

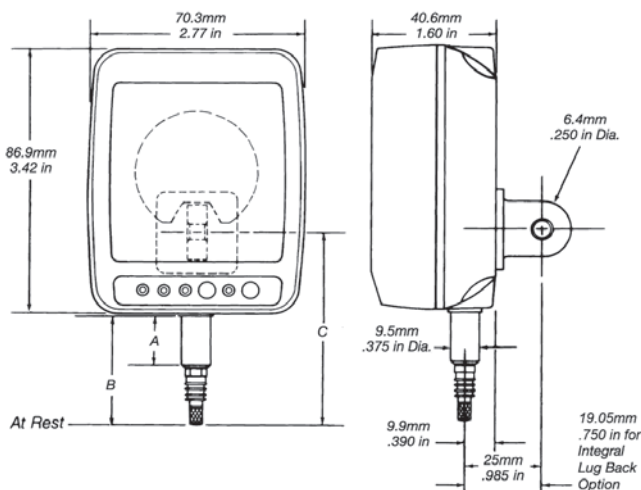
Maxum® III Digital Comparator

Features

- Features both digital display for accuracy and readability and unique fan analog display for trend and change
- User configurable in inch / metric units, normal / reverse sensing, resolution, analog scale, and tolerance setup & display
- Dynamic Capabilities: Min, Max, TIR, Hold, Reset
- Absolute Transducers - no overspeed errors. . . . no missed counts. . . . no missed readings
- Auto power down - provides extremely low battery consumption, assuring long life from readily available commercial batteries
- Data output - 3 formats - Maxum, serial, or digimatic
- Both integral and remote readout versions available
- Easily used on Snap Gages, Bore Gages, Comparator Stands, and Fixture Gages
- Special options available: setup mode or calibration lockout, remote external power, 4:5 ratio, 12 o'clock mounted integral transducer, integral vertical or horizontal lug back, 1.5, 2.0 or 3.0 inch stem length, and more. . . .
- IP54 protection
- Easy to select, order and operate!



Technical Data



For short range indicators – Standard Stem Length
(± 1.0 mm / ± .040" range indicators)

A	B	C
17 mm / .670"	36 mm / 1.42"	63.5 mm / 2.50"

For long range indicators – Standard Stem Length
(± 1.99 mm / ± .100" range indicators)

22 mm / .87"	47 mm / 1.84"	73 mm / 2.87"
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For both short and long range indicators –
Long Stem Lengths

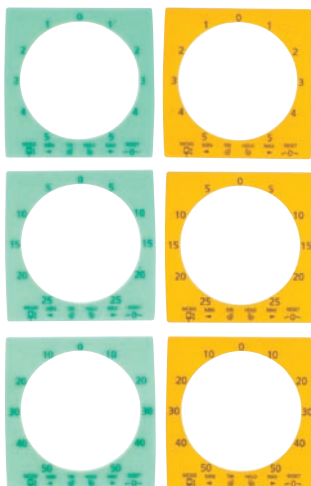
38 mm / 1.5"	57 mm / 2.25"	84.6 mm / 3.33"
51 mm / 2**	70 mm / 2.75"	97.3 mm / 3.83"
76 mm / 3**	95 mm / 3.75"	123 mm / 4.83"

* Special Order Lengths

Easily designed into your applications . . . full-size Maxum® Indicator and accessories, tracing templates or CAD files available on request.

