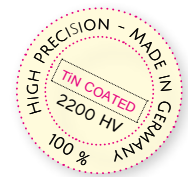
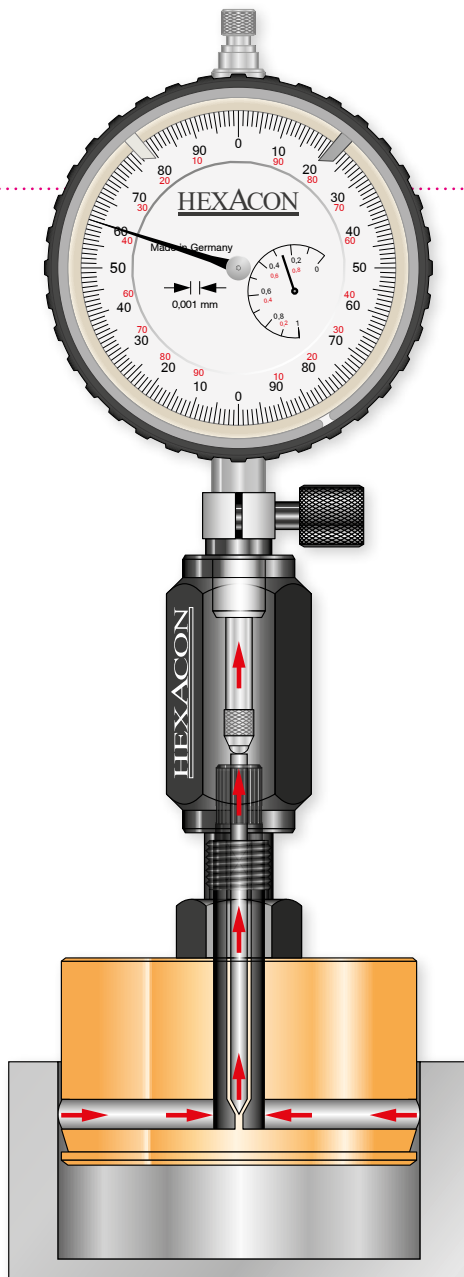
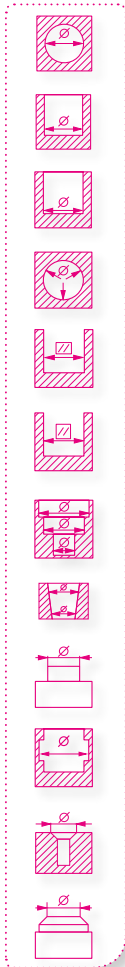


HEXAACON

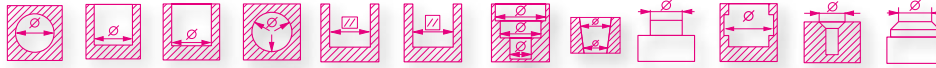


 English

Ø

µ-precision hole measuring instruments
overview

HEXAACON



Hexacon Messtechnik GmbH specializes in the area of precision hole and chamfer measurement.

We manufacture high-precision hole measuring heads according to your individual diameter specifications. Applications range from manual measurement to fully automated measurement. We also offer an extensive line of system accessories.

The repeat accuracy of our hole measuring heads at IT 8 is $< 1\mu$.

100% Made in Germany

All Hexacon PMK precision measuring heads and chamfer measuring heads, chamfer probes and insertion measuring instruments are tough, reliable, high-precision metrology equipment made 100% here in Germany! This allows the strictest of quality requirements and standards for quality assurance to be met.

Our system accessories, such as gauge holders, centering holders and depth extensions are also made in our own facilities, 100% Made in Germany. The accessories are in stock in the warehouse.

Know-how and years of experience

Our engineering services in the area of technical and production technology development since 1996 guarantee you perfect measurement problem solutions in the area of precision hole and chamfer measurement.

Many years of experience in consulting and the implementation of customer-specific problems offer you a high level of know-how for measurement tasks in production as well as in quality assurance.

Titanium nitride coating

All Hexacon PMK's are manufactured of high-quality tool-grade steel and treated at no extra charge with a quality-improving titanium nitride coating. This has been our standard for many years.

TiN coating provides very good hardness, about 2200 HV, as well as corrosion resistance with outstanding sliding and friction characteristics. TiN coatings also slide easily to prevent the measurement object from tilting and sticking during the measurement procedure. This results in less wear and longer life for measurement tools, as well as greater cost-effectiveness.



Precision measuring points


The measuring points in the PMK measuring heads are precision fabricated from tough, high-quality coated hard metal. Diamond measuring points of synthetic diamond are available upon request. (Not for blind hole variants and outer diameter measuring heads)

Repair capability and service

All our hole and chamfer measuring instruments are not only robust, but are also outstandingly capable of repair. Our services include the delivery of original replacement parts up to and including complete refurbishment and remanufacture of worn measuring tools to as-new condition, as well as recalibration of metrology equipment.

