Measuring Automaton for V6-Crankshaft

Brief description
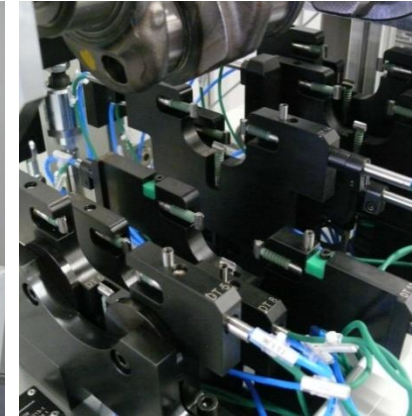
- measuring automation post-process

Measuring task

- measurement of location tolerances (positions) pin bearing/fixing pin

Technology

- tactile
- static

Special features

- loading/unloading: with a handling supplied by the customer
- calibration: automatic
- changeover: without changeover (within one group of types)
- control system: external control
- batch mode for 3 different types of workpieces (mix mode possible)
- probe stroke 10 mm for different stroke radii
- modular system with a changing frame for the measuring unit for the opportunity of changeover on further types of crankshafts (V8, V12,...)

3439213/ta

Measuring Automaton for Camshaft

<u>Brief description</u>

• measuring automaton postprocess

<u>Measuring task</u>
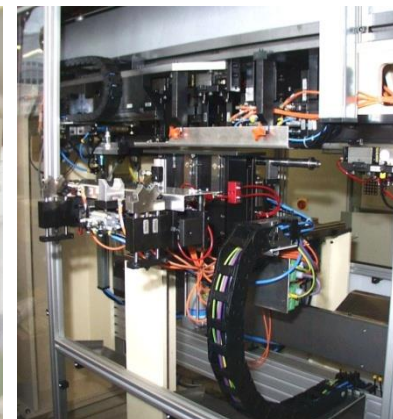
• measurement of diameters, lengths, run-out tolerances (radial run-outs, axial run-outs)

<u>Technology</u>

• tactile

• dynamic

<u>Special features</u>

• loading/unloading: with a handling supplied by the customer

• calibration: automatic

• changeover: automatic

01-4330/ol

Double Track Measuring Automaton for Camshaft Bushing

Brief description

- measuring automaton for 100% check

Measuring taski

- measurement of diameters, lengths, run-out tolerances (axial run-outs), gearing (pitch circle diameter), location tolerances (concentricity)
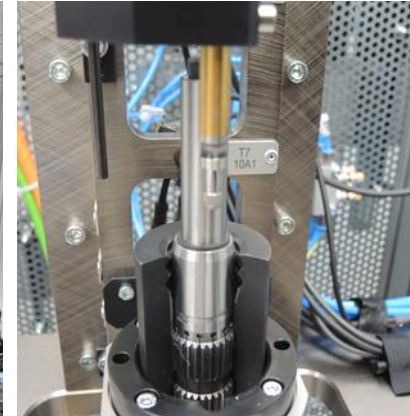
Technology

- tactile
- dynamic

Tolerances

- Ø tolerance ± 0,01 mm

Special features

- cycle time: < 13 s (for one measuring cycle) or 6,5 s (double track measuring mode)
- clamping/picking up the workpiece is done in the pitch circle of the gearing
- special clamping devices hydraulic clamping mandrel with SAE external spline grooves
- single + double track measurement possible

3452894/eis

Measuring Automaton for Flange Shaft ECT

Brief description

- measuring automaton post-process

Measuring task

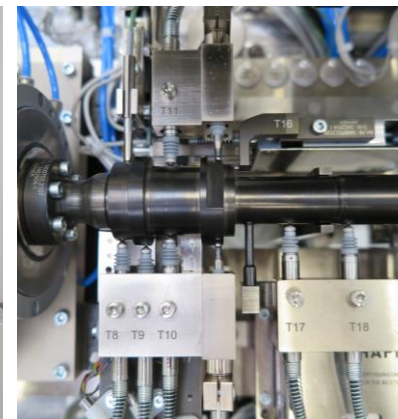- measurement of diameters, lengths, form tolerances an orientation tolerances

