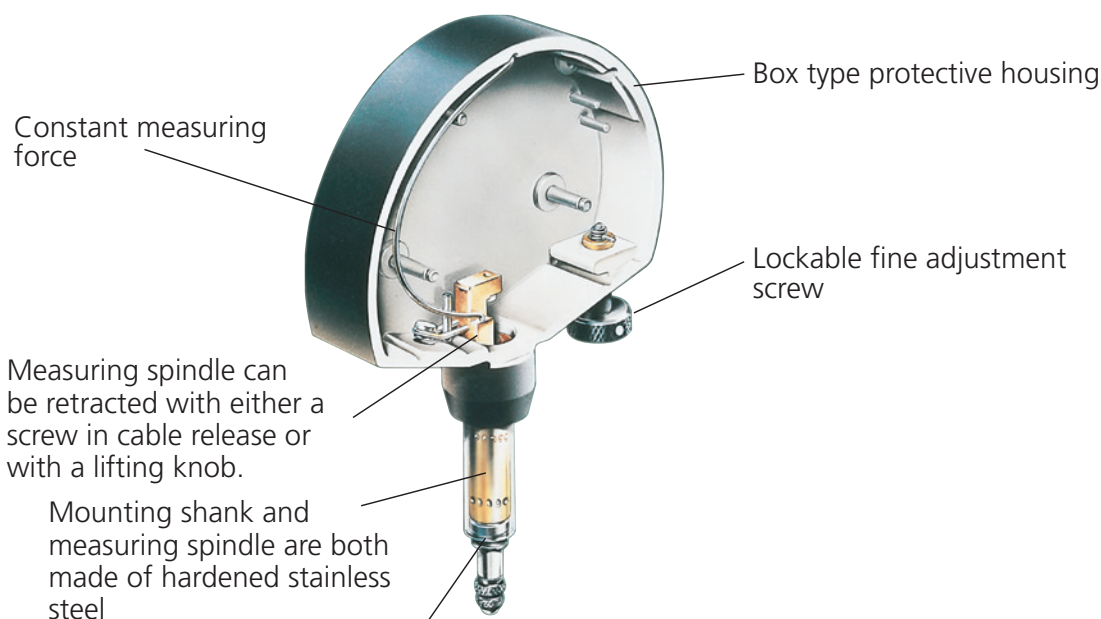


Millimes | Digital and Dial Comparators

Millimes dial comparators differ from conventional dial indicators through more precise components, greater accuracy and a much improved hysteresis. Millimes dial comparators are especially suitable for radial run-out, straightness and flatness measurements as well as for comparative measurements. Other outstanding advantages include its easy handling, reliable readability and absolute shock resistance of the measuring mechanism.



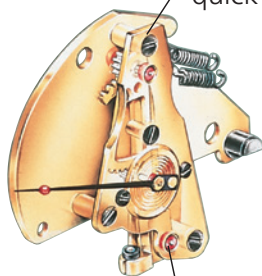
Millimes | Digital and Dial Comparators – Design



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

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

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



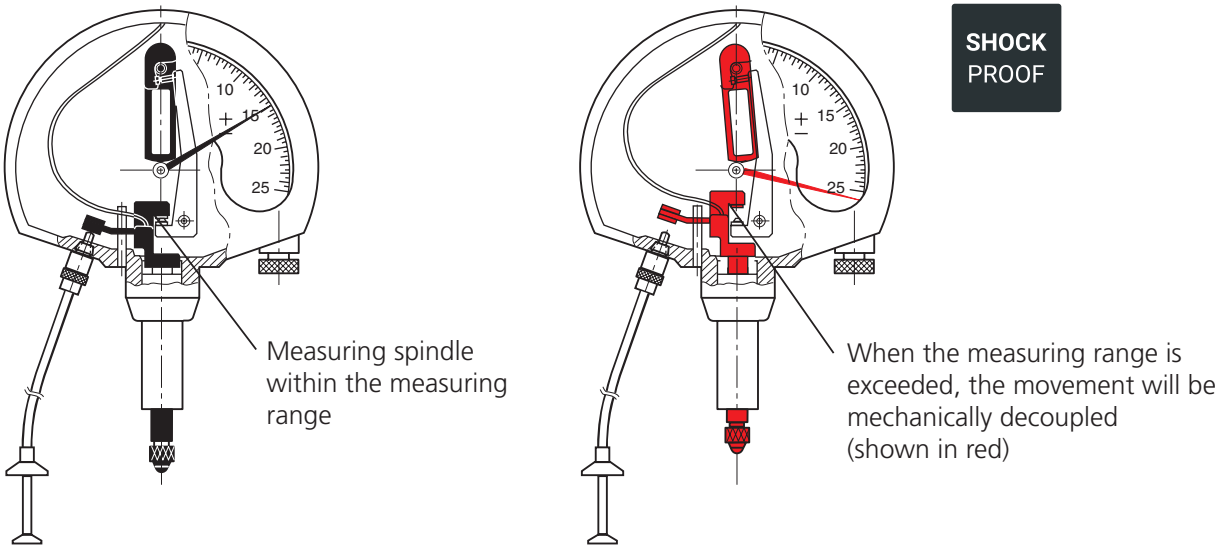
Maximum sensitivity and accuracy are ensured by the jeweled movement in conjunction with the precision gears and pinions