Maxµm® III Digital Comparator

Technical Data



Description	Short Range	Long Range		
Digital range				
Standard	±1.00 mm/ ±.040"	±1.99 mm/ ±.100"		
Reduced	±0.199 mm/ ±.0199"	None		
Digital resolution	0.005 mm/ .0005"	0.005 mm/ .0005"		
Switchable	0.001 mm/ .0001" 0.001 mm/ .00005" 0.0005 mm/ .00002"	0.001 mm/ .0001"		
Analog range	5 or 25 or 50	25 or 50		
Analog resolution	0.01 mm/ .001"	0.01 mm/ .001"		
Switchable	0.005 mm/ .0005" 0.001 mm/ .0001"	0.005 mm/ .0005"		
Total spindle travel	3.04 mm/ .120"	6.35 mm/ .250"		
Pre-Travel*	0.3 mm/ .010"	1.06 mm/ .020"		
Over-Travel*	0.8 mm/ .030"	1.31 mm/ .030"		
Accuracy				
Standard range	0.5% of Total Range	0.35% of Total Range		
Reduced range	0.25% of Total Range	N/A		
Repeatability	±One Least Digit	±One Least Digit		
Gaging force	3 - 4 oz / 85 - 112 grams, preloaded			
Operation temperature	10° to 55°C / 50° to 130°F			
Storage temperature	-20° to 65°C / -4° to 149°F			
IP Rating	54			
Weight	approx. 385 g / 13.6 oz.			
Battery life	approx. 4000 hours			
Power	3.0 volt Lithium battery (type CR123A or equivalent) Mahr Federal Order Number: 2239138			
Contact point	(Normally furnished – PT-223) for 0.375" dia. Stem, 0.250" long, radiused tip, 4-48 thread; (EPT-1037-W1) for 8 mm dia. stem, 6 mm long, radiused tip, M2.5 thread.			
Stem length mm / <i>inch</i>	Stem diameter	Data output	Order no. Short range	Order no. long range
17 mm/ 0.670"	0.375"	No Output	2033101	2033102**
38 mm/ 1.50"	0.375"		2033103	2033104
17 mm/ 0.670"	8 mm		2033105	2033106**
38 mm/ 1.50"	8 mm	Digital Output 6 pin (D, E1)	2033107	2033108
17 mm/ 0.670"	0.375"		2033111	2033112**
38 mm/ 1.50"	0.375"		2033113	2033114
17 mm/ 0.670"	8 mm		2033115	2033116**
38 mm/ 1.50"	8 mm		2033117	2033118
17 mm/ 0.670"	0.375"	Digital Output with Hold / Reset 10 pin (E2)	2033121	2033122**
38 mm/ 1.50"	0.375"		2033123	2033124
17 mm/ 0.670"	8 mm		2033125	2033126**
38 mm/ 1.50"	8 mm		2033127	2033128

* dependent on standard or reduced range selected. Standard range shown.

** Long Range Indicator Stem Length is 0.870" / 22 mm

Maxum® III Digital Comparator

Technical Data

Maxum® III Remote Indicating Unit*

No Digital Output Port
 Digital Output -6 pin (D, E1)
 Digital Output with Hold & Reset -10 pin (E2)

Order no.

2033001
2033011
2033021

* Maxum® III Remote Indicating Units are NOT compatible with traditional Remote Transducer models EAS-XXXX.



Maxum® III Digital Transducer^①

Digital Transducers

Short Range

Long Range

Range	±1.00 mm/ ±.040"	±1.99 mm/ ±.100"
Total Spindle Travel	3.04 mm/ .120"	6.35 mm/ .250"
Pre-Travel**	0.3 mm/ .010"	0.5 mm/ .020"
Over-Travel**	0.8 mm/ .030"	

Gaging Force 3-4 oz / 85-112 grams, preloaded
 Operation Temperature 10° to 55°C/50° to 130°F
 Storage Temperature -20° to 65°C/-4° to 149°F

Contact Point (Normally furnished – PT-223) for **0.375"** dia. Stem, **0.250"** long, radiused tip, 4-48 thread; (EPT-1037-W1) for 8mm dia. Stem, 6mm long, radiused tip, M2.5 thread.

** dependent on standard or reduced range selected. Standard range shown.

Transducer Type	Stem Length	Stem Diameter	Order no. Short Range	Order no. Long Range
Canister	17 mm/ 0.670"	0.375"	2033091	2033092^②
Canister	38 mm/ 1.50"	0.375"	2033093	2033094
Canister	17 mm/ 0.670"	8.0 mm	2033095	2033096^②
Canister	38 mm/ 1.50"	8.0 mm	2033097	2033098

Pencil Body Diameter = **0.375"** **2033099** —

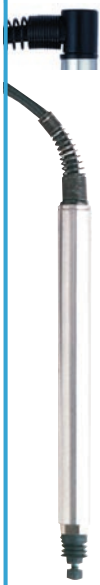
① Digital Transducer models 203309X require an adaptor cable for use with traditional DEI-XXXXXX Maxum and Maxum Plus Indicating Units.