Advantages of our products at a glance:

- **Top quality and precision in fabrication and measurement accuracy.**
- **Robust, field-ready metrology equipment for effective, rational measurement.**
- **TiN coating provides higher service life at no additional cost.**
- **Refined system accessories, for both manual and automated measurement.**
- **Flexible adaptation and modification to customer specifications as well as special solutions are possible.**
- **Great prices and short delivery times**
- **100% Made in Germany**

 Company headquartered in Dieburg,
Hessen, Germany



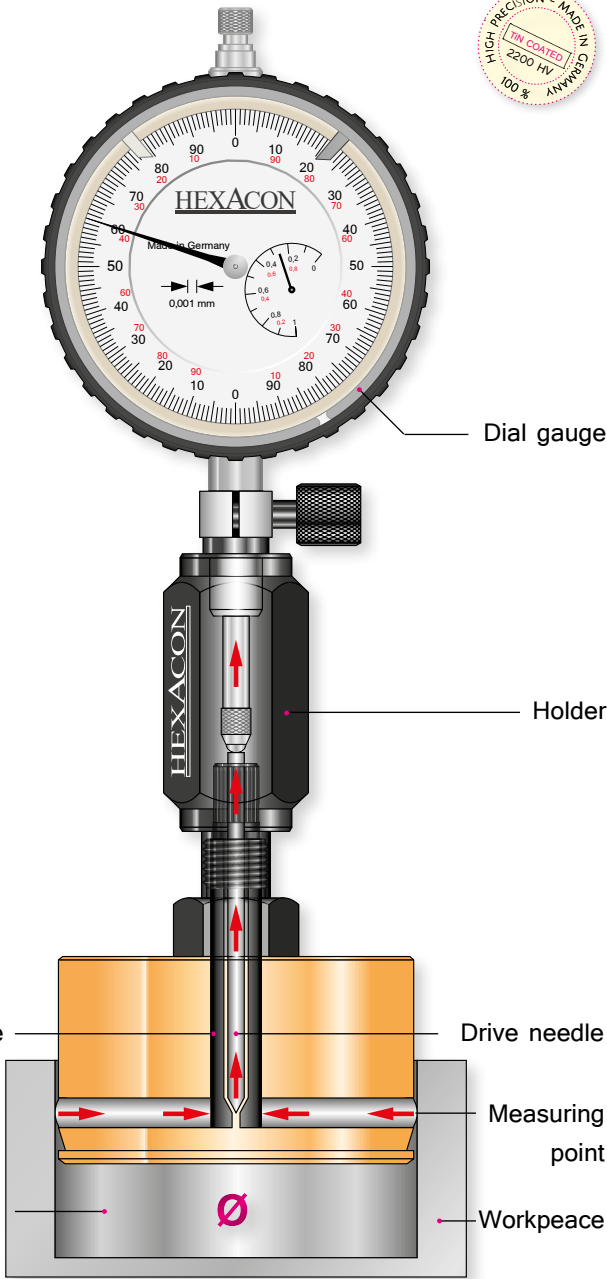
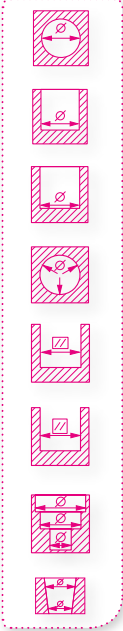
Hole measuring instruments



Functional principle

PMK • Precision hole measuring heads • TiN coated

For quality assurance in fabrication and in testing.



PMK precision meas. heads • Functional description

PMK measuring heads are used for the reliable, rapid precision measurement of diameters and form errors in holes of a wide variety of types.

The purely mechanical measurement principle uses hardened metal measuring points to probe the hole, then guide the force through measurement rods into the housing onto a hardened, conically ground drive needle.

A measurement gauge holder, with or without drive needle, connects the measuring head to corresponding displays such as analog or digital dial gauges using inductive measuring probes, measuring columns or automatic computer measurement systems.

By sliding into the depth of the hole during the measurement process, any **conicity in the hole** can be measured as well. TiN is advantageous here.

Using a rotational probing movement into the hole, additional **form errors in the hole** can be measured:

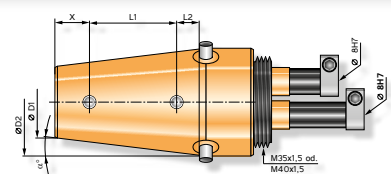
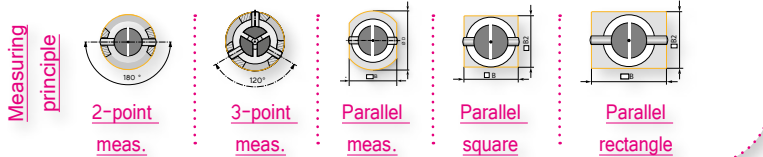
Elliptical form errors, which often occur in drilled holes, can be detected and measured with high precision using **2-point measuring heads**.

Polygonal form errors, which frequently occur in turned or cast parts, can be measured with equal precision using **3-point measuring heads**.

Measuring heads are available in round, conical, parallel, rectilinear or square shapes.

We also provide multi-point measuring heads as well as corresponding dial gauge holders and depth extensions, measurement stands, dial gauges and additional accessories.

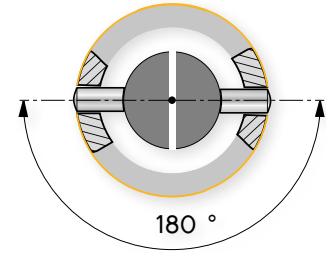
All Hexacon measuring heads are 100% Made in Germany.



Conical multi-point measuring head

2-point hole measuring heads

HEXAACON



PMK • Precision hole measuring heads • TiN coated

Measurement of through holes and blind holes.

ø 6 - 280 mm



Diamond measuring points,
PMK-NO and PMK-XK upon request.

Normal X dimension

Short X dimension

Blind hole X dim.

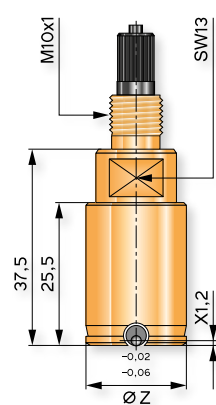
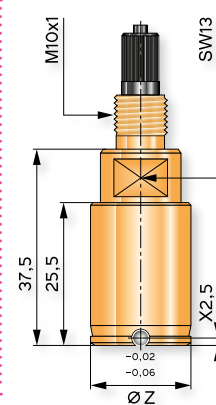
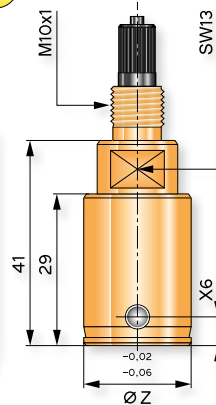
PMK 2-point with insertion groove

Overall catalog • Page 12

PMK • 2-point precision measuring heads

With insertion groove. Self-centering.
ø 10-280 mm, available with: Standard X dim.,
short X dimension or blind hole X dimension.
M6x0.75 mm or M10x1 mm threads.
Measuring range 0.15 mm and up, extensible.

