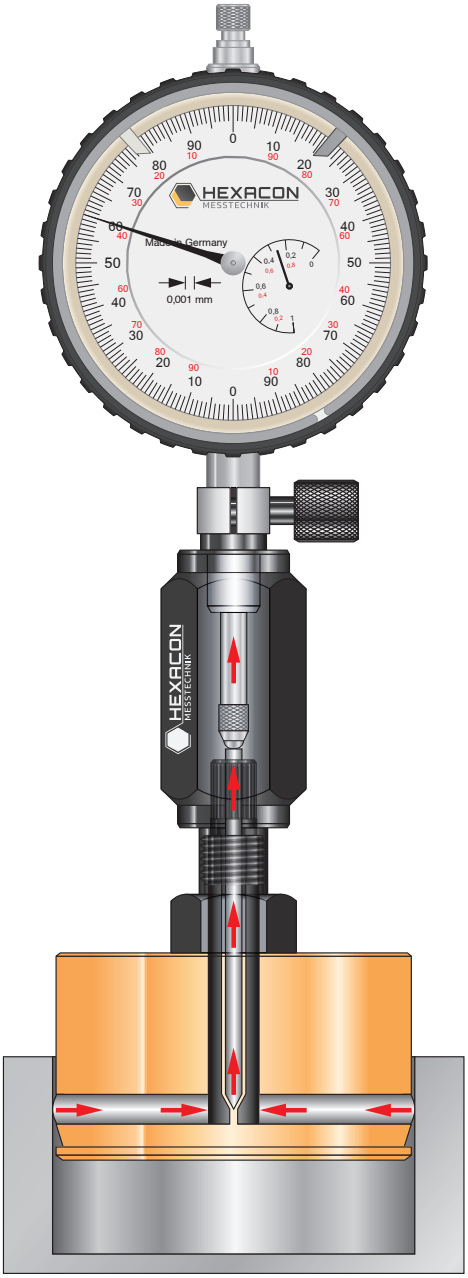
ENGLISH

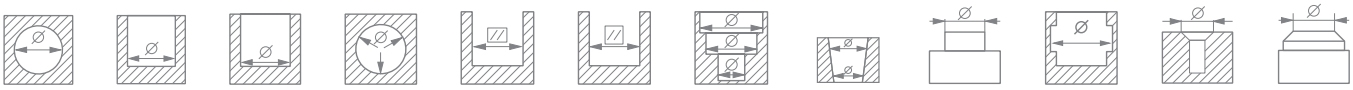
HEXACON MESSTECHNIK

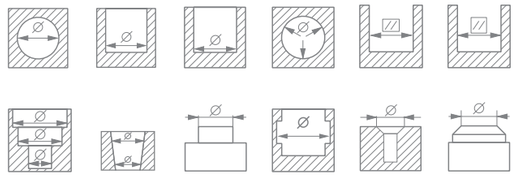


HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

OVERALL CATALOG

PRECISION MEASURING HEADS
CHAMFER MEASURING INSTRUMENTS





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

We manufacture high-precision bore 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 down to < 1µ.

100 % Made in Germany

All precision measuring heads, chamfer gauges, chamfer probes and insertion measuring instrumentsare 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. The accessories are available from stock.

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 bore 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 (TiN)

All precision measuring heads are made of high-quality tool steel and finished with a quality-enhancing titanium nitride coating (TiN) at no extra charge.
This has been our standard for many years.

The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding and friction properties. Furthermore, TiN coatings protect the measurement object against canting and jamming during the measurement process due to their easy sliding. This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

Precision measuring points

The measuring points in the precision measuring heads are fabricated from robust, high-quality coated hard metal. Diamond measuring points of synthetic diamond are available upon request.

Repair capability and service

All our bore 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:

- Highest measuring accuracy
- Titanium nitride coating (TiN)
- Long wear life
- Modular system
- Extensive accessories for hand and automatic measurement
- Combinable with air gauging
- Cost effective measurement
- Rational measurement
- Short delivery times
- Competitive prices

Company headquartered in
Dieburg, Hessen. Germany

Bore measuring instruments

FUNCTIONAL PRINCIPLE

PRECISION BORE MEASURING HEADS TIN COATED

For quality assurance in fabrication and in testing.

Precision measuring heads functional description

Precision 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 rotating probing movement into the hole, additional form errors in the hole can be measured:

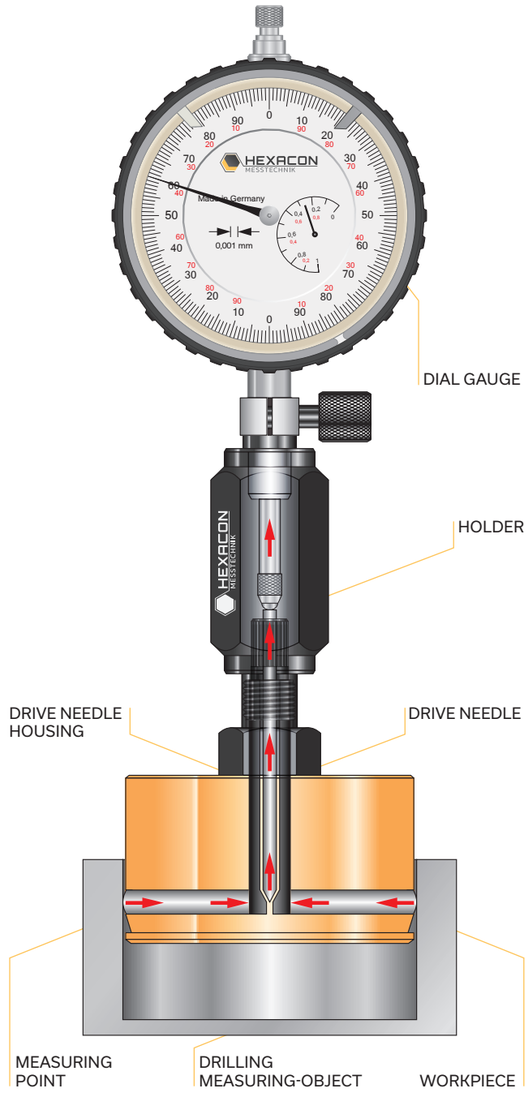
Elliptical form errors, which often occur in drilled holes, can be detected and measured with high precision using 2-point measuring heads.

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

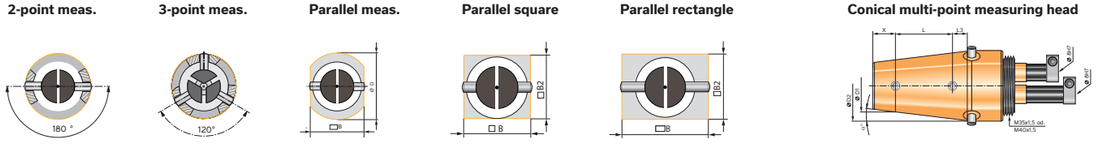
Measuring heads are available in round, conical, parallel, rectangular or square shapes.

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

All Hexacon precision measuring heads are 100 % Made in Germany.



Measuring principle



Bore measuring instruments

PROPERTIES AND CALIBRATION

PRECISION BORE MEASURING HEADS TIN COATED

Diameters from 6-280 mm • Repeat accuracy at IT 8 is down to < 1µ.

Factory calibration of precision bore measuring heads

Upon request you can receive a **factory calibration certificate or DAkkS** for the measuring head.

For bore measuring heads we guarantee a repeat accuracy less than 1µ, and that accuracy is often even exceeded, as shown again and again by measurement protocols.

Long-lasting precision metrology equipment

Due to the mature design, robust construction and high-quality machining, we provide particularly reliable, long-lasting precision metrology equipment.

Cleaning and service

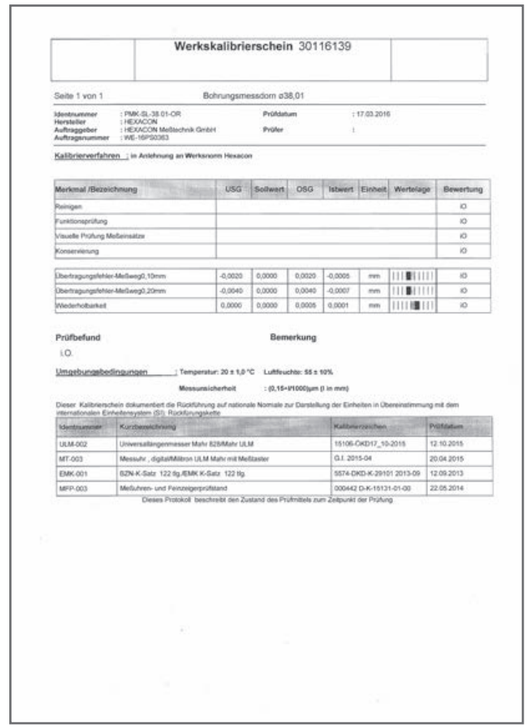
The titanium nitride coating give precision measuring heads dirt- and water-repelling qualities and make them easy to clean and service.

For worn parts such as springs or drive needles, we keep all spare parts on stock.

Repair

When necessary, the precision measuring heads are easy to repair and restore to like-new condition and can also be recertified upon request.

Hexacon Messtechnik GmbH produces high-quality precision metrology instruments for industry and handicraft businesses.



Werkskalibrierschein 30116139

Seite 1 von 1 — Bohrungsmessdorn ø38,01

Identnummer	: PMK-SL-38.01-OR	Prüfdatum	: 17.03.2016
Hersteller	: HEXACON		
Auftraggeber	: HEXACON Meßtechnik GmbH	Prüfer	: i
Auftragsnummer	: WE-16P0383		

Kalibrierverfahren : in Anlehnung an Werksnorm Hexacon

Merkmal /Bezeichnung	USG	Sollwert	OSG	Istwert	Einheit	Wertelage	Bewertung
Reinigen							IO
Funktionsprüfung							IO
Visuelle Prüfung Meßeinsätze							IO
Konservierung							IO
Übertragungsfehler-Messweg0,10mm	-0,0020	0,0000	0,0020	-0,0005	mm		IO
Übertragungsfehler-Messweg0,20mm	-0,0040	0,0000	0,0040	-0,0007	mm		IO
Wiederholbarkeit	0,0000	0,0000	0,0008	0,0001	mm		IO

Prüfbefund: i.O. — Bemerkung

Umgebungsbedingungen: Temperatur: 20 ± 1,0 °C Luftfeuchte: 55 ± 10% — Messunsicherheit : (0,15+l/1000)µm (l in mm)

Dieser Kalibrierschein dokumentiert die Rückführung auf nationale Normale zur Darstellung der Einheiten in Übereinstimmung mit dem internationalen Einheitensystem (SI). Rückführungsnachweise

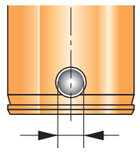
Identnummer	Kurzbezeichnung	Kalibrierzeichen	Prüfdatum
ULM-002	Universallängenmesser Mahr B28/Mahr ULM	15106-ÖKD17_10-2015	12.10.2015
MT-003	Messuhr , digitalMikron ULM Mahr mit Meßtaster	G.I. 2015-04	20.04.2015
EMK-001	BZN-K-Satz 122 tlg./EMK K-Satz 122 tlg.	5574-ÖKD-K-29101 2013-09	12.09.2013
MFP-003	Meßuhren- und Feinzeigerprüfstand	000442 D-K-15131-01-00	22.05.2014

Dieses Protokoll beschreibt den Zustand des Prüfmittels zum Zeitpunkt der Prüfung

NOTES

PMK - TECHNICAL CHARACTERISTICS

MEASURING POINTS
DIAMETERS AND RADII



Measuring points • Diameters and radii

The measuring points in all precision measuring heads are made of coated hard metal, ground and polished. They are extremely robust, with a long service life.

The measuring points are suitable not only for measuring steels, but also aluminum workpieces!

Diamond measuring points MKD upon request. Not available for blind hole variants and outer diameter measuring heads.

Measuring points • Diameters and radii for PMK-NO and PMK-XK

PMK	PMK body diameter Ø mm	Outer measuring point Ø mm	Measuring point radius mm
Type 02	6 - 8	3	2
	8 - 20	3	2
Type 03	15 - 25	4.5	2.5
	25 - 30	4.5	4.5
	30 - 35	4.5	6.5
	35 - 40	4.5	8.5
	40 - 46	4.5	10.5
	46 - 55	4.5	13.0
	55 - 65	4.5	16.0
	65 - 300	4.5	20.0

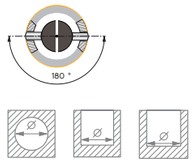
Measuring points • Diameters and radii for PMK-EF

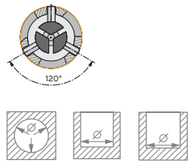
PMK	PMK body diameter Ø mm	Outer measuring point Ø mm	Measuring point radius mm
Type 02	10 - 20	3	2
Type 03	15 - 40	4.5	2.5
	40 - 50	4.5	2.5
	50 - 280	4.5	2.5

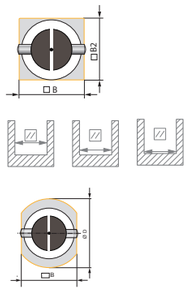
PRODUCT DIRECTORY

PRECISION BORE MEASURING HEADS · TIN COATED

Diameters from 6-280 mm • Repeat accuracy at IT 8 is down to < 1µ.

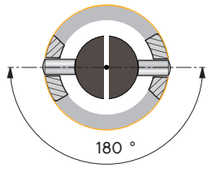






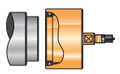
PRODUCT DIRECTORY

SPECIAL PRECISION MEASURING HEADS
OUTER MEASURING HEADS
CONICAL AND MULTI-POINT MEASURING HEADS
INSERTION MEASURING DEVICES

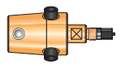


2-point parallel bore measuring heads, rectangular form		
Width 40-130 mm, X-dimension: Normal, short, blind hole	PMK • NO-03-PA	Page 44

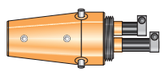
2-point crankshaft parallel measuring head		
X-dimension: 3 mm and up	PMK • KW	Page 46



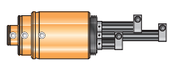
2-point precision outer measuring head		
X-dimension • Normal	PMK • AM	Page 48
Precision special measuring heads	PMK • SO	Page 49



Precision measuring heads in conical variant		
X-dimension • Normal	PMK • KE	Page 50



Multi-point measuring heads in conical variant		
Conical measurement	PMK • ME-KE	Page 52



Multi-point bore measuring heads		
Up to 4 measuring points	PMK • ME	Page 54

PMK-ES • Insertion measuring instrument		
With large measuring range up to 15 mm	PMK • ES	Page 56

PRODUCT DIRECTORY

DIAL GAUGE HOLDERS, CENTERING HOLDERS,
DEPTH EXTENSIONS, ANGLE ADAPTER,
DEPTH STOPS, STANDS AND SETTING RINGS

Dial gauge holders for precision measuring heads			
Holder and accessories, example application			Page 58
Holder and accessories, overview			Page 59
Dial gauge holder for PMK-02 meas. heads	M6x0.75 thread	HM-02	Page 60
Dial gauge holder for PMK-03 meas. heads	M10x1 thread	HM-03	Page 62
Dial gauge holder for PMK-03 rotating	M10x1 thread	HM-03-150-RO	Page 63
Dial gauge holder for heavy dial gauges	M6x0.75 thread	HA-V2	Page 64
Dial gauge holder for heavy dial gauges	M10x1 thread	HA-V3	Page 64
Dial gauge holder for inductive meas. probes	M6x0.75 thread	HT-V2	Page 65
Dial gauge holder for inductive meas. probes	M10x1 thread	HT-V3	Page 65

Centering holders for precision measuring heads for automated measurement			
Centering holder - floating holder	M6x0.75 thread	ZH-PMK-02	Page 66
Centering holder - floating holder	M10x1 thread	ZH-PMK-03	Page 66
Centering holder with anti-turning protection	M6x0.75 thread	ZH-PMK-02-VDS	Page 68
Centering holder with anti-turning protection	M10x1 thread	ZH-PMK-03-VDS	Page 68
Centering holder with mounting flange	M10x1 thread	ZH-LKM-03-50	Page 70
Centering holder with destruction protection	M10x1 thread	ZH-PMK-03-50-L	Page 71

Dial gauge holders in modular system for custom setup			
Modular measuring systems, ø 8H7 dial gauge connection		MB	Page 72

Depth extensions for dial gauge holders - with drive needle			
Depth extension, also temperature stable	M6x0.75 thread	VL-02	Page 74
Depth extension, also temperature stable	M10x1 thread	VL-03	Page 75

Angle adapter for measuring heads and depth extensions			
90° angle adapter for PMK-02	M6x0.75 thread	WS-02	Page 76
90° angle adapter with integrated PMK	M6x0.75 thread	WS-SO-02	Page 76
90° angle adapter with integrated PMK	M10x1 thread	WS-SO-03	Page 76
90° angle adapter for PMK-03	M10x1 thread	WS-03	Page 77
Thread reduction	M10x1 thread	RS	Page 77

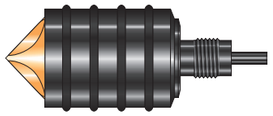
Depth stops for precision measuring heads			
Clamping ring depth stops	ø 6 mm to ø 85 mm	TA-KR-V	Page 78
Depth stops for PMK-02 meas. heads	M6x0.75 thread	TA-02	Page 79
Depth stops as depth measuring head	Example application	TA-02-45	Page 79
Depth stops for PMK-03 meas. heads	M10x1 thread	TA-03	Page 80

Equipment stands and measuring stands		
Equipment stands, extensible up to 6 stands	GS-PMK-1	Page 82
Measurement stand suitable for larger workpieces	UMS-1	Page 84
Measurement stand with integrated centering holder	UMS-2	Page 85

Setting rings with nominal DIN 2250-C standard dimensions		
Setting rings	Setting rings DIN 2250-C	Page 86

PRODUCT DIRECTORY

PRECISION INNER AND OUTER CHAMFER MEASURING INSTRUMENTS, DIAL GAUGES, TEST WORKSTATION, INDUCTIVE MEASURING PROBES



Precision inner and outer chamfer measuring instruments

Inner and outer chamfer measuring instruments

Chamfer probe for 45°chamfers

Analog chamfer special dial gauges

Analog precision indicators and dial gauges, digital dial gauges, dial gauge test stand, inductive measuring probes

Test workstation for dial gauges and precision indicators

Inductive measuring probes for precision measuring heads and chamfer measuring instruments

Example applications

PRECISION MEASURING HEADS (PMK)

2-POINT PRECISION MEASURING HEADS
3-POINT PRECISION MEASURING HEADS
MULTI-POINT PRECISION MEASURING HEADS

2-POINT PRECISION MEASURING HEADS (PMK)

- **PMK with insertion groove**
  with normal X-dimension, short X-dimension and blind hole X-dimension
- **PMK with insertion chamfer for automatic measurement**
  with normal X-dimension and short X-dimension
- **PMK with insertion chamfer and two diameters for automatic measurement**
  with normal X-dimension and short X-dimension

3-POINT PRECISION MEASURING HEADS (PMK)

- **PMK with insertion groove**
  with normal X-dimension and short X-dimension
- **PMK with insertion chamfer for automatic measurement**
  with normal X-dimension and short X-dimension
- **PMK with insertion chamfer and two diameters for automatic measurement**
  with normal X-dimension and short X-dimension

2-POINT PRECISION PARALLEL MEASURING HEADS (PMK)

Measuring heads in square form, round form or rectilinear form with normal or short X-dimension or blind hole X-dimension also crankshaft parallel measuring heads

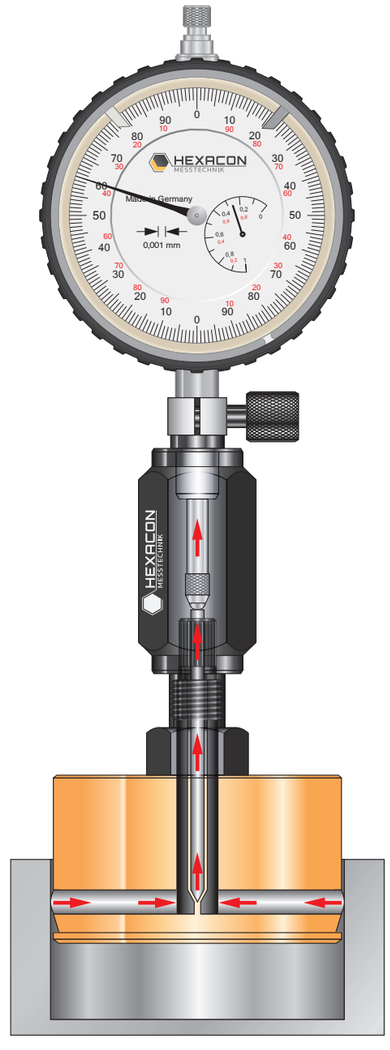
2-POINT PMK • OUTER MEASURING INSTRUMENT

2-POINT PMK • CONE MEASURING HEADS

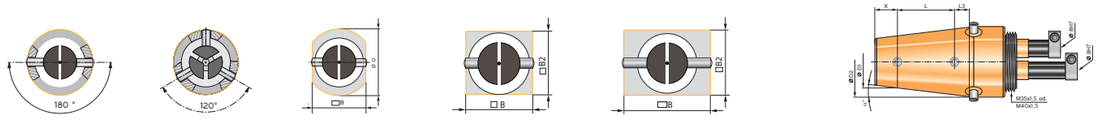
2-POINT PMK • MULTI-POINT TAPERED MEASURING HEADS

2-POINT PMK • MULTI-POINT MEASURING HEADS

2-POINT PMK • INSERTION MEASURING INSTRUMENT



Measuring principle

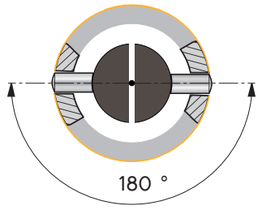


2-POINT BORE MEASURING HEADS

PMK-NO **Ø 6 - 280 MM**

TITANIUM NITRIDE COATING **NORMAL X-DIMENSION**

Measurement of through holes.
Repeat accuracy at IT is down to 8 < 1µ.



Diamond measuring points upon request.

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-NO Precision measuring heads with normal X-dimension and titanium nitride coating
Measure precise diameters, ovality and conicity or deformation of the bore through rotation during the measuring process.

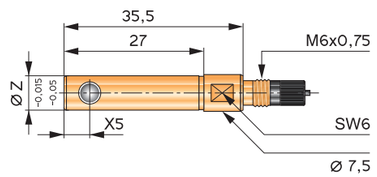
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-02

ø 6 - 8 mm | Normal X-dim. 5 mm | M6x0.75 thread

PMK-NO-02 · Precision meas. head in normal variant
ø 6-8 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

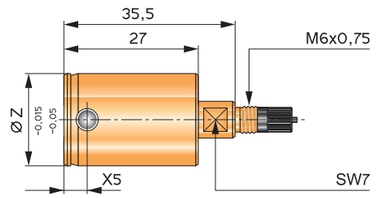


ORDERING EXAMPLE: Ø Workpiece = 6 H7 = PMK-NO-02-6

PMK-NO-02

ø 8 - 20 mm | Normal X-dim. 5 mm | M6x0.75 thread

PMK-NO-02 · Precision meas. head in normal variant
ø 8-20 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

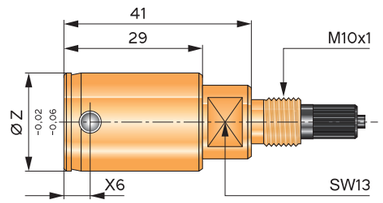


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-NO-02-18

PMK-NO-03

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03 · Precision meas. head in normal variant
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

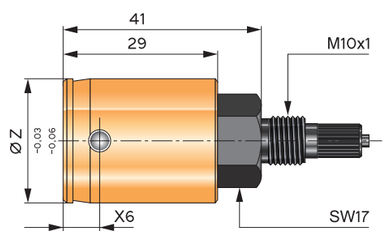


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-NO-03-38

PMK-NO-03

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03 · Precision meas. head in normal variant
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.



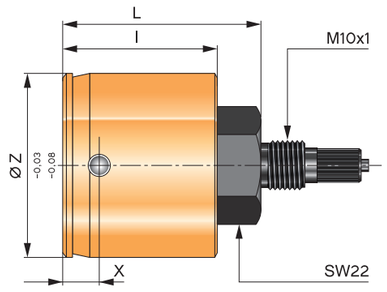
ORDERING EXAMPLE: Ø Workpiece = 42 ± 0.05 = PMK-NO-03-41,95

PMK-NO-03

ø 50 - 280 mm | Normal X-dim. starting at 7.5 mm | M10x1 thread

PMK-NO-03 · Precision meas. head in normal variant
ø 50-280 mm, delivered with normal X-dimension and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

Ø Z	X	l	L
> 50 - 100	7.5	33.5	42.5
> 100 - 280	10	36	45



ORDERING EXAMPLE: Ø Workpiece = 62 ± 0.05 = PMK-NO-03-61,95

ACCESSORIES

>> **DEPTH EXTENSION** Starting on page 74

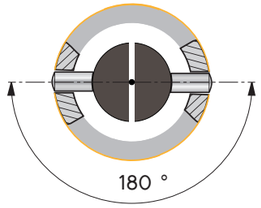
>> **DIAL GAUGE HOLDER** Starting on page 60

2-POINT BORE MEASURING HEADS

PMK-XK **Ø 6 - 280 MM**

TITANIUM NITRIDE COATING **SHORT X-DIMENSION**

Measure blind holes close to the bottom of the hole.
Repeat accuracy at IT is down to 8 < 1µ.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-XK Precision measuring heads with short X-dimension and titanium nitride coating
Measure blind holes close to the bottom of the hole and measure precise diameters, ovality and conicity or deformation of the bore through rotation during the measuring process.

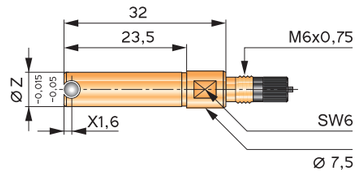
The repeat accuracy of our 2-point measuring heads at IT is down to 8 is < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-XK-02

ø 6 - 8 mm | Short X-dim. 1.6 mm | M6x0.75 thread

PMK-XK-02 · Precision meas. head with short X-dim.
ø 6-8 mm, delivered with short X-dimension of 1.6 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

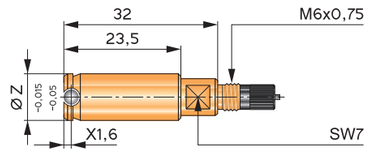


ORDERING EXAMPLE: Ø Workpiece = 6 H7 = PMK-XK-02- 6

PMK-XK-02

ø 8 - 20 mm | Short X-dim. 1.6 mm | M6x0.75 thread

PMK-XK-02 · Precision meas. head with short X-dim.
ø 8-20 mm, delivered with short X-dimension of 1.6 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

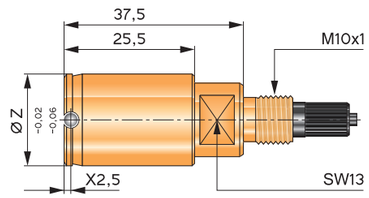


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-XK-02-18

PMK-XK-03

ø 15 - 40 mm | Short X-dim. 2.5 mm | M10x1 thread

PMK-XK-03 · Precision meas. head with short X-dim.
ø 15-40 mm, delivered with short X-dimension of 2.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

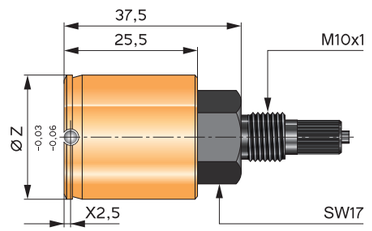


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-XK-03-38

PMK-XK-03

ø 40 - 50 mm | Short X-dim. 2.5 mm | M10x1 thread

PMK-XK-03 · Precision meas. head with short X-dim.
ø 40-50 mm, delivered with short X-dimension of 2.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.