② Long Range Indicator Stem Length is 0.870" / 22 mm.
 See Adaptor Cable selections as follows:

Adaptor Cables

Order no.

For DEI with 6 pin split connector **2239080**
 For DEI with 8 pin round connector **2239081**



Pencil



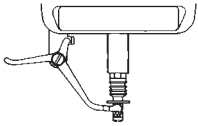
Canister

- Maxum® and Maxum Plus Transducers are available as Replacement Parts. Refer to Part Price List for Part Numbers and Pricing.
- Maxum III Remote Indicating units sold separately from Digital Transducer.
- Any Digital Transducer may be used with a Maxum III Remote Indicating unit.
- For English or Metric Contact Points visit pages 5-22, 5-27 and 5-52 thru 5-53.
- For alternate cable lengths or extension cables - call Mahr Federal's Technical Assistance Group.
- For special indicator options - call Mahr Federal's Technical Assistance Group.

Maxµm® III Digital Comparator

Accessories

For Integral Maxµm® Indicators



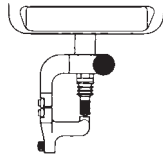
Lifting Levers¹⁾

Furnished with washer and longer contact point. Left Hand (shown)

Order no. EAS-1903*

Right Hand (not shown)

Order no. EAS-1904



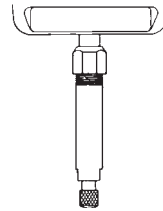
Right Angle Attachments

Lever Type (not shown)
(± .187" maximum range)

Order Model EAT-1034-W1

Spring Type (shown)
(± .060" maximum range)

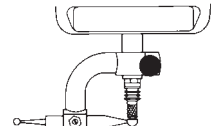
Order Model EAT-1035-W1



Auxiliary Plunger

3" long, .500" O.D.

Order no. EAS-1912



Hole Attachments

Short Lever (shown)
(1.0" pivot to contact)

Order Model EAT-1032-W1

Long Lever (not shown)
(1.87" pivot to contact)

Order Model EAT-1033-W1

¹⁾ (For use on .670" stem length only, DEI-XX1X1)

* Not for (±.100" / 1.99 mm)

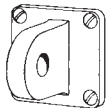


Ox-Bow Lifting Lever

Order no. LR-40

* Other Accessories shown are for .375" stem models. Equivalent types are available for most Maxµm models having 8mm stems. Adaptor Bushing (BU-197) may also allow 8mm stem indicators to be used with the above accessories. Full size Maxµm Indicator and accessories tracing templates are available on request.

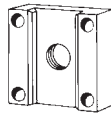
Backs for Maxµm® Indicators and Remote Indicating Units (Supplied with mounting screws)



Lug Back (.250" hole)

Mounts horizontally or vertically.

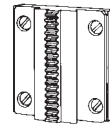
Order no. EBK-1006



Adjustable Slide Back

(.500" slot, 1/4-20 thread)

Order no. EBK-1007



Rack Back

Fits SE-33 (shown) and SE-73.

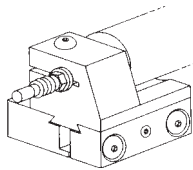
Adjustable Mounting Block (not shown).

Order no. EBK-1005

Replacement Screws

2-56 x .218"

Order no. ESW-1252

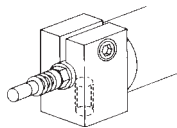


Rack Bracket (Shown mounted to SE-33 Adjustable Mounting Block.)

SE-33 and SE-73 Adjustable Mounting Blocks are available separately. SE-33 is supplied with hex-screw adjust. SE-73 is supplied with knob adjust.

Order Model EAD-1007-W1 (.375" I.D.)

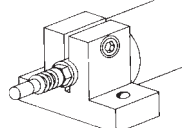
Order Model EAD-1007-W2 (8 mm I.D.)



Square Bracket

(1/4-20 mounting thread)

Order Model AAD-67



T Bracket

Flange mounted.

Order Model AAD-91

* Mounting Brackets shown are for .375" stem models. Equivalent types are available for most Maxµm models having 8 mm stems. Adaptor Bushing (BU-197) may also allow 8 mm stem indicators to be used with the above accessories. Full size Maxµm Indicator and accessories tracing templates are available on request.