Repeat accuracy at IT 8 < 1µ.



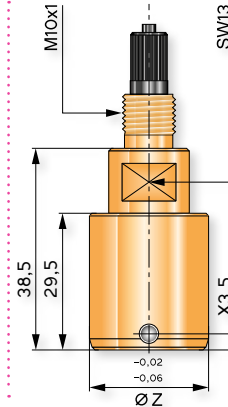
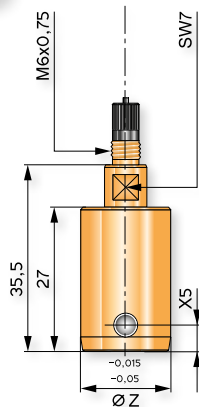
PMK 2-point with insertion chamfer

Overall catalog • Page 18

PMK • 2-point precision measuring heads

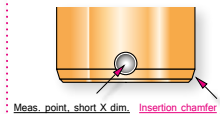
W. insertion chamfer for automated measurement.
Self-centering. ø 10-280 mm, available with:
Standard X dimension or short X dimension.
M6x0.75 mm or M10x1 mm threads.
Measuring range 0.15 mm and up, extensible.

Repeat accuracy at IT 8 < 1µ.



Insertion chamfer for automated measuring

Prevents sticking during the measuring process

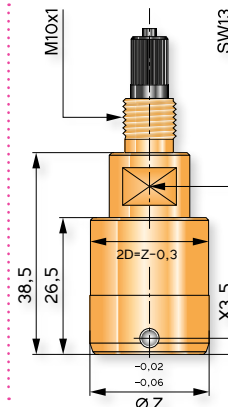
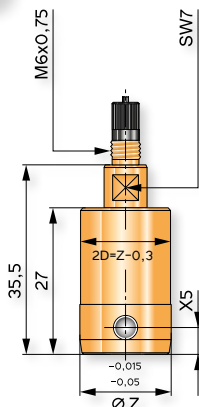


PMK 2-point w. ins. chamfer and 2nd ø

Overall catalog • Page 22

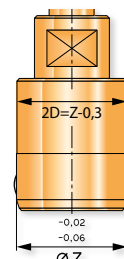
PMK • 2-point precision measuring heads

W. insertion chamfer and second tapered diameter for automated measuring. Self-centering.
ø 10-280 mm, available with:
Standard X dimension or short X dimension.
M6x0.75 mm or M10x1 mm threads.
Measuring range 0.15 mm and up, extensible.
Repeat accuracy at IT 8 < 1µ.



2nd ø for automated measuring

Prevents sticking, even for a deeper measurement



NEW!

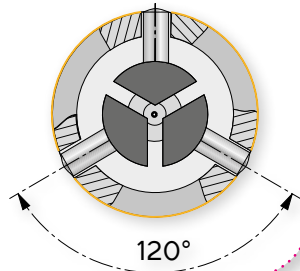
NEW!

2-point and 3-point PMK precision hole measuring heads with normal X dimension, short X dim. or blind hole X dim.

2-point measuring heads measure precision diameters as well as ovality and conicity of the hole by rotating during the measuring process. 3-point measuring heads also measure polygonal deformations of the hole.

The repeat accuracy of our 2-point and 3-point measuring heads at IT 8 is <math> < 1\mu </math>.

All Hexacon PMK are manufactured of high-quality tool-grade steel and treated at no extra charge with a quality-improving titanium nitride coating. TiN coating provides very good hardness, about 2200 HV, as well as corrosion resistance with very good sliding and friction characteristics. This results in improved service life as well as protecting the object being measured. The measurement points are fabricated from coated hard metal. Diamond measuring points upon request.

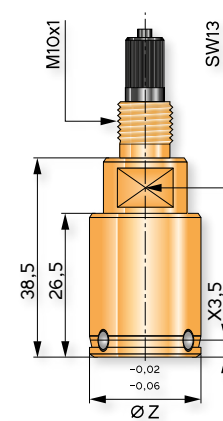
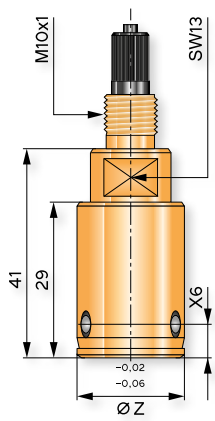


3-point hole measuring heads

PMK 3-point with insertion groove

Overall catalog • Page 26

PMK • 3-point precision measuring heads
 With insertion groove, true three-point meas.
 Self-centering. ϕ 15-100 mm, available with:
 Standard X dimension or short X dimension.
 M10x1 mm thread.
 Measuring range 0.15 mm and up, extensible.
 Repeat accuracy at IT 8 <math> < 1\mu </math>.

