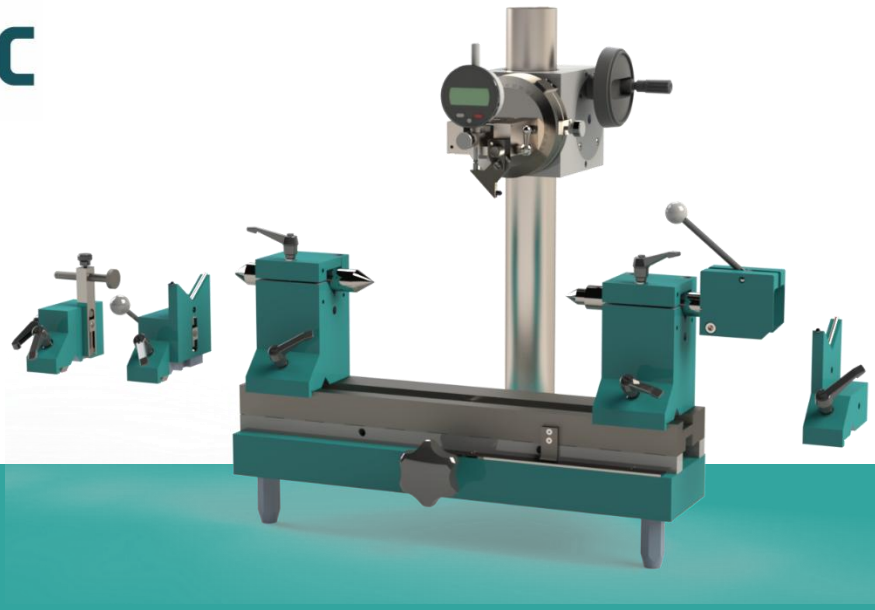
Manual Concentricity measuring device



- Measuring device for runout, total runout, axial runout, concentricity, coaxiality, roundness, tooth thickness on rotationally symmetrical parts or gears

- Measuring principle:
  - The test piece is turned on its own axis by hand and simultaneously scanned by the dial gauge

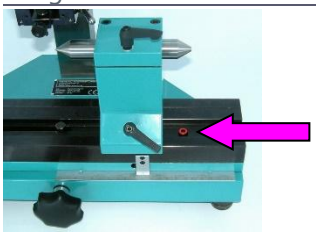
- Highlights:
  - Measuring carriage can be moved horizontally, allowing for coaxiality and total runout of the test piece to be determined
  - Deflection lever for axial runout measurement
  - Test pieces can be quickly changed by swiveling out the dial gauge
  - Angular adjustment of the measuring head
  - Individual equipment with accessories (see page 3)
  - Operating instructions for various measuring tasks (see page 5)

Attention!

- The quality of the measurement also depends directly on the quality of the centering holes in the test piece!
- No changes may be made to the measuring head during a measurement (no height adjustment, no angle adjustment).
- The measuring device must be handled with care. Excessive force will destroy components!

Technical Data

Test pieces	Turned parts in general External and internal gears (spur, bevel, worm gears) Cutting tools (cylindrical milling cutters, cutting wheels)
Test pieces with centring hole	
Length	0...245 mm
Test diameter	0...195 mm
Test pieces without centring hole	
Length	30...315 mm
Test diameter	0...195 mm (depending on the bearing journal)
Bearing journal diameter	3...85 mm
Diameter difference	0...16 mm (bearing journal)
Realisable measuring tasks	
Shape tolerance determination:	Runout, total runout, Axial runout, Concentricity, Coaxiality, Roundness
Gear thickness:	Radial single-ball dimension
Self-tolerance of the device	
Coaxiality of the centring tips	Ø0.003 mm
Axial runout accuracy	0.002 mm
Scatter range of the measurements	0.001 mm
Measuring head	
Vertical movement	0...160 mm
Stroke	5 mm (to be disengaged when changing the test piece)
Swivelling	± 90°
Measuring carriage	
Horizontal movement	0...200 mm
Storage	
Tip height	100mm
Tip width	0...290 mm
Dimensions	
Width x depth x height	470 x 340 x 490 mm
Weight	approx. 54 kg



Remove the transport lock before commissioning!
(red screw)

Basic unit

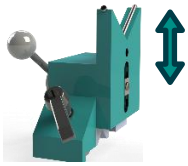
Basic unit
BK720-100

Individual equipment with:
- 2 prisms + 1 stop
- 2 blocks with tips (1x spring-loaded, 1x fixed)
- 1 block with tip + 1 prism + 1 stop
- Dial gauge
- Measuring insert
- Deflection lever for axial runout measurement
- Special designs and accessories on request