Other Maxµm Accessories

Data Output Cables for Maxµm III

Serial Cable (6 pin to db9 pinF PC) **2239036**

Serial Cable (10 pin to db9 pinF PC) **2239038**

Digimatic Cable (6 pin to std 10 pin) **2239035**

Digimatic Cable (10 pin to std 10 pin) **2239037**

Send Data Footswitch used with Serial Cables above. **300-50**

Mating Connectors — Maxµm III Models

For 6 pin data output type (D, E1) **ECN-1521**

For 10 pin data output type (E2) **ECN-1689**

Remote Switch Assembly (for Hold/Reset)

Handswitch **EAS-2867**

Footswitch **EAS-2868**

Splashcover for Maxµm III

Battery for Maxµm III **ECV-1307-W1**

Overlay Kit for Maxµm III **2239138**

Access Key (6 pin) **2239040**

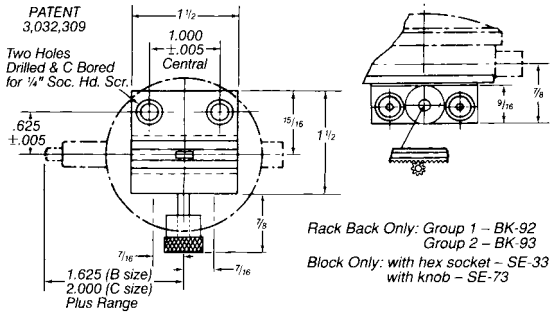
Access Key (10 pin) **2240545**

2240547

Adjustable Mounting Brackets

Features

- Allows fast, positive indicator adjustments
- Ideal for permanent indicator mounting to fixtures
- Rack Back included with all Brackets
- Sizes for ANSI/AGD Groups 1 and 2



Order Numbers

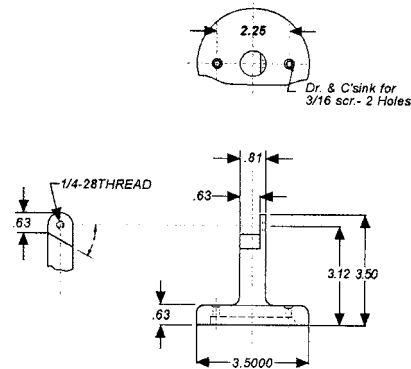
Mahr Federal Indicator	Used with	Order no.
Group 1	hex socket adjust	AT-27
Group 1	adjusting knob	AT-115
Group 2	hex socket adjust	AT-28
Group 2	adjusting knob	AT-116

Universal Mounting Base

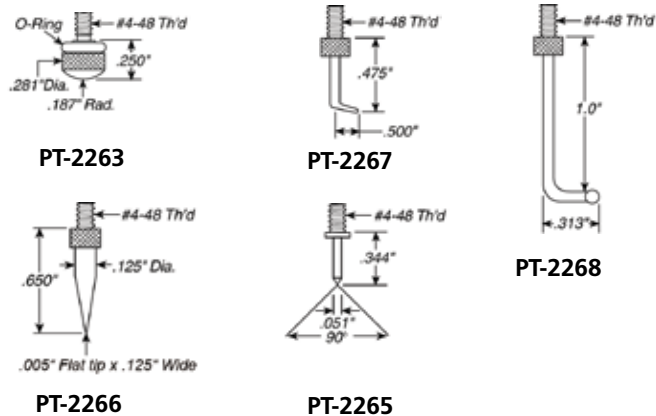
Features

- Allows mounting indicator to custom fixtures
- Uses lug back to mount indicator
- Accommodates all size indicators

Order no. BA-1051



Added flexibility for your Mahr Federal Dial Indicators



Description

Shock Absorbing Contact. "O" ring over threads provides a barrier between metal surface and stem, minimizing damage if point is pushed in with excessive force.

Order no.

PT-2263

Chisel Point Contact for checking small slots. Furnished with a small lock nut for positioning on the indicator.

PT-2266

Small Offset Point Contact. Small tip, .010" radius, permits checking narrow recesses. Furnished with a lock nut for indicator positioning.