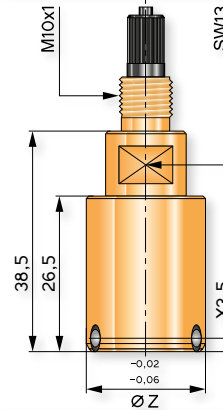
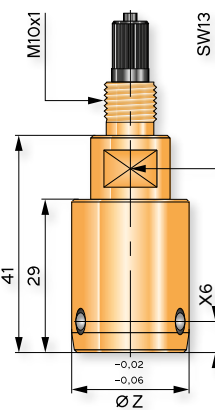


PMK 3-point with insertion chamfer

Overall catalog • Page 30

PMK • 3-point precision measuring heads
 With insertion chamfer for automated meas.
 Self-centering. ϕ 15-100 mm, available with:
 Standard X dimension or short X dimension.
 M10x1 mm thread.
 Measuring range 0.15 mm and up, extensible.
 Repeat accuracy at IT 8 <math> < 1\mu </math>.

With insertion chamfer for automated measurement

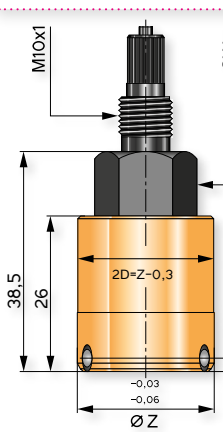
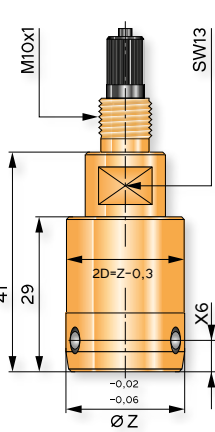


PMK 3-point w. ins. chamfer and 2nd ϕ

Overall catalog • Page 34

PMK • 3-point precision measuring heads
 W. insertion chamfer and second tapered diameter for automated measuring.
 Self-centering. ϕ 15-100 mm, available with:
 Standard X dimension or short X dimension.
 M10x1 mm thread.
 Measuring range 0.15 mm and up, extensible.
 Repeat accuracy at IT 8 <math> < 1\mu </math>.

With insertion chamfer and 2nd ϕ for automated measurement



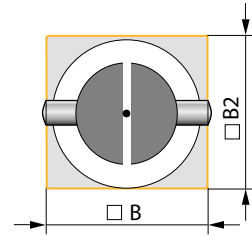
2-point hole measuring heads

HEXAACON

PMK • Precision parallel measuring heads • TiN coated

Measurement of through holes and blind holes.

Ø 8 - 130 mm



Diamond measuring points,
PMK-NO upon request.

PMK 02-PAQ Ø 8 - 15 mm

Overall catalog • Page 38

PMK-02-PAQ • 2-point precision meas. heads

Ø 8-15 mm, available with: Standard X dim.,
short X dimension or blind hole X dimension.
Self-centering. M6x0.75 mm thread.
Measuring range 0.15 mm and up, extensible.

Repeat accuracy at IT 8 < 1µ.



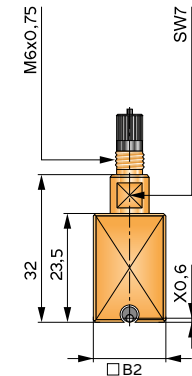
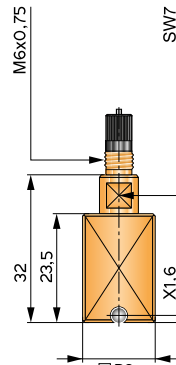
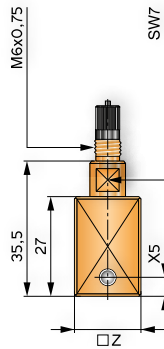
Normal X dimension



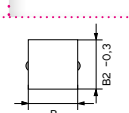
Short X dimension



Blind hole X dim.



NEW!



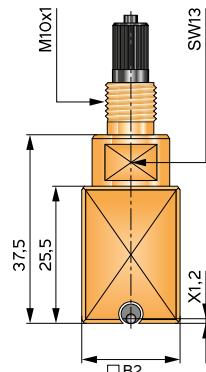
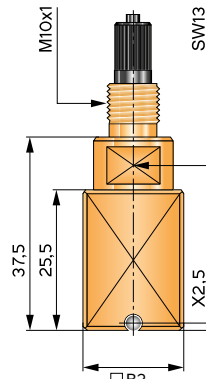
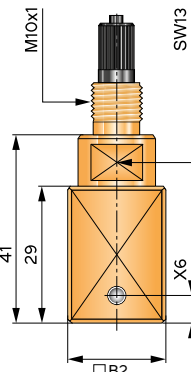
PMK 03-PAQ Ø 15 - 40 mm

Overall catalog • Page 39

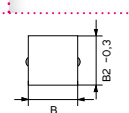
PMK-03-PAQ • 2-point precision meas. heads

Ø 15-40 mm, available with: Standard X dim.,
short X dimension or blind hole X dimension.
Self-centering. M10x1 mm thread.
Measuring range 0.2 mm and up, extensible.

Repeat accuracy at IT 8 < 1µ.



NEW!



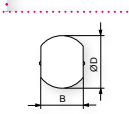
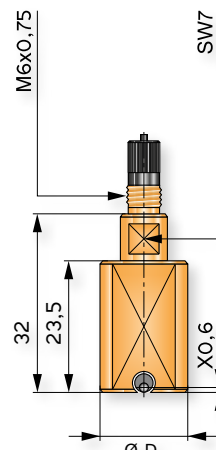
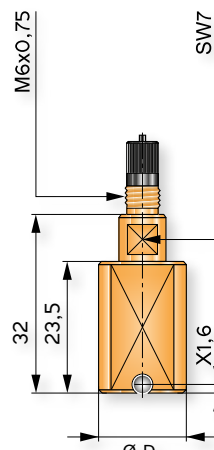
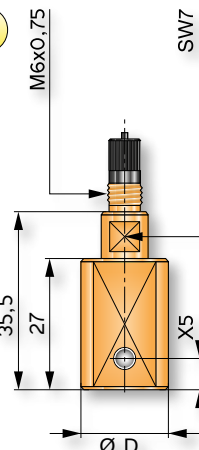
PMK 02-PA Ø 8 - 15 mm

Overall catalog • Page 40

PMK-02-PA • 2-point precision meas. heads

Ø 8-15 mm, available with: Standard X dim.,
short X dimension or blind hole X dimension.
Self-centering. M6x0.75 mm thread.
Measuring range 0.15 mm and up, extensible.