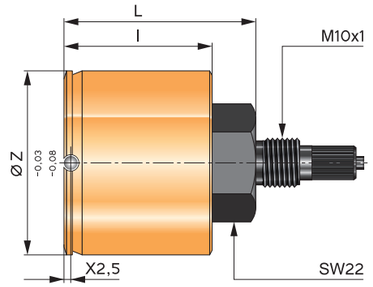
ORDERING EXAMPLE: Ø Workpiece = 42 ± 0.05 = PMK-XK-03-41,95

PMK-XK-03

ø 50 - 280 mm | Short X-dim. 2.5 mm | M10x1 thread

PMK-XK-03 · Precision meas. head with short X-dim.
ø 50-280 mm, delivered with short X-dimension 2.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

Ø Z	X	l	L
> 50 - 130	2.5	28.5	37.5
> 130 - 280	2.5	28.5	37.5



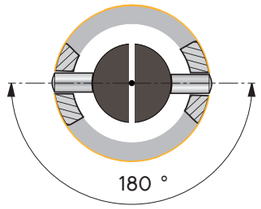
ORDERING EXAMPLE: Ø Workpiece = 62 ± 0.05 = PMK-XK-03-61,95

2-POINT BORE MEASURING HEADS

PMK-SL **Ø 10 - 130 MM**

TITANIUM NITRIDE COATING **BLIND HOLE**

Measure deep into the bottom of the hole.
Repeat accuracy at IT is down to 8 < 1µ.



Diamond measuring points
not available for PMK-SL variant.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-SL Precision measuring heads with blind hole X-dimension and titanium nitride coating
Measure blind holes deep into the hole and measure precise diameters, ovality and conicity or deformation of the bore through rotation during the measuring process.

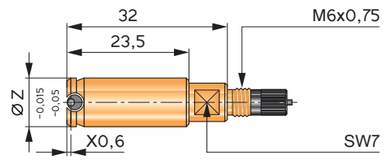
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-SL-02

ø 10 - 20 mm | Short X-dim. 0.6 mm | M6x0.75 thread

PMK-SL-02 · Precision meas. head with short X-dim.
ø 10-20 mm, delivered with short X-dimension of 0.6 mm and M6x0.75 thread. Their measuring range is 0.15 mm. Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

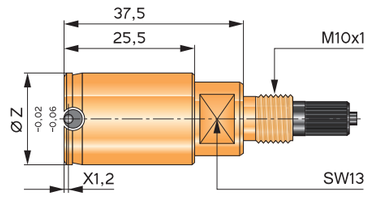


ORDERING EXAMPLE: Ø Workpiece = 12 H7 = PMK-SL-02-12

PMK-SL-03

ø 15 - 40 mm | Short X-dim. 1.2 mm | M10x1 thread

PMK-SL-03 · Precision meas. head with short X-dim.
ø 15-40 mm, delivered with short X-dimension of 1.2 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.3 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

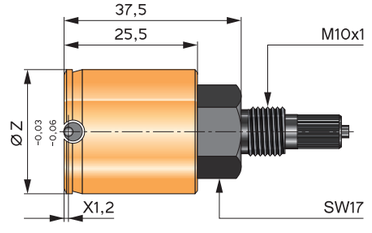


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-SL-03-20

PMK-SL-03

ø 40 - 50 mm | Short X-dim. 1.2 mm | M10x1 thread

PMK-SL-03 · Precision meas. head with short X-dim.
ø 40-50 mm, delivered with short X-dimension of 1.2 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.3 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

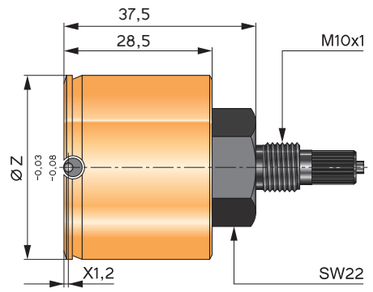


ORDERING EXAMPLE: Ø Workpiece = 44 D10 = PMK-SL-03-44,08

PMK-SL-03

ø 50 - 130 mm | Short X-dim. 1.2 mm | M10x1 thread

PMK-SL-03 · Precision meas. head with short X-dim.
ø 50-130 mm, delivered with short X-dim. of 1.2 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.3 mm upon request.
elf-centering, with insertion groove.
Specify the smallest hole dimension when ordering.



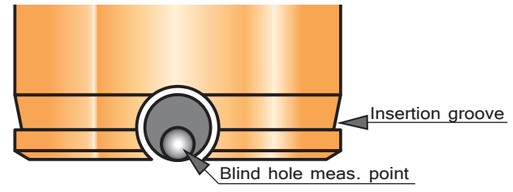
ORDERING EXAMPLE: Ø Workpiece = 124 D10 = PMK-SL-03-124,15

BLIND HOLE MEASURING HEADS

PMK-SL • Blind hole measuring heads

The position and special geometry of the measuring points in blind hole measuring heads permit precision measurement deep into the bottom of the bore.

The insertion groove permits the precision guidance of the measuring head and prevents canting during insertion into the measurement object.



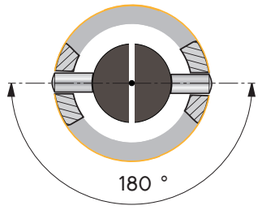
NOTES

2-POINT BORE MEASURING HEADS

PMK-NO-EF **Ø 8 - 280 MM** **FOR AUTOMATED MEASURING**

TITANIUM NITRIDE COATING **NORMAL X-DIMENSION**

Measure blind holes close to the bottom of the hole.
Repeat accuracy at IT is down to 8 < 1µ.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-NO-EF Precision measuring heads for automated measurement
The special geometry of the measuring heads with insertion chamfer prevents sticking during the measuring process. Also used in combination with our ZH-PMK centering holders.

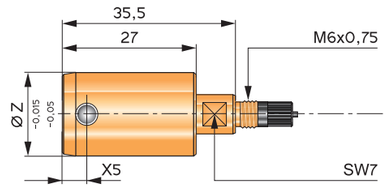
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-02-EF

ø 8 - 20 mm | Normal X-dim. 5 mm | M6x0.75 thread | Meas. point radius R = 2 mm

PMK-NO-02-EF
Precision measuring heads for automated measuring
ø 8-20 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

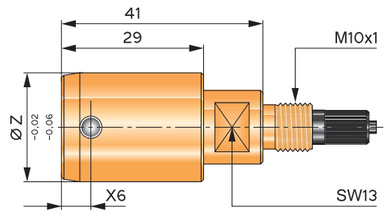


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-NO-02-EF-18

PMK-NO-03-EF

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-EF
Precision measuring heads for automated measuring
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

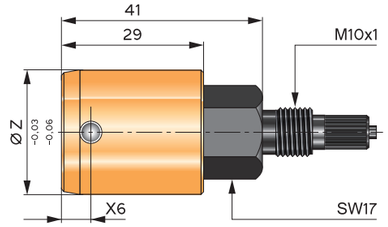


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-NO-03-EF-38

PMK-NO-03-EF

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-EF
Precision measuring heads for automated measuring
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.



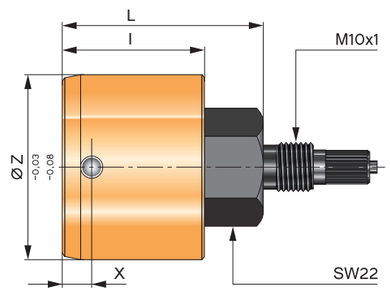
ORDERING EXAMPLE: Ø Workpiece = 42 ± 0.05 = PMK-NO-03-EF-41,95

PMK-NO-03-EF

ø 50 - 280 mm | Normal X-dimension | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-EF
Precision measuring heads for automated measuring
ø 50-280 mm, delivered with normal X-dimension and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer. Specify the smallest bore dimension when ordering.

Ø Z	X	l	L
> 50 - 100	7.5	33.5	42.5
> 100 - 280	10	36	45

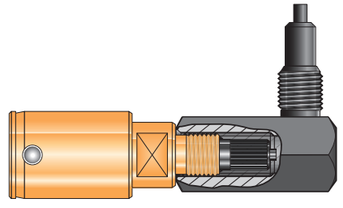


ORDERING EXAMPLE: Ø Workpiece = 84 D10 = PMK-NO-03-EF-84,12

NOTES

EXAMPLE APPLICATION

Angle adapter for measuring heads
Are available for PMK-02 with M6x0.75 threads and for PMK-03 with M10x1 threads.



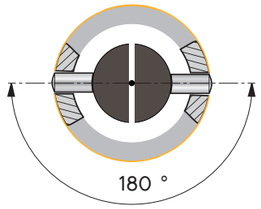
>> DATA STARTING ON PAGE 76

2-POINT BORE MEASURING HEADS

PMK-XSO-EF **FOR AUTOMATED MEASURING**

Ø 8 - 280 MM **TITANIUM NITRIDE COATING**

The special geometry of the measuring heads with insertion chamfers prevents sticking. Also ideal in combination with our ZH-PMK centering holders.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-XSO-EF Precision measuring heads for automated measurement
The special geometry of the measuring heads with insertion chamfer prevents sticking during the measuring process. Also used in combination with our ZH-PMK centering holders.

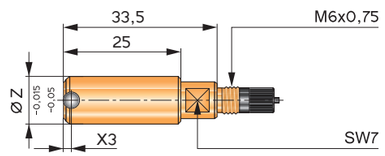
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-XSO-02-EF

ø 8 - 20 mm | Short X-dimension 3 mm | M6x0.75 thread | Meas. point radius R = 2 mm

PMK-XSO-02-EF
Precision measuring heads for automated measuring
ø 8-20 mm, delivered with short X-dimension of 3 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request. Self-centering.
The insertion chamfer prevents sticking.
Specify the smallest bore dimension when ordering.

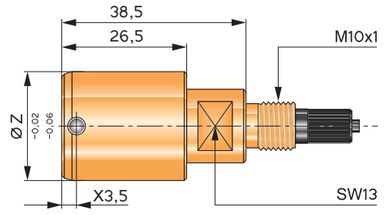


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-XSO-02-EF-18

PMK-XSO-03-EF

ø 15 - 40 mm | Short X- dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-EF
Precision measuring heads for automated measuring
ø 15-40 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering.
The insertion chamfer prevents sticking.
Specify the smallest bore dimension when ordering.

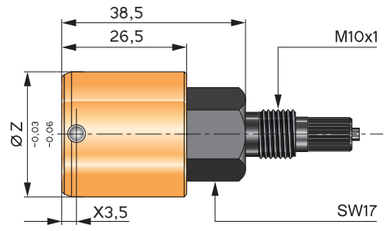


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-XSO-03-EF-38

PMK-XSO-03-EF

ø 40 - 50 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-EF
Precision measuring heads for automated measuring
ø 40-50 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering.
The insertion chamfer prevents sticking.
Specify the smallest bore dimension when ordering.

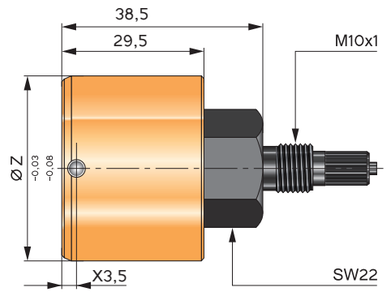


ORDERING EXAMPLE: Ø Workpiece = 42 ± 0.05 = PMK-XSO-03-EF-41,95

PMK-XSO-03-EF

ø 50 - 280 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-EF
Precision measuring heads for automated measuring
ø 50-280 mm, delivered with short X-dimension 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering.
The insertion chamfer prevents sticking.
Specify the smallest bore dimension when ordering.



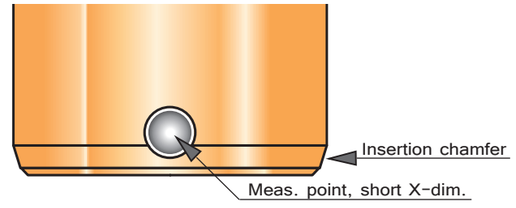
ORDERING EXAMPLE: Ø Workpiece = 64 D10 = PMK-XSO-03-EF-64,1

EF MEASURING HEADS

PMK-XSO-EF • Precision meas. heads with insertion chamfer for automated measurement

The insertion chamfer permits reliable guidance of the measuring head and prevents sticking during insertion into the measurement object.

The position of the measuring points in meas. heads with short X-dim. (XSO) permits precision measurement right up close to the bottom of the hole.

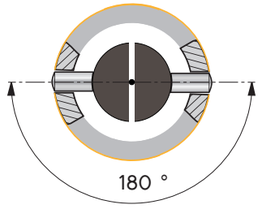


2-POINT BORE MEASURING HEADS

PMK-NO-EF-2D **FOR AUTOMATED MEASURING**

Ø 8 - 280 MM **TITANIUM NITRIDE COATING**

The special geometry of meas. heads with insertion chamfer and 2-zone diameter prevent sticking, even for deeper measurements.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-NO-EF-2D Precision meas. head for automated meas. with normal X-dimension
The special geometry of the measuring heads with insertion chamfers (EF) and the second diameter tapered towards the back (2D) prevent sticking even for a deeper measurement.

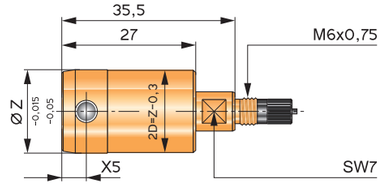
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-02-EF-2D

ø 8 - 20 mm | Normal X-dim. 5 mm | M6x0.75 thread | Meas. point radius R = 2 mm

PMK-NO-02-EF-2D
Precision measuring heads for automated measuring
ø 8-20 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

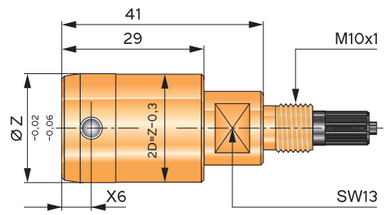


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-NO-02-EF-2D-18

PMK-NO-03-EF-2D

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-EF-2D
Precision measuring heads for automated measuring
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

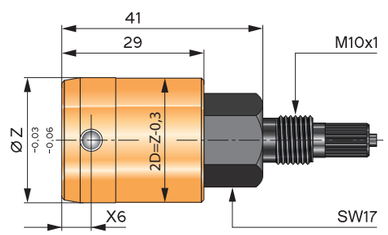


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-NO-03-EF-2D-38

PMK-NO-03-EF-2D

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-EF-2D
Precision measuring heads for automated measuring
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.



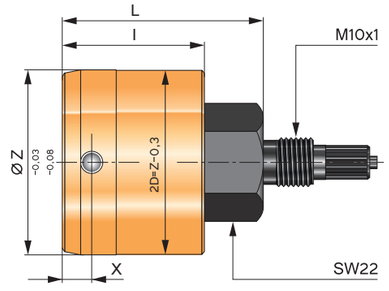
ORDERING EXAMPLE: Ø Workpiece = 42 ± 0.05 = PMK-NO-03-EF-2D-41,95

PMK-NO-03-EF-2D

ø 50 - 280 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-EF-2D
Precision measuring heads for automated measuring
ø 50-280 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

Ø Z	X	l	L
> 50 - 100	7.5	33.5	42.5
> 100 - 280	10	36	45

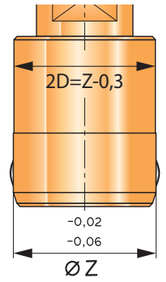


ORDERING EXAMPLE: Ø Workpiece = 84 D10 = PMK-NO-03-EF-2D-84,12

EF-2D MEASURING HEADS

PMK-NO-EF-2D
Precision measuring heads for automated measurement
The special geometry of the measuring heads with insertion chamfer and second, tapered diameter prevents sticking during the measurement process, even for deeper measurements.

The measuring point radius can be adapted upon request for measuring heads with insertion chamfer.

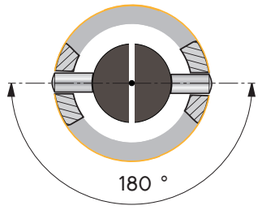


2-POINT BORE MEASURING HEADS

PMK-XSO-EF-2D **FOR AUTOMATED MEASURING**

Ø 8 - 280 MM **TITANIUM NITRIDE COATING**

The special geometry of meas. heads with insertion chamfer and 2-zone diameter prevent sticking, even for deeper measurements.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-XSO-EF-2D Precision measuring heads for automated measurement
The special geometry of the measuring heads with insertion chamfers and the second diameter tapered towards the back prevent sticking even for a deeper measurement.

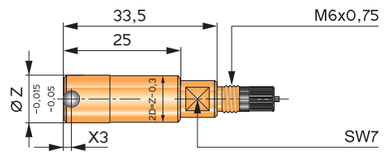
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-XSO-02-EF-2D

ø 8 - 20 mm | Short X-dimension 3 mm | M6x0.75 thread | Meas. point radius R = 2 mm

PMK-XSO-02-EF-2D
Precision measuring heads for automated measuring
ø 8-20 mm, delivered with short X-dimension of 3 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

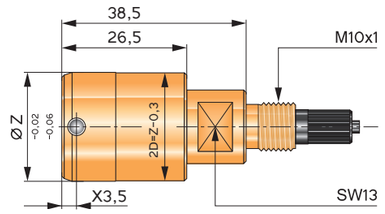


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-XSO-02-EF-2D-18

PMK-XSO-03-EF-2D

ø 15 - 40 mm | Short X- dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-EF-2D
Precision measuring head for automated measuring
ø 15-40 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

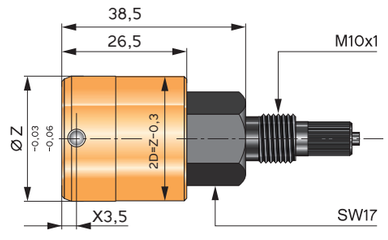


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-XSO-03-EF-2D-38

PMK-XSO-03-EF-2D

ø 40 - 50 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-EF-2D
Precision measuring head for automated measuring
ø 40-50 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

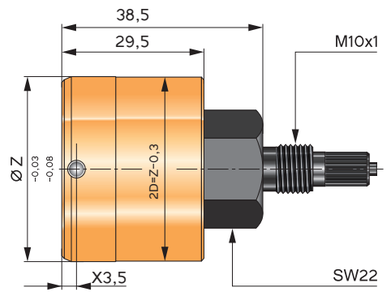


ORDERING EXAMPLE: Ø Workpiece = 42 ± 0.05 = PMK-XSO-03-EF-2D-41,95

PMK-XSO-03-EF-2D

ø 50 - 280 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-EF-2D
Precision measuring head for automated measuring
ø 50-280 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering, with insertion chamfer, tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.



ORDERING EXAMPLE: Ø Workpiece = 64 D10 = PMK-XSO-03-EF-2D-64.08

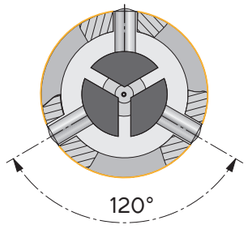
NOTES

3-POINT BORE MEASURING HEADS

PMK-NO-03-3P

Ø 15 - 100 MM **TITANIUM NITRIDE COATING**

Innovative „true" 3-point precision measurement technology precisely measures polygonal form errors in holes.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

3-point PMK-NO-3P Precision measuring heads with titanium nitride coating
This unique measurement technology implements true 3-point measurement to measure polygons, dimensions and form errors in bores that other measuring instruments can't, or can't easily, measure.

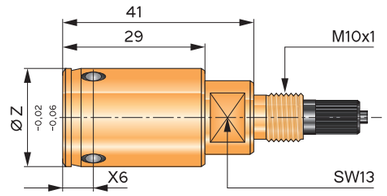
The repeat accuracy of our 3-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-03-3P

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-3P · Precision meas. head in 3-point design
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

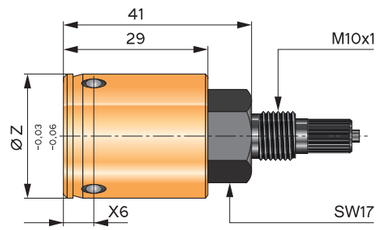


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-NO-03-3P-20

PMK-NO-03-3P

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-3P · Precision meas. head in 3-point design
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

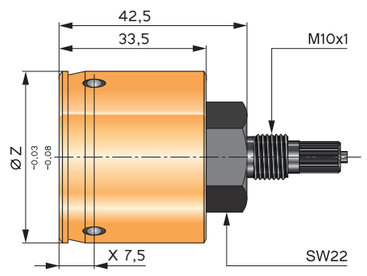


ORDERING EXAMPLE: Ø Workpiece = 44 H7 = PMK-NO-03-3P-44

PMK-NO-03-3P

ø 50 - 100 mm | Normal X-dim. 7.5 mm | M10x1 thread | PMK-NO-03-3P > 100mm on request.

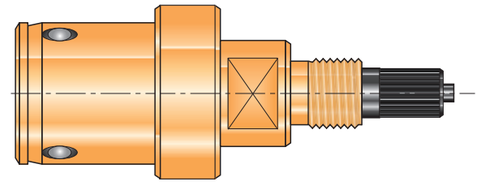
PMK-NO-03-3P · Precision meas. head in 3-point design
ø 50-100 mm, delivered with normal X-dimension of 7.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.



ORDERING EXAMPLE: Ø Workpiece = 98 H7 = PMK-NO-03-3P-98

PRECISION MEASURING HEADS WITH INTEGRATED DEPTH STOP IN THE HOUSING

Upon request, depth stops integrated into the measuring body are available for nearly all variants.

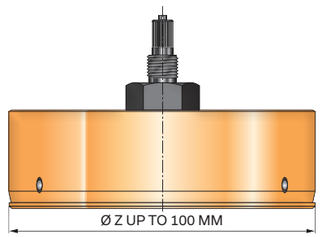


PRECISION MEASURING HEAD IN 3-POINT MEASURING TECHNOLOGY

Precision measuring head in 3-point measuring technology
With normal X-dimension or short X-dimension is available depending on variants.

From a diameter of Z = ø 15 to 100 mm in the standard version.

Other dimensions and special needs upon request.



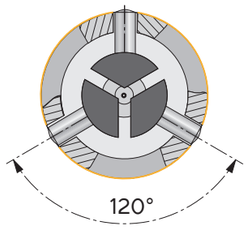
NOTES

3-POINT BORE MEASURING HEADS

PMK-XSO-03-3P **SHORT X-DIM.**

Ø 15 - 100 MM **TITANIUM NITRIDE COATING**

Innovative "true" 3-point precision measurement technology precisely measures polygonal form errors in holes.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

3-point PMK-XSO-03-3P Precision measuring heads with titanium nitride coating measure close to the bottom of the hole. This unique measurement technology implements true 3-point measurement to measure polygons, dimensions and form errors in holes that other measuring instruments can't, or can't easily, measure.

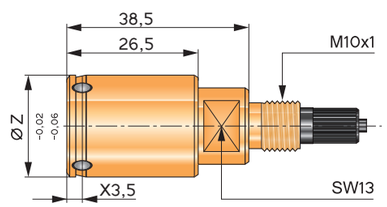
The repeat accuracy of our 3-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-XSO-03-3P

ø 15 - 40 mm | Short X-dim. 3.5 mm | M10x1 thread

PMK-XSO-03-3P · Precision meas. head in 3-point design
ø 15-40 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

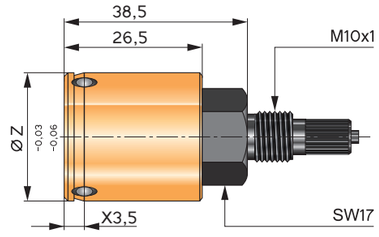


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-XSO-03-3P-20

PMK-XSO-03-3P

ø 40 - 50 mm | Short X-dim. 3.5 mm | M10x1 thread

PMK-XSO-03-3P · Precision meas. head in 3-point design
ø 40-50 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.

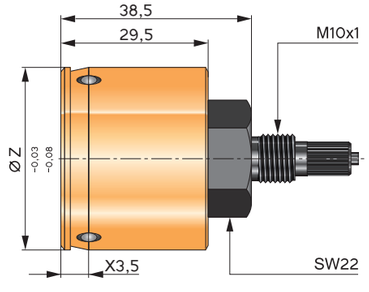


ORDERING EXAMPLE: Ø Workpiece = 44 H7 = PMK-XSO-03-3P-44

PMK-XSO-03-3P

ø 50 - 100 mm | Short X-dim. 3.5 mm | M10x1 thread | PMK-XSO-03-3P > 100mm on request.

PMK-XSO-03-3P · Precision meas. head in 3-point design
ø 50-100 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion groove.
Specify the smallest bore dimension when ordering.



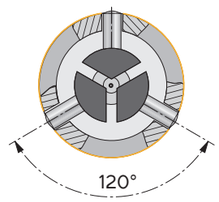
ORDERING EXAMPLE: Ø Workpiece = 98 H7 = PMK-XSO-03-3P-98

PRECISION MEASURING HEAD IN 3-POINT MEASURING TECHNOLOGY

Precision measuring head in 3-point measuring technology
With normal X-dimension or short X-dimension is available depending on variants.

From a diameter of Z = ø 15 to 100 mm in the standard version.

Other dimensions and special needs upon request.



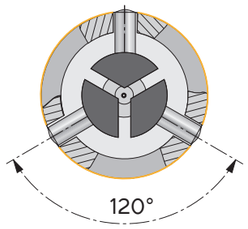
NOTES

3-POINT BORE MEASURING HEADS

PMK-NO-03-3P-EF **FOR AUTOMATED MEASURING**

Ø 15 - 100 MM **TITANIUM NITRIDE COATING**

"True" 3-point precision measuring technology. The special geometry of the measuring heads with insertion chamfer (EF) improve the ability to center. measures polygonal form errors in holes.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

3-point PMK-NO-03-3P-EF Precision measuring heads for automated measurement of diameters
The special geometry of the measuring heads with insertion chamfer prevents sticking during the measuring process.

