Bruker alicona

That's metrology

Cobots

Turbine | Disc | Compact

Bruker alicona

Cobots

The combination of high-resolution, optical 3D measurement sensors and collaborative robots

Cobots consist of a collaborative 6-axis robot and an optical 3D measuring sensor, providing repeatable and traceable measurements in high resolution also in production. All Bruker Alicona Cobots are equipped with our IF-Sensor R25, while its mechanical base can be customized depending on the measuring task and the component to be measured. Cobots are used in all areas of precision manufacturing. Currently, they are most commonly used in the aerospace, tooling and automotive sector. What all designs have in common regardless of the application:

Cobots are “allrounders” in quality assurance, designed for efficient and highly user- friendly measurement automation.

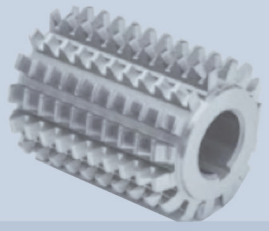
- Easy teach-in of up to 500 measuring positions including CAD CAM connection
- Automatic measurement of surface, GD&T features, defects and more
- High-resolution, optical and repeatable measurement of smallest geometries on large components
- No programming or metrology knowledge necessary for handling, programming and measuring of taught-in measurement series
- Modular application and positioning options, e.g. directly next to the machine tool to measure the tool as well as the workpiece directly inside the machine (measuring without unclamping)
- Optimum integration into existing production lines by means of hand-held, intuitive teach-in process, automatic evaluation and safety concept without protective housing

TurbineCobot

Bruker alicona

DiscCobot

CompactCobot



Applications & benefits in the aerospace industry

- Optical measurement of turbine blades, cases, discs and fan blades
- Verification of break edge to ensure safety regulations
- Defect/Roughness measurement for MRO (Maintenance, Repair and Overhaul)
- Time savings of up to 70% compared to replica measurements

Applications & benefits in the tooling industry

- Measurement of smallest geometries and surface features on large tools (e.g. saw blade, hob, broach)
- Measurement directly inside the machine tool without unclamping
- Easy implementation of serial measurements with full utilization of the measuring system
- Measurement of cutting edges (edge radii, edge breaks and defects), including roughness measurement

Alicona´s cobot range

Collaborative systems enable modern production strategies

The Alicona cobot range is based on the combination of a collaborative 6-axis robot and the robust optical 3D measurement sensor IF-SensorR25, delivering high resolution, traceable and repeatable measurements. Collaborative systems are tailored to the individual measurement task and application. Programming and measuring as well as handling of pre-defined measurement programs require no prior knowledge of metrology. Cobots run in both manual and automatic mode and can be optimally integrated into an existing production line. Users verify surface state as well as dimensional accuracy of components by measuring distances, angles, form deviations and position tolerances. Examples from the Cobot series are the DiscCobot, the TurbineCobot or the CompactCobot, which are mainly used in the aerospace, automotive and tool industries for industrial quality assurance.

GENERAL SPECIFICATIONS

Robot type	UR-10
Specimen radius	1300 mm
Safety	collaborative – stops at collision with an object; certified by TÜV Nord and TÜV Süd
Axes	6 rotating joints
Repeatability	+/- 0.1 mm
Sensor	IF-SensorR25 - travel range in Z 26mm motorized - LED ring light with 24 segments - 126 mm x 153 mm x 202 mm (W x D x H)
Mass (incl. sensor)	approx. 30 kg
Operation	coarse positioning of the sensor through handles; fine positioning through precise joystick movement
Display	integrated touchscreen to display the live view and 3D view of the measured dataset
Software compatibility	**AutomationManager:** Easy teach-in of measurement sequences by adding robot positions, SingleField and ImageField measurements. **CADCAM:** Virtual planning of measurement sequence on CAD model incl. simulation of the measurement task.

CompactCobot

Dimensions (H x W x L)	0,95 x 0,79 x 1,35 m
Weight	400 kg
Max. sample weight	ca. 100 kg
Operation	Drawer with integrated 19,5´ touchscreen
Interface	Hole grid plate for mounting different sample holders and samples
Additional Features	Integrated status lights 4 emergency stops on each corner

Bruker alicona

DiscCobot

Dimensions	control console: 1 x 1 x 0.9 m; system: 1.0 x 1.45 x 0.95 m (excl. cobot)
Mass	approx. 1.5 t
Additional axes	rotation axis
Max. specimen weight	approx. 150 kg
Interface	flexible perforated plate for mounting of grips
Safety	laser scanner for additional monitoring of the operating range

TurbineCobot

Dimensions (H x W x L)	1,2 x 1,3 x 2,2 m (excl. Cobot), component position at approx. 0,7 m height
Mass	ca. 1000 kg
Additional axes	rotation axis
Max. component weight	65 kg
Interface	perforated plate for mounting of grips and components
Operation	sliding drawer with integrated touchscreen
Safety	laser scanner for additional monitoring of the operating range

Bruker alicona

Form and roughness. In one system.

By Alicona. That´s metrology!

Optical 3D surface measurement

Collaborative robots consist of a collaborative 6-axis robot and an optical 3D measurement sensor. They are used to verify surface quality and dimensional accuracy of small features on large components.

IF-19022020 - 2