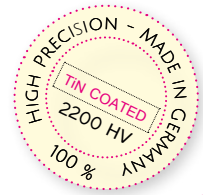
Repeat accuracy at IT 8 < 1µ.



2-point PMK-PA parallel hole measuring head with normal X dimension, short X dimension or blind hole X dimension, titanium nitride coated, precisely measure the parallelism of two surfaces.

The repeat accuracy of our 2-point measuring heads at IT 8 is < 1µ.

All Hexacon PMK are manufactured of high-quality tool-grade steel and treated at no extra charge with a quality-improving titanium nitride coating. TiN coating provides very good hardness, about 2200 HV, as well as corrosion resistance with very good sliding and friction characteristics. The improved service life results in high cost-effectiveness as well as protection of the measurement object. The measurement points are fabricated from coated hard metal. Diamond measuring points upon request.



Normal X dimension



Short X dimension



Blind hole X dimension

PMK 03-PA

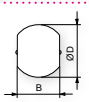
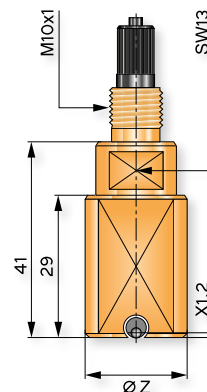
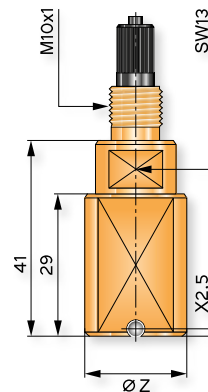
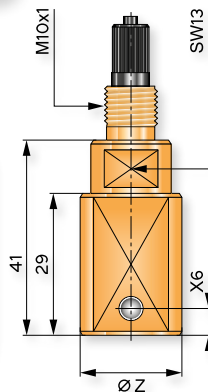
Ø 15 - 40 mm

Overall catalog • Page 42

PMK-03-PA • 2-point parallel meas. head

Ø 15-40 mm, available with: Standard X dim., short X dimension or blind hole X dimension. Self-centering. M10x1 mm thread. Measuring range 0.2 mm and up, extensible.

Repeat accuracy at IT 8 < 1µ.



PMK 03-PA

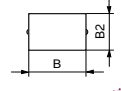
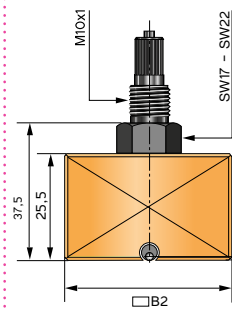
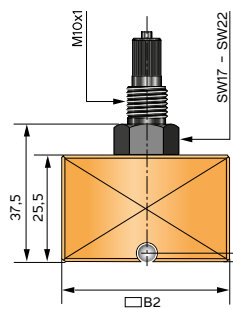
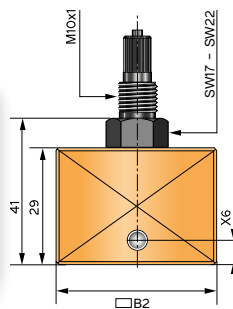
Ø 40-130 mm

Overall catalog • Page 44

PMK-03-PA • 2-point parallel meas. head

Ø 40-130 mm, available with: Standard X dim., short X dimension or blind hole X dimension. Self-centering. M10x1 mm thread. Measuring range 0.2 mm and up, extensible.

Repeat accuracy at IT 8 < 1µ.



NEW!

PMK KW

Width 6 mm and up

Overall catalog • Page 46

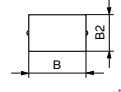
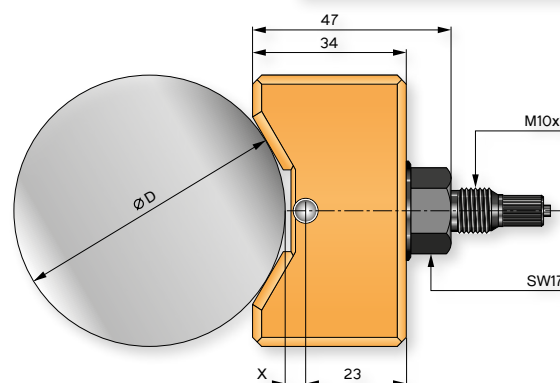
PMK-KW • Crankshaft parallel meas. head

X dimension starting at 2 mm. Width 6 mm and up. Available with: M6x0.75 mm or M10x1 mm thread. Self-centering. Illustration may differ.

Repeat accuracy at IT 8 < 1µ.



PMK crankshafts Parallel measuring head



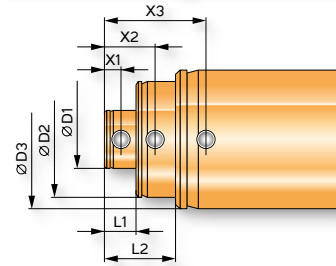
Hole measuring heads

HEXA CON

PMK • Precision measuring heads • TiN coated

Measuring heads in different variants.