PT-2267

Needle Contact for checking into small areas. Correct length for use as a replacement on Mahr Federal 65P-40 depth gage.

PT-2265

Right Angle Contact with a .093" diameter ball for checking hard-to-reach grooves. Right angle allows checking to bottom or to top of a groove when used with a push down action Indicator. Its 1" length makes it long enough to be used with Mahr Federal 75P-50 Series Depth Gages.

PT-2268

Contact Thread Adapter, Adapts M2.5 thread to 4-48 thread (.375" length)

AD-185

4-48 to M2.5 Threaded Adapter

2236519

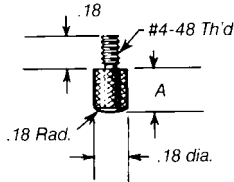
Features

- Innovative Contact Points make your indicators more versatile.
- Minimize point damage with a shock absorbing contact, without the need for a cushion gear.
 - Needle point perfect for checking small areas – etchings, pits and more.
 - Chisel point easily adapts to small slots or screw heads.
 - Small offset point for narrow recesses – grooves, holes and under ledges.
 - Right angle point makes hard to reach grooves easily accessible.

Contact Points

Used with ANSI/AGD Groups 1,2,3,4 Long Range Wetproof Perpendicular and Maxµm® Indicators. Points for ANSI Group 0 Indicators - see page 5-8. For Special Points - call Mahr Federal. See pages 5-52 & 5-53 for additional Metric Contact Points.

Regular



Hardened Steel (inch)

Dimension A	Order no.	Dimension A	Order no.
1/8"	PT-225	1-5/8"	PT-235
1/4"	PT-223*	1-3/4"	PT-241
3/8"	PT-563	1-7/8"	PT-100
1/2"	PT-14	2"	PT-51
5/8"	PT-564**	2-1/8"	PT-243
3/4"	PT-31	2-1/4"	PT-696
7/8"	PT-201	2-3/8"	PT-101
1"	PT-232	2-1/2"	PT-245
1-1/8"	PT-305	2-5/8"	PT-102
1-1/4"	PT-565	2-3/4"	PT-566
1-3/8"	PT-239	2-7/8"	PT-247
1-1/2"	PT-50	3"	PT-155

Hardened Steel (Metric***)

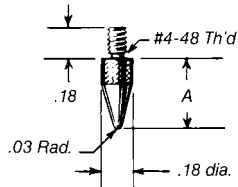
Dimension A	Order no.	Dimension A	Order no.
6 mm	EPT-1037-W1	15 mm	EPT-1037-W3
10 mm	EPT-1037-W2	20 mm	EPT-1037-W4
12 mm	EPT-1037-W6	25 mm	EPT-1037-W5

Tungsten Carbide
 1/4" PT-35 **Set of 8 Steel**
 1/8" to 1" PT-116

Diamond
 1/4" PT-317 **Set of 24 Steel**
 1/8" to 3" PT-115

* PT-223 normally furnished with all Indicators
 ** PT-564 normally furnished with all Wetproof Indicators
 *** All Metric Points have M2.5 thread

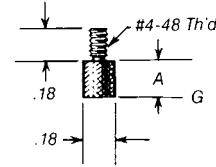
Tapered



Hardened Steel (inch) Tungsten Carbide (inch)

Dimension A	Order no.	Dimension A	Order no.
3/16"	PT-233	7/16"	PT-181
7/16"	PT-229	3/4"	PT-182
1"	PT-253	1"	PT-183
1-7/16"	PT-230		
2"	PT-231		

Flat End

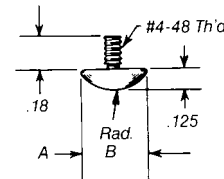


Hardened Steel (inch)

Dimension A	Order no.	Dimension A	Order no.
1/8"	AL-19	6 mm	EAL-1016-W1
1/4"	AL-673	10 mm	EAL-1016-W2
3/8"	AL-20	15 mm	EAL-1016-W3
1/2"	AL-21	20 mm	EAL-1016-W4
5/8"	AL-22	25 mm	EAL-1016-W5
3/4"	AL-23		
7/8"	AL-24		
1"	AL-25		

