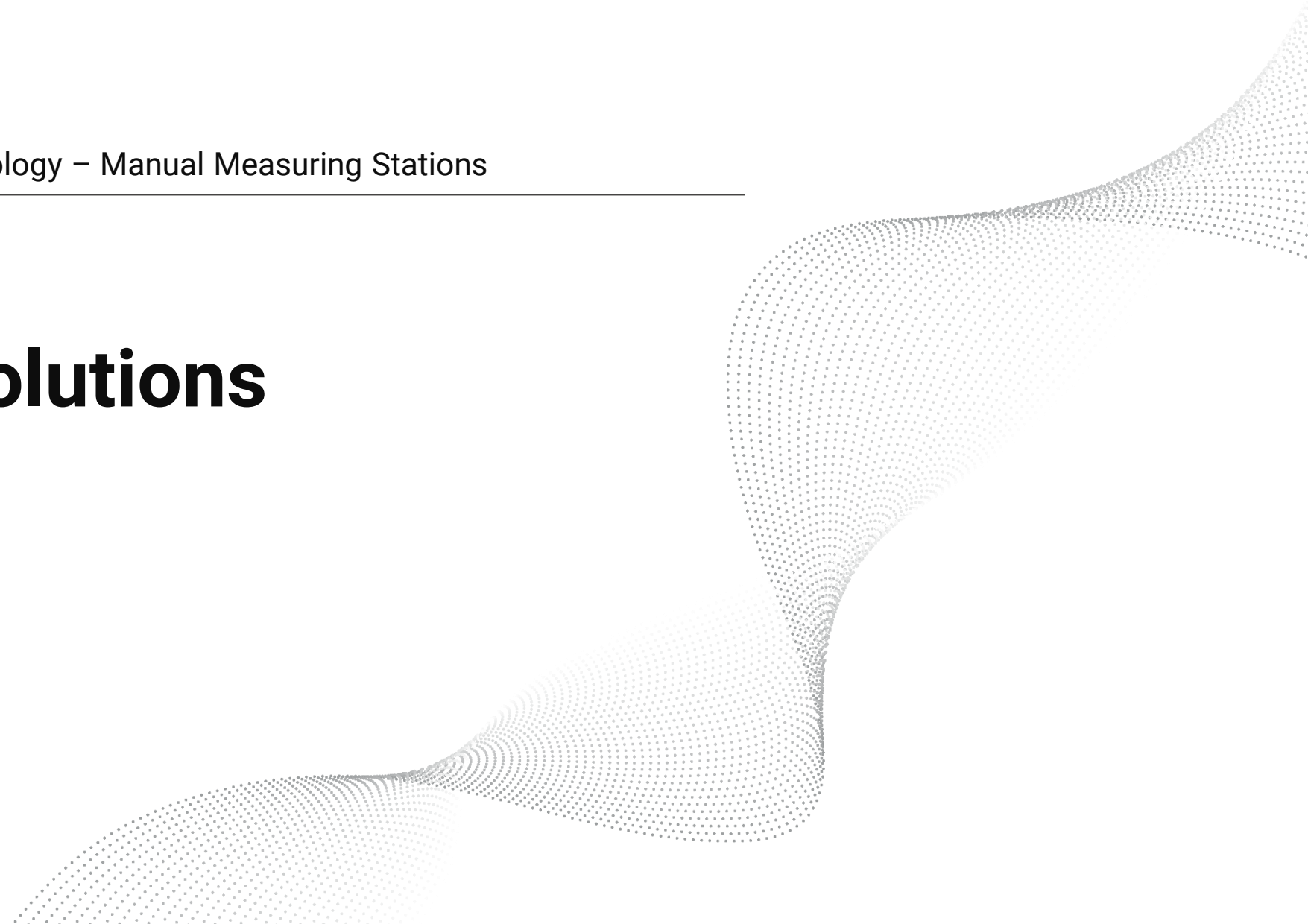


Engineered Solutions



Manual Measuring Station for Shafts

Measurement Task

This measuring station is available with different configurations regarding drive units, such as the PCV, GD120 (side-cranked) or LD130. Depending on the drive unit applied the station enables contour and/or roughness measurement.

The design is to measure flexible features like radii, straightness, roughness on bearing surfaces etc.. of larger turned parts e.g. crankshafts.

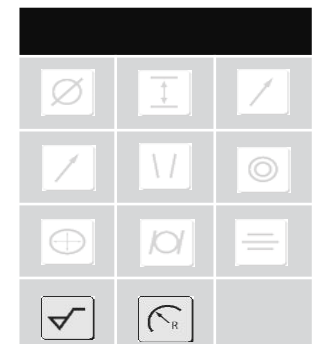
The Solution

This measuring station has been designed for measurement of large shafts up to 1.600mm (larger versions are available on request).