∅ 8 - 280 mm



PMK AM

Outer measuring head

Overall catalog • Page 48

PMK-02-AM • Outer measuring head

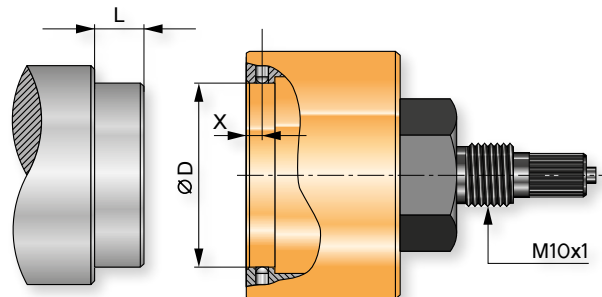
Self-centering. ∅ 8-15 mm, delivered with: X dimension of 5 mm, M6x0.75 mm thread.

PMK-03-AM • Outer measuring head

Self-centering. ∅ 15 mm and up, delivered with: X dimension of 5 mm, M10x1 mm thread.

Measuring range 0.2 mm, extensible.

Repeat accuracy at IT 8 < 1μ.



Outer measurement

Repeat accuracy < 1μ

NEW!

PMK KE

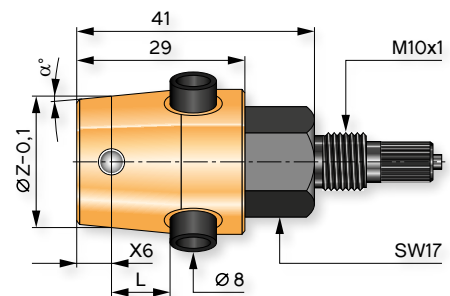
Conical measuring head

Overall catalog • Page 50

PMK-KE • Precision conical measuring head

Self-centering. ∅ 8 mm and up, delivered with: Standard X dimension. M6x0.75 mm or M10x1 mm thread. Measuring range 0.15 mm, extensible. Specify Z, angle α, L and conical slope when ordering.

Repeat accuracy at IT 8 < 1μ.



Conical measurement

Repeat accuracy < 1μ

NEW!

PMK ME-KE

Conical measuring head

Overall catalog • Page 52

PMK-ME-KE • Multi-point conical measuring head

are delivered with integrated holder for inductive measuring probes with ∅ 8H7 mm.

Thread for handle M35x1.5 mm or M40x1.5 mm. Depth stop using Allen screws.

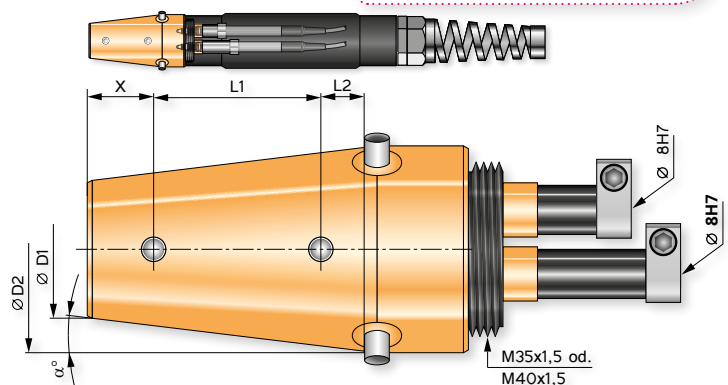
Repeat accuracy at IT 8 < 1μ.

PMK ME-KE with holder for inductive measuring probes



Multi-point meas. heads

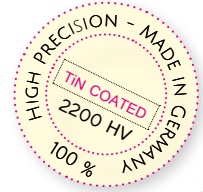
Repeat accuracy < 1μ



PMK hole measuring heads in different variants Titanium nitride coated. For different requirements in the area of hole metrology, we offer special high quality measuring heads with high measurement accuracy. For example, conical precision measuring heads, outer diameter measuring heads, and multi-point measuring heads as well as special measuring heads for interior teeth.

Similarly, modifications of our standard measuring heads are also possible, such as modified X dimensions and special chamfers for automated measurement, grooves and much more. Depth stops integrated into the housing are also possible. Modifications to the form and material of the measuring points can also be made.

You can find more details and information about our precision measuring heads and chamfer measuring instruments as well as an extensive range of system accessories in our overall catalog.



PMK ME

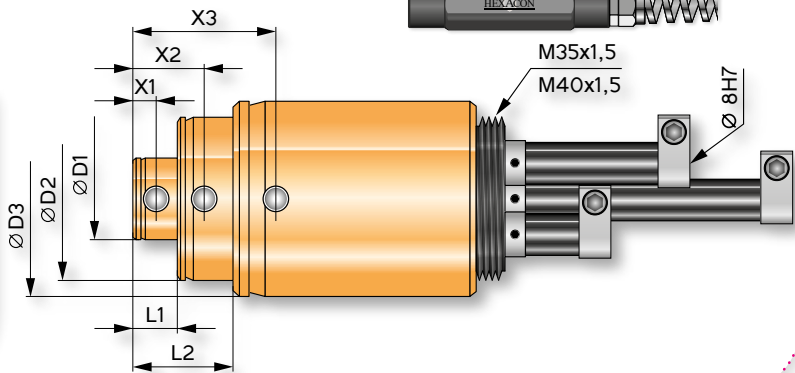
Multi-point meas. heads

Overall catalog • Page 54

PMK-ME • Multi-point precision meas. heads

Are delivered with integrated holder for inductive measuring probes with \varnothing 8H7 mm. Integrated depth stop can be implemented for example using the housing geometry. Threaded connection for handle M35x1.5 mm or M40x1.5 mm.

Repeat accuracy at IT 8 < 1 μ .



