

Millimess. Dial Comparators

Overview

Design Features

Box type protective housing

Constant measuring force

Lockable fine adjustment screw

Self contained movement, which is both quick and easy to remove and replace

Measuring spindle can be retracted with either a screw in cable release or with a lifting knob.

Mounting shank and measuring spindle are both made of hardened stainless steel

Measuring spindle is mounted in a high precision ball guide (Types 1000 / 1002 / 1003 / 1004) for minimal hysteresis

Insensitive to lateral forces (side play) acting on the measuring spindle

Maximum sensitivity and accuracy are ensured by the jeweled movement and in conjunction with the precision gears and pinions

Easy to read scale

Adjustable tolerance markers

Shockproof Mechanism

Measuring spindle within the measuring range

When the measuring range is exceeded the movement will be mechanically decoupled (shown in red)

**SHOCK
PROOF**

Mechanical Dial Comparators



1002

DIN 879-1



1003

DIN 879-1



1004



1003XL

DIN 879-1



1003T**

DIN 879-1



Technical Data

	Measuring range	Readings	Over-travel	Measuring force	Order no. Standard*	Order no. Water-proof**
Metric						
1002 Supramess	± 25 µm	0.5 µm	2.8 mm	1 N	4335000	4335005
1003 Millimess	± 50 µm	1 µm	2.8 mm	1 N	4334000	4334005
1003 Millimess XL	± 130 µm	2 µm	2.5 mm	1 N	4334001	4334006
1004 Compramess	± 0.13 mm	5 µm	2.5 mm	1 N	4333000	4333005
1010 Zentimess	± 0.25 mm	0.01 mm	2.5 mm	1 N	4332000	4332005
1050 Dezimess	± 1.5 mm	0.05 mm	0.3 mm	1 N	4330000	4330005
Inch						
1002 Z Supramess	± .0010"	.00002"	.11"	1 N	4335900	4335905
1003 Z Millimess	± .0020"	.00005"	.11"	1 N	4334900	4334905
1004 Z Compramess	± .0050"	.0001"	.10"	1 N	4333900	4333905
1010 Z Zentimess	± .0100"	.0005"	.10"	1 N	4332900	4332905

* Incl. Plastic Case; Adapter 940 (for inch instruments only)

** IP54, Incl. Plastic Case, Splash Guard Cover 957, Rubber Bellows (only for 1002/1003/1004); Adapter 940 (for inch instruments only)