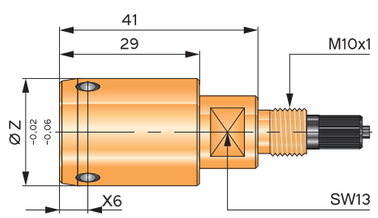
The repeat accuracy of our 3-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-03-3P-EF

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-3P-EF · Precision meas. head in 3-point design
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

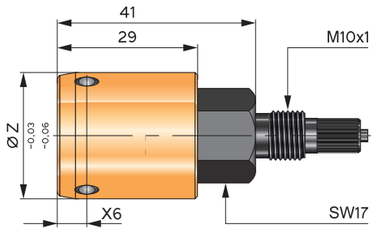


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-NO-03-3P-EF-20

PMK-NO-03-3P-EF

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-3P-EF · Precision meas. head in 3-point design
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

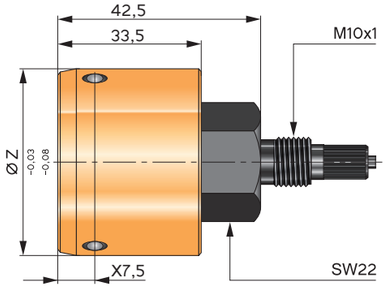


ORDERING EXAMPLE: Ø Workpiece = 44 H7 = PMK-NO-03-3P-EF-44

PMK-NO-03-3P-EF

ø 50 - 100 mm | Normal X-dim. 7.5 mm | M10x1 thread | PMK-NO-03-3P-EF > 100mm on request.

PMK-NO-03-3P-EF · Precision meas. head in 3-point design
ø 50-100 mm, delivered with normal X-dimension of 7.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.



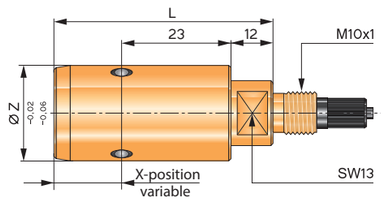
ORDERING EXAMPLE: Ø Workpiece = 98 H7 = PMK-NO-03-3P-EF-98

PMK-XV-03-3P-EF

PMK-XV-03-3P-EF · Precision measuring head with variable X-dimension

Precision measuring head in 3-point measurement technology available with modified housing dimensions depending on variant. This allows, for example, variable positioning of the X-dimension due to a longer housing form.

Details upon request.



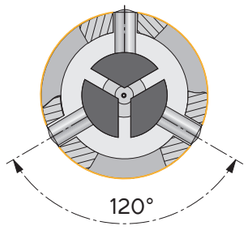
NOTES

3-POINT BORE MEASURING HEADS

PMK-XSO-03-3P-EF **FOR AUTOMATED MEASURING**

Ø 15 - 100 MM **TITANIUM NITRIDE COATING**

With short X-dimension of 3.5 mm.



Diamond measuring points upon request.

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

3-point PMK-XSO-03-3P-EF Precision meas. heads for automated measurement of diameters, with short X-dimension. The special geometry of the measuring heads with insertion chamfer prevents sticking during the measuring process.

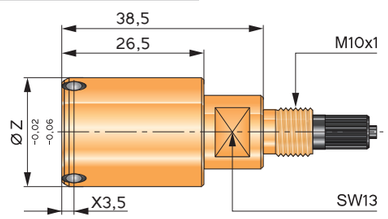
The repeat accuracy of our 3-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-XSO-03-3P-EF

ø 15 - 40 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-3P-EF · Precision meas. head in 3-point design
ø 15-40 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

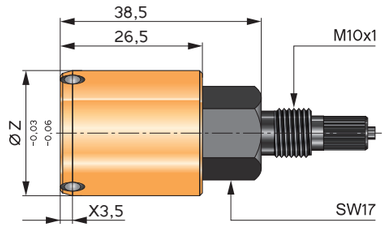


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-XSO-03-3P-EF-20

PMK-XSO-03-3P-EF

ø 40 - 50 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-3P-EF · Precision meas. head in 3-point design
ø 40-50 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.

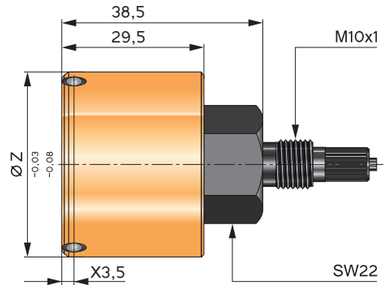


ORDERING EXAMPLE: Ø Workpiece = 44 H7 = PMK-XSO-03-3P-EF-44

PMK-XSO-03-3P-EF

ø 50 - 100 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm | ø > 100mm on request

PMK-XSO-03-3P-EF · Precision meas. head in 3-point design
ø 50-100 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request.
Self-centering, with insertion chamfer.
Specify the smallest bore dimension when ordering.



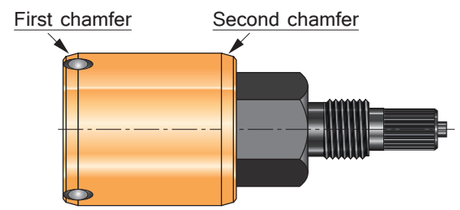
ORDERING EXAMPLE: Ø Workpiece = 98 H7 = PMK-XSO-03-3P-EF-98

2-CHAMFER MEASURING HEADS

PMK-2EF · Precision Measuring heads for autom. measurement

The special geometry of the measuring heads with two-sided insertion chamfers (2EF) prevents sticking both during insertion as well as during retraction of the measuring head during the automated measuring process.

The second chamfer on the measuring head can be implemented in nearly all 2-point and 3-point measuring heads with NO, XK and SL X-dimensions.



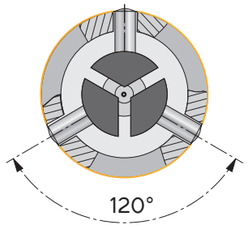
NOTES

3-POINT BORE MEASURING HEADS

PMK-NO-03-3P-EF-2D **FOR AUTOMATED MEASURING**

Ø 15 - 100 MM **TITANIUM NITRIDE COATING**

The special geometry of the measuring heads with insertion chamfer and 2 tapered diameters prevents sticking.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

3-point PMK-NO-03-3P-EF-2D Precision measuring heads for automated measurement of diameters
The special geometry of the measuring heads with insertion chamfers and the second diameter tapered towards the back prevent sticking even for a deeper measurement.

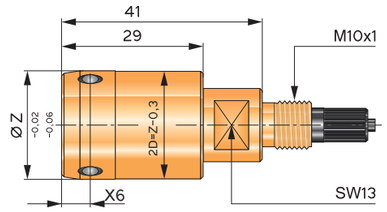
The repeat accuracy of our 3-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-03-3P-EF-2D

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-3P-EF-2D
Precision meas. head in 3-point design
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer. Tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

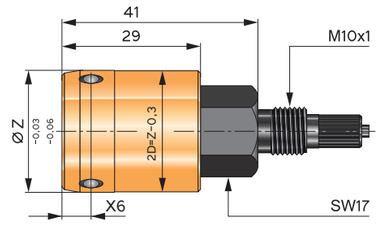


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-NO-03-3P-EF-2D-20

PMK-NO-03-3P-EF-2D

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-NO-03-3P-EF-2D
Precision meas. head in 3-point design
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer. Tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

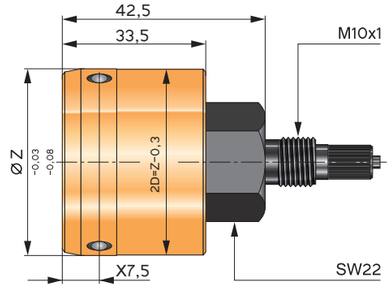


ORDERING EXAMPLE: Ø Workpiece = 44 H7 = PMK-NO-03-3P-EF-2D-44

PMK-NO-03-3P-EF-2D

ø 50 - 100 mm | Normal X-dim. 7.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm | ø > 100mm on request.

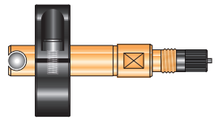
PMK-NO-03-3P-EF-2D
Precision meas. head in 3-point design
ø 50-100 mm, delivered with normal X-dimension of 7.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer. Tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.



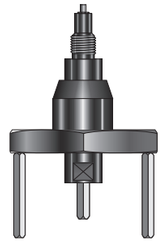
ORDERING EXAMPLE: Ø Workpiece = 98 H7 = PMK-NO-03-3P-EF-2D-98

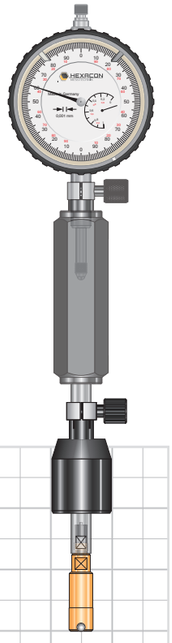
EXAMPLE APPLICATION

Depth stops for PMK
Starting on page 78



Depth stop - clamping ring





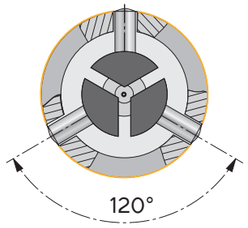
NOTES

3-POINT BORE MEASURING HEADS

PMK-XSO-03-3P-EF-2D **FOR AUTOMATED MEASURING**

Ø 15 - 100 MM **TITANIUM NITRIDE COATING**

With short X-dimension of 3.5 mm.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

3-point PMK-XSO-03-3P-EF-2D Precision measuring heads for automated measurement of diameters, with short X dimension. The special geometry of the measuring heads with insertion chamfers and the second diameter tapered towards the back prevent sticking even for a deeper measurement.

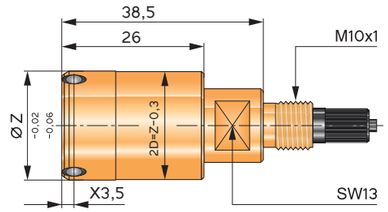
The repeat accuracy of our 3-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-XSO-03-3P-EF-2D

ø 15 - 40 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-3P-EF-2D · 3-point precision meas. head
ø 15-40 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer. Tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

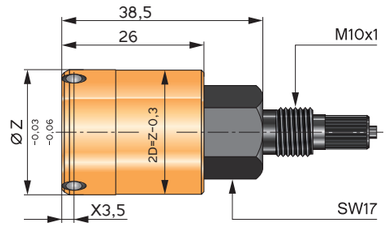


ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-XSO-03-3P-EF-2D-20

PMK-XSO-03-3P-EF-2D

ø 40 - 50 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm

PMK-XSO-03-3P-EF-2D · 3-point precision meas. head
ø 40-50 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer. Tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.

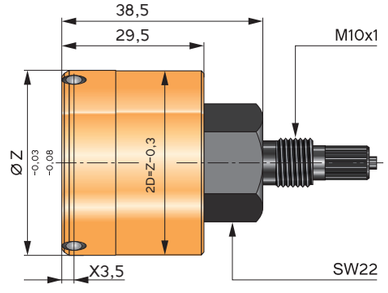


ORDERING EXAMPLE: Ø Workpiece = 44 H7 = PMK-XSO-03-3P-EF-2D-44

PMK-XSO-03-3P-EF-2D

ø 50 - 100 mm | Short X-dim. 3.5 mm | M10x1 thread | Meas. point radius R = 2.5 mm | ø > 100mm on request.

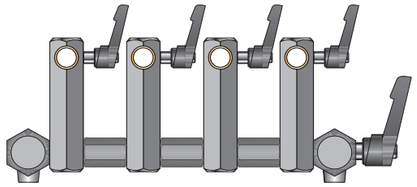
PMK-XSO-03-3P-EF-2Z · 3-point precision meas. head
ø 50-100 mm, delivered with short X-dimension of 3.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering, with insertion chamfer. Tapered measuring body prevents sticking. Specify the smallest bore dimension when ordering.



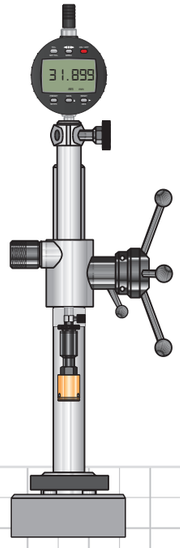
ORDERING EXAMPLE: Ø Workpiece = 98 H7 = PMK-XSO-03-3P-EF-2D-98

EXAMPLE APPLICATION

Device stands and measurement stands permit reliable, efficient measurement.
On the largest workpieces in series or in testing.
Starting on page 78



Extensible to up to 6 points!



NOTES

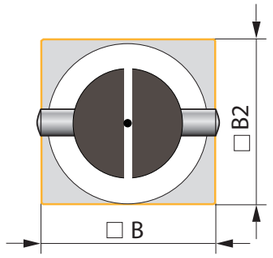
SQUARE PARALLEL MEASURING HEADS

PMK-02-PAQ

PARALLEL MEASURING HEADS, SQUARE FORM

B 8 - 15 MM **TITANIUM NITRIDE COATING**

Measuring square forms. Thread M6x0.75.



Diamond measuring points upon request.

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-PAQ Square parallel precision measuring heads with titanium nitride coating
Precisely measure the parallelism of two surfaces.

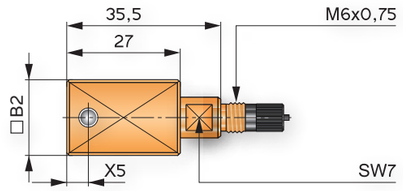
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-02-PAQ

ø 8 - 15 mm | Normal X-dim. 5 mm | M6x0.75 thread

PMK-NO-02-PAQ • Square meas. head in normal variant
B 8-15 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Specify the smallest dimension B of the parallels when ordering.



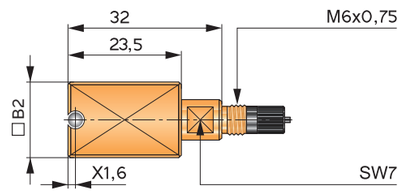
Tolerance B
- 0.015
- 0.05
Tolerance B2
- 0,3

ORDERING EXAMPLE: Ø Workpiece = 14 H7 = PMK-NO-02-PAQ-14

PMK-XK-02-PAQ

ø 8 - 15 mm | Short X-dim. 1.6 mm | M6x0.75 thread

PMK-XK-02-PAQ • Square meas. head, short X dimension
B 8-15 mm, delivered with short X-dimension of 1.6 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Specify the smallest dimension B of the parallels when ordering.



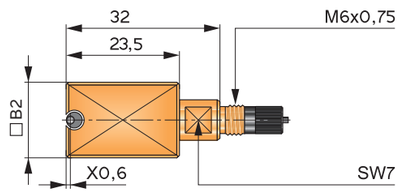
Tolerance B
- 0.015
- 0.05
Tolerance B2
- 0,3

ORDERING EXAMPLE: Ø Workpiece = 14 H7 = PMK-XK-02-PAQ-14

PMK-SL-02-PAQ

ø 10 - 15 mm | Short X-dim. 0.6 mm | M6x0.75 thread

PMK-SL-02-PAQ • Square meas. head, short X-dimension
B 10-15 mm, delivered with short X-dimension of 0.6 mm and M6x0.75 thread. Their measuring range is 0.15 mm.
Specify the smallest dimension B of the parallels when ordering.



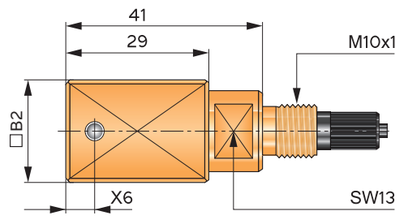
Tolerance B
- 0.015
- 0.05
Tolerance B2
- 0,3

ORDERING EXAMPLE: Ø Workpiece = 15 H7 = PMK-SL-02-PAQ-15

PMK-NO-03-PAQ

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-PAQ · Square meas. head in normal variant
B 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



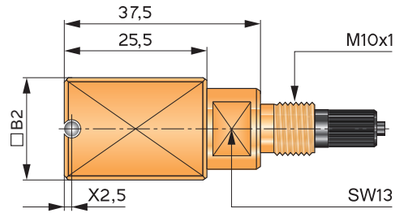
Tolerance B
- 0.02
- 0.06
Tolerance B2
- 0,3

ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-NO-03-PAQ-18

PMK-XK-03-PAQ

ø 15 - 40 mm | Short X-dim. 2.5 mm | M10x1 thread

PMK-XK-03-PAQ • Square meas. head, short X-dimension
B 15-40 mm, delivered with short X-dimension of 2.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



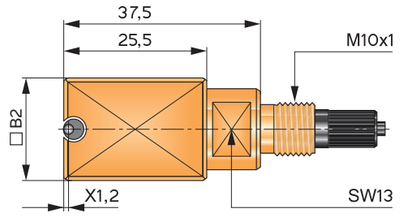
Tolerance B
- 0.02
- 0.06
Tolerance B2
- 0,3

ORDERING EXAMPLE: Ø Workpiece = 35 H7 = PMK-XK-03-PAQ-35

PMK-SL-03-PAQ

ø 15 - 40 mm | Short X-dim. 1.2 mm | M10x1 thread

PMK-SL-03-PAQ · Square meas. head in blind hole variant
B 15-40 mm, delivered with short X-dimension 1.2 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.3 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



Tolerance B
- 0.02
- 0.06
Tolerance B2
- 0,3

ORDERING EXAMPLE: Ø Workpiece = 34 D10 = PMK-SL-03-PAQ-34.08

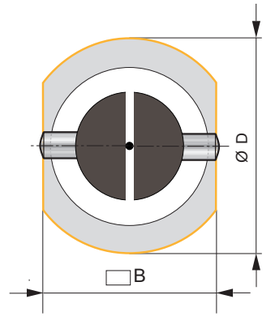
2-POINT PARALLEL MEASURING HEADS

PMK-02-PA

PRECISION PARALLEL MEASURING HEADS

B 8 - 15 MM **TITANIUM NITRIDE COATING**

Precise measurement of parallel surfaces.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-02-PA Parallel precision measuring heads with titanium nitride coating
Precisely measure the parallelism of two surfaces.

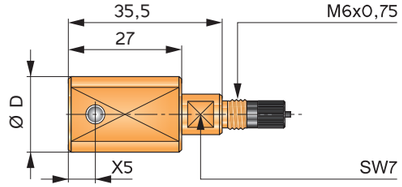
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-02-PA

ø 8 - 15 mm | Normal X-dim. 5 mm | M6x0.75 thread

PMK-NO-02-PA • Parallel meas. head in normal variant
B 8-15 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



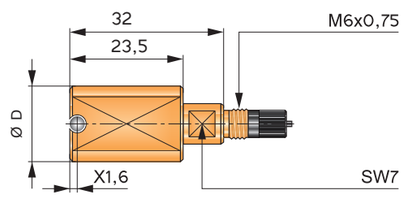
Tolerance B
- 0.015
- 0.05

ORDERING EXAMPLE: Ø Workpiece = 14 H7 = PMK-NO-02-PA-14

PMK-XK-02-PA

ø 8 - 15 mm | Short X-dim. 1.6 mm | M6x0.75 thread

PMK-XK-02-PA • Parallel meas. head, short X-dimension
B 8-15 mm, delivered with short X-dimension of 1.6 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.6 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



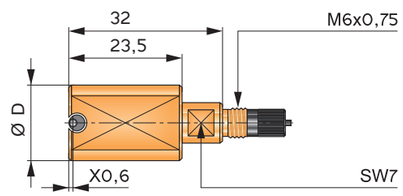
Tolerance B
- 0.015
- 0.05

ORDERING EXAMPLE: Ø Workpiece = 14 H7 = PMK-XK-02-PA-14

PMK-SL-02-PA

ø 10 - 15 mm | Short X-dim. 0.6 mm | M6x0.75 thread

PMK-SL-02-PA · Parallel meas. head, short X-dimension
B 10-15 mm, delivered with short X-dimension of 0.6 mm and M6x0.75 thread. The measuring range is 0.15 mm and can be extended up to 0.3 mm upon request.
Specify the smallest dim. B of the parallels when ordering.

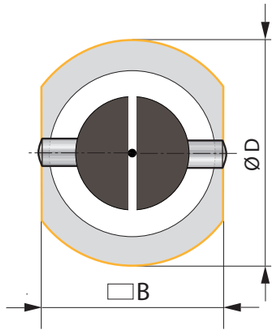


Tolerance B
- 0.015
- 0.05

ORDERING EXAMPLE: Ø Workpiece = 15 H7 = PMK-SL-02-PA-15

BODY DIAMETER FOR PARALLEL MEASURING HEADS

Tolerance	PMK body diameter Ø D
B - 0.015 - 0.05	Ø D ± 0.2
8 mm	11,0 mm
9 mm	12.5 mm
10 mm	14.0 mm
11 mm	15.5 mm
12 mm	17.0 mm
13 mm	18.5 mm
14 mm	19.5 mm
15 mm	21.0 mm



NOTES

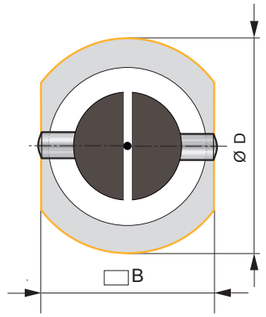
2-POINT PARALLEL MEASURING HEADS

PMK-03-PA

PRECISION PARALLEL MEASURING HEADS

B 15 - 40 MM **TITANIUM NITRIDE COATING**

Precise measurement of parallel surfaces.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-03-PA Parallel precision measuring heads with titanium nitride coating
Precisely measure the parallelism of two surfaces.

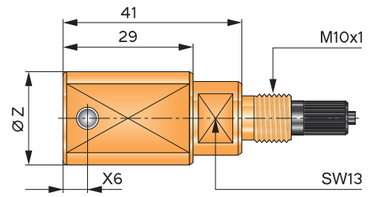
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN). The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-03-PA

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-PA · Parallel meas. head in normal variant
B 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



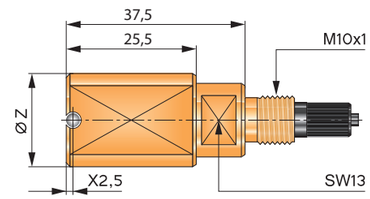
Tolerance B
- 0.02
- 0.06

ORDERING EXAMPLE: B Workpiece = 18 H7 = PMK-NO-03-PA-18

PMK-XK-03-PA

ø 15 - 40 mm | Short X-dim. 2.5 mm | M10x1 thread

PMK-XK-03-PA · Parallel meas. head, short X-dimension
B 15-40 mm, delivered with short X-dimension of 2.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
Specify the smallest dim. B of the parallels when ordering.



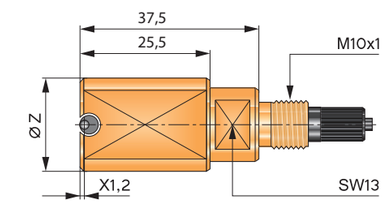
Tolerance B
- 0.02
- 0.06

ORDERING EXAMPLE: B Workpiece = 35 H7 = PMK-XK-03-PA-35

PMK-SL-03-PA

ø 15 - 40 mm | Short X-dim. 1.2 mm | M10x1 thread

PMK-SL-03-PA · Parallel meas. head, blind hole variant
B 15-40 mm, delivered with short X-dimension 1.2 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.3 mm upon request.
Specify the smallest dim. B of the parallels when ordering.

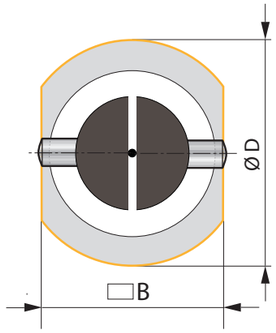


Tolerance B
- 0.02
- 0.06

ORDERING EXAMPLE: B Workpiece = 34 D10 = PMK-SL-03-PA-34,08

BODY DIAMETER FOR PARALLEL MEASURING HEADS

Tolerance	PMK body diameter Ø D
B - 0.02 - 0.06	Ø D ± 0.2
15 mm	21.2 mm
15.5 mm	21.9 mm
16 mm	22.6 mm
16.5 mm	23.3 mm
17 mm	24.0 mm
17.5 mm	24.7 mm
18 mm	25.5 mm
18.5 mm	26.2 mm
19 mm	26.9 mm
19.5 mm	27.6 mm
20 mm	28.3 mm
21 mm	29.7 mm
22 mm	31.1 mm
23 mm	32.5 mm
24 mm	33.9 mm
25 mm	35.6 mm
26 mm	36.8 mm
27 mm	38.2 mm
28 mm	39.6 mm
29 mm	41.0 mm
30 mm	42.4 mm
32 mm	45.3 mm
35 mm	49.5 mm
36 mm	50.9 mm
38 mm	53.7 mm
40 mm	56.6 mm



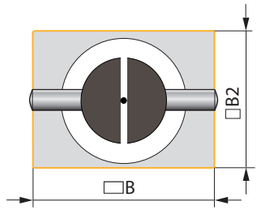
2-POINT PARALLEL MEASURING HEADS

PMK-03-PA

PRECISION PARALLEL MEASURING HEADS

B 40 - 130 MM **TITANIUM NITRIDE COATING**

Precise measurement of parallel surfaces.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-03-PA Precision parallel measuring heads with titanium nitride coating
Precisely measure the parallelism of two surfaces.

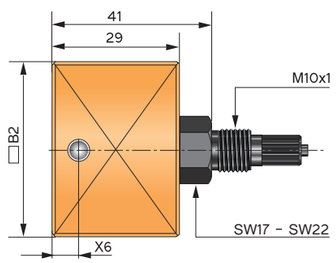
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-03-PA

ø 40 - 130 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-PA · Parallel meas. head in normal variant
B 40-130 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
B2 = approx. 25-30 mm
Specify the smallest dim. B of the parallels when ordering.



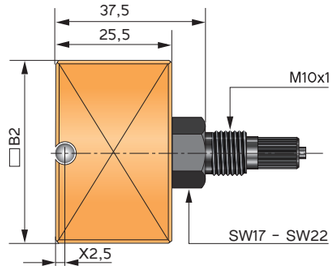
Tolerance B
- 0.03
- 0.08

ORDERING EXAMPLE: B Workpiece = 88 H7 = PMK-NO-03-PA-88

PMK-XK-03-PA

ø 40 - 130 mm | Short X-dim. 2.5 mm | M10x1 thread

PMK-XK-03-PA · Parallel meas. head with short X-dim.
B 40-130 mm, delivered with short X-dimension of 2.5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request.
B2 = approx. 25-30 mm
Specify the smallest dim. B of the parallels when ordering.



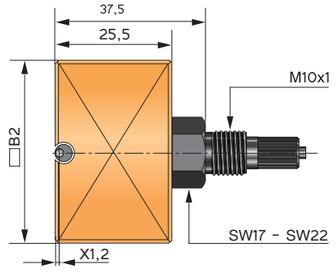
Tolerance B
- 0.03
- 0.08

ORDERING EXAMPLE: B Workpiece = 45 H7 = PMK-XK-03-PA-45

PMK-SL-03-PA

ø 40 - 130 mm | Short X-dim. 1.2 mm | M10x1 thread

PMK-SL-03-PA · Parallel meas. head, blind hole variant
B 40-130 mm, delivered with short X-dimension 1.2 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.3 mm upon request.
B2 = approx. 25-30 mm
Specify the smallest dim. B of the parallels when ordering.



Tolerance B
- 0.03
- 0.08

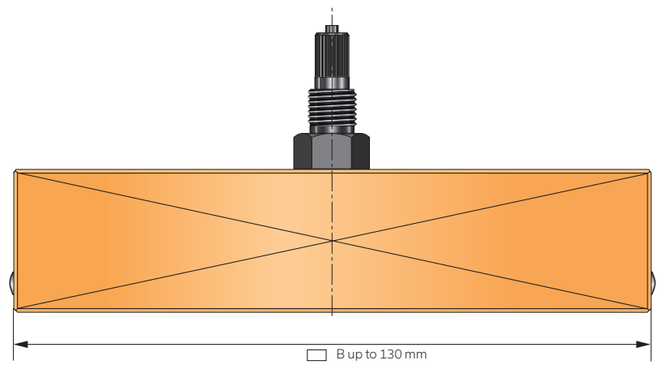
ORDERING EXAMPLE: B Workpiece = 34 D10 = PMK-SL-03-PA-34,08

PMK-PA

Parallel meas. head delivered up to B = 130 mm

Parallel measuring heads are available with normal X-dimension, short X-dimension and blind hole X-dimension in standard variant.