Tungsten Carbide
 1/4" AL-51
 Set of 8 Steel
 1/8" to 1" AL-55

Button

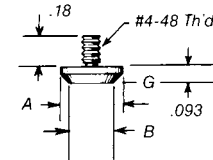


Hardened Steel (inch)

Dim. A	Dim. B	Order no.	Dim. A	Dim. B	Order no.
.375"	.250"	PT-227	.375"	.250"	PT-120
.500"	.375"	PT-619			

Tungsten Carbide

Wide Face



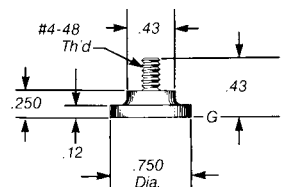
Hardened Steel (inch)

Dim. A	Dim. B	Order no.	Dim. A	Dim. B	Order no.
.356"	.250"	AL-502	9.04	6.35	EAL-1020-W1
.500"	.375"	AL-1510	12.7	9.5	EAL-1020-W2
.615"	.500"	AL-520	15.6	12.7	EAL-1020-W3
.731"	.625"	AL-44	18.6	15.9	EAL-1020-W4

Tungsten Carbide (inch)

.356" .250" AL-1730 **Set of 8 Steel (Metric***)**
 9.04 6.35 EAL-1021

Extra Wide Face



Hardened Steel

Order no. AL-291

Contact Points and Accessories for Dial Indicators, Dial Comparators and Probes

Standard Contact Points 901

Ball dia. 3 mm

Catalog no.		Order no.
901	with steel ball	4360001
901 H	with carbide ball	4360002
901 R	with ruby ball	4360003

Spherical Contact Points 902 Flat Contact Points 903

902	902 H	903	903 H
Steel	Carbide contact face	Steel	Carbide tipped
Length mm	Order no.	Order no.	Order no.
4	4360007	-	4360070
6	4360009	-	4360071
8	4360010	4360040	4360072
10	4360011	4360041	4360073
12	4360012	4360042	4360074
15	4360013	4360043	4360075
20	4360014	4360044	4360076
25	4360015	4360045	4360077
30	4360016	4360046	4360300
35	4360017	4360047	4360078
40	4360019	4360049	4360310
45	4360026	4360050	4360303
50	4360018	4360048	4360079
55	4360031		
65	4360035		
75	4360020		
85	4360036		
95	4360029		

Ball Contact Point 906 H

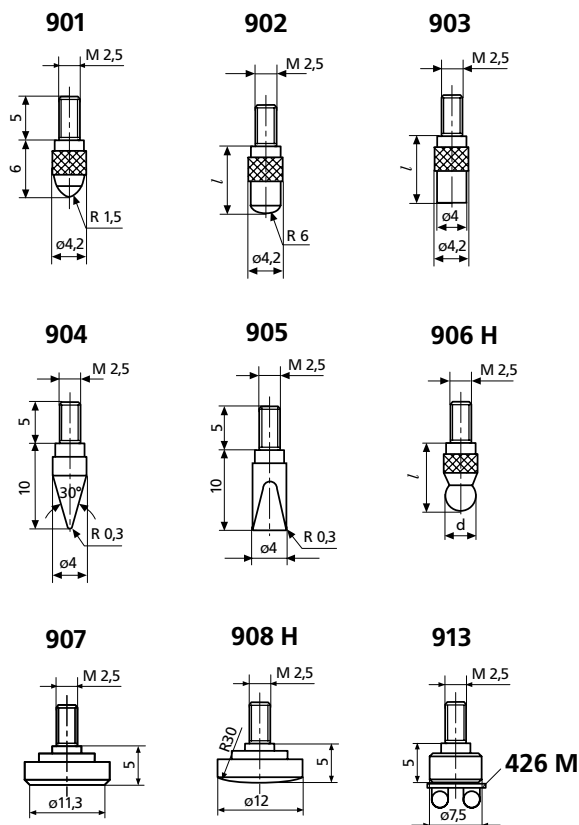
with carbide ball. accuracy ball dia. 0/-6µm