Technology

- Tactile
- static as well as dynamic

Tolerances

- Ø tolerance 15 µm
- running tolerance 20 µm

Special features

- cycle time: 25 s (if location-oriented, otherwise 29 s)
- control system: external control
- loading/unloading: with a handling supplied by the customer (portal)
- calibration: automatic (integrated)
- temperature compensation at both ends of the shaft

3462904/he

Measuring Automaton for Con Rod

Brief description

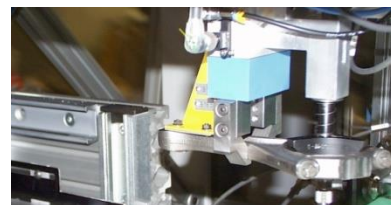- measuring automaton for 100% check and classification

Measuring task

- measurement of diameters, lengths, orientation tolerances (parallelisms). Location tolerances (symmetries), temperature compensation, mass (rotating/oscillating)

Technology

- tactile
- static

Special features

- cycle time: < 4,6 s
- loading/unloading: with an integrated handling
- calibration: automatic
- workpiece marking by means of laser or pin marker

01-4506/ol

Measuring System for Con Rod

Brief description

- measuring system for sample check

Measuring task

- measurement of diameters, lengths, orientation tolerances (parallelisms), location tolerances (symmetries), temperature compensation

Technology

- tactile
- static

Special features

- loading/unloading: manual
- fast changing mandrel
- depth gauge adjustment

01-4500/ol

Measuring Automaton for Con Rod

Brief description
- measuring automaton postprocess

Measuring task
- measurement of diameters, lengths

Technology
- tactile
- static

Tolerances
- Ø tolerance = 8 µm

Special features
- loading/unloading: with a handling supplied by the customer
- calibration: automatic
- changeover: manual, without readjustment of the probes
- control system: external control
- batch mode for 4 different types of workpieces

3437589/eis

Measuring Automaton for Engine Block

Brief description
- measuring automaton for 100% check

Measuring task
- measurement of diameters

Technology
- tactile as well as contactless, pneumatical
- static as well as dynamic

Special features
- loading/unloading: on a conveyor
- calibration: automatic
- changeover: manual or automatic
- for in-lines and V-engines
- cleaning station

01-2811/ol

Measuring Automaton for Engine Block

Brief description
- measuring automaton postprocess

Measuring task
- measurement of diameters, lengths

Technology
- tactile
- static

Tolerances
- Ø tolerance = H7, lengths tolerance = ±30 µm

Special features
- loading/unloading: with a handling supplied by the customer
- control system: external control
- very dirt resistant

3438573/ba

Measuring Device for Cylinder Head Cover

Brief description

- measuring system for sample check

Measuring task

- measurement of diameters, form tolerances (roundnesses), location tolerances (coaxialities)
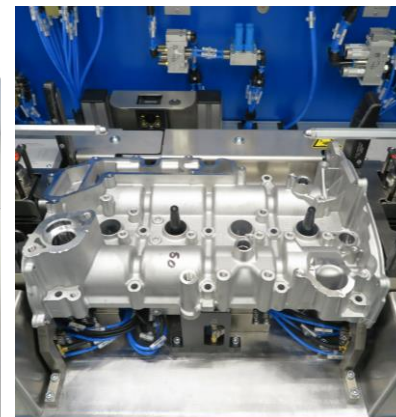
Technology

- tactile
- static

Tolerances

- inside Ø tolerance < 25 µm

Special features

- cycle time: < 30 s
- loading/unloading: manual
- calibration: manual
- control system: manual
- reading station for DMC-Code

3462733/ba

Measuring Automaton for E-Motor-Housing

Brief description

- measuring automaton postprocess for 100% check

Measuring task

- measurement of diameters , form tolerances (roundnesses), location tolerances (concentricities)

Technology

- tactile
- static

Special features

- loading/unloading: with a handling supplied by the customer or manual
- calibration: manual
- basis is build in 6 small grooves, which are made by extruding

3439613/he

Measuring Automaton for Turbocharger (Housing)