Available up to 130 mm width.



NOTES

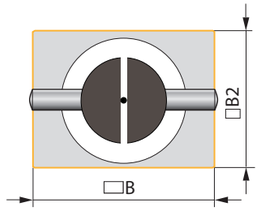
CRANKSHAFT MEASURING HEADS

PMK-KW

CRANKSHAFT PARALLEL MEASURING HEADS

B 10 MM AND UP **TITANIUM NITRIDE COATING**

With precision 2-point technology.



Diamond measuring points upon request.

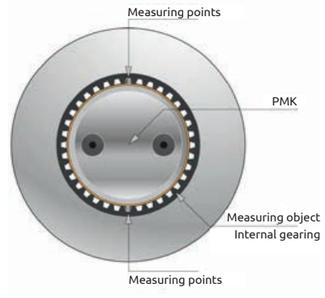
INTERNAL GEARING MEASURING HEAD

PMK-IVZ

PRECISION MEASURING HEAD FOR INTERNAL GEARING

Ø 20 MM AND UP

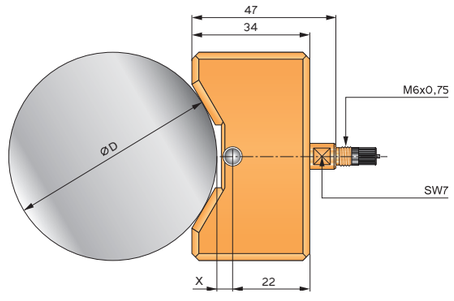
Repeat accuracy at IT is down to 8 < 1µ.



PMK-KW-02

ø 10 - 20 mm | X-dim. 2 mm and up | M6x0.75 thread

PMK-KW-02 • Crankshaft parallel measuring head
available with M6x0.75 mm thread and X-dimension of 2 mm and up. Width from 10 to 20 mm. Illustration may differ.

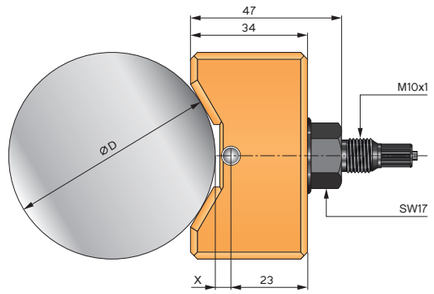


ORDERING EXAMPLE: B Workpiece = 14 H7 = PMK-KW-02-X-14

PMK-KW-03

ø 15 mm and up | X-dim. 3 mm and up | M10x1 thread

PMK-KW-03 • Crankshaft parallel measuring head
available with M10x1mm thread and X-dimension of 3 mm and up. Width 15 mm and up. Illustration may differ.



ORDERING EXAMPLE: B Workpiece = 30 H7 = PMK-KW-03-X-30

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

PMK-KW Parallel precision crankshaft measuring heads
Precisely measure the parallelism of two surfaces. In variants with connection threads in M6x0.75 and M10x1.

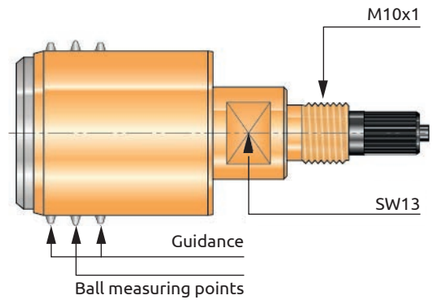
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-IVZ-03

ø 20 - 40 mm | M10x1 thread

PMK-IVZ-03
Precision measuring head for internal gearing
Ø20-40 mm, delivered with M10x1 thread.
With measuring balls. Measuring range 0,2 mm.
Self-centering, with insertion chamfer.

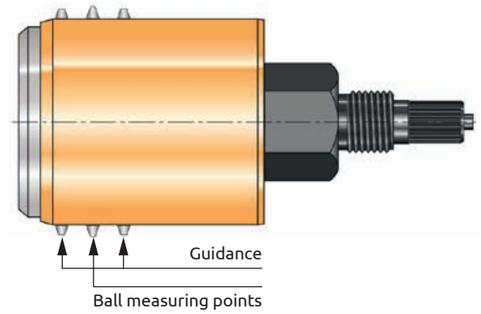


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-IVZ-03-38

PMK-IVZ-03

ø > 50 mm | M10x1 thread

PMK-IVZ-03
Precision measuring head for internal gearing
Ø > 50 mm, delivered with M10x1 thread.
With measuring balls. Measuring range 0,2 mm.
Self-centering, with insertion chamfer.



ORDERING EXAMPLE: Ø Workpiece = 68 H7 = PMK-IVZ-03-68

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-IVZ-03 Precision measuring head for internal gearing measure precisely diameters from internal gearing. Internal gearing only possible with an even numbered teeth. A sample part and associated drawing of the workpiece is required with the order.

Repeat accuracy at IT is down to 8 < 1µ.

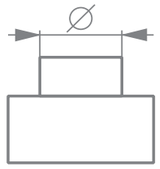
All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

OUTER MEASURING HEADS

PMK-AM

2-POINT OUTER MEASURING HEADS

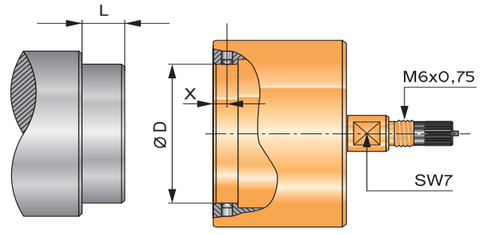
Precision measurement of outer diameters.
For shaft ends and the like.



PMK-AM-02

ø 10 - 20 mm | X-dimension 5 mm | M6x0.75 thread

PMK-AM-02 • Outer measuring head in normal variant
ø 10-20 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.2 mm and can be extended up to 0.6 mm upon request. Self-centering.
Specify the L-dimension when ordering.

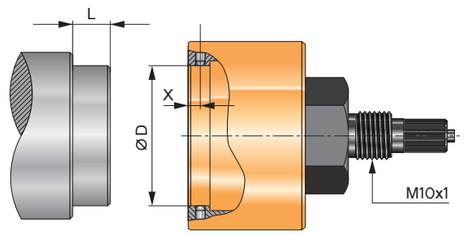


ORDERING EXAMPLE: B Workpiece = 14 H7 = PMK-AM-02-14

PMK-AM-03

ø 20 - 175 mm | X-dimension 5 mm | M10x1 thread

PMK-AM-03 • Outer measuring head in normal variant
ø 20 mm and up, delivered with normal X-dimension of 5 mm and M10x1 thread. The measuring range is 0.2 mm and can be extended up to 0.8 mm upon request. Self-centering.
Specify the L-dimension when ordering.



ORDERING EXAMPLE: B Workpiece = 40 H7 = PMK-AM-03-40

HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

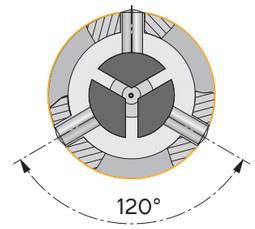
2-point PMK-AM Outer diameter precision measuring heads
Precisely measure the outer diameter at shaft ends. In variants with connection threads in M6x0.75 and M10x1.

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

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK SPECIAL MEASURING HEADS

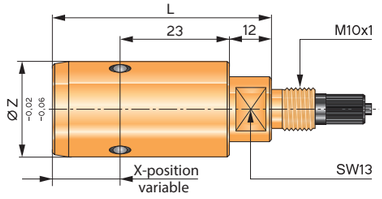
Modification of measuring heads according to customer request.



PMK-XV

Variable X-dim.

PMK-XV · Precision meas. head with variable X-dimension
Many of our precision measuring heads are available with modified housing dimension, depending on the variant.
The longer housing form means the X-dimension can be positioned variably.

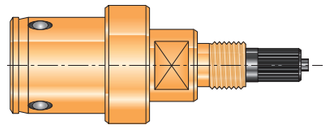


DETAILS UPON REQUEST

PMK

Depth stop

Precision measuring heads with integrated depth stop
Upon request, depth stops integrated into the measuring body are available for different variants.

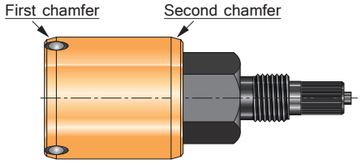


DETAILS UPON REQUEST

PMK-2-EF

2-insertion chamfers

Precision measuring heads with 2-insertion chamfers
Prevent sticking during automated measurement.



DETAILS UPON REQUEST

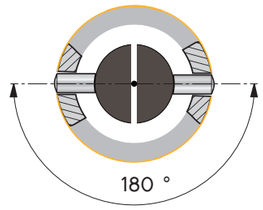
2-POINT CONICAL MEASURING HEADS

PMK-NO-KE

CONICAL VARIANT

Ø 10 - 100 MM **TITANIUM NITRIDE COATING**

Repeat accuracy at IT 8 is down to < 1µ.



Diamond measuring points upon request.

HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

2-point PMK-KE Conical precision measuring heads measure precision diameters at a defined depth, ovality by rotating during the measurement process, and form errors in the hole.

A sample part and associated drawing of the workpiece is required with the order.

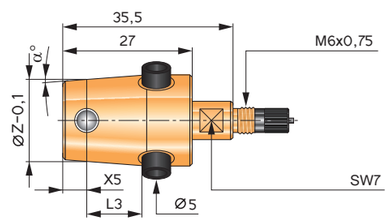
The repeat accuracy of our 2-point measuring heads at IT 8 is down to < 1µ.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-NO-02-KE

ø 10 - 20 mm | Normal X-dim. 5 mm | M6x0.75 thread

PMK-NO-02-KE · Precision meas. head in conical variant
ø 10-20 mm, delivered with normal X-dimension of 5 mm and M6x0.75 thread. The measuring range is 0.15 mm. Self-centering.
Specify Z, angle α°, L3 and conical slope when ordering.

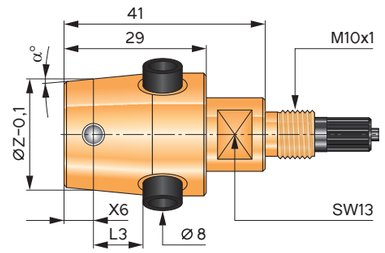


ORDERING EXAMPLE: Ø Workpiece = 18 H7 = PMK-NO-02-KE-18

PMK-NO-03-KE

ø 15 - 40 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-KE · Precision meas. head in conical variant
ø 15-40 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm. Self-centering.
Specify Z, angle α°, L3 and conical slope when ordering.

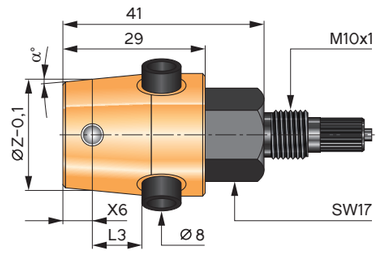


ORDERING EXAMPLE: Ø Workpiece = 38 H7 = PMK-NO-03-KE-38

PMK-NO-03-KE

ø 40 - 50 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-KE · Precision meas. head in conical variant
ø 40-50 mm, delivered with normal X-dimension of 6 mm and M10x1 thread. The measuring range is 0.2 mm. Self-centering.
Specify Z, angle α°, L3 and conical slope when ordering.



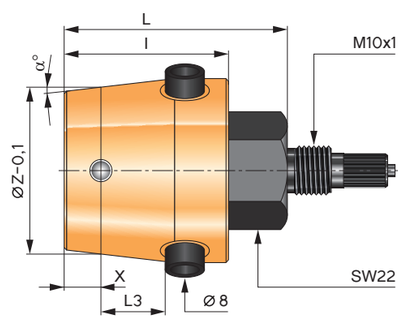
ORDERING EXAMPLE: Ø Workpiece = 45 H7 = PMK-NO-03-KE-45

PMK-NO-03-KE

ø 50 - 100 mm | Normal X-dim. 6 mm | M10x1 thread

PMK-NO-03-KE · Precision meas. head in conical variant
ø 50-100 mm, delivered with normal X-dimension and M10x1 thread. The measuring range is 0.2 mm. Self-centering.
Specify Z, angle α°, L3 and conical slope when ordering.

Ø Z	X	l	L
> 50 - 100	7.5	33.5	42.5
> 100 - 280	10	36	45

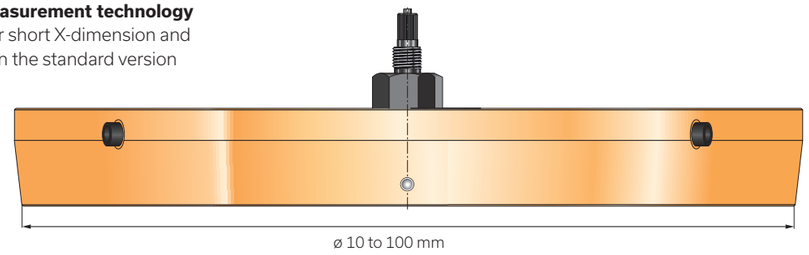


ORDERING EXAMPLE: Ø Workpiece = 54 D10 = PMK-NO-03-KE-54,08

PMK-NO-KE

Conical PMK-NO-KE in 2-point measurement technology
Available with normal X-dimension or short X-dimension and from 10 mm to 100 mm diameter Z in the standard version according to variant.

Other dimensions and special needs upon request.



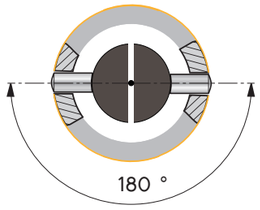
CONICAL MEASURING HEADS

PMK-ME-KE

CONICAL VARIANT

TITANIUM NITRIDE COATING

With integrated dial gauge or inductive probe holders.



HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

2-point PMK-ME-KE Conical and multi-point conical precision measuring heads
Measure precision diameters at a defined depth, ovality by rotating during the measurement process and form errors in the hole.

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

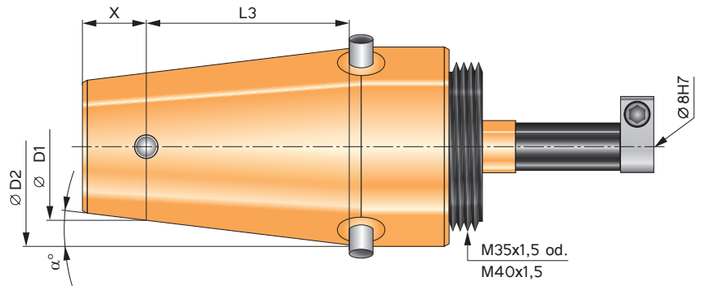
All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-ME-KE

Conical measuring head

PMK-ME-KE • 2-point conical precision measuring head
Thread for handle M35x1.5 mm or M40x1.5 mm. With insertion chamfer. Depth stop using allen screws.

In order inquiry:
Specify X, L3, D1, D2 and α° angle.

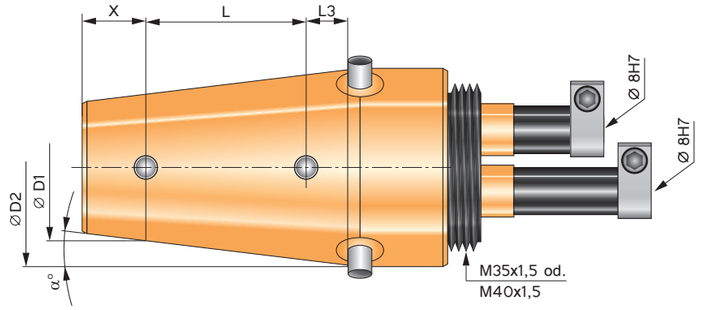


PMK-ME-KE

Multi-point conical measuring head

PMK-ME-KE • Multi-point conical precision measuring head
Thread for handle M35x1.5 mm or M40x1.5 mm. With insertion chamfer. Depth stop using allen screws.

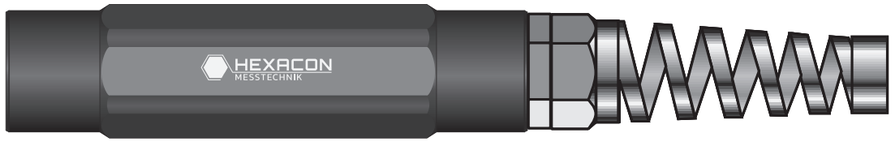
In order inquiry:
Specify X, L1, L3, D1, D2 and α° angle.



HM-ME-M35 / M40

Handle for PMK-ME-KE

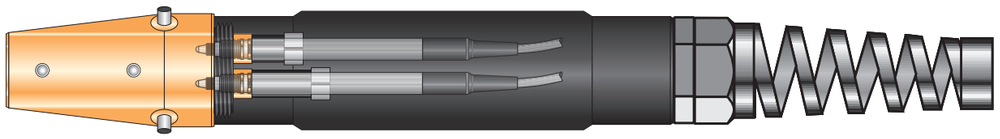
HM-ME-M35 / M40 • Handle for PMK-ME-KE
Robust handle of aluminum for reliable protection and handling of PMK-ME-KE conical metrology instrument.



Thread M35x1.5 • Order no.: HM-ME-M35x1.5 Thread M40x1.5 • Order no.: HM-ME-M40x1.5

APPLICATION EXAMPLE

PMK-ME-KE conical measuring instrument with HM-ME-M35 handle and inductive probes mounted.

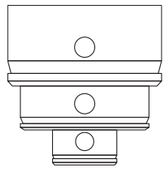


MULTI-POINT MEASURING HEADS

PMK-ME

TITANIUM NITRIDE COATING

With precision multi-point measurement technology.



HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

2-point PMK-ME Multi-point precision measuring heads precisely measure the dimensions and form of two or more diameters. An integrated depth stop can be implemented using a clamping ring, stop screws or the housing structure. Thread for handle M35x1.5 or M40x1.5.

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

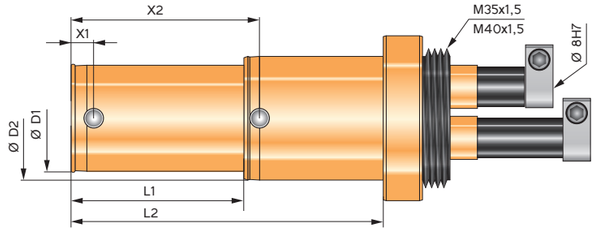
All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

PMK-ME-2P

Two-point measuring head

PMK-ME-2P • Two-point precision measuring head
Integrated depth stop can be implemented for example using the housing geometry.
Threaded connection for handle M35x1.5 or M40x1.5.

In order inquiry:
Specify Ø D1, X1, L1, D2, X2, L2

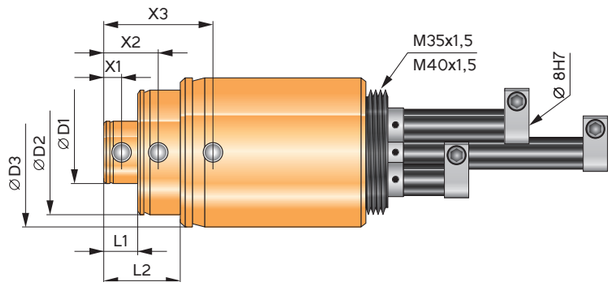


PMK-ME

Multi-point measuring head

PMK-ME • Multi-point precision measuring head
Integrated depth stop can be implemented for example using the housing geometry.
Threaded connection for handle M35x1.5 or M40x1.5.

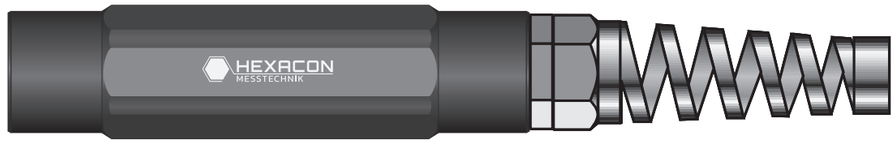
In order inquiry:
Specify Ø D1, X1, L1, D2, X2, L2



HM-ME-M35 / M40

Handle for PMK-ME

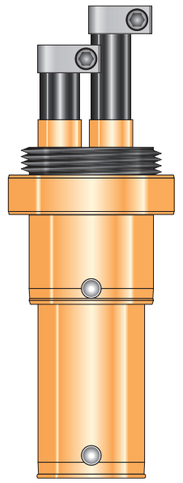
HM-ME-M35 / M40 • Handle for PMK-ME
Robust handle of aluminum for reliable protection and handling of multi-point measuring instrument PMK-ME.



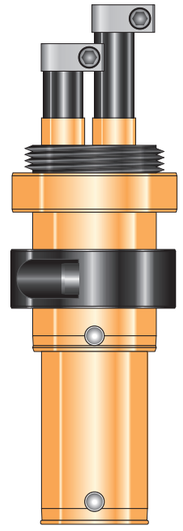
Thread M35x1.5 • Order no.: HM-ME-M35x1.5 Thread M40x1.5 • Order no.: HM-ME-M40x1.5

APPLICATION EXAMPLES

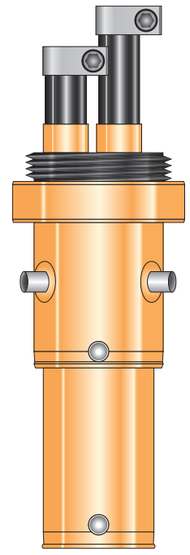
PMK-ME
Two-point measuring head with housing structure as depth stop.



PMK-ME
Two-point measuring head with adjustable TA-KR-V clamping ring as depth stop.



PMK-ME
Two-point measuring head with stop screws as depth stop.



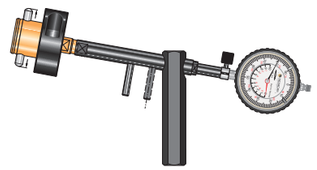
INSERTION MEASURING HEADS

PMK-ES

MAX. 15 MM MEAS. RANGE

TITANIUM NITRIDE COATING

And special pistol holder with ventilation.



HEXACON MESSTECHNIK

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

PMK-ES Insertion precision measuring instrument with large measurement range and special pistol holder
Measures precision diameter differences up to 15 mm. With integrated measuring gauge holder and M10x1 stop thread as well as depth stop clamping ring.

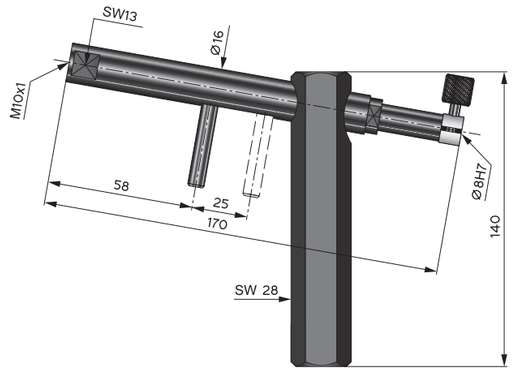
The repeat accuracy of our 2-point insertion measuring heads at IT 8 is down to < 1/100 mm.

All Hexacon precision measuring heads are made of high-quality tool steel and finished with a titanium nitride coating (TiN) at no extra charge. The TiN coating is characterized by a very high hardness of approx. 2200 HV, as well as corrosion resistance and has outstanding sliding an friction properties. Furthermore, TiN coatings protect the measurement object against caning an jamming during the measurement process due to their easy sliding.This results in reduced wear, as well as a better service life of the measuring tools and higher cost-effectiveness.

HM-03-AL-25

With ventilation | M10x1 thread

HM-03-AL-25 • Special holder with ventilation for PMK-ES
For insertion measurement. For retraction of the meas. points for insertion measuring instrument, see below for the PMK-ES as well as for precision measuring heads with offset measuring points. Pulling back the measurement stroke on the holder, the measuring points can be extended or retracted by max. 15 mm Ø D - Ø d.

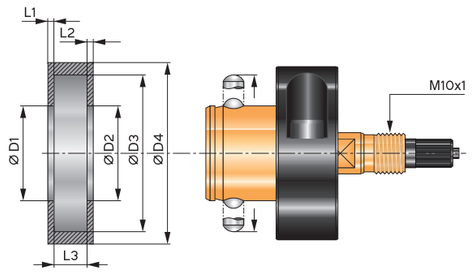


Order no.: HM-03-AL-25

PMK-ES

For insertion meas. | Normal X-dim. 15 mm | M10x1 thread

PMK-ES · Precision meas. head for insertion meas.
ø 15 mm and up, delivered with normal X-dimension of 15 mm and M10x1 thread. Diameter differences of up to 15 mm can be measured. Ideal for insertion measurement. Self-centering, with insertion groove. Depth stop clamping ring included in delivery. Specify the smallest hole dimension when ordering.



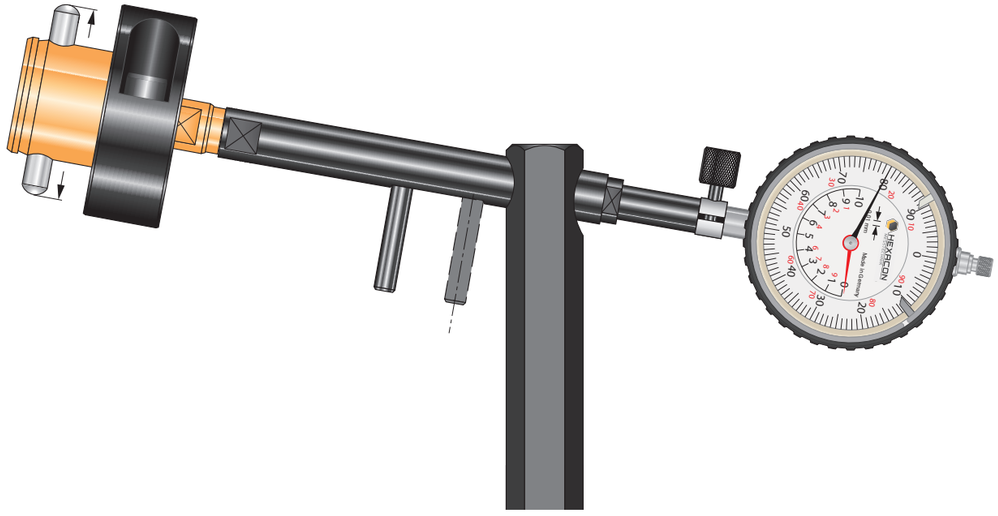
ORDERING EXAMPLE: Ø Workpiece = 20 H7 = PMK-ES-03-20

MEASURING SET FOR INSERTION MEASURING

Normal X-dim. 15 mm | Measuring range up to 15 mm | M10x1 thread

PMK-ES · Complete set for insertion measurement
Consisting of: Measuring head, depth stops, pistol handle and dial gauge.

ø 15 mm and up, delivered with X-dimension of 15 mm and M10x1 thread. Diameter differences of up to 15 mm can be measured. Ideal for insertion measurement. Self-centering, with insertion groove. Depth stop clamping ring included in delivery.