The workpiece is loaded and positioned manually. The measuring position is approached by manually moving the measuring column. The column is mounted on a manual HX-axis aligned parallel to the work piece axis. A additional HY-axis at right angle aligned to the workpiece axis is used for fine adjustment and zenith search. The crankshaft can be turned within the POM-coated supports manually. This enables maximum accessibility to the features which needs to be measured, especially to the surface of crank bearings.



Automation:	manual
Main application:	shaft; crankshaft
Reference No:	5



Measurement on Large Bearing-Rings

Measurement Task

- Contour measurement of the gothic arch geometry within the bearing-ring
- Roughness on outer and inner diameter of the ring

The Solution

This measurement station is based on a MarSurf LD system complemented by a universal flexible workpiece fixture dedicated to (bearing-) rings. The fixture includes an TX axis with 800mm of adjustment and TY axis with +/-25mm of adjustment.

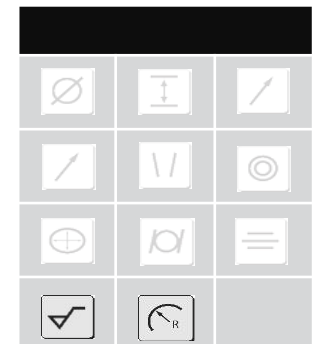
Additionally, there are two rotary axis for part positioning: TC axis (180 degrees) and a TB axis (110 degrees) for part positioning/movement. Those axis are coming with a digital protractor angle position indicator.

The fixture is designed to hold parts ranging in diameter from 25,5mm (1") through 455mm (18").

Positioning system is designed to be applied as upgrade to a standard Mahr surface measurement system.



Automation:	manual
Main application:	bearing
Reference No:	11



Manual Universal Measuring Station - Series 001

Measurement Task

Measurement of roughness and contour features depending on the drive unit applied

- Complex small parts
- Heavier workpieces
- Periodic measurement tasks

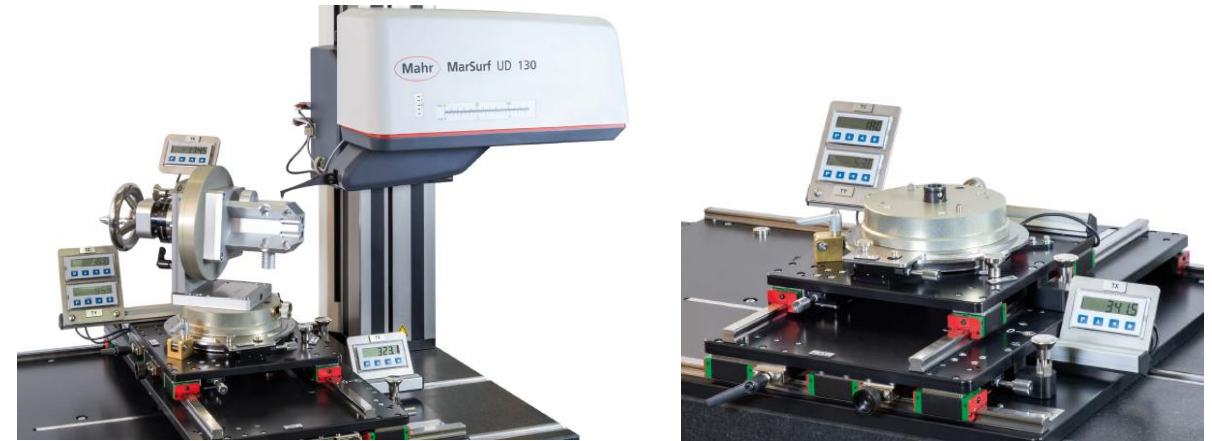
The Solution

This measuring station simplifies daily measuring tasks by using manual positioning axes placed on a standard measuring station (with a large granite plate).

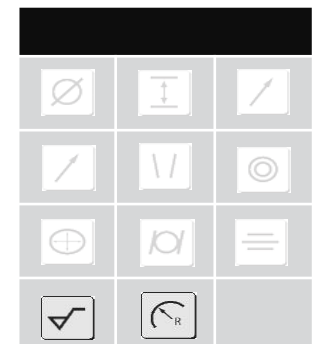
It is suitable for workpieces up to 30 kg and an edge length of up to 300 mm.

The basic axis comprises two linear axes TX and TY and a rotary axis TC which can be freely rotated through 360°. The axes are all equipped with digital position indicators. In addition, a fine positioning mechanism on each axis enables the sensitive alignment of the workpiece.

As an option, the measuring station can also be expanded with one or two additional swivel axes (TA or TA/TB) by means of a standard quick-change interface.