Ball dia. d mm	l mm	Order no.	Ball dia. d mm	l mm	Order no.
1	8.5	4360150	5.5	9	4360161
1.25	8.5	4360151	6	9	4360162
1.5	8.5	4360152	6.35 (1/4")	9	4360163
1.75	8.5	4360153	6.5	10	4360164
2	8.5	4360154	7	10	4360165
2.5	8.5	4360155	7.5	11	4360166
3	8.5	4360156	8	11	4360167
3.5	8.5	4360157	8.5	12	4360168
4	8.5	4360158	9	12	4360169
4.5	8.5	4360159	10	13	4360170
5	9	4360160			

Contact Rollers 909

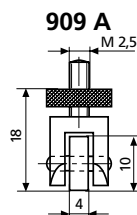
Concentricity error 3 µm

	Order no.
Cylindrical Roller	909 A 4360220
Radiused Roller, R = 5 mm	909 B 4360221



Special Contact Points

	Order no.
Conical Contact Points, Steel	904 4360130
Carbide tipped	904 H 4360131
Wedge Shaped Contact Points, Steel	905 4360140
Carbide tipped	905 H 4360141
Flat Contact Points, Steel, A = 1 cm²	907 4360200
Carbide tipped, dia. 7 mm	907 H 4360201
Spherical Contact Points, Steel	908 4360210
Carbide tipped	908 H 4360211
Flat Contact Point, for mounting Pin Gage Holder 426 M for measuring threads using three-wire method	913 4360400



Contact Points and Accessories for Dial Indicators, Dial Comparators and Probes

Measuring Attachment 910 H

	Order no.
with parallel adjustable carbide blades	910 H 4360230

Pin Contact Point 911

dia. 1 mm, flat

Length l mm	Order no.	Length l mm	Order no.
15	4360280	35	4360284
20	4360281	40	4360285
25	4360282	50	4360286
30	4360283		

Pin Contact Point 911 H

	Order no.
Carbide tipped, dia 1 mm, flat	911 H1 4360240
Carbide tipped, dia 1.5 mm, flat	911 H2 4360241

Measuring Spindle Extensions 912

Length l mm	Order no.	Length l mm	Order no.
10	4360250	35	4360254
15	4360251	50	4360255
20	4360252	75	4360256
25	4360253	100	4360257

Special Holder 941

For all types of measuring equipment
 For placing a dial indicator at a certain distance or angle
 Travel of the measuring spindle 3 mm
 Contact Point 901 (interchangeable)

Straight Holder 941 G

Mounting shank length l_1
 Order no.

25	4365000
50	4365001
75	4365002

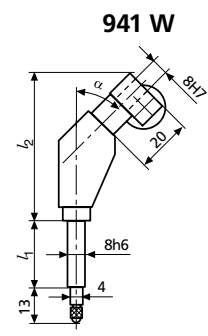
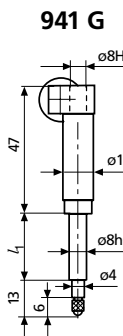
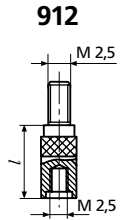
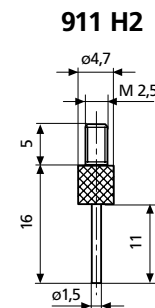
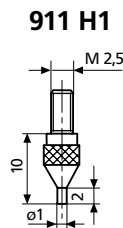
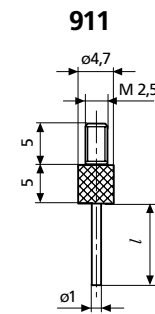
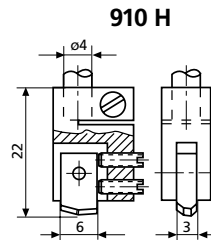
Angular Holder 941 W

Order no.	l_2 mm	Order no.	l_2 mm	Order no.	l_2 mm
Angle $\alpha=45^\circ$		Angle $\alpha=60^\circ$		Angle $\alpha=90^\circ$	

4365010	} 53.7	4365020	} 49.3	4365030	} 34.5
4365011		4365021		4365031	
4365012		4365022		4365032	

Sensor Level 943

	Order no.
For testing concentricity in bore holes as well as difficult to reach outside diameters To be inserted in a measuring stand with a lifting device Contact Point 901 interchangeable Travel ± 1 mm	4367000



Transmission error with the 941 W
 max. 1%;
 for travel 3 mm = 0.03 mm