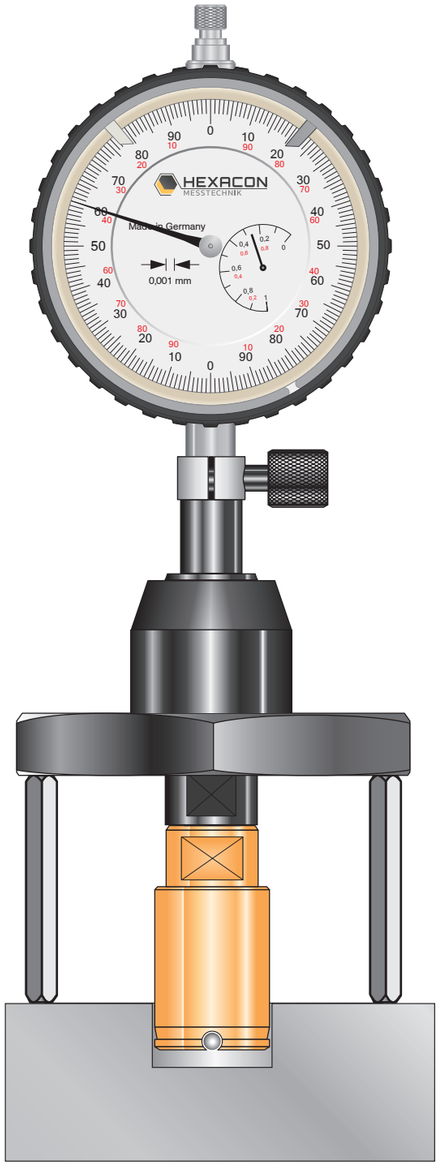


HOLDERS AND ACCESSORIES

SYSTEM ACCESSORIES FOR PRECISION MEASURING HEADS

EXAMPLE APPLICATION

Precision measuring head with HM-03-GS-60 holder, MU-01-0001, dial gauge and TA-03 depth stop base body



DIAL GAUGE AND ACCESSORIES FOR PMK

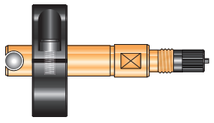
HOLDER, DEPTH STOP, EXTENSIONS FOR DIAL GAUGE HOLDER, DEVICE STAND AND MEASUREMENT STAND

- **Dial gauge holder for precision measuring heads**
  PMK-02 = M6x0.75 thread
- **Dial gauge holder for precision measuring heads**
  PMK-03 = M10x1 thread
- **Dial gauge holder for heavy or robust dial gauges**
- **Measurement holder for inductive measuring heads**
- **Centering holder for automated measurement**
- **Dial gauge holder in modular measuring system**

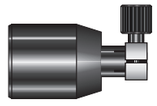
Measurement gauge holder for inductive measuring heads

· Dial gauge holder
· Centering holder

- **Extensions for dial gauge holders with drive needle**
- **Angle pieces for precision measuring heads**
- **Depth stop clamping rings for precision measuring heads**
- **Depth stops in modular system for precision measuring heads**

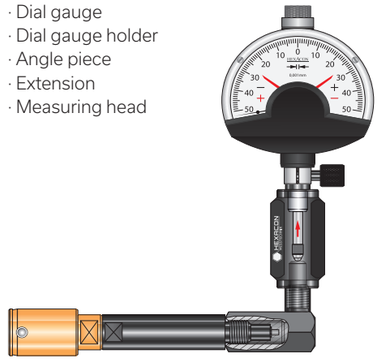


Depth stop clamping ring



TA-02 depth stop

· Dial gauge
· Dial gauge holder
· Angle piece
· Extension
· Measuring head



- **Device stand for serial measurement of compact workpieces**
- **Measurement stands suitable for larger workpieces**
- **Measurement stand integrated centering holder**

· Dial gauge
· Dial gauge holder
· Angle piece
· Depth extension
· Depth stop
· Device stand

STANDARD DIAL GAUGE HOLDERS

HM-02

FOR PMK-02 MEASURING HEADS

M6x0.75 THREAD

With ø 8H7 dial gauge connection and knurled screw.

HIGH PRECISION
TEMPERATUR STABLE!
MADE IN GERMANY

Dial gauge holder for precision measuring heads of type 02 = M6 thread, Ø8H7 dial gauge connection
Suitable for all precision measuring heads in cylindrical, conical or parallel form with M6x0.75 thread.

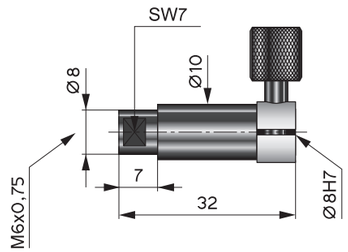
All variants with handle in stable aluminium housing, with knurled screw.

To avoid falsifying the measurement results due to heat from the hands, the HM-02-150 size **temperature-stable steel** (!) is used.

HM-02-32

M6x0.75 thread

HM-02-32 · Dial gauge holder for PMK type 02
Short, round variant 32 mm length, diameter 10 mm, delivered with M6x0.75 thread. For special dial gauges with short shaft. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts.

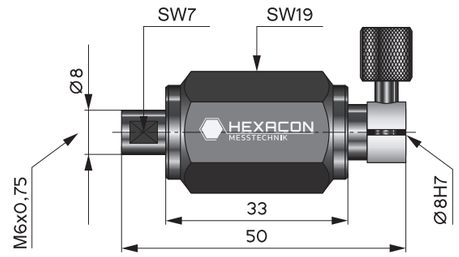


Order no.: HM-02-32

HM-02-50

M6x0.75 thread

HM-02-50 · Dial gauge holder for PMK type 02
Short variant 50 mm length, SW 19, delivered with M6x0.75 thread. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts and inductive measuring probes.

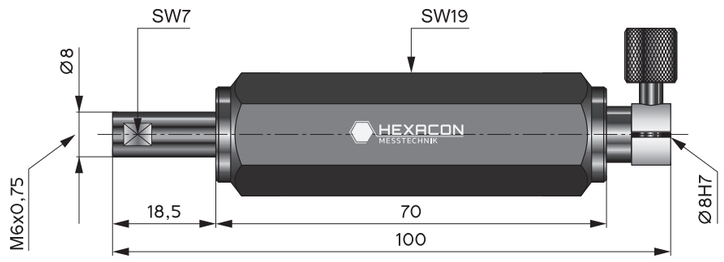


Order no.: HM-02-50

HM-02-100

M6x0.75 thread

HM-02-100 · Dial gauge holder for PMK type 02
Normal variant 100 mm length, SW 19, delivered with M6x0.75 thread. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts and inductive measuring probes.

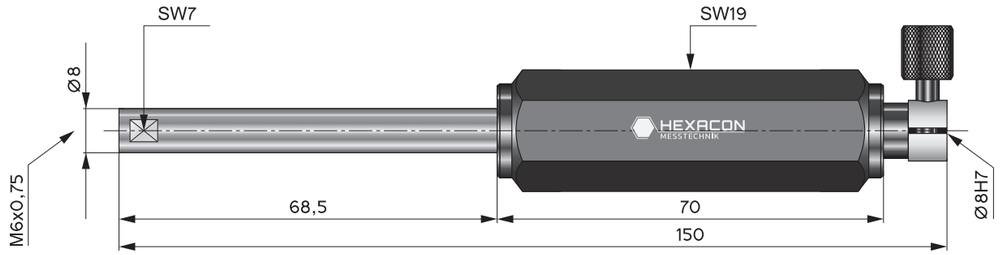


Order no.: HM-02-100

HM-02-150

M6x0.75 thread

HM-02-150 · Dial gauge holder for PMK type 02
Long variant 150 mm length, SW 19, delivered with M6x0.75 thread. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts and inductive measuring probes.

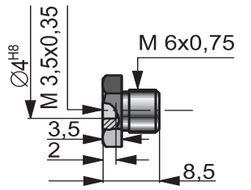


Order no.: HM-02-150

RS-01-02

Thread reducer

RS-01-02 · Thread reducer for the use of measuring heads with M3.5x0.35 thread on HM-02 holders or VL-02 extension with M6x0.75 thread.



Order no.: RS-01-02

STANDARD DIAL GAUGE HOLDERS

HM-03

FOR PMK-03 MEASURING HEADS

M10x1 THREAD

With ø 8H7 dial gauge connection and knurled screw.

HIGH PRECISION
TEMPERATUR STABLE!
MADE IN GERMANY

Dial gauge holder to hold analog or digital dial gauges and inductive measuring probes
With standard Ø8H7 connection on precision measuring heads with M10x1 thread.

All variants with handle in stable aluminium housing, with knurled screw.

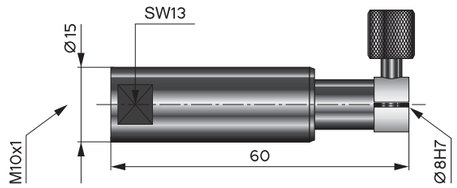
The model HM-03-150 and HM-03-150-RO are fabricated of **temperature-stable precision steel** !

Thread reducers make it possible to use measuring heads with smaller threads such as M6x0.75 or M3.5x0.35 on holders with M10x1 threads, with or without drive pin.

HM-03-GS-60

M10x1 thread

HM-03-GS-60 · Dial gauge holder for PMK type 03
Short, round variant 60 mm length, diameter 15 mm, delivered with M10x1 thread. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts and inductive measuring probes.

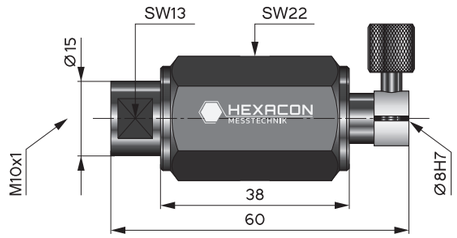


Order no.: HM-03-GS-60

HM-03-60

M10x1 thread

HM-03-60 · Dial gauge holder for PMK type 03
Short variant 60 mm length, SW 22, delivered with M10x1 thread. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts and inductive measuring probes.

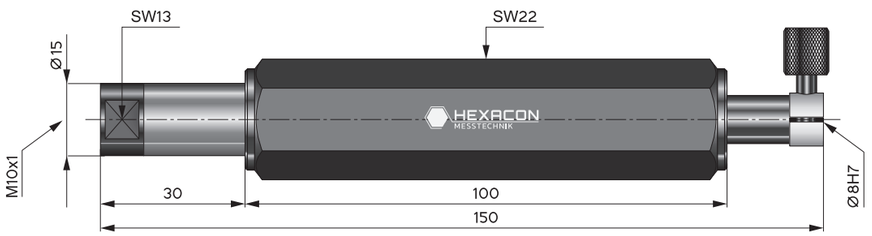


Order no.: HM-03-60

HM-03-150

M10x1 thread

HM-03-150 · Dial gauge holder for PMK type 03
Normal variant 150 mm length, SW 22, delivered with M10x1 thread. The Ø8H7 dial gauge clamp is suitable for all types of analog and digital dial gauges shafts and inductive measuring probes. Temperature-stable precision steel.

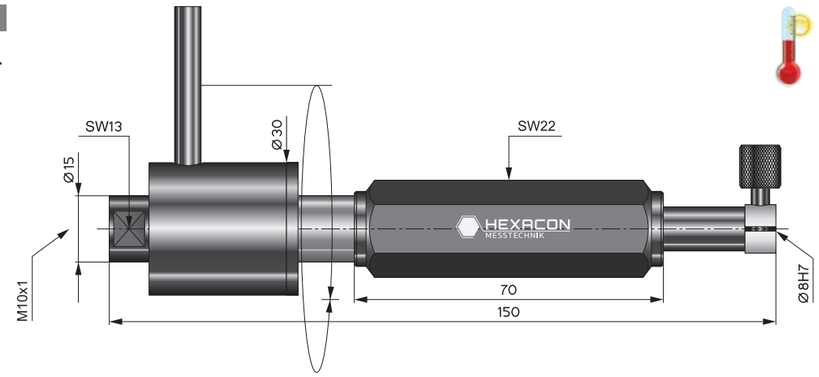


Order no.: HM-03-150

HM-03-150-RO

M10x1 thread | Rotating

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.

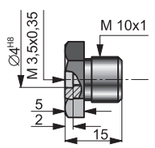


Order no.: HM-03-150-RO

RS-01-03

Thread reducer

RS-01-03 · Thread reducer
For the use of precision measuring heads with M3.5x0.35 thread on HM-03-60 holders. Incl. MU-VL-10.

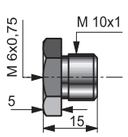


Order no.: RS-01-03

RS-02-03

Thread reducer

RS-02-03 · Thread reducer
For the use of precision measuring heads with M6x0.75 thread on HM-03-60 holders. Incl. MU-VL-10.

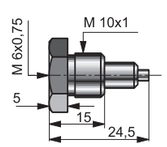


Order no.: RS-02-03

RS-02-03-L

Thread reducer

RS-02-03-L · Thread reducer
For the use of precision measuring heads with M6x0.75 thread on HM-03 holders or VL-03 extension 50 mm or longer with drive pin and M10x1 thread.



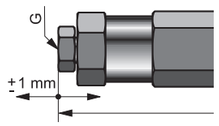
Order no.: RS-02-03-L

SPECIAL DIAL GAUGE HOLDERS

FOR HEAVY OR ROBUST DIAL GAUGES

WITH ADJUSTING NUT

With ø 8H7 dial gauge connection.



HIGH PRECISION
100%
MADE IN GERMANY

Special dial gauge holder for holding heavy dial gauges and inductive measuring probes

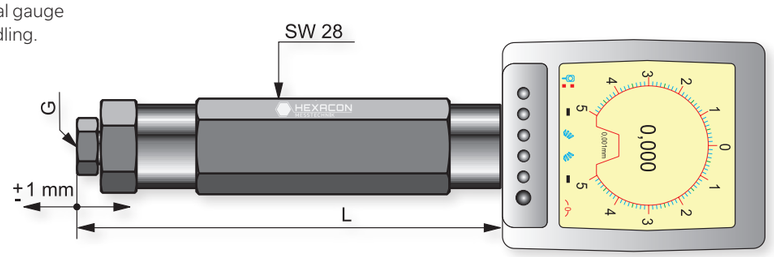
Suitable for precision measuring heads with M6x0.75 or M10x1 threads. With standard Ø8H7 connection. The adjusting nut permits the comfortable, efficient adjustment of dial gauges and measuring probes.

The holders are made of steel, and the housing of aluminium.

HA-V2

M6x0.75 thread

HA-V2 • Holder for heavy or robust dial gauges
By adjusting the adjusting nut (G), the dial gauge can easily be adjusted. No awkward handling.

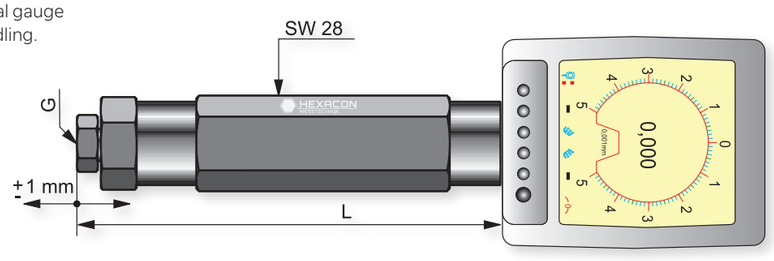


Order no.: HA-V2-K (Length: 60 mm) HA-V2-L (Length: 140 mm)

HA-V3

M10x1 thread

HA-V3 • Holder for heavy or robust dial gauges
By adjusting the adjusting nut (G), the dial gauge can easily be adjusted. No awkward handling.

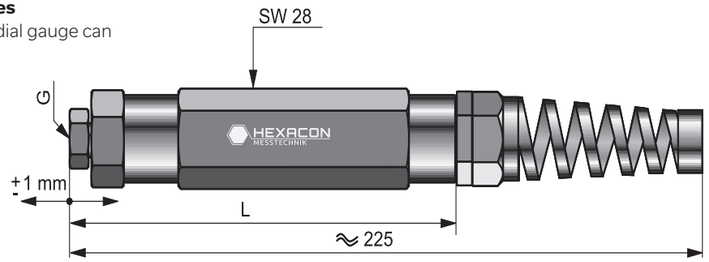


Order no.: HA-V3-K (Length: 60 mm) HA-V3-L (Length: 140 mm)

HT-V2

M6x0.75 thread Holder for inductive probes

HT-V2 · Holder for inductive measuring probes
By adjusting the M6x0.75 adjusting nut (G), the dial gauge can easily be adjusted. No awkward handling.
L=140 mm. With kink protection.

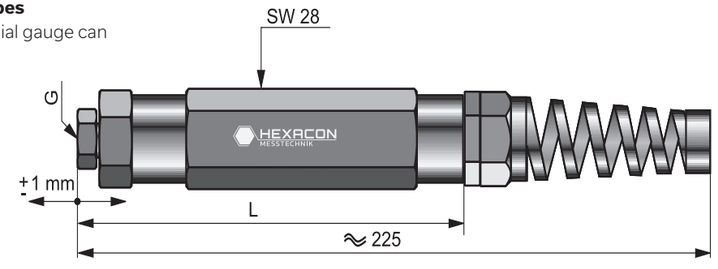


Order no.: HT-V2

HT-V3

M10x1 thread Holder for inductive probes

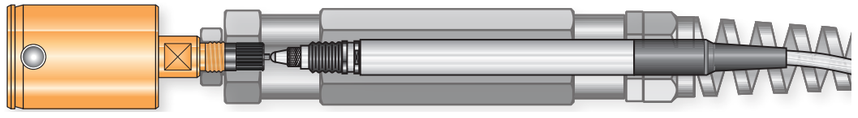
HT-V3 · Holder for inductive measuring probes
By adjusting the M10x1 adjusting nut (G), the dial gauge can easily be adjusted. No awkward handling.
L=140 mm. With kink protection.



Order no.: HT-V3

APPLICATION EXAMPLE

HT-V2 / HT-V3
Holder with precision measuring head and inductive probe.



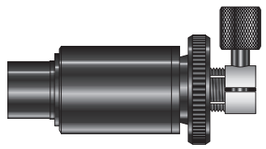
CENTERING HOLDERS

ZH-PMK

FOR AUTOMATED MEASUREMENT

WITH ADJUSTING NUT

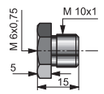
With ø 8H7 dial gauge connection and M6x0.75 or M10x1 thread.



HIGH PRECISION
100%
MADE IN GERMANY

Centering holder for automated measurement compensate for axial errors in centering of the workpiece and prevent damages to both the measuring head and the measurement object.

The axial freedom of movement is ± 0.5 mm. The set nut fastens the play once adjusted.
Available with M6x0.75 or M10x1 threads.

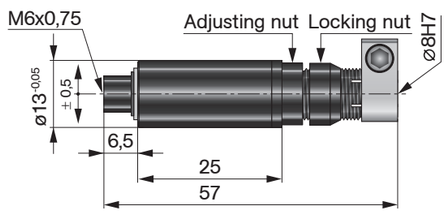


Thread reducers make it possible to use measuring heads with smaller threads such as M6x0.75 or M3.5x0.35 on holders and float holders with M10x1 threads.

ZH-PMK-02-13

ø 13 mm | M6x0.75 thread

ZH-PMK-02-13 · Centering holder with M6x0.75 thread
For automated measurement, ø 13 mm, length 57 mm.
Axial freedom of movement ±0.5 mm, clamping ring with allen screw.

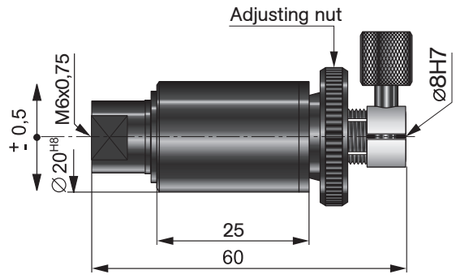


Order no.: ZH-PMK-02-13

ZH-PMK-02-20

ø 20 mm | M6x0.75 thread

ZH-PMK-02-20 · Centering holder with M6x0.75 thread
For automated measurement, ø 20 mm, length 60 mm.
Axial freedom of movement ±0.5 mm, clamping ring with knurled screw.

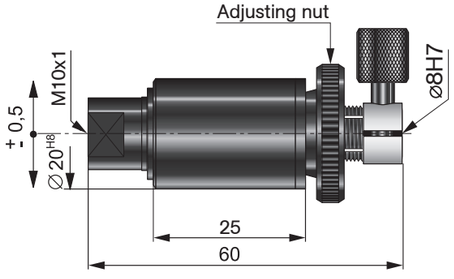


Order no.: ZH-PMK-02-20

ZH-PMK-03-20

ø 20 mm | M10x1 thread

ZH-PMK-03-20 · Centering holder with M10x1 thread
For automated measurement, ø 20 mm, length 60 mm.
Axial freedom of movement ±0.5 mm, clamping ring with knurled screw.

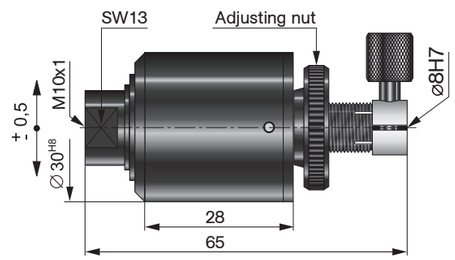


Order no.: ZH-PMK-03-20

ZH-PMK-03-30

ø 30 mm | M10x1 thread

ZH-PMK-03-30 · Centering holder with M10x1 thread
For automated measurement, ø 30 mm, length 65 mm.
Axial freedom of movement ±0.5 mm, clamping ring with knurled screw.



Order no.: ZH-PMK-03-30

APPLICATION EXAMPLES

ZH-PMK-03-20 · Centering holder
With cylindrical precision measuring head and analog precision indicator.

ZH-PMK-03-20 · Centering holder
With chamfered measuring head and analog special dial gauge.

ZH-PMK-03-30 · Centering holder
With conical precision measuring head and digital display.

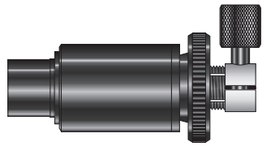
CENTERING HOLDERS

ZH-PMK-VDS

FOR AUTOMATED MEASUREMENT

WITH TWIST PROTECTION

M6x0.75 or M10x1 threads.

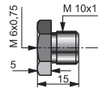


HIGH PRECISION
100%
MADE IN GERMANY

Centering holder for automated measurement compensate for axial errors in centering of the workpiece and prevent damage to both, the measuring head and the measurement object.

The twist protection prevents the display from twisting when the workpiece rotates.

The axial freedom of movement is ± 0.5 mm. The set nut fastens the play once adjusted. Available with M6x0.75 or M10x1 threads.

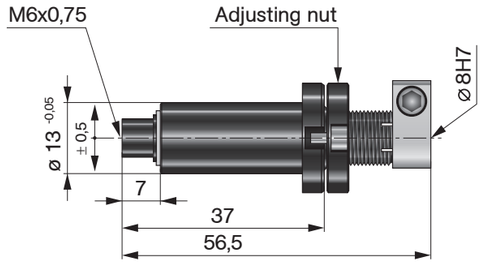


Thread reducers make it possible to use measuring heads with smaller threads such as M6x0.75 or M3.5x0.35 on holders and float holders with M10x1 threads.

ZH-PMK-02-VDS

ø 13 mm | M6x0.75 thread

ZH-PMK-02-VDS-13
Centering holder with twist protection
For automated measurement, with M6x0.75 thread, ø 13 mm, length 57 mm. Axial freedom of movement ±0.5 mm, clamping ring with allen screw.



Order no.: ZH-PMK-02-VDS-13

ZH-PMK-03-VDS

ø 20 mm | M10x1 thread

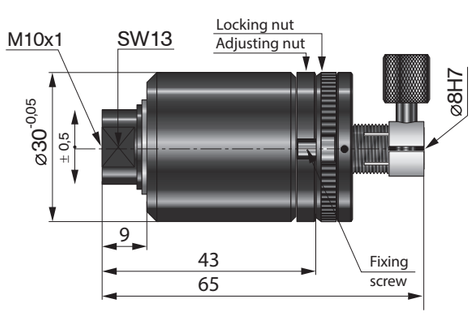
ZH-PMK-03-VDS-20
Centering holder with twist protection
For automated measurement, with M10x1 thread, ø 20 mm, length 60 mm. Axial freedom of movement ±0.5 mm, clamping ring with knurled screw.

Order no.: ZH-PMK-03-VDS-20

ZH-PMK-03-VDS

ø 30 mm | M10x1 thread

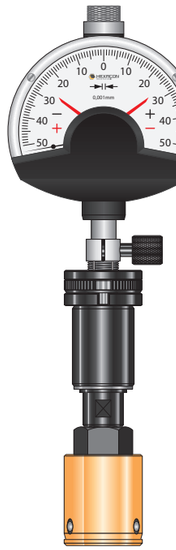
ZH-PMK-03-VDS-30
Centering holder with twist protection
For automated measurement, with M10x1 thread, ø 30 mm, length 65 mm. Axial freedom of movement ±0.5 mm, clamping ring with knurled screw.



Order no.: ZH-PMK-03-VDS-30

APPLICATION EXAMPLES

ZH-PMK-03-VDS-20 · Center. holder
With cylindrical precision measuring head and analog precision indicator.



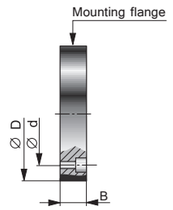
ZH-PMK-03-VDS-20 · Center. holder
With chamfered measuring head and analog special dial gauge.

ZH-PMK-03-VDS-20 · Center. holder
With conical precision measuring head and digital display.

CENTERING HOLDERS

ZH-LMK

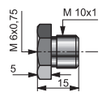
M10x1 thread.



HIGH PRECISION
100%
MADE IN GERMANY

Centering holder for automated measurement compensate for axial errors in centering of the workpiece and prevent damage to both, the measuring head and the measurement object.

The axial freedom of movement is ± 0.5 mm. The set nut fastens the play once adjusted. Available with M6x0.75 or M10x1 threads.



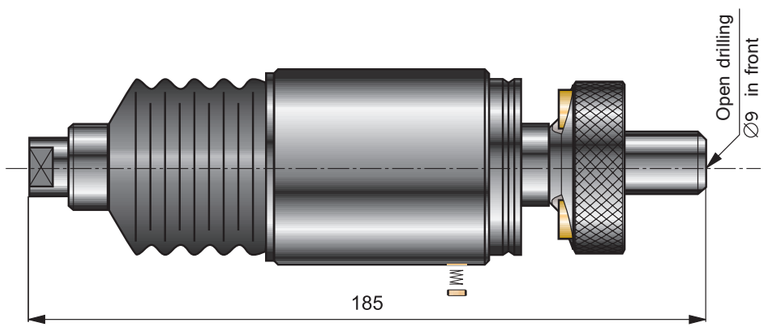
Thread reducers make it possible to use measuring heads with smaller threads such as M6x0.75 or M3.5x0.35 on holders and float holders with M10x1 threads.

ZH-LMK-03-50

Centering holder

ZH-LMK-03-50 centering holder
For mounting in automatic feed units, available with ZH-FL mounting flange for installation in system parts and air measuring heads.

