Auxiliary lines: Parallel lines, perpendicular lines, and straight lines with a defined angle/offset
- Auxiliary curves as a continuation of a circular segment, curves with a pre-defined radius
- Auxiliary points projection points, co-ordinate points, points on a contour etc.
- Determination of the highest and lowest points on contours and elements
- Determination of straightness deviation, graphically and numerically
- Determination of radius form deviation, graphically and numerically
- Linear and radial form deviation of an interrupted profile can be measured
- Regression radius over pre-defined angles
- Predefined co-ordinates (X or Z axes) for regression radii and lines
- Automatic dimensioning with tolerance analysis for repeated measurements
- Determination of radius and diameter relative to a virtual middle axis
- Zooming from 0.1 to 2000:1 for display and printouts
- Comments and text can be entered and freely positioned
- High performance export functions for transferring data to (e.g.) Excel, Word etc.
- Feature-rich print processor
- Multi-contour printouts sup-
port multiple contours on a single page
- Flexible display of your company data, logos, part numbers etc...
- Multipart measurements are possible over the entire measurement range (250 x 320 mm) without losing the reference points
- Trapezoidal channels can be tested (only with an optional probe arm)
- Measurement direction can be freely chosen
- A special probe arm reduces the previous border angle limitation (78° rising and 87° falling) to 89° falling
- Composite measurements from forwards and backwards operation are possible
- Stylus tip compensation for all probe directions

**Technical data**
- Measurement area (W x H): 250 x 320 mm
- Measurement system non-contact, optical, incremental over all axes
- Internal resolution: 0.033 µm
- Measurement speed automatically optimized (0.1 - 3 mm/s)
- Feed operation up to 25 mm/s
- Probe arms ConturoMatic T probe arms, maximum rigidity, torsion free, and screwable
- Probe arm compensation
- Stylus tips Standard contour stylus tips R 25 µm as well as special stylus tips from R 1 µm to R 2000 µm
- Stylus tip compensation
- Feed elements: Self-adjusting, maintenance-free feed mechanisms
- Drives: Maintenance-free with lifetime lubrication
- Control system: T&S measurement, control unit are integrated into the device
- Safety: Feed forces are mechanically and electronically limited
- Measurement table: Integrated into the system, area 200 x 235 mm, 13 mm Y adjustment path
- System accuracy: ± (1.5 + L/100) µm [L = measurement length in mm] (without changing measurement direction). Measured over an inclined straightness standard. This system error value contains the sum of all measurement-system errors, including feed errors.

- Device dimensions (W x D x H): 860 x 250 x 720 mm
- Table loading: max. 15 kg
- Weight: approx. 90 kg
- Scope of delivery:
  - Complete mechanical setup with Y adjustment table,
  - integrated control system,
  - 2 standard probe arms, PC,
  - OS: Windows XP Pro,
  - 17” TFT flatscreen,
  - Inkjet printer,
  - system supply voltage: 230 VAC/50 Hz

We reserve the right to make technical changes. No responsibility is accepted for printing errors or misconceptions.
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**Example: Edge shortening**

**Example: Form deviation over a regression curve**