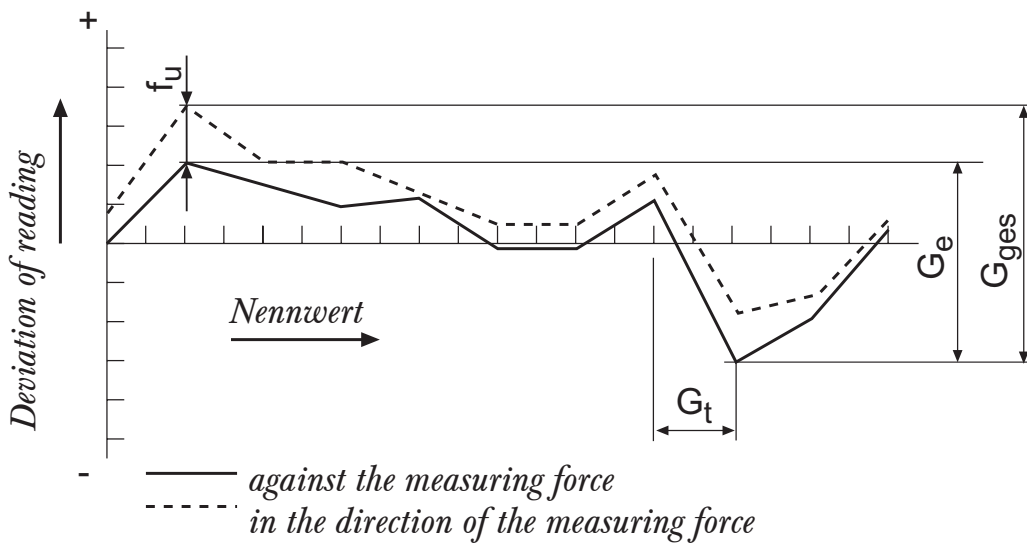
Easy to read scale

Adjustable tolerance markers

Millimess | Shockproof Mechanism



Millimess | Metrological characteristics



Millimess | Versions



Inductive Digital Comparator



Mechanical Dial Comparator



Mechanical Dial Comparator with limit contacts

Millimes 1003 / 1003 T / 1002 / 1002 T

Mechanical Dial Comparator



FEATURES

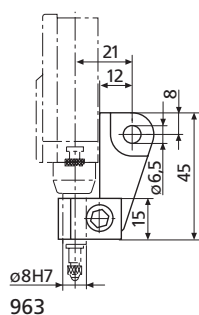
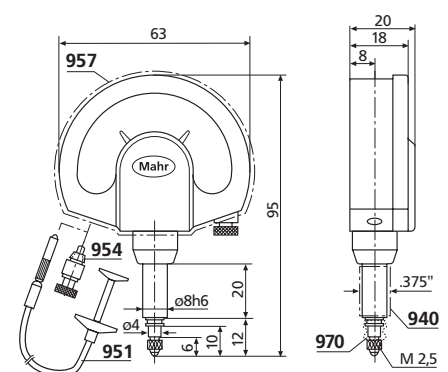
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral forces (side play) acting on the measuring spindle
- Maximum sensitivity and accuracy are ensured by the jeweled movement in conjunction with the precision gears and pinions
- Box type protective housing
- Constant measuring force
- Measuring spindle can be retracted with either a screw in cable release or with a lifting knob
- Package contains: case