Multi-point meas. heads

Repeat accuracy < 1 μ

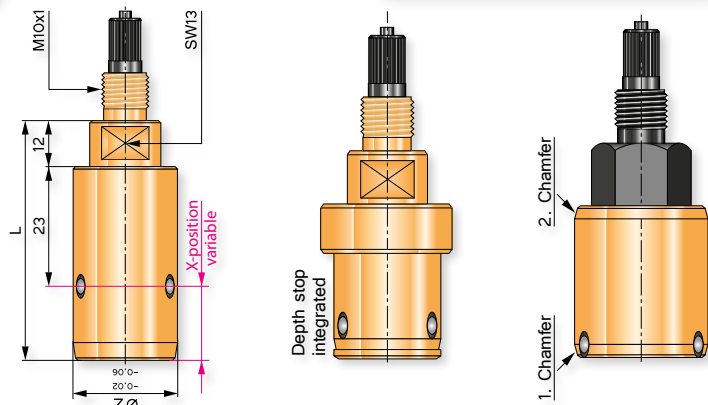
PMK SO

Special meas. heads

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PMK • Special measuring heads

Modification of standard measuring heads to customer specification. Modifications to the form and function of measuring heads are possible upon request. The figures here are just a few examples.



Special measuring heads

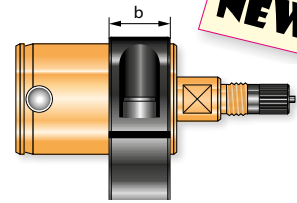
acc. to customer request

NEW!

Dial gauge holders • Extensions

HEXAACON

NEW!



Depth stop • Clamping rings P. 78

Dial gauge holders, depth extensions and depth stops

PMK system accessories in modular system.

For PMK meas. heads

Dial gauge holder for PMK modular system

HM Dial gauge holder

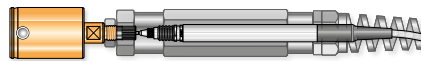
Overall catalog • Page 60

Dial gauge holder for PMK measuring heads

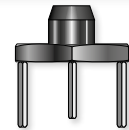
Dial gauge holder with shaft \varnothing 8mm H7.
With M6x0.75 mm or M10x1 mm threads.
Short variant 32 mm in length and up.
Normal variant up to 150 mm in length.

Example combination:

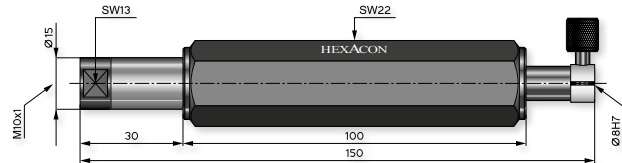
TA-03 depth stop (Catalog page 80) can be clamped on the HM-03-150 dial gauge holder.



Holder for inductive measuring probes • Page 65



Depth stop TA-03
Page 80

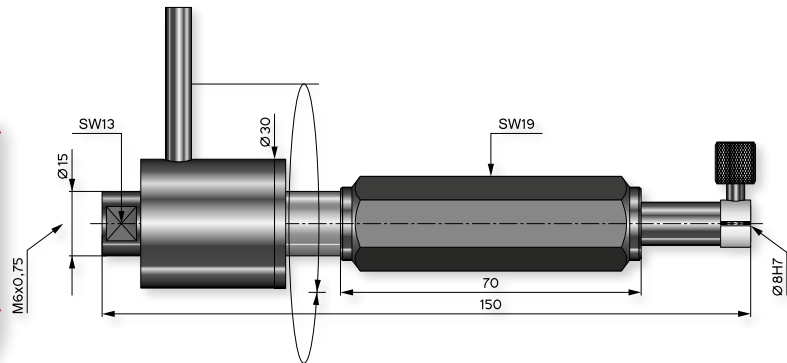


Rotating dial gauge holder for PMK • M10x1 mm thread

HM 03-150-RO Dial gauge holder • Rotating

Overall catalog • Page 63

PMK special holder: For measuring roundness, ovality, or (with the 3-point PMK) polygonal error on fixed, clamped or heavy workpieces. Rotating head to hold measuring heads. Rotation is possible through 360°. The dial gauge remains stationary in the field of vision while turning.



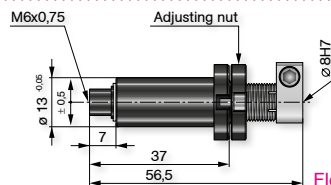
Floating holders for automated measurement

ZH PMK Centering holder

Overall catalog • Page 66

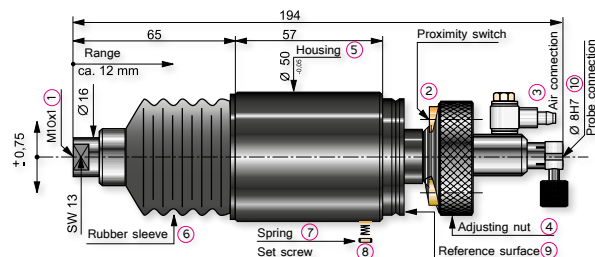
Centering holder for automated measuring with PMK and chamfer measuring heads compensate for axial errors in centering of the workpiece and prevent damages to both, the measuring head and the measuring object.

Versions available with twist protection.



Floating holder with twist protection. • Page 68

NEW!



PMK system accessories in modular system. The dial gauge holders, depth extensions, depth stops and other system accessories precision-machined from high-quality materials are specifically manufactured for our precision measuring heads. They complement and complete our measuring heads, making them reliable, highly accurate metrology instruments for very flexible use.

For example, adjustable depth stops can easily be clamped onto extensions to measure at defined depths. Angle extensions can be combined with dial gauge holders and depth extensions to form practical manual measuring instruments for hard-to-reach areas. In combination with the GS device stand and the TA-03 depth stop, the same components can be used for measurement applications for small workpieces.



For automated meas. centering holders work with our special PMK-EF measuring heads with insertion chamfer.