Automation:	manual
Main application:	gear; camshaft
Reference No:	22



Measuring Station with Aircushioned Positioning Table

Measurement Task

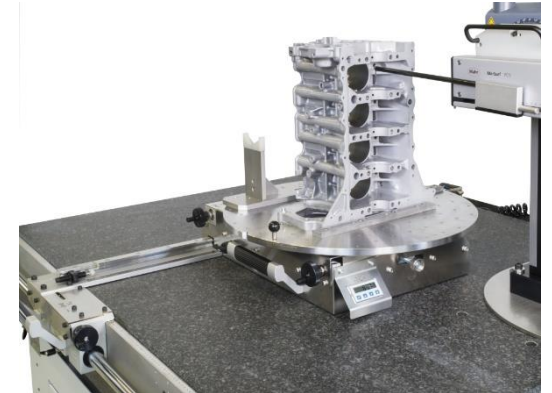
- Roughness and contour measurement
- Depending on the measuring task, all drive units from the Mahr can be applied
- Combination of several different drive units are possible
- Workpiece weight up to 250 kg

The Solution

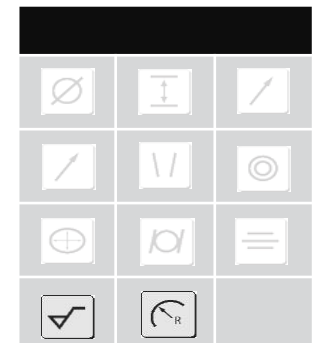
Measuring station with air-bearing positioning table for comfortable and precise positioning of large workpieces.

The guided axes allow positioning of the workpieces in TX, TY and TC direction. Each axis can be adjusted separately by simple and fast pre-positioning and subsequent fine adjustment. Each axis can be locked separately with a parking brake.

The mounting plate (Ø 600 mm) has a hole pattern with M6 threads at 50 mm intervals (Witte system). This allows the user to flexibly realise workpiece supports on site.



Automation:	manual
Main application:	motorblock; crankshaft; gearbox
Reference No:	23



Flexible Manual Measurement Station

Measurement Task

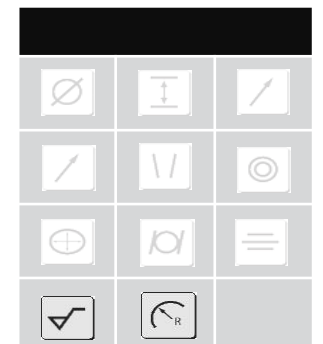
- General contour and roughness measurement tasks
- Roughness measurement on main and journal bearings
- Radii at bearing joints

The Solution

Basic setup of this measurement station is a standard XCR20 LD260 measurement station in combination with a 1500mm x 1000mm granite. The HZ-column is fixed at the granite. The workpiec support system is carried by an air plate to enable easy movement of quite heavy workpieces. On top of the airplate system a fixture with a mechanical TB swivelling axis is installed. Therefore the granite has been surrounded by a safety boundry.



Automation:	manual
Main application:	shaft, crankshaft
Reference No:	26



High Precision Measurement of Spindel-Profiles

Measurement Task

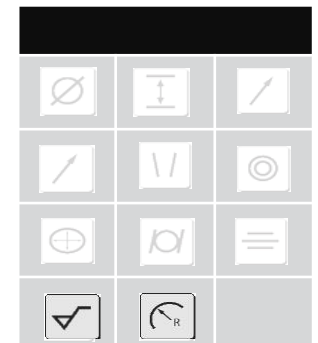
- Contour and/or roughness measurement
- High precision measurement of profile (e.g. gothic profile) on spindles
- Specific designed to measure the contour perpendicular to the pressure angle of spindle contour

The Solution

This measuring station is based on the MarSurf 4.0 family B. The basic measuring station is extended by a special granite and a manual X-Y-C positioning system. The linear axes in X and Y direction are equipped with a fine adjustment. The rotary axis is a high-precision adjustable C axis (± 0.5 angular minutes) and is equipped with a digital display for the position of the axis. The measuring station concept includes a specific base frame as well as a monitor and PC holder.



Automation:	manual
Main application:	steering, shaft
Reference No:	72



Flexible Roughness and Contour Measurement on Large Workpieces

Measurement Task

typical applications are for example:
 turbin blades, cylinder block, cylinder head, crankshaft, housing, et al.

Depending on drive unit applied roughness and contour features can be measured

The Solution

This measuring station is designed for measurement tasks on large and heavy workpieces. The workpiece is placed on the granite block. Afterwards the measuring column with drive unit can be positioned flexibly, freely in all directions. The positioning is performed via an air bearing plate, which is located below the measuring column. During proceeding of measurements the air-supply is switched off and the column is placed stable on the granite. An all-round limit prevents the easily movable column from falling down. The granite is designed with a T-slot for attaching accessories. The size of the granite is 2.0m x 1.0m.

The measuring station concept is characterized by:

- High flexibility
- Easy positioning to the measuring task, even on large workpieces



Automation:	manual
Main application:	aerospace
Reference No:	85