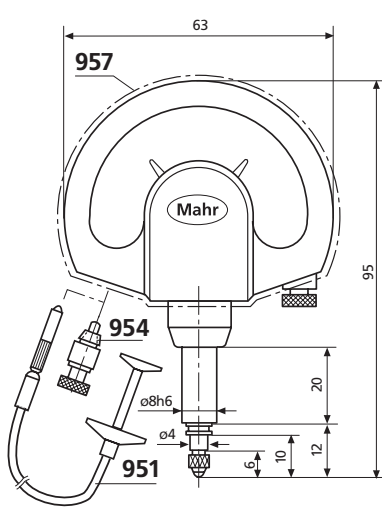
Mechanical Dial Comparators



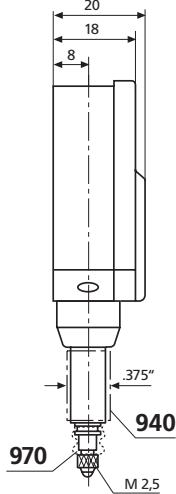
1010



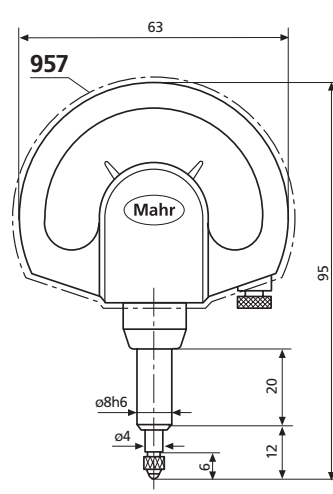
1050



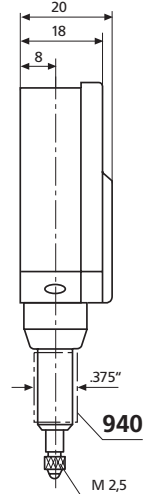
1002/1003/1004



970 940 M 2,5



1010/1050

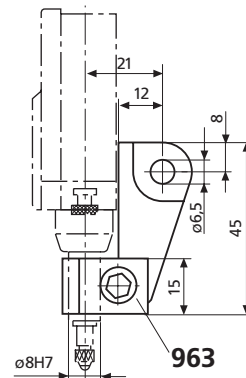


940 M 2,5

Accessories

	Order no.
Adapter Bush for adapting mounting shank 8h6 mm to inch bore .375"	940 4310103
Cable Release to raise the measuring spindle	951 4372000
Lifting Knob for lifting the measuring spindle	954 4372030
Splash Guard Cover	957 4373030
Rubber Bellows for 1002/1003/1004 to seal the open end of the measuring spindle	970 4334786
Mounting Lug to mount on mounting shank 8h6 mm	963 4375002

Additional Accessories	Page
Contact Points	901-913 5-52
Special Holder	941 5-52
Sensor Lever	943 5-53



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

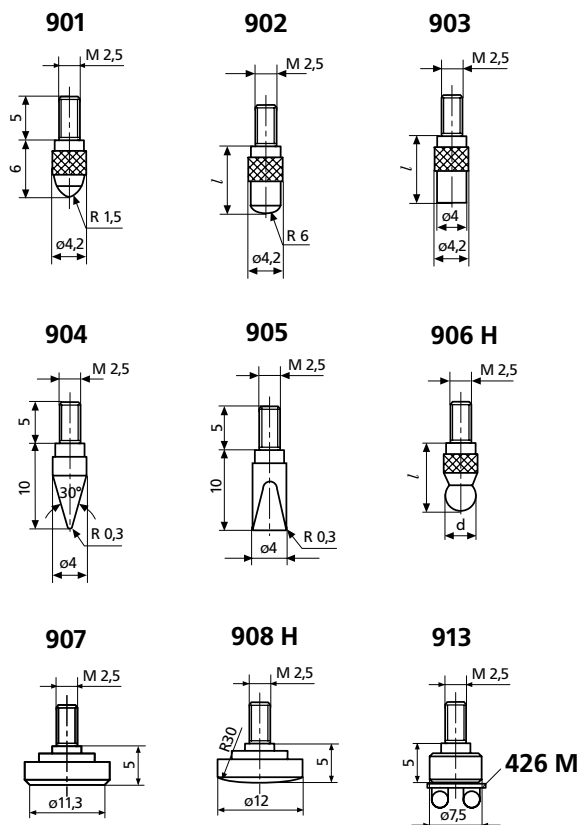
with carbide ball. accuracy ball dia. 0/-6µm

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

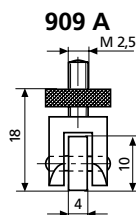
Concentricity error 3 µm

	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

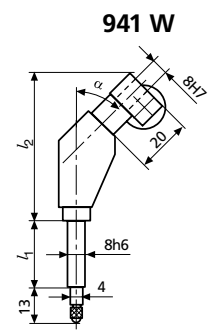
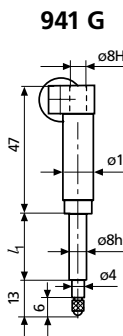
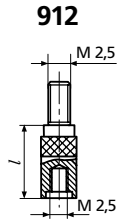
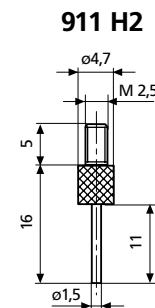
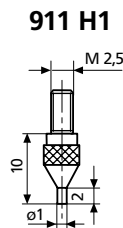
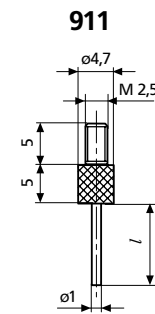
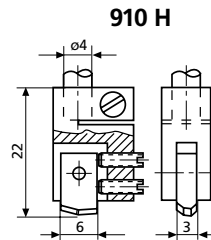
Angular Holder 941 W

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