Other functions and dimensions like the ZH-PMK-03-50-L centering holder.



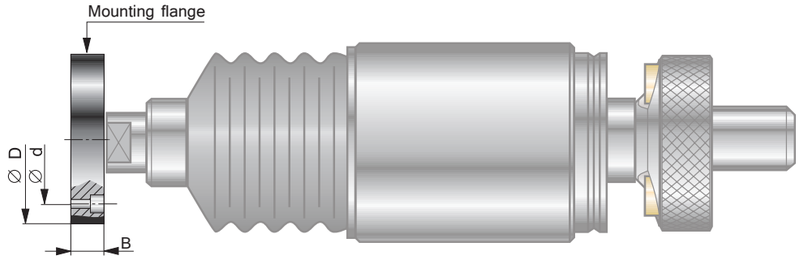
Order no.: ZH-LMK-03-50

ZH-MFL

Mounting flange

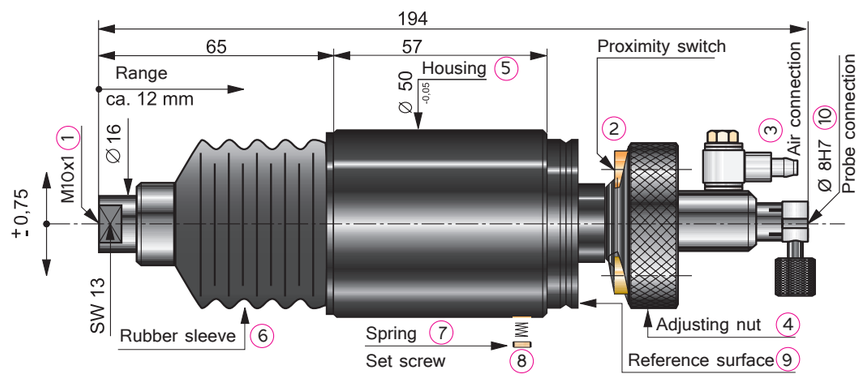
ZH-MFL mounting flange
For holding of ZH-LMK-03-50 centering holder.

Specify D, d and B when ordering.



Order no.: ZH-MFL

ZH-PMK-03-50-L



1) Connection thread for measuring head
2) Proximity switch for return spring distance monitoring
3) Air connection (cleaning air connection)
4) Adjusting nut for float range
5) Housing
6) Rubber sleeve
7) Spring for weight compensation
8) Set screw for spring
9) RF reference surface for (2)

ZH-PMK-03-50-L centering holder used for automated measurement in the horizontal as well as vertical range.

Horizontal use
The replaceable springs (7) can be used with the set screw (8) to exert the required compensating pressure on the ZH-PKM axis. They are adjusted with the PMK screwed into place in the horizontal orientation and the screw pointing down (180°).

Vertical use
In vertical operation, the spring (7) needs to be removed and the screw (8) has to be screwed in to about 0.5 mm under the Ø housing (5). Adjustment of the orientation of the ZH-PMK axis to the workpiece axis needs to be done as follows:

The adjusting nut (4) with its conical side is screwed onto the counter cone in the clockwise direction until it stops. After placement tighten another 1-2 full turns. Now set up! During operation, loosen again and adjust the centering and/or floating range. The adjustment of the centering and/or floating range can be done by adjusting the counter nut (4) in the play of the cone (radially), max. 1,5 ± 0,75 mm. The counter nut (4) is used to secure the nut by tightening it lightly. Warning! Do not tighten the screws for the bush (2).

Protection from destruction and overrun
In case of a crash, the axis springs back into the housing (5) by at most 12 mm. Along the corresponding return spring offset, the nut (4) also lifts from the reference surface (in the circle (RF)) to the back. By using an electronic probe in (2), the automatic feed movement can be interrupted. This application also can be used for deviations in drilling depth measurement. To clamp the probe, 3 bushings (2) are provided. Clamp probe in bushing (2).

Mounting the measuring probe
Right after the measuring head was mounted, the measuring probe needs to be fastened in the probe connection (10) Ø8H7 roughly in the middle hysteresis range. Note: The PMK should be in the setting master.

Air connection
The air connection (3) (Festo system) is only used to connect to cleaning-air which escapes through the measuring points on the PMK. Depending on the situation, the cleaning-air can improve conditions at the measurement point, workpiece, service time, preliminary cleaning, etc.

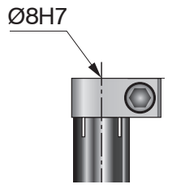
Other variant:
In a slightly modified form, the ZH-PMK-50 series can also be used for (pure) air measuring heads.

Order no.: ZH-PMK-03-50-L

MODULAR MEASURING SYSTEMS

DIAL GAUGE HOLDERS FOR CUSTOM SETUP

Without drive needle. For clamping, gluing or screw fastening.



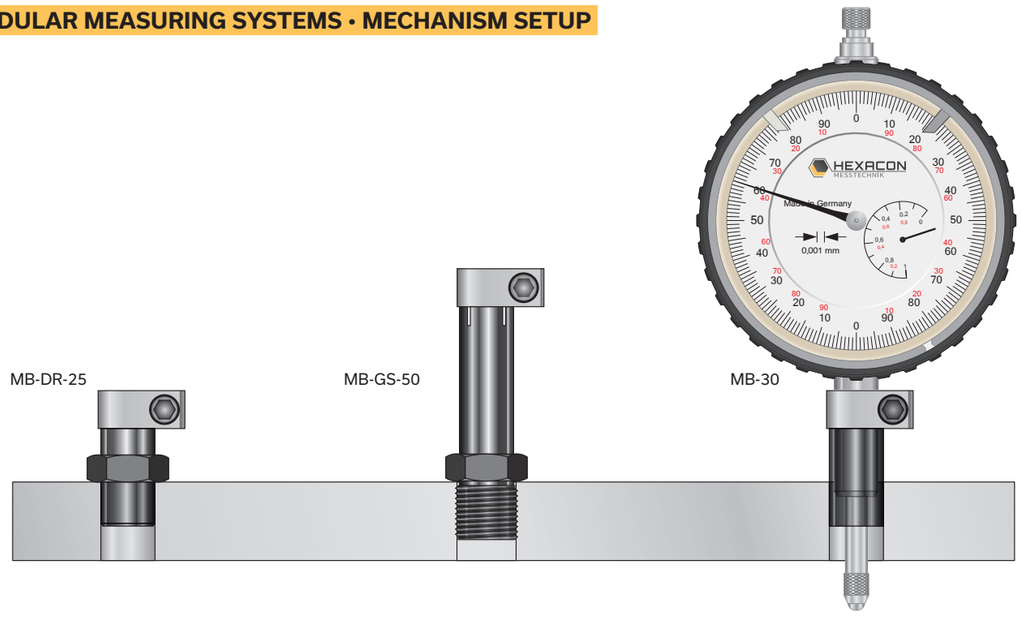
HIGH PRECISION 100% MADE IN GERMANY

The modular measuring system offers helpful elements for the designer.

In the measuring setup. The variety of types for screw or adhesive fastening, with or without stop, can be used for many applications.

The holders are provided by default with a clamping ring Ø8H7 with allen screw SW 2,5 mm.
Starting from a length of 30 mm they are also available with double clamping rings or knurled screw M3.

MODULAR MEASURING SYSTEMS • MECHANISM SETUP

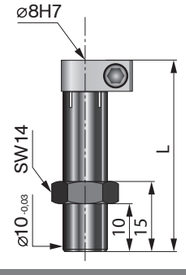


MB-DR

Dial gauge holder

Dial gauge holder for clamping
For holding dial gauges and inductive measuring probes.

Order no.	Length	Order no.	Length
MB-DR-25	25 mm	MB-DR-30	30 mm
MB-DR-50	50 mm	MB-DR-75	75 mm
MB-DR-100	100 mm		

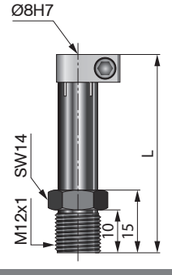


MB-GS

Dial gauge holder

Dial gauge holder for screw fastening
To hold dial gauges and inductive measuring probes.

Order no.	Length	Order no.	Length
MB-GS-25	25 mm	MB-GS-30	30 mm
MB-GS-50	50 mm	MB-GS-75	75 mm
MB-GS-100	100 mm		

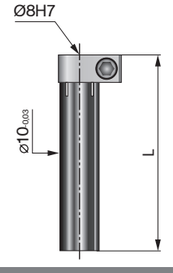


MB

Dial gauge holder

Dial gauge holder for clamping
For holding dial gauges and inductive measuring probes.

Order no.	Length	Order no.	Length
MB-20	20 mm	MB-25	25 mm
MB-30	30 mm	MB-50	50 mm
MB-75	75 mm	MB-100	100 mm

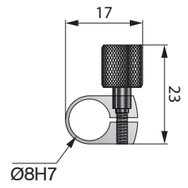


MB-KS-RS

Clamping ring

Clamping ring with knurled screw

Note: The standard holder has only one clamping ring!



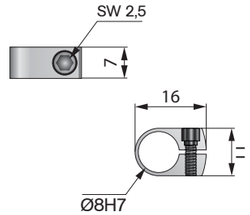
Order no.: MB-KS-RS

MB-KS

Clamping ring

Clamping ring with allen screw SW 2,5 mm

Note: The standard holder has only one clamping ring!



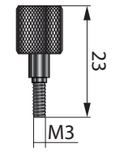
Order no.: MB-KS

MB-RS-M3

Knurled screw

Knurled screw M3

Note: The standard holder has only one clamping ring!



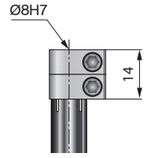
Order no.: MB-RS

MB-KS-2

Double clamping ring

Double clamping rings with allen screw, SW 2,5 mm

Note: The standard holder has only one clamping ring!

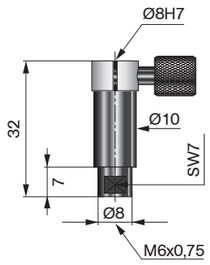


Order no.: MB-30-KS-2

HM-02-32

Dial gauge holder

Standard dial gauge holder
with knurled screw, 32 mm length, ø 10 mm, delivered with M6x0.75 thread. Standard dial gauge shaft. Ø 8H7.



Order no.: HM-02-32

DEPTH EXTENSIONS

FOR DIAL GAUGE HOLDERS WITH DRIVE NEEDLE

UP TO 250 MM IN LENGTH

M6x0.75 and M10x1 threads.

Extensions of 80 mm and up temperature-stable

HIGH PRECISION
TEMPERATUR STABLE!
MADE IN GERMANY

Depth extensions for measurement of deep holes from 20 mm to 250 mm length.
Model VL-02 with M6x0.75 thread is suitable for all PMK-02 measuring heads and holders in HM-02 size - M6x0,75.
Model VL-03 with M10x1 thread is suitable for all PMK-03 measuring heads and holders in HM-03 size - M10x1.
Multiple extensions can be combined.

Lengths up to 65 mm are fabricated from steel. For lengths of 80 mm and up, we use exclusively temperature-stabilized steel. This influences the measurement result from for example the heat of hands only to a very slight extent. The drive pin is fabricated from hardened steel.

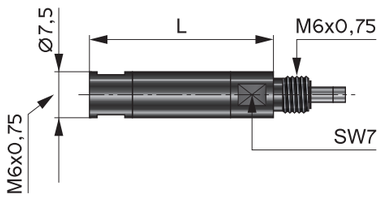
Thread reducers permit the use of measuring heads with smaller threads on larger holders and extensions.

VL-02-7.5

Depth extension | M6x0.75 thread

VL-02-7.5 · Standard depth extension for PMK type 02
Short, round variant 20 mm to 65 mm in length, ø 7.5 mm delivered with M6x0.75 thread.

Order no.	Length	Order no.	Length
VL-02-20-7.5	20 mm	VL-02-50-7.5	50 mm
VL-02-30-7.5	30 mm	VL-02-65-7.5	65 mm
VL-02-40-7.5	40 mm		

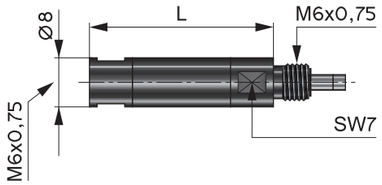


VL-02

Depth extension | M6x0.75 thread

VL-02 · Standard depth extension for PMK type 02
Short, round variant 20 mm to 65 mm in length, ø 8 mm delivered with M6x0.75 thread.

Order no.	Length	Order no.	Length
VL-02-20	20 mm	VL-02-50	50 mm
VL-02-30	30 mm	VL-02-65	65 mm
VL-02-40	40 mm		

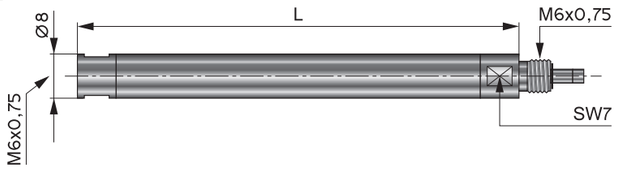


VL-02

Depth extension | M6x0.75 thread

VL-02 · Temperature-stable depth extension for PMK type 02
Variant from 80 to 250 mm in length, ø 8 mm delivered with M6x0.75 thread.

Order no.	Length	Order no.	Length
VL-02-80	80 mm	VL-02-150	150 mm
VL-02-100	100 mm	VL-02-250	250 mm
VL-02-125	125 mm		

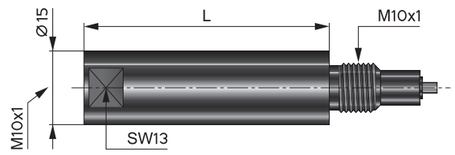


VL-03

Depth extension | M10x1 thread

VL-03 · Standard depth extension for PMK type 03
Short variant 50 mm length, ø 15 mm, delivered with M10x1 thread.

Order no.	Length	Order no.	Length
VL-03-50	50 mm	VL-03-65	65 mm

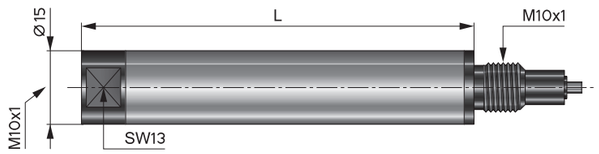


VL-03

Depth extension | M10x1 thread

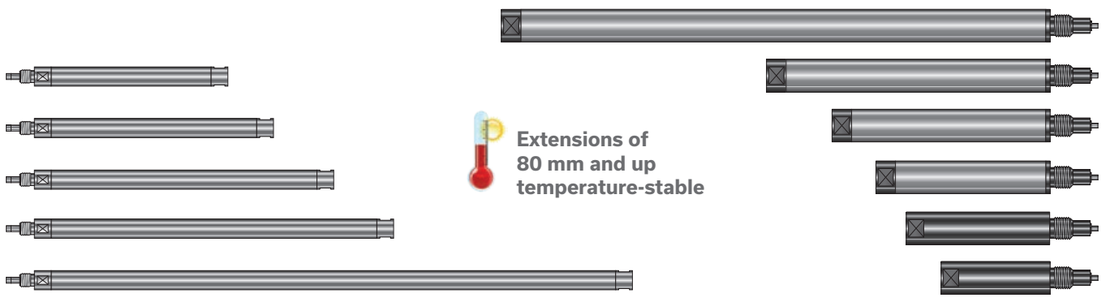
VL-03 · Temperature-stable depth extension for PMK type 03
Variant from 80 to 250 mm in length, ø 15 mm, delivered with M10x1 thread.

Order no.	Length	Order no.	Length
VL-03-80	80 mm	VL-03-150	150 mm
VL-03-100	100 mm	VL-03-250	250 mm
VL-03-125	125 mm		



VL-02 Depth extension with M6x0,75 thread

VL-02 Depth extension M10x1 thread



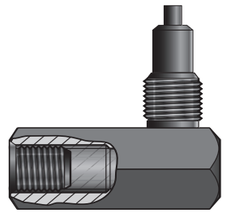
Extensions of 80 mm and up temperature-stable

ANGLE EXTENSIONS

ANGLE PIECES FOR PRECISION MEASURING HEADS

MODULAR SYSTEM

With M6x0.75 or M10x1 threads.



HIGH PRECISION 100% MADE IN GERMANY

Angle pieces WS for precision measuring heads in the modular system, also for use in device stands

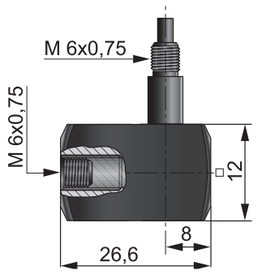
As hand-held measuring instruments, they are used to improve readings in difficult-to-reach measurement positions.

Combination option: Can be combined with VL depth extensions.
Combination option: Can be combined with GS device stands. (In combination with VL depth extensions)
Combination option: Can be combined with TA depth stops. (In combination with VL depth extensions)

WS-02

Angle piece | M6x0.75 thread

WS-02 · 90° angle piece for PMK type 02
With M6x0.75 thread. square body. 12 mm wrench size.
Can be combined with HM-02 measuring gauge holder.
Can be combined with VL-02 depth extensions.

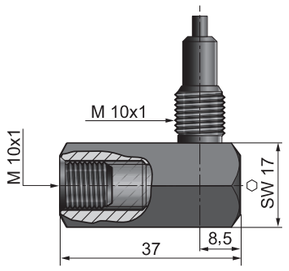


Order no.: WS-02

WS-03

Angle piece | M10x1 thread

WS-03 · 90° angle piece for PMK type 03
With M10x1 thread. Hexagonal body. 17 mm wrench size.
Can be combined with HM-03 measuring gauge holder.
Can be combined with VL-03 depth extensions.
Can be combined with GS device stands.
Can be combined with TA depth stops.

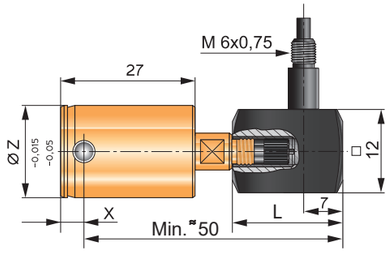


Order no.: WS-03

WS-02-SO

PMK and angle piece | M6x0.75 thread

WS-02-SO · 90° angle piece with PMK type 02 meas. head
With M6x0.75 thread. Square body, 12mm wrench size
PMK-02 measuring head and angle piece are delivered as an integrated unit. L depends on the individual variant.
Cannot be unmounted.

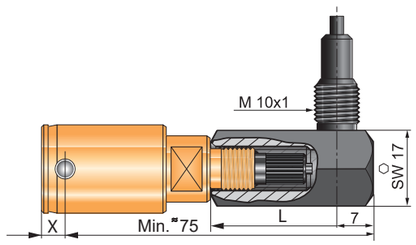


Order no.: WS-02-SO

WS-03-SO

PMK and angle piece | M10x1 thread

WS-03-SO · 90° angle piece with PMK type 03 meas.head
With M10x1 thread. Hexagonal body, 17 mm wrench size
PMK-03 measuring head and angle piece are delivered as an integrated unit. L depends on the individual variant.
Cannot be unmounted.



Order no.: WS-03-SO

THREAD REDUCERS

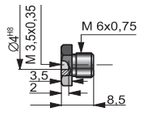
TIPP!

WS-03 angle extension
With GS device stand, VL-03 depth extension and TA-03 depth stop in modular system.

RS-01-02

Thread reducer

RS-01-02 thread reducer
For the use of measuring heads with M3.5x0.35 thread on holders type HM-02

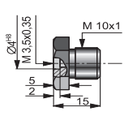


Order no.: RS-01-02

RS-01-03

Thread reducer

RS-01-03 thread reducer
For the use of measuring heads with M3.5x0.35 thread on holders type HM-03

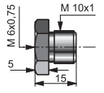


Order no.: RS-01-03

RS-02-03

Thread reducer

RS-02-03 thread reducer
For the use of measuring heads with M6x0.75 thread on holders type HM-03.

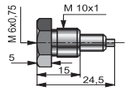


Order no.: RS-02-03

RS-02-03-L

Thread reducer

RS-02-03-L thr. reducer
For the use of measuring heads with M6x0.75 thread on holders type HM-03 or VL-03 extension 50 mm or longer with drive pin and M10x1 thread.



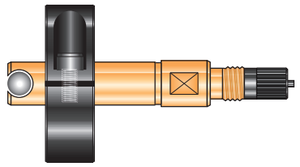
Order no.: RS-02-03-L

DEPTH STOP CLAMPING RINGS

DEPTH STOPS FOR PRECISION MEASURING HEADS

ADJUSTABLE

Permits measurements in defined hole depths.



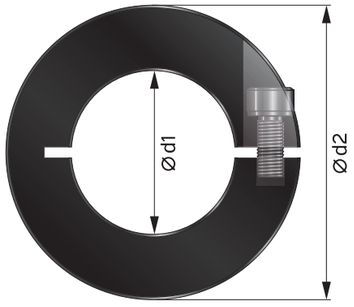
TA-KR-V

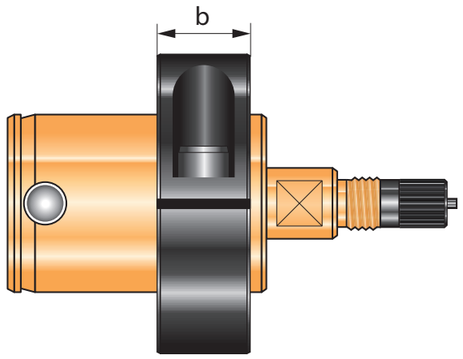
Depth stop clamping ring | Adjustable

TA-KR-V depth stop clamping ring
The adjustable steel Hexacon depth stop clamping rings are specially fabricated to fit the individual dimensions of your precision measuring head and are mounted on the body of the precision measuring head. Their position on the precision measuring head is variably adjustable to permit measurements at defined bore depths. Inner bore and flat surface are fabricated in a single clamping step. The back is marked with a V notch. Measurement errors due to the tilt effect during measurement are avoided by precision guiding at a right angle.

Clamping rings represent an easy-to-use, robust, flexible solution as an adjustable depth stop. The clamping rings are fabricated of burnished, unhardened steel. Standard inner diameters are available from 6-85 mm. Other dimensions upon request.

The inner bore is about 0.1mm larger than the nominal diameter of the measuring head.





TA-KR-V DEPTH STOP CLAMPING RING

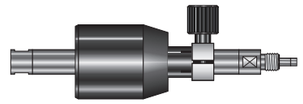
d1 (mm)	d2 (mm)	b (mm)	d1 (mm)	d2 (mm)	b (mm)
6-8	16	9	30-34	54	15
7-9	18	9	34-38	57	15
9-11	24	9	38-42	60	15
11-13	28	11	42-48	73	19
13-15	30	11	48-55	78	19
15-17	34	13	55-60	82	19
17-19	36	15	60-65	88	19
19-21	40	15	65-70	93	19
21-23	42	15	70-75	98	19
23-26	45	15	75-80	103	19
26-30	48	15	80-85	108	19

DEPTH STOPS

DEPTH STOPS FOR PRECISION MEASURING HEADS

BELL FORM **ADJUSTABLE**

Permits measurements in defined bore depths.



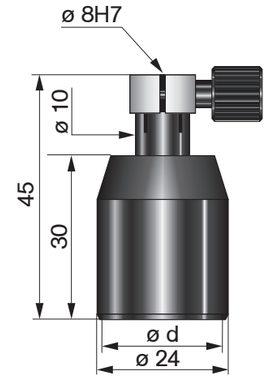
TA-02-45 clamped on VL-02-80

TA-02-45

Depth stop bell

For VL-02 extension

TA-02-45 depth stop
Can be clamped to VL-02 extension
Specify inner diameter when ordering.



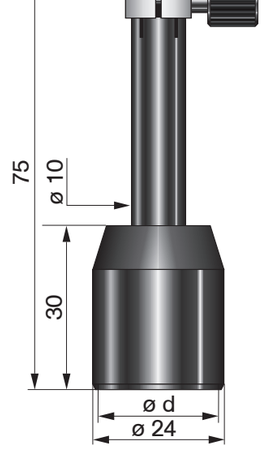
Order no.: TA-02-45

TA-02-75

Depth stop bell

For VL-02 extension

TA-02-75 depth stop
Can be clamped to VL-02 extension
Specify inner diameter when ordering.



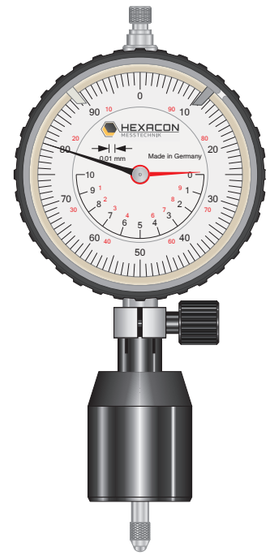
Order no.: TA-02-75

EXAMPLE APPLICATION

Depth stop bell

For VL-02 extension

TA-02-45 as depth measuring head
With serveral dial gauges and dial gauge extensions on request.



HIGH PRECISION
100%
MADE IN GERMANY

TA-02 depth stop · Bell form
The adjustable Hexacon depth stops can be clamped on VL-02 depth extensions.
Their position on the extension is variably adjustable to permit measurements at defined bore depths.

Measurement errors are also prevented by the precision guiding at a right angle.

Depth stops represent an easy-to-use, robust, flexible solution as an adjustable depth stop.
The clamping rings are fabricated of unhardened steel. Lengths from 45-75 mm are available.

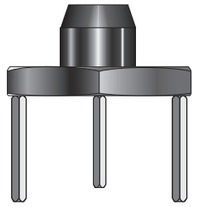
Other dimensions upon request.

DEPTH STOPS

DEPTH STOPS FOR BORE MEASURING HEADS

MODULAR SYSTEM

Can be combined with different extension arms and GS device stand.



Depth stops in a modular system permit flexible applications for measuring workpieces at a defined depth, both at through holes, near the bottom of the hole and in blind holes.

The hexagonal TA-03 base body as three arc diameters of ø 28 mm, ø 40 mm, and ø 50 mm and can be clamped and adjusted on the HM-03-150 holder and the VL-03 extensions in lengths from 50 to 250 mm.

Three included spacer bolts are screwed into the base body at one of the three diameters and hold the measurement object at the optimum distance.

The TA-03-A1 and TA-03-A2 extension arms can be used to extend the hole diameter flexibly from ø 60-100 mm and ø 110-150 mm.

TA-03

Depth stops

Depth stops in the modular system
The TA-03 base body can be converted using the TA-03-A1, TA-03-A2 and TA-03-A3 extension arms to support larger arcs from ø 28 mm to 150 mm.

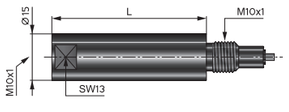
Depth stops for PMK
Can be clamped to - Holder HM-03-150
- Extension VL-03

Order no.:

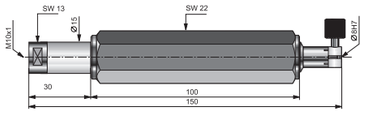
TA-03	- Base body	- ø TK 28 - 50 mm
TA-03-A1	- Short extension arm	- ø TK 60 - 90 mm
TA-03-A2	- Long extension arm	- ø TK 110 - 140 mm
TA-03-A3	- Long extension arm	- ø TK 155 - 185 mm (not illustrated)

VL-03

VL-03-65 Extension



HM-03-150 Holder



Order no.	Length
VL-03-50	50 mm
VL-03-65	65 mm

Temperature-stable steel

Order no.	Length
VL-03-80	80 mm
VL-03-100	100 mm
VL-03-125	125 mm
VL-03-150	150 mm
VL-03-250	250 mm

TIPP!