TECHNICAL DATA

Order no.	4334000	4334005	4334102	4334103	4335000	4335005
Product type	1003	1003 T	1002	1003	1002	1002 T
Measuring range	μm	± 50	± 25	± 50	± 25	± 25
Graduation value	μm	1	0.5	1	0.5	0.5
Type of dial face		50-0-50	25-0-25	50-0-50	25-0-25	25-0-25
Error limit G_e	μm	1	0.5	1	0.5	0.5
Error limit G_{ges}	μm	1.2	0.6	1.2	0.6	0.6
Error limit G_t	μm	0.7	0.4	0.7	0.4	0.4
Hysteresis f_u	μm	0.5	0.3	0.5	0.3	0.3
Repeatability f_w	μm	0.5	0.3	0.5	0.3	0.3
Standard		DIN 879-1	Factory standard	DIN 879-1	Factory standard	Factory standard
Overtravel	mm	2.8				
Measuring force	N	1				
Scale diameter	mm	50				
Dial color		Yellow		White	Yellow	
IP protection category:		IP 54			IP 54	

Order no.	Mounting shaft	Scale diameter
	mm	mm
4334000	8	50
4334005	8	50
4334102	8	50
4334103	8	50
4335000	8	50
4335005	8	50



ACCESSORIES

Order no.	Product name	Product type
4310103	Adapter bushing (.375" / 8 mm)	940
4372000	Cable release (250 mm)	951
4372030	Lifting knob	954
4373030	Splash guard cover	957
4334786	Rubber bellows	970
4375002	Lug back to mount on mounting shank 8h6 mm	963

Millimess 1004 / 1004 T / 1003 XL / 1003 XLT

Mechanical Dial Comparator



FEATURES

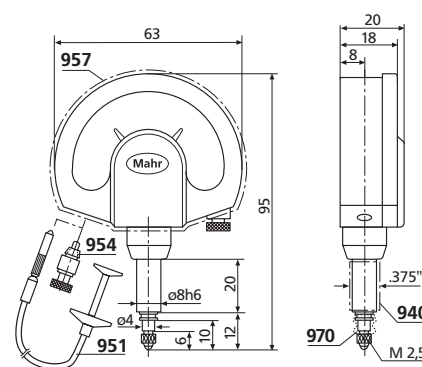
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral forces (side play) acting on the measuring spindle
- Maximum sensitivity and accuracy are ensured by the jeweled movement in conjunction with the precision gears and pinions
- Box type protective housing
- Constant measuring force
- Measuring spindle can be retracted with either a screw in cable release or with a lifting knob
- Package contains: case



TECHNICAL DATA

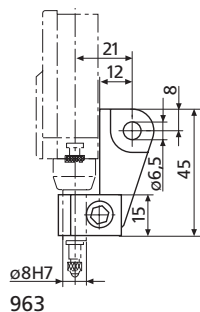
Order no.		4333000	4333005	4334001	4334006
Product type		1004	1004 T	1003 XL	1003 XLT
Measuring range	µm	± 130			
Graduation value	µm	5		2	
Type of dial face		130–0–130			
Error limit G_e	µm	3.5		2	
Error limit G_{ges}	µm	4		2.4	
Error limit G_t	µm	3		1.4	
Hysteresis f_u	µm	1			
Repeatability f_w	µm	1			
Standard		Factory standard			
Overtravel	mm	2.5			
Measuring force	N	1			
Scale diameter	mm	50			
Dial color		White		Yellow	
IP protection category:		IP 54		IP 54	

Order no.	Mounting shaft	Scale diameter
	mm	mm
4333000	8	50
4333005	8	50
4334001	8	50
4334006	8	50



ACCESSORIES

Order no.	Product name	Product type
4310103	Adapter bushing (.375" / 8 mm)	940
4372000	Cable release (250 mm)	951
4372030	Lifting knob	954
4373030	Splash guard cover	957
4334786	Rubber bellows	970
4375002	Lug back to mount on mounting shank 8h6 mm	963