Prisms and stop

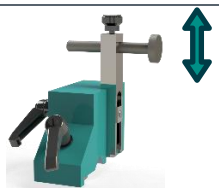
Fixed prism
BK720-230

Ø bearing journal 3...85 mm



Prism height adjustable
BK720-240

Ø bearing journal 3...85 mm
Adjustment range ±10 mm



Stop height adjustable
BK720-250

For axial fixing of test piece

Blocks with tip

Block with tip with fixed centring tip
BK720-210

Centring tip
one side pointed and
one side with inner cone

Block with tip with spring-loaded centring tip
BK720-220

Test piece clamping in with spring force
Centring tip pointed

Dial gauges

Mechan. Dial gauge
KT001510

Meas. range ±50 µm
Scale value 1 µm

Mechan. Dial gauge
KT000313

Meas. range 10 mm
Scale value 10 µm

Digital dial gauge
KT001172

Meas. range 12.5mm
Readout 10 µm

Digital dial gauge
KT004826

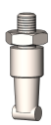
Meas. range 12.5mm
Readout 1 µm

Deflector

Deflection lever
BK720-310

90° deflection for axial runout meas.

Measuring inserts



Measuring insert
Transverse cylinder
KT005176

Measuring insert
Cutting edge
KT001026

Measuring insert
Ball ø3
KT001165

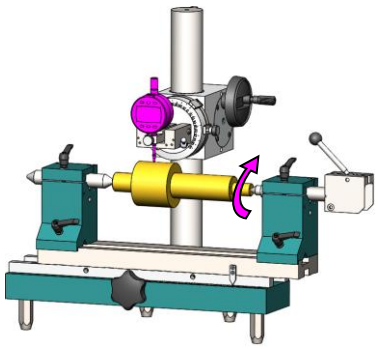
Measuring insert
Ball ø2
KT003299

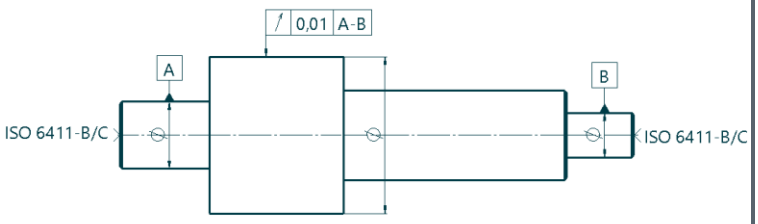
Measuring insert
Crowned ø10
KT005622

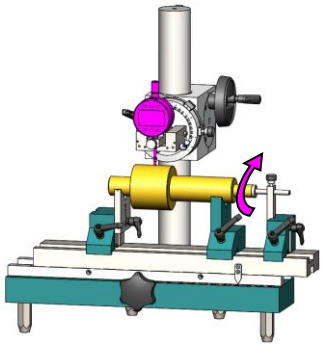
Wear parts

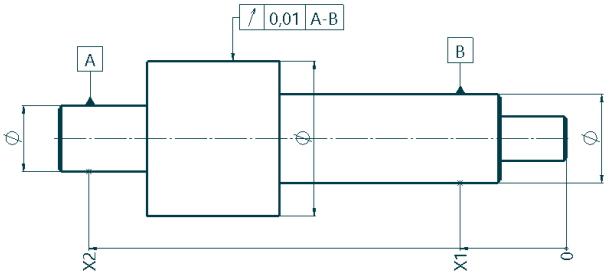
	Standard centring tip BK720-210-005
	Spring-loaded centring tip BK720-221-000
	Spring-loaded tip BK720-221-001
	Prism BK720-231-000
	Sliding prism BK720-241-000
	Stop flange BK720-250-003