Brief description

- measuring automaton postprocess

Measuring task

- measurement of diameters, lengths, location tolerances (positions in space), temperature/compensation of the temperature (workpiece heated very inhomogeneous)

Technology

- tactile
- static as well as dynamic (250° measuring range)

Special features

- loading/unloading: with a handling supplied by the customer
- changeover: without changeover for 6 types of workpieces
- batch mode for 6 different types of workpieces
- correction of the machine tool set resp. cavity related depending on the measuring characteristic
- respectively one measuring automaton for the different operation steps

3441140/bn
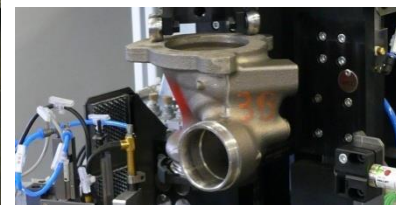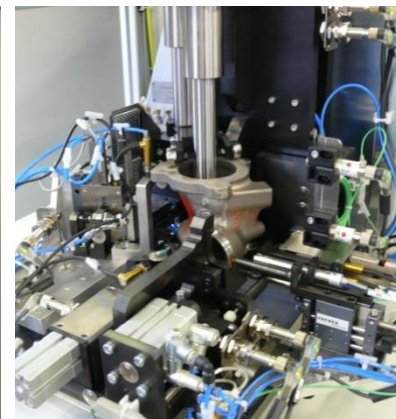
MA for Turbocharger
(Bear. Housing / Compr. Impeller-Blank)

Brief description

- measuring automaton for 100% check

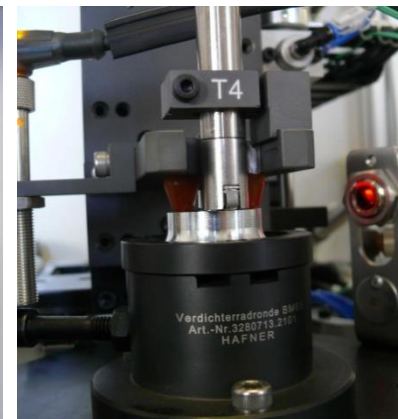Measuring task

- measurement of diameters inside

Technology

- contactless, pneumatical
- static

Tolerances

- diameter approximately 5 mm: tolerance < 10 μm

Special features

- loading/unloading: manual or with a handling supplied by the customer
- calibration: manual or automatic
- changeover: manual
- identification of the types of workpieces: read in of the datamatrix code by a camera
- data interface to superordinated manufacturing execution system (MES)
- two similar designed measuring automatons respectively for bearing housing or compressor impeller-blank

3440053/ri

Measuring Automaton for Balance Shaft

Brief description

- measuring automaton for 100% check

Measuring task

- measurement of diameters, form tolerances (roundnesses), orientation tolerances (parallelisms), run-out tolerances (radial run-outs)

Technology

- tactile
- Static

Tolerances

- Ø tolerance 9 µm, roundness 8 µm

Special features

- cycle time: 20 s
- loading/unloading: with an integrated handling
- calibration: automatic
- changeover: without changeover
- ok-classification, internal storage for nok-workpieces
- rotary unit 180 °

3466315/eis

Measuring Automaton for Turbocharger (Rotor)

Brief description
- measuring automaton for 100% check (and classification)

Measuring task
- measurement of diameters, lengths, radial run-outs, axial run-outs

Technology
- tactile
- static
- dynamic

Tolerances
- 5 µm (run-out tolerances)

Special features
- cycle time: 30 s
- loading/unloading: with an integrated handling
- calibration: automatic
- changeover: manual
- sorting of the workpieces ("ok" and "not ok")
- nok-classification with 4 separate barges on the front side

3446663/he

Measuring Device for Turbocharger (Compressor Wheel)

Brief description
- measuring device for sample check

Measuring task
- measurement of diameters, angles

Technology
- contactless, pneumatical
- static

Tolerances
- diameter about 5 mm, tolerance < 10 µm

Special features
- calibration: manual
- continuous display of the measuring values

3439959/ba