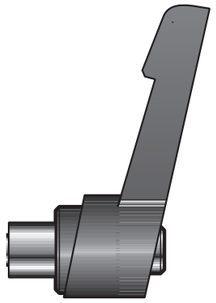
WS-03 angle extension
With GS device stand, VL-03 depth extension and TA-03 depth stop in modular system.

DEVICE STANDS

GS DEVICE STANDS

FOR THE SERIES MEAS. OF COMPACT WORKPIECES

Up to 6 stands can be combined.



HEXACON MESSTECHNIK

HIGH PRECISION 100% MADE IN GERMANY

GS device stands for precision measuring heads

The use of the device stand simplifies handling significantly during stationary measurement.

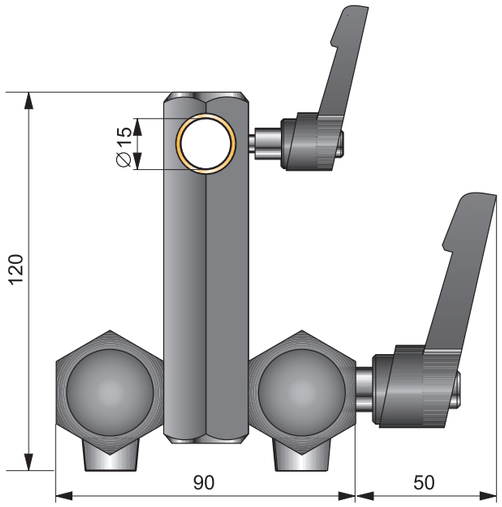
The combination of holders, extensions, angle pieces and depth stops permits individual, flexible applications for the rational measurement of smaller parts. The device stand for PMK can be extended to up to 6 points ! Extension with multiple stands elements into one unit permits measurements with different measuring heads in one compact measuring stand unit.

GS-PMK-1

Device stand

Technical data:

Workpiece Ø:	max. 170 mm
Workpiece height:	max. 280 mm
L x W x H:	about 200 x 150 x 500 mm



TIPP!

HM-03-GS-60 dial gauge holder
Can be combined with the GS device stand.

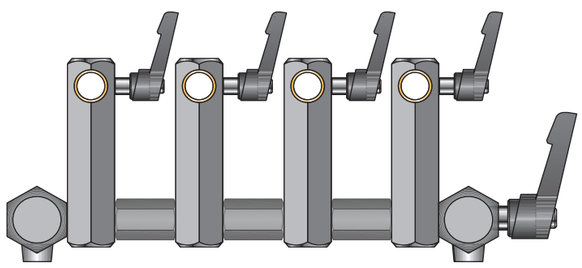
Gauge display here is in the horizontal orientation.

Order no.: GS-PMK-1

GS-PMK-4

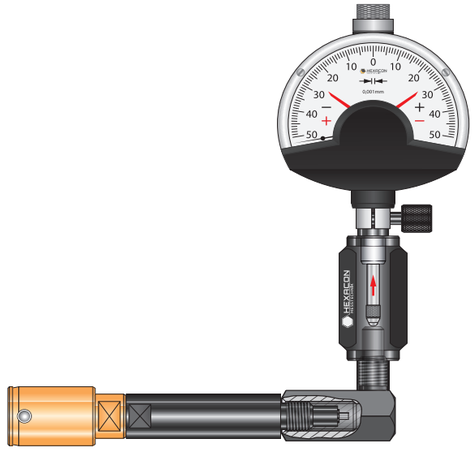
Device stand

The GS device stand can be extended upon request to up to 6 measurement points.



APPLICATION EXAMPLES

WS-03 angle piece with VL-03 depth extension and HM-03-60 dial gauge holder completes the GS-PMK device stand.



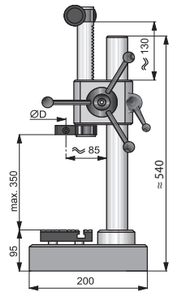
VL-03 depth extension with TA-03 depth stop, WS-03 angle piece and HM-03-60 dial gauge holder round out the device stand to form a comfortable measuring station. Dial gauge in vertical orientation.

NOTES

MEASUREMENT STANDS

SUITABLE FOR LARGER WORKPIECES

Permits effective series bore measurement and chamfer measurement.



UMS-1

Measurement stand

UMS-1 universal measurement stand
The UMS-1 is perfect for measurement tasks on larger workpieces. Simple handling is possible in combination with our precision measuring heads and chamfer measuring heads. Dial gauge holders or floating holders to hold mechanical or electronic distance sensors can be included.

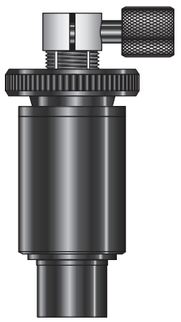
Technical data:

Workpiece Ø:	max. 170 mm
Workpiece height:	max. 280 mm
L x W x H:	about 200 x 150 x 500 mm

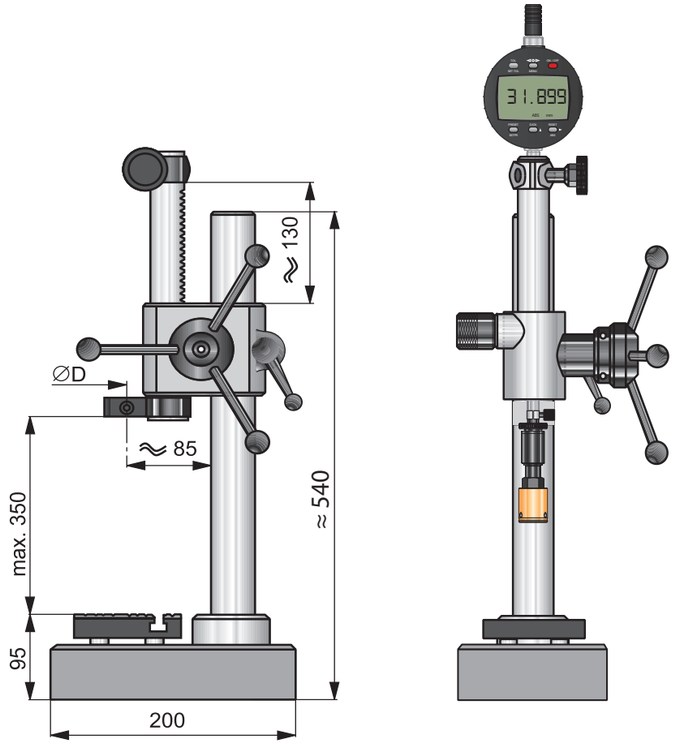
TIPP!

Special variants
Longer measurement columns as well as modified drives are possible.

Centering holders
Simplify the centered insertion of the measuring head into the workpiece.



ZH-PMK-03-20 meas. gauge holder



Order no.: UMS-1

UMS-2

Measurement stand

UMS-2 universal measurement stand
The UMS-2, in combination with the different precision measuring heads, is perfect for measurements n the µ range. The fully new concept of the measurement axis in the feed axis with the integrated centering holder largely eliminates measurement and angle errors due to unloading. The centering holder (included standard) can be blocked or released for radial floating. The stable, rigid design also permits reliable depth measurement.

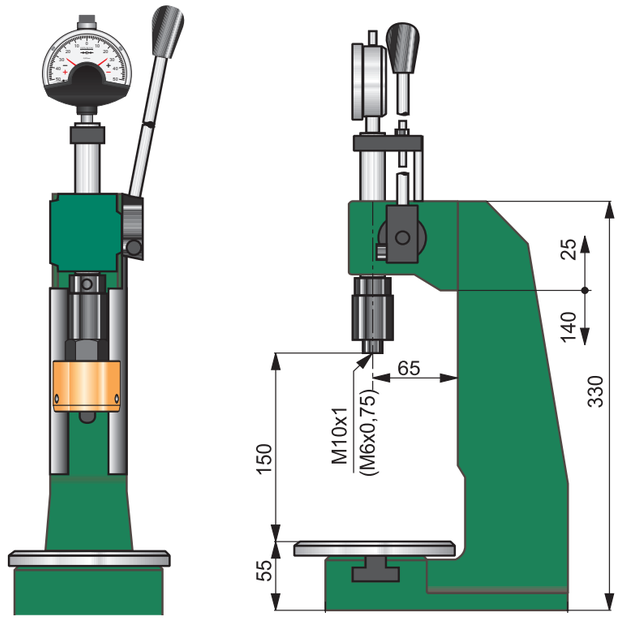
Technical data:

Workpiece Ø:	max. 140 mm
Workpiece height:	max. 130 mm
Measuring head holder:	M10 x 1 /M6 x 0.75
Weight:	about 10 kg

Standard accessory
Measurement table Ø 125 mm

Centering holder
With floating axis compensation.

Depth stop to limit measurement depth.

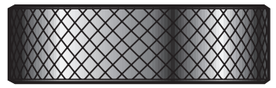


Order no.: UMS-2

SETTING RINGS

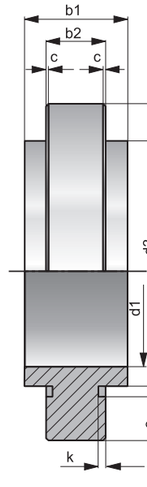
NOMINAL DIN 2250-C STANDARD DIMENSIONS

Setting rings made of first-class gauge steel, hardened, tempered, grounded and finely lapped. The setting rings are labeled with the actual dimension. Tolerance for the hole is JS4.



SETTING RINGS

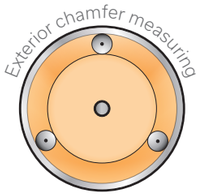
DIN 2250-C



Model	Nominal diameter	Dimensions					
	d1	b1	b2	d2	d3	e	k
	1 - 2,5	4					
	> 2,5 - 3			22			
	> 3 - 5	5					
	> 5 - 6						
	> 6 - 10	8		32			
	> 10 - 15	10		38			
	> 15 - 18						
	> 18 - 20	12		45			
	> 20 - 25	14		53			
	> 25 - 30						
	> 30 - 32	16		63			
	> 32 - 40	18		71			
	> 40 - 50			85			
	> 50 - 60	20		100			
	> 60 - 70			112			
	> 70 - 80	24		125			
	> 80 - 90			140			
	> 90 - 100			160			
	> 100 - 110		14	170	132	113	3
	> 110 - 120			180	140		
	> 120 - 130	28	16	190	150		4
	> 130 - 140			200	160	14	
	> 140 - 150		18	212	170		
	> 150 - 160			224	180	15	5
	> 160 - 170		20	236	190	16	
	> 170 - 180			250	200	17	
	> 180 - 190	32		265	212	18,5	
	> 190 - 200		22	280	224	20	6
	> 200 - 212			300	236	22	
	> 212 - 224		25	315	250	24	
	> 224 - 236			335	265	26	7
	> 236 - 250			355	280		
	> 250 - 265		28	375	300	27,5	8
	> 265 - 280	36		400	315		
	> 280 - 300		32	425	335	32,5	
	> 300 - 315			450	355	35	9

CHAMFER MEASUREMENT

FUNCTIONAL PRINCIPLE OF CHAMFER MEASUREMENT



Precision interior and exterior chamfer measuring instruments with titanium nitride coating.

We offer interior and exterior chamfer measuring instruments with measuring angles of 90°, 60° and 127° in standard variants.

They are suitable for quick precision measurement of chamfers, depressions and holes, both for one-time measurement or for series measurement.

Their wide measuring range of up to 20 mm is a great advantage.

In their purely mechanical measuring principle, the measuring cone probes the chamfer, depression or hole and directs the force within the housing onto a hardened, ground drive needle and then to the display.

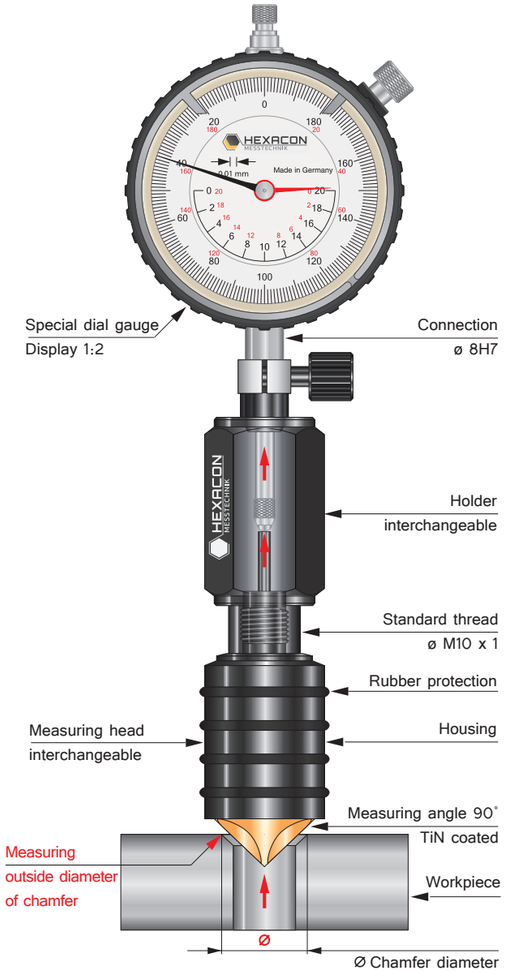
A dial gauge holder connects the measuring head to corresponding displays such as analog or digital dial gauges, inductive measuring probes, measuring columns or automated computer measuring systems.

The removable HM-03-60 dial gauge holders are included in the standard scope of delivery and permit the flexible handling of different measuring heads.

For example, at 90° measuring angles, measuring heads of different sizes as well as interior and exterior measuring heads can easily be swapped while still using the same holders, gauges or measuring systems.

The quality-improving titanium nitride coating, with high hardness values - about 2200 HV - and outstanding sliding and friction characteristics, is included in the standard scope of delivery at no extra cost. It gives our precision metrology equipment its outstanding service life.

Other measuring angles upon request.



All Hexacon precision measuring heads are 100 % Made in Germany.

The special dial gauges with 1:2 display scale for 90° measuring angles conveniently show the size of the outer diameter of the chamfer directly in millimeters! That eliminates conversion and reading errors. The dial gauges are equally suitable for either interior or exterior measurement. We offer these special dial gauges for precision measuring heads with diameters from 1.0 to 80 mm, each with a 20 mm measuring range.

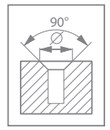
The special analog dial gauge with 1/100 mm display accuracy and a 20 mm measuring range is included in the standard scope of delivery with all 90° measuring heads!

CHAMFER MEASURING 90°

MEASURING RANGE 20 MM

Standard variant including holder and gauge.

INTERIOR CHAMFER MEASURING



PRINCIPLE: CONE

HIGH PRECISION 100% TiN COATED 2200 HV MADE IN GERMANY

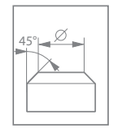
HEXACON MESSTECHNIK

Precision exterior chamfer measuring instrument with titanium nitride coating

Standard exterior chamfer measuring instruments with 90° measuring angles are used for quick precision measurement of the diameter of exterior chamfers and shaft ends. Their wide measuring range of about 20 mm is a great advantage.

For all 90° variants up to a diameter of 80 mm, the measuring head, special dial gauge and dial gauge holder are provided together as a kit! For larger diameters, we recommend digital dial gauges with a factor setting.

EXTERIOR CHAMFER MEASURING

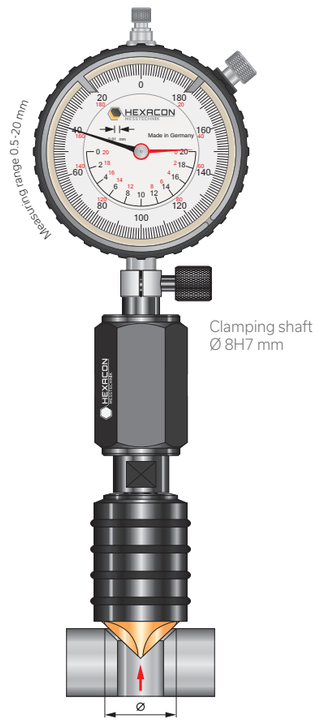


PRINCIPLE: BELL

FM-SB-01 90°

Ø 1 - 20 mm | Dial gauge included

The special dial gauge displays the result of the chamfer directly in mm !

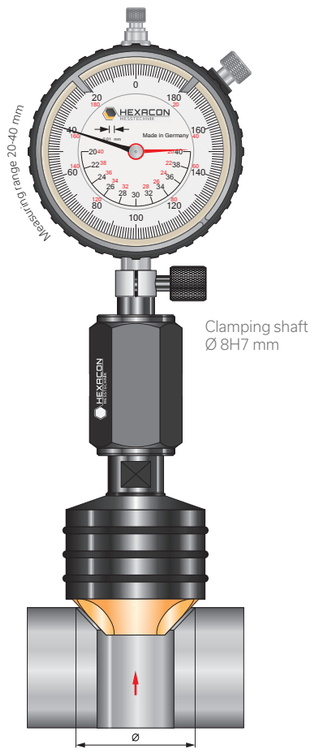


Order no.	Cone	Measuring range
FM-SB-01	90°	Ø 1 - 20 mm
FM-SB-02	90°	Ø 20 - 40 mm
FM-SB-03	90°	Ø 40 - 60 mm

FM-SB-02 90°

Ø 20 - 40 mm | Dial gauge included

The special dial gauge displays the result of the chamfer directly in mm !



Order no.	Cone	Measuring range
FM-SB-04	90°	Ø 60 - 80 mm
FM-SB-05	90°	Ø 80 - 100 mm
FM-SB-06	90°	Ø 100 - 120 mm

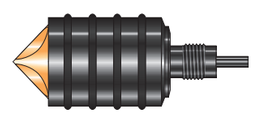
Precision interior chamfer measuring instrument
With titanium nitride coating.

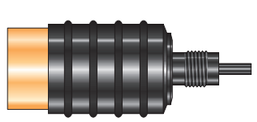
Interior chamfer measuring instruments with a 90° measuring cone quickly and accurately measure the largest diameter of chamfers, depressions and holes. Their measuring accuracy is 0.01 mm.

The special analog dial gauge included, with it's 1:2 scale division, shows the result of the largest chamfer diameter directly in mm with no conversion needed. The display accuracy is 0.01 mm. The special dial gauge is suitable for interior or exterior cone measuring instruments with 90° measuring angles.

The HM-03-60 dial gauge holder, also included, is removable to permit it's use and combination with other components in our accessory line.

Particularly convenient is not only the large measuring range of about 20 mm, but also the long service life of the measuring head thanks to the titanium nitride treatment.

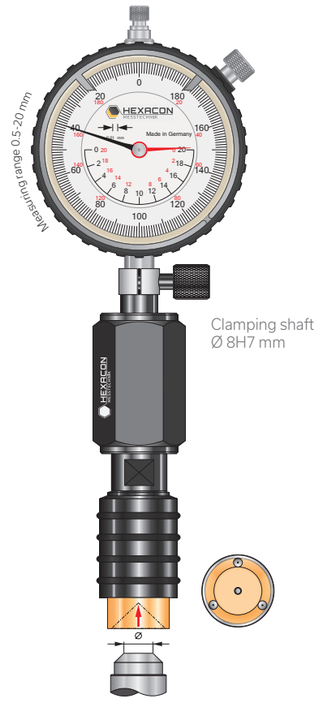




FM-FB-01 90°

Ø 5 - 20 mm | Dial gauge included

The special dial gauge displays the result of the chamfer directly in mm !



Order no.	Cone	Measuring range
FM-FB-01	90°	Ø 5 - 20 mm
FM-FB-02	90°	Ø 20 - 40 mm
FM-FB-03	90°	Ø 40 - 60 mm

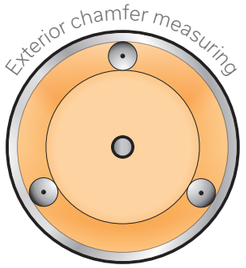
FM-FB-04 90°

Ø 60 - 80 mm | Dial gauge not included

For larger diameters of over 80 mm, we recommend digital dial gauges with a factor setting !

Order no.	Cone	Measuring range
FM-FB-04	90°	Ø 60 - 80 mm
FM-FB-05	90°	Ø 80 - 100 mm
FM-FB-06	90°	Ø 100 - 120 mm

For comparative measurements a reference workpiece or configuration master is required.

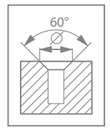


CHAMFER MEASURING 60°

MEASURING RANGE 10 MM

Standard variant including holder.

INTERIOR CHAMFER MEASURING

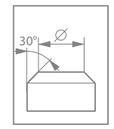


PRINCIPLE: CONE

HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

HEXACON MESSTECHNIK

EXTERIOR CHAMFER MEASURING



PRINCIPLE: BELL

Precision exterior chamfer measuring instrument with titanium nitride coating

Standard exterior chamfer measuring instruments with 60° measuring angles are used for quick precision measurement of the diameter of exterior chamfers and shaft ends. Their wide measuring range of about 10 mm is a great advantage.

For all 60° variants we recommend digital dial gauges with a factor setting.

FM-SA-01 60°

Ø 1 - 10 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included !

Order no.	Cone	Measuring range
FM-SA-01	60°	Ø 1 - 10 mm
FM-SA-02	60°	Ø 10 - 20 mm
FM-SA-03	60°	Ø 20 - 30 mm
FM-SA-04	60°	Ø 30 - 40 mm
FM-SA-05	60°	Ø 40 - 50 mm
FM-SA-06	60°	Ø 50 - 60 mm

FM-SA-04 60°

Ø 30 - 40 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included !

Order no.	Cone	Measuring range
FM-SA-07	60°	Ø 60 - 70 mm
FM-SA-08	60°	Ø 70 - 80 mm
FM-SA-09	60°	Ø 80 - 90 mm
FM-SA-10	60°	Ø 90 - 100 mm
FM-SA-11	60°	Ø 100 - 110 mm
FM-SA-12	60°	Ø 110 - 120 mm

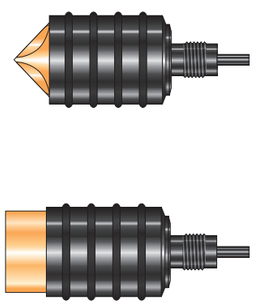
Precision interior chamfer measuring instrument
With titanium nitride coating.

Interior chamfer measuring instruments with a 60° measuring cone quickly and accurately measure the largest diameter of chamfers, depressions and holes. Their measuring accuracy is 0.01 mm.

The HM-03-60 dial gauge holder, also included, is removable to permit it's use and combination with other components in our accessory line.

The special dial gauge is not included !

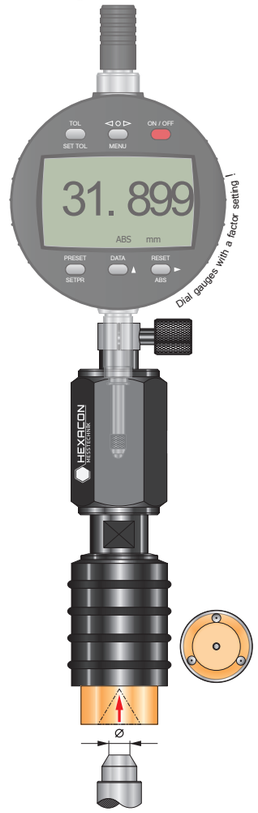
Particularly convenient is not only the large measuring range of about 10 mm, but also the long service life of the measuring head thanks to the titanium nitride treatment.



FM-FA-01 60°

Ø 5 - 10 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included ! For all 60° variants we recommend digital dial gauges with a factor setting.



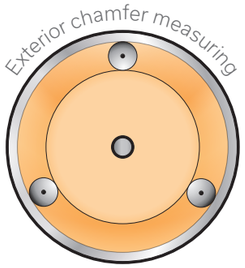
Order no.	Cone	Measuring range
FM-FA-01	60°	Ø 5 - 10 mm
FM-FA-02	60°	Ø 10 - 20 mm
FM-FA-03	60°	Ø 20 - 30 mm
FM-FA-04	60°	Ø 30 - 40 mm
FM-FA-05	60°	Ø 40 - 50 mm
FM-FA-06	60°	Ø 50 - 60 mm

FM-FA-04 60°

Ø 60 - 80 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included ! For all 60° variants we recommend digital dial gauges with a factor setting.

Order no.	Cone	Measuring range
FM-FA-07	60°	Ø 60 - 70 mm
FM-FA-08	60°	Ø 70 - 80 mm
FM-FA-09	60°	Ø 80 - 90 mm
FM-FA-10	60°	Ø 90 - 100 mm
FM-FA-11	60°	Ø 100 - 110 mm
FM-FA-12	60°	Ø 110 - 120 mm



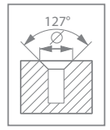
For comparative measurements a reference workpiece or configuration master is required.

CHAMFER MEASURING 127°

MEASURING RANGE 20 MM

Standard variant including holder.

INTERIOR CHAMFER MEASURING

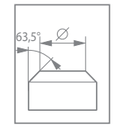


PRINCIPLE: CONE

HIGH PRECISION
100%
TiN COATED
2200 HV
MADE IN GERMANY

HEXACON MESSTECHNIK

EXTERIOR CHAMFER MEASURING



PRINCIPLE: BELL

Precision exterior chamfer measuring instrument with titanium nitride coating

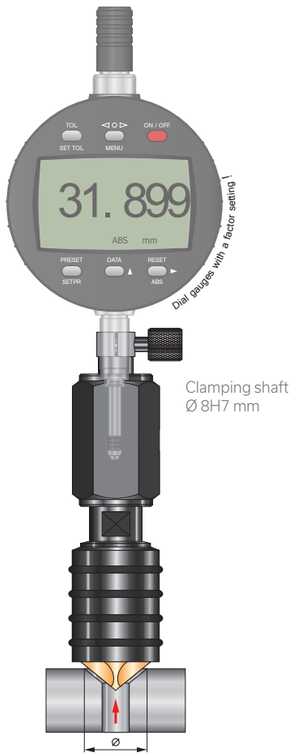
Standard exterior chamfer measuring instruments with 127° measuring angles are used for quick precision measurement of the diameter of exterior chamfers and shaft ends. Their wide measuring range of about 20 mm is a great advantage.

For all 127° variants we recommend digital dial gauges with a factor setting.

FM-SC-01 127°

Ø 1 - 20 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included ! For all 127° variants we recommend digital dial gauges with a factor setting.

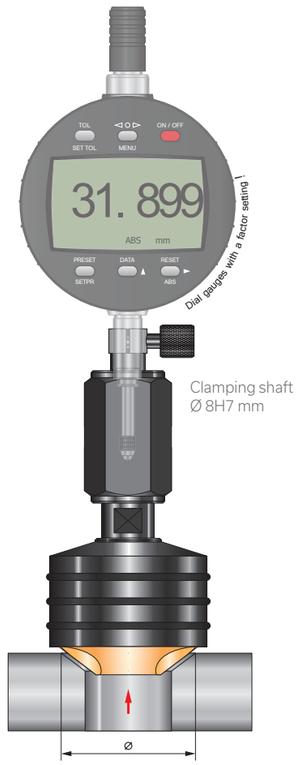


Order no.	Cone	Measuring range
FM-SC-01	127°	Ø 1 - 20 mm
FM-SC-02	127°	Ø 20 - 40 mm
FM-SC-03	127°	Ø 40 - 60 mm

FM-SC-02 127°

Ø 20 - 40 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included ! For all 127° variants we recommend digital dial gauges with a factor setting.