Runout measurement

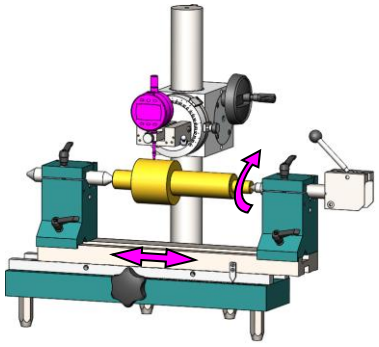


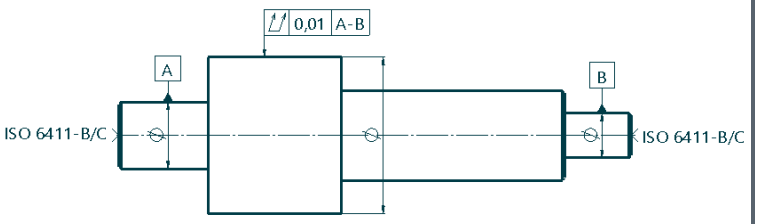




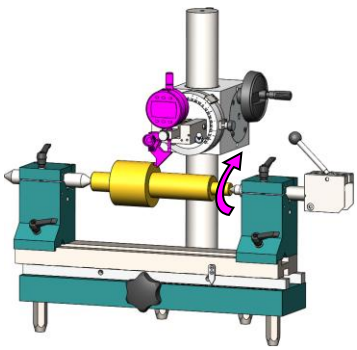


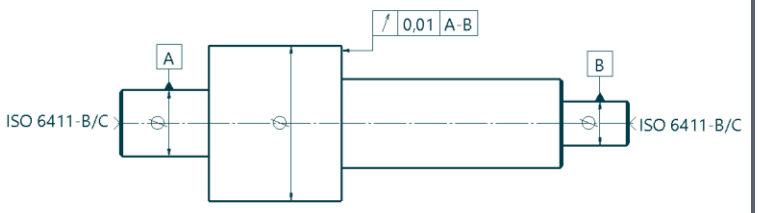
Total runout measurement



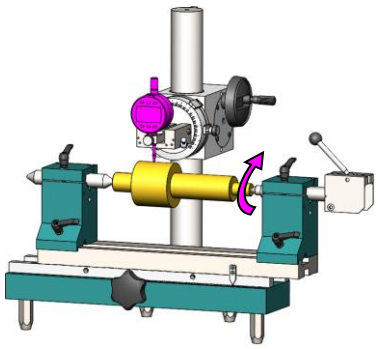


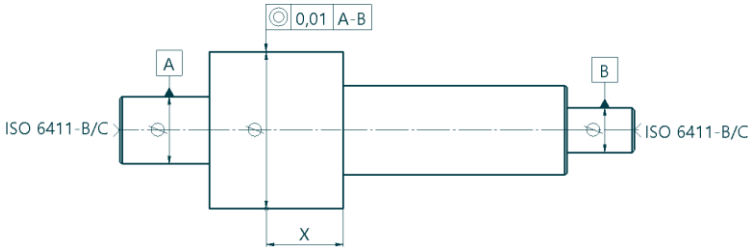
Axial runout measurement

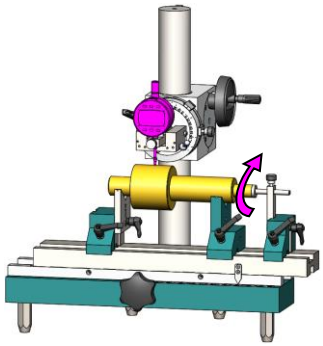


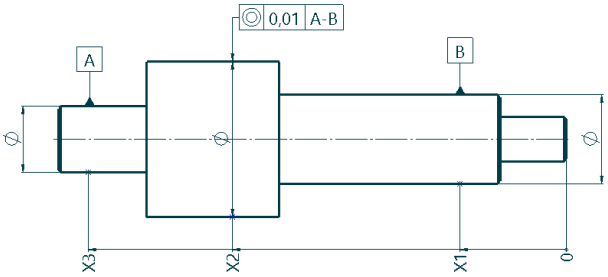


Concentricity measurement

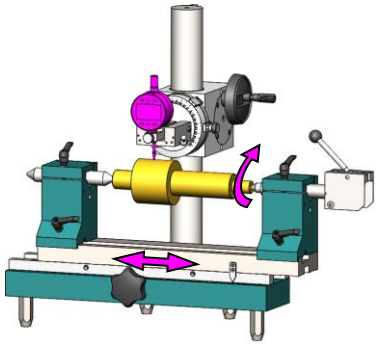


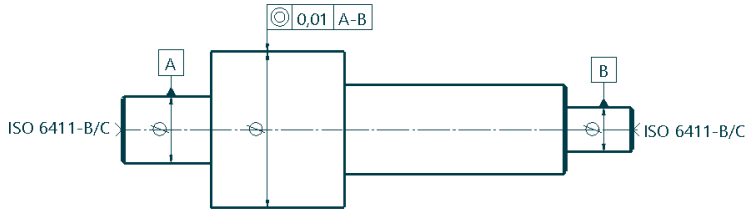




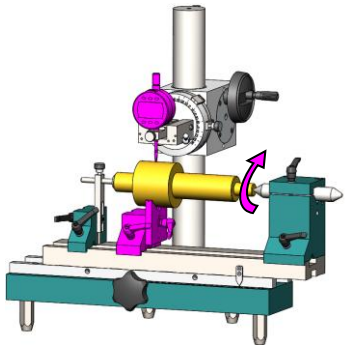


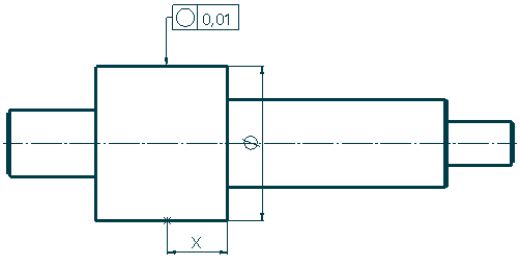
Coaxiality measurement

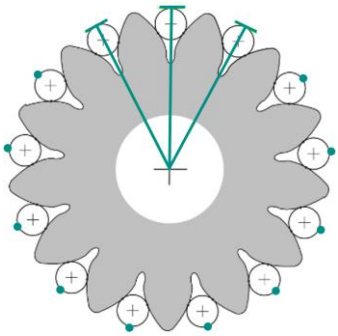




Roundness measurement





Tooth thickness measurement – single-ball dimension

M_{rk}