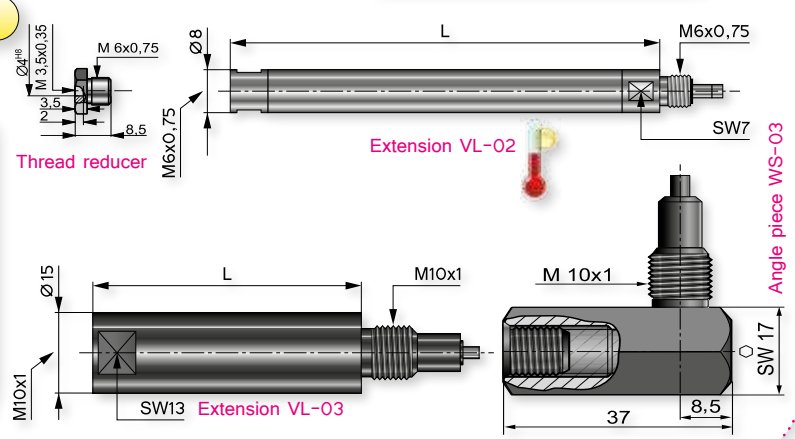
Extensions • Depth stops

Extensions and angle pieces in modular system

VL 02/03 Depth extensions

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Depth extensions for PMK:
VL-02 • Ø 8 mm • Length from 20 to 250 mm with M6x0.75 mm thread.
VL-03 • Ø 15 mm • Length from 50 to 250 mm with M10x1 mm thread.
 Multiple extensions can be combined.
 Starting at 80 mm, all extensions are fabricated from temperature-stable steel.
 Thread reducers allow measuring heads with smaller threads to be connected.



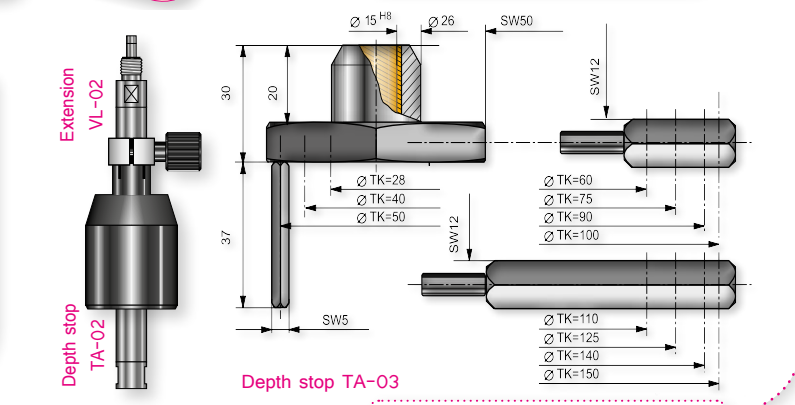
Depth stops in modular system

TA 02/03 Depth stops



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Depth stops for PMK
TA-02 • Ø 8 mm • Length from 45 to 75mm with M6x0,75 mm thread.
 Clamped on the VL-02 extension.
TA-03 • Ø 15 mm • M10x1 mm thread.
 Clamped on the VL-03 extension.
 TA-03 can be combined with the GS device stand.

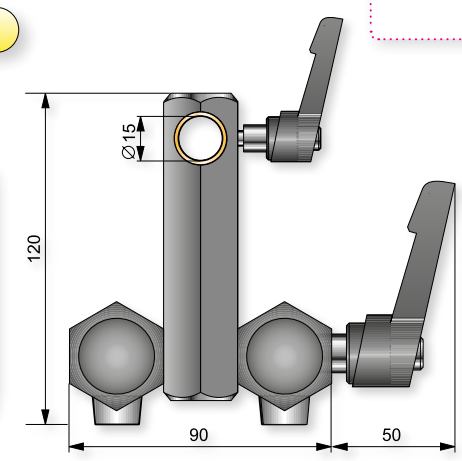


Device stands in modular system

GS Device stands

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GS device stand • For the series measuring of compact workpieces.
 The use of the device stands simplifies handling significantly during stationary measurement. The combination of holders, extensions, angle pieces and depth stops permits individual and flexible applications for the rational measurement of smaller parts.



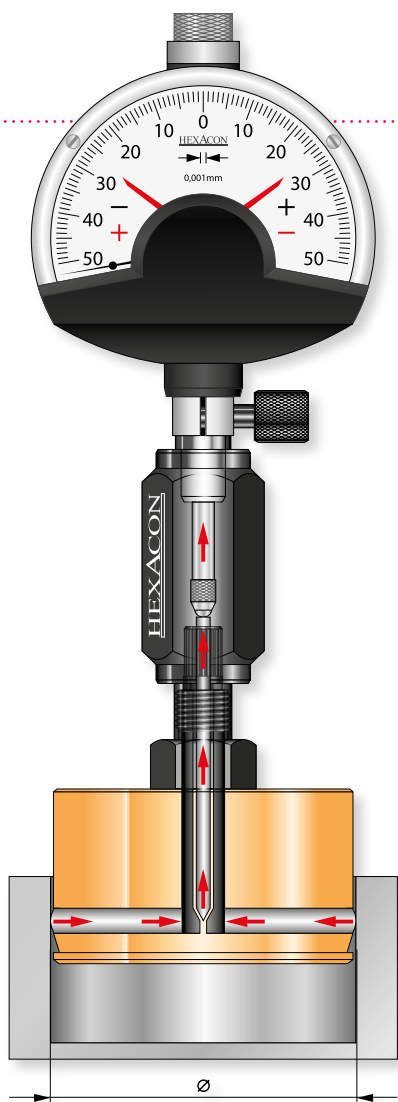
Sample:
 GS • With: Extension VL-03, WS-03 and depth stop TA-03 and PMK



HEXAACON

μ-precision hole and chamfer measuring instruments

HIGH PRECISION - MADE IN GERMANY
TIN COATED
2200 HV
100 %



Hole measuring instruments



Chamfer meas. instruments

NEW!

New overall catalog !

μ-precision hole and chamfer measuring instruments



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