Order no.	Cone	Measuring range
FM-SC-04	127°	Ø 60 - 80 mm
FM-SC-05	127°	Ø 80 - 100 mm
FM-SC-06	127°	Ø 100 - 120 mm

Precision interior chamfer measuring instrument
With titanium nitride coating.

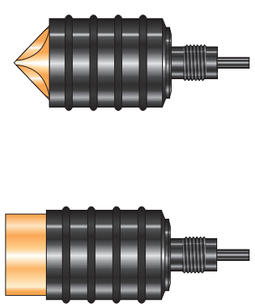
Interior chamfer measuring instruments with a 127° measuring cone quickly and accurately measure the largest diameter of chamfers, depressions and holes. Their measuring accuracy is 0.01 mm.

The dial gauge holder is always included in the delivery.The special dial gauge is not included !

The special dial gauges and holders are identical for interior and exterior meas. of the same size at 127° and the measuring heads are interchangeable.

The HM-03-60 dial gauge holder, also included, is removable to permit it's use and combination with other components in our accessory line.

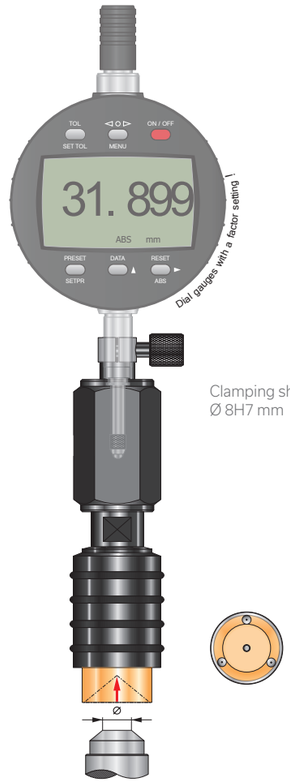
Particularly convenient is not only the large measuring range of about 20 mm, but also the long service life of the measuring head thanks to the titanium nitride treatment.



FM-FC-01 127°

Ø 5 - 20 mm | Dial gauge not included

The HM-03-60 dial gauge holder is included ! For all 127° variants we recommend digital dial gauges with a factor setting.

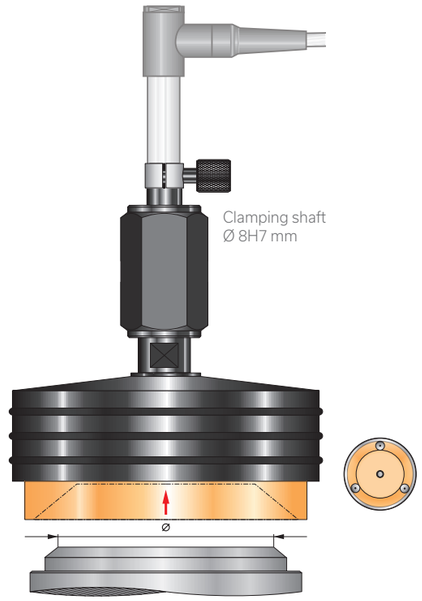


Order no.	Cone	Measuring range
FM-FC-01	127°	Ø 5 - 20 mm
FM-FC-02	127°	Ø 20 - 40 mm
FM-FC-03	127°	Ø 40 - 60 mm

FM-FC-04 127°

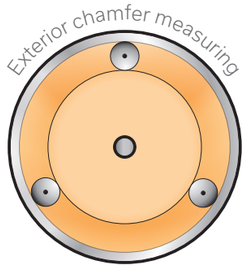
Ø 60 - 80 mm | Inductive probe not included

The HM-03-60 dial gauge holder is included ! For all 127° variants we recommend digital dial gauges with a factor setting or inductive probes, page 101.



Order no.	Cone	Measuring range
FM-FC-04	127°	Ø 60 - 80 mm
FM-FC-05	127°	Ø 80 - 100 mm
FM-FC-06	127°	Ø 100 - 120 mm

For comparative measurements a reference workpiece or configuration master is required.

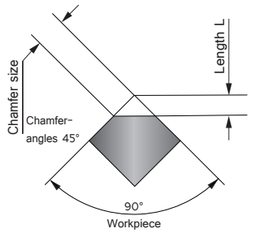


CHAMFER PROBE 45°

PRECISION 45° CHAMFER PROBE

MEASURING RANGE 10 MM

Precise measurement of chamfer with 45°.

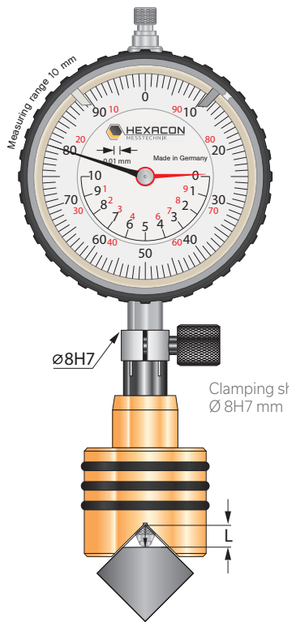


FT-01

45° chamfer probe

Analog dial gauge included

With analog dial gauge with concentric indicator arrangement. Measuring accuracy is 0.01 mm.



FT-01-D

45° chamfer probe

Digital dial gauge included

We recommend digital dial gauges with a factor setting.

Determination of the chamfer size

Chamfer size F	Length L
0.1 mm	0.07 mm
0.2 mm	0.14 mm
0.3 mm	0.21 mm
0.4 mm	0.28 mm
0.5 mm	0.35 mm
0.6 mm	0.42 mm
0.7 mm	0.49 mm
0.8 mm	0.57 mm
0.9 mm	0.64 mm
1.0 mm	0.71 mm
1.5 mm	1.06 mm
2.0 mm	1.41 mm
2.5 mm	1.76 mm
3.0 mm	2.12 mm
3.5 mm	2.47 mm

The determination of the chamfer size is via the table display

L = Chamfer size F x 0.7071

Chamfer size F = Length L : 0.7071

The setting or conversion factor is 1.4142.

FT-01 precision 45° chamfer probe with titanium nitride coating.

Measures chamfers with 45° angles. Set including analog or digital dial gauge. Standard dial gauge connection. Can also be combined with other analog and digital dial gauges as well as inductive measuring probes.

TIPP!

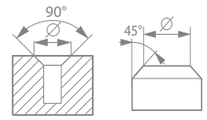
Digital dial gauges with factor setting capability allow direct display in mm. The setting or conversion factor is 1.4142.

Order no.: FT-01 including analog dial gauge Order no.: FT-01-D with digital dial gauge Order no.: FT-01-X without dial gauge

CHAMFER DIAL GAUGES

ANALOG MECHANICAL SPECIAL PRECISION DIAL GAUGES

For 90° measuring heads with a large measuring range of 20 mm.
Display scale with a 1:2 scale · Display accuracy 0.01 mm.

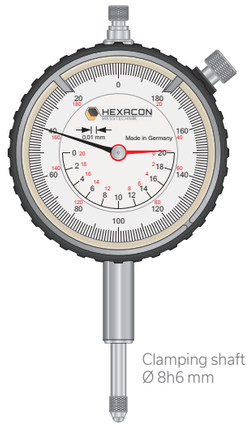


DIN EN ISO 463 / DIN 874 dial gauge
for interior and exterior chamfer measurement. Measuring range 10 mm.

AD-FM-01 90°

Ø 0 - 20 mm

Scale 1:2



Order no.	Cone	Meas. range
AD-FM-01	90°	Ø 0 - 20 mm

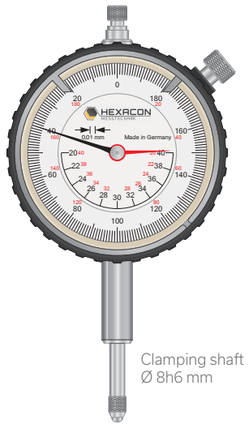
Measuring force
0.7 N ± 10 %

Interior and exterior chamfer measuring

AD-FM-02 90°

Ø 20 - 40 mm

Scale 1:2



Order no.	Cone	Meas. range
AD-FM-02	90°	Ø 20 - 40 mm

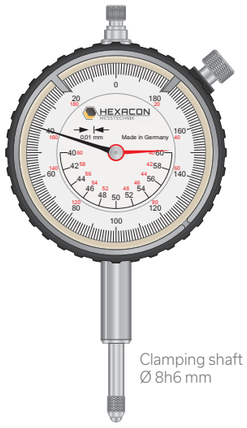
Measuring force
0.7 N ± 10 %

Interior and exterior chamfer measuring

AD-FM-03 90°

Ø 40 - 60 mm

Scale 1:2



Order no.	Cone	Meas. range
AD-FM-03	90°	Ø 40 - 60 mm

Measuring force
0.7 N ± 10 %

Interior and exterior chamfer measuring

AD-FM-04 90°

Ø 60 - 80 mm

Scale 1:2

Order no.	Cone	Meas. range
AD-FM-04	90°	Ø 60 - 80 mm

Measuring force
0.7 N ± 10 %

Interior and exterior chamfer measuring

Analog mechanical special precision dial gauges for 90° measuring heads with display scale directly in mm and a large measuring range.

The dial gauges have concentric indicator arrangement as well as a display scale with a 1:2 scale, permitting convenient read-off of the measured value directly in millimeters for 90° measurement. This eliminates reading errors. The measuring range is about 20 mm and display accuracy is 0.01 mm. Clamping shaft Ø 8h6 mm. With fastening screw to prevent unintentional twisting of the scale. Outer ring Ø 58 mm. Threaded measurement tip M2.5.

The special analog dial gauge is already included in the standard scope of delivery for 90° measuring heads!

NOTES

ANALOG PRECISION INDICATORS AND DIAL GAUGES

DIGITAL DIAL GAUGES
DIAL GAUGE TEST STAND
INDUCTIVE PROBES

HEXACON MESSTECHNIK

Clamping Shaft ø 8H7 mm

Repeat accuracy at IT 8 < 1µ

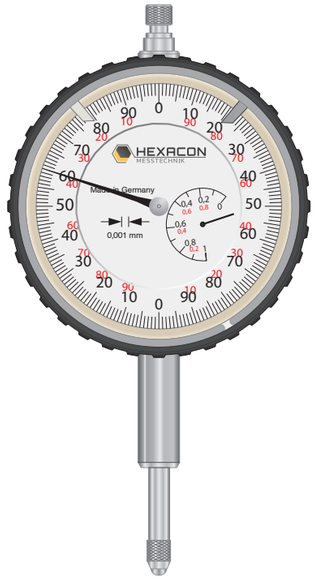
Analog dial gauges and precision indicators for bore measuring heads

Dial gauge
Scale division value 0.001 mm

Dial gauge concentric scale arrangement
Scale division value 0.01 mm

Precision indicator
Scale division value 0.001 mm

Precision indicator
Scale division value 0.01 mm



Digital dial gauges for bore measuring heads

Digital dial gauges
Numerical step 0.01 mm

Digital dial gauges
Numerical step 0.001 mm

Inductive measuring probe, measuring test station

DIAL GAUGES

ANALOG AND DIGITAL

Precise measurement of chamfer with 45° angles.

Dial gauge test tips
M2.5 thread

Analog mechanical precision dial gauges and precision indicators with display accuracy of 0.01 mm and 0.001 mm
The refined design, the use of high-quality materials and the mature precision-manufactured measurement mechanism guarantee the outstanding quality of our precision dial gauges and precision indicators. Measuring bolts and clamping shaft are made of high-resistance stainless steel. The measuring bolt is lapped.

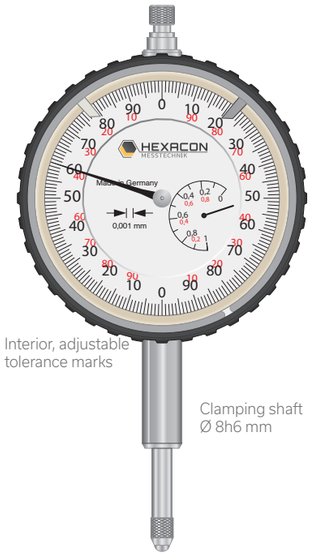
Digital mechanical precision dial gauges and precision indicators with display accuracy of 0.01 mm and 0.001 mm
High-contrast, large, easily readable LCD display, control and display part can turn 280°. Lifting cap with dust protection function on end of measuring bolt. Clamping shaft and measuring bolts of hardened stainless steel.

Dial gauges with inch displays are available upon request.

MU-01-0001

Meas. range 1 mm

Resolution 0.001 mm



Interior, adjustable tolerance marks

Clamping shaft Ø 8h6 mm

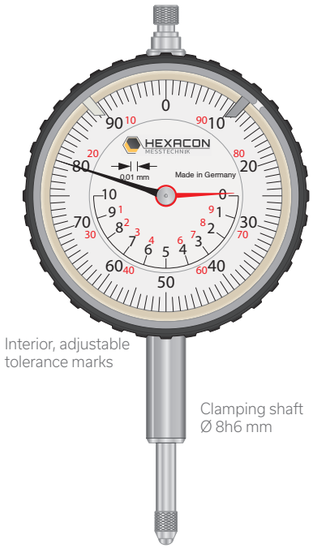
Scale division value 0.001 mm

Measuring range	1 mm
1 indicator rotation	0.2 mm
Starting measuring force	0.7 N ± 10%
Ø 58 mm, DIN EN ISO 463	

MU-01-001

Meas. range 10 mm

Resolution 0.01 mm



Interior, adjustable tolerance marks

Clamping shaft Ø 8h6 mm

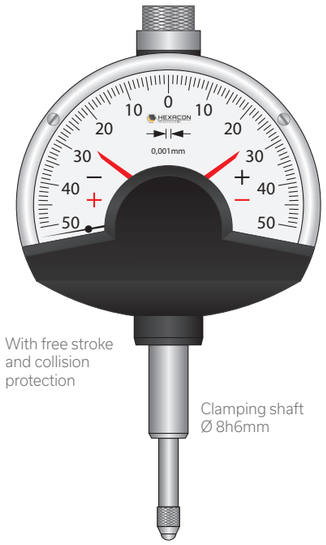
Scale division value 0.01 mm

Measuring range	10 mm
1 indicator rotation	1 mm
Starting measuring force	0.7 N ± 10%
Ø 58 mm, DIN EN ISO 463 / DIN 878	

MU-02-0001

Meas. range 0.1 mm

Resolution 0.001 mm



With free stroke and collision protection

Clamping shaft Ø 8h6mm

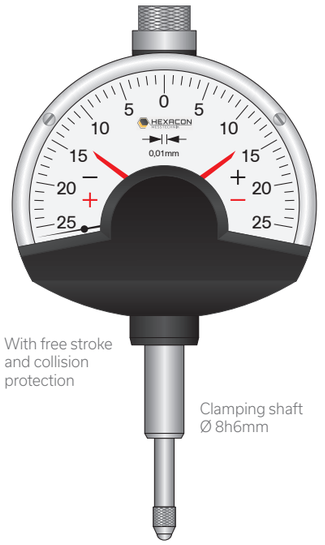
Scale division value 0.001 mm

Measuring range	0.1 mm
Scale numbering	50-0-50
Starting measuring force	1.0 N ± 10%
Ø 62 mm, DIN 879-1	

MU-02-001

Meas. range 0.5 mm

Resolution 0.01 mm



With free stroke and collision protection

Clamping shaft Ø 8h6mm

Scale division value 0.01 mm

Measuring range	0.5 mm
Scale numbering	25-0-25
Starting measuring force	1.1 N ± 10%
Ø 62 mm, DIN 879-1	

MU-04-001

Meas. range 12.5 mm

Numerical step 0.01 mm

Clamping shaft Ø 8h6 mm

Numerical step 0.01 mm

Measuring range	12.5 mm
Starting meas. force	0.5-1 N ± 10%

MU-05-001

Meas. range 12.5 mm

Numeric step value 0.01 mm

With factor setting

Clamping shaft Ø 8h6 mm

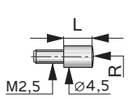
Numeric step value with factor setting **0.01 mm**

Measuring range	12.5 mm
Starting meas. force	0.5-1 N ± 10%

MU-TS-L

Meas. insert for dial gauge

HM-meas. inserts for dial gauges.
R = 2,5 / 4,5 / 6,5 / 20

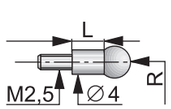


Order no.: MU-TS-L Specify L+R

MU-TS-L

Ball insert for dial gauge

Ball inserts for dial gauges.
Different lengths and radii available.
With M2.5 thread

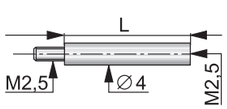


Order no.: MU-R5-L Specify L+R

MU-VL-L

Extension for dial gauge

Extensions for dial gauges.
Different lengths available.



Order no.: MU-VL-L Specify L

MU-04-0001

Meas. range 12.5 mm

Numerical step 0.001 mm

Numerical step 0.001 mm

Measuring range	12.5 mm
Starting meas. force	0.5-1 N ± 10%

MU-05-0001

Meas. range 12.5 mm

Numeric step value 0.001 mm

Numeric step value with factor setting **0.001 mm**

Measuring range	12.5 mm
Starting meas. force	0.5-1 N ± 10%

DIAL GAUGE TEST STAND

FOR DIAL GAUGES AND PRECISION INDICATORS

For analog and digital dial gauges based on DIN 878 and DIN 875.

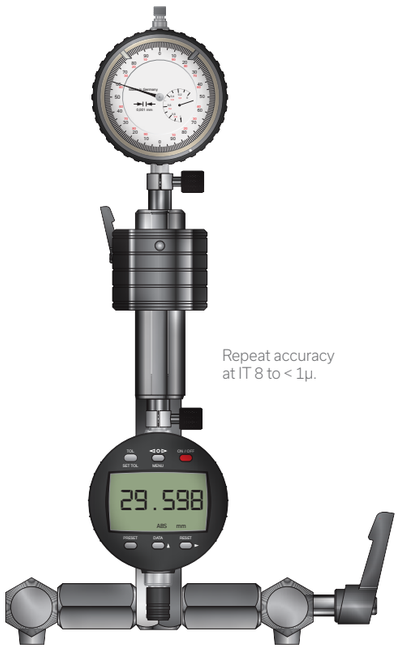
HEXACON MESSTECHNIK

DIN 878
DIN 875

MU-PS

Dial gauge test stand

Dial gauge test stand
The test station permits the testing of analog and digital dial gauges and precision indicators using a calibrate reference gauge or using inductive measuring probes and a measurement system. By rotating the set screw, the measurement path and measured value display change, permitting the precision comparison of reference and test object.



Repeat accuracy
at IT 8 to < 1µ.

Test workstation for dial gauges and precision indicators

The dial gauge test stand supports the testing of dial gauges and precision indicators with a test distance of up to 30 mm.

Permits the testing of dial gauges, precision indicators and lever gauges for compliance with DIN 878, 875, 2270, ASME/ANSIB 89.1.10 M 1987, the VDI/VDE DGQ 261 directives or factory standards.

Stand order no.: MU-PS · Display and probe order no.: MU-EL Standard delivery without dial gauge or ind. meas. probe.

INDUCTIVE MEASURING PROBES

RESOLUTION 0.01 µM

TITANIUM NITRIDE COATED

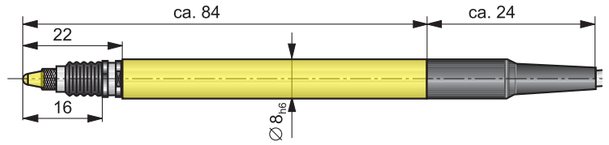
Inductive measuring probes have very high resolution at a very attractive price.
They also have a long service life and are easily repaired.
With standard 8h6 connection.

HEXACON MESSTECHNIK

IT-101

Inductive meas. probe

Inductive measuring probe
Resolution 0.01 µm, measurement stroke ± 1 mm, total stroke 4.6 mm. Measuring force 0.63 N ±20% ball guide zero-play. Measurement insert 3 mm ball, M2.5 mm thread, replaceable. Temperature range -10 to +65 °C.

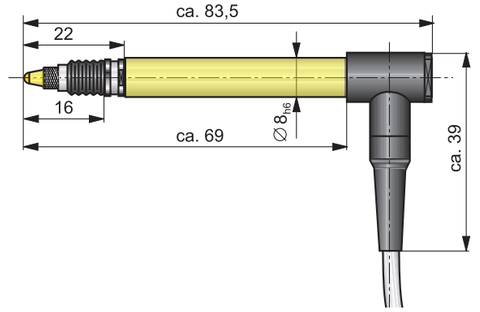


Order no.: IT-101

IT-102

Inductive meas. probe Radial cable guide

Inductive measuring probe
Resolution 0.01 µm, measurement stroke ± 1 mm, total stroke 4.6 mm. Measuring force 0.63 N ±20% ball guide zero-play. Measurement insert 3 mm ball, M2.5 mm thread, replaceable. Temperature range -10 to +65 °C.

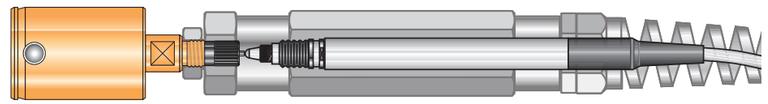


Order no.: IT-102

HT-V2

Inductive probe holder Meas. probes adjustable

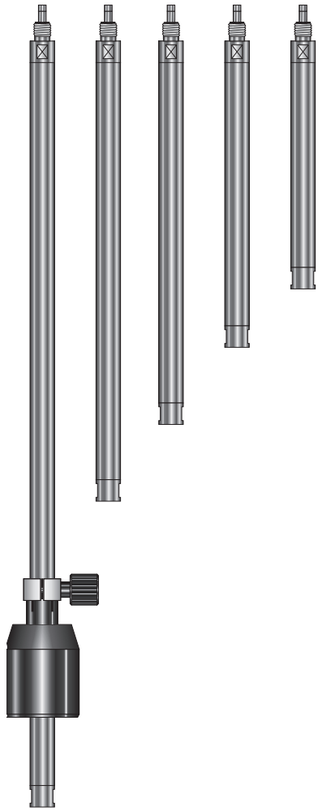
HT-V2 · Holder for inductive measuring probes
By adjusting the M6x0.75 adjusting nut (G), the inductive probe can easily be adjusted. No awkward handling. L=140 mm. With kink protection.

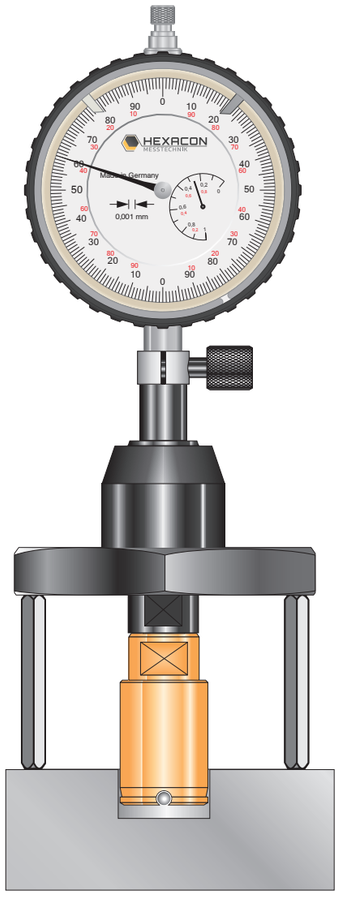


Order no.: HT-V2

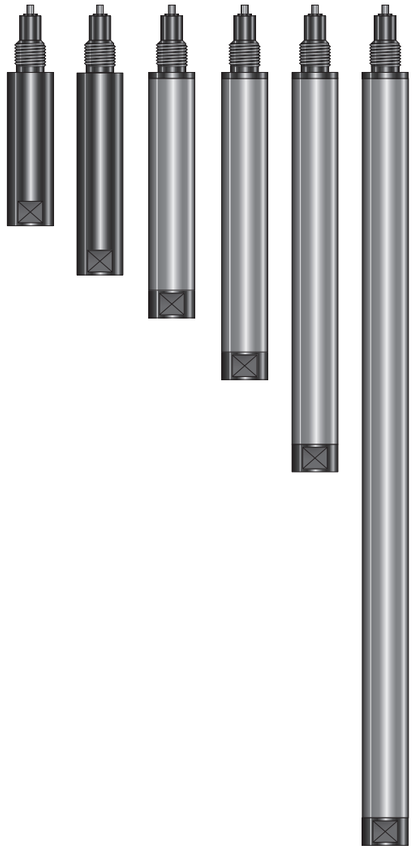
EXAMPLE APPLICATIONS

VL-02 depth extension · M6x0.75





VL-03 depth extension · M10x1



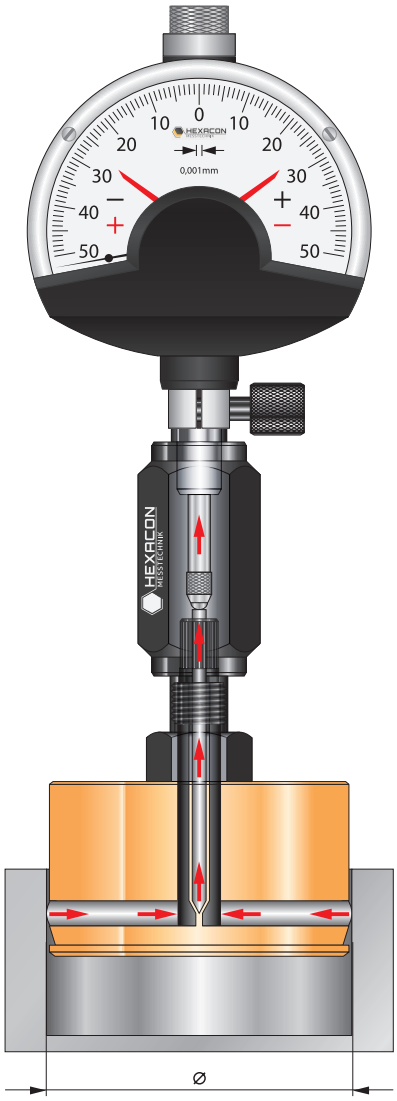
TA-02 depth stop
Adjustable, clamped on
VL-02 extension

Accessories in modular system
An extensive offering of carefully coordinated system accessories such as dial gauge holders, depth extensions, depth stops and centering holders offer flexible, efficient handling in a wide variety of measurement tasks, both for manual and for automated measurement.

TA-03 depth stop, adjustable
clamped on to HM-03-GS-60 holder
with PMK-XK-03 measuring head

HIGH PRECISION
100%
MADE IN GERMANY

Version E-V-07



Hexacon Messtechnik GmbH

Dammweg 35
D-64807 Dieburg

Phone +49 (0) 6071 - 24458
Fax +49 (0) 6071 - 21874

germany@hexacon-messtechnik.com
www.hexacon-messtechnik.com