Millimes 1003

Mechanical Dial Comparator

DIN 879-1

FEATURES

- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral forces (side play) acting on the measuring spindle
- Maximum sensitivity and accuracy are ensured by the jeweled movement in conjunction with the precision gears and pinions
- Box type protective housing
- Constant measuring force
- Measuring spindle can be retracted with either a screw in cable release or with a lifting knob
- Package contains: case

Application:

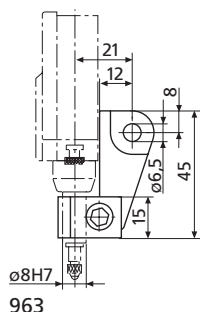
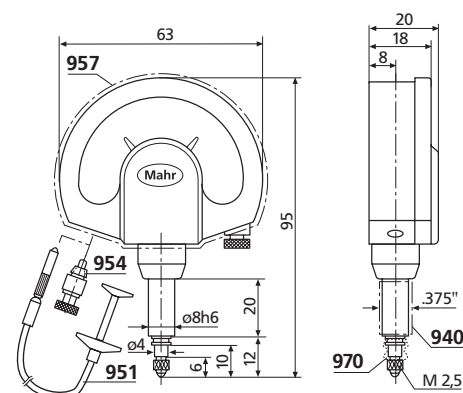
- Models with reduced / increased measuring force
- for measurements on thin walled, soft materials or delicate surfaces



TECHNICAL DATA

Order no.	4334075 4334070 4334050 4334076 4334071 4334010 4334011							
Product type	1003							
Measuring range	μm	± 50						
Graduation value	μm	1						
Type of dial face	50-0-50							
Error limit G _e	μm	1						
Error limit G _{ges}	μm	1.2						
Error limit G _t	μm	0.7						
Hysteresis f _u	μm	0.5						
Repeatability f _w	μm	0.5						
Standard	DIN 879-1						Factory standard	
Overtravel	mm	2.8						
Measuring force	N	0.3	0.4	0.5	0.6	0.7	2	3
Scale diameter	mm	50						
Dial color	Yellow							

Order no.	Mounting shaft	Scale diameter
	mm	mm
4334075	8	50
4334070	8	50
4334050	8	50
4334076	8	50
4334071	8	50
4334010	8	50
4334011	8	50



ACCESSORIES

Order no.	Product name	Product type
4310103	Adapter bushing (.375" / 8 mm)	940
4372000	Cable release (250 mm)	951
4372030	Lifting knob	954
4373030	Splash guard cover	957
4334786	Rubber bellows	970
4375002	Lug back to mount on mounting shank 8h6 mm	963

Millimes 1000 A / 1000 B

Mechanical Dial Comparator

FEATURES

- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral forces (side play) acting on the measuring spindle
- Maximum sensitivity and accuracy are ensured by the jeweled movement in conjunction with the precision gears and pinions
- Box type protective housing
- Constant measuring force
- Measuring spindle can be retracted with either a screw in cable release or with a lifting knob
- **Package contains:** cable release, case

Application:

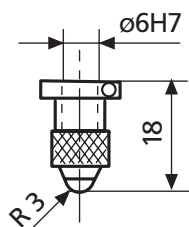
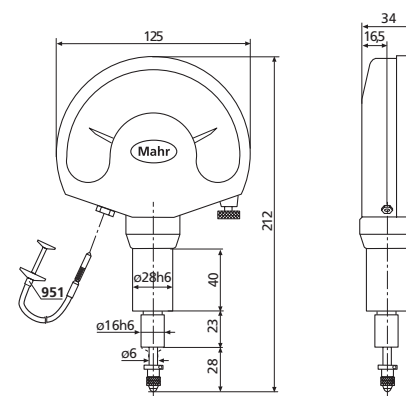
- Very clear, reliable and fatigue-free readings due to extra-large display.
- Ideal for test stations at which high volume production parts are measured or where the display can only be read from a distance.
- For use in a stable measuring table. We recommend: MarStand 824 GT measuring table
- M2.5 thread on end of measuring pin for optional standard anvils



TECHNICAL DATA

Order no.		4338100	4339100
Product type		1000 A	1000 B
Measuring range	µm	± 120	± 50
Graduation value	µm		1
Type of dial face		120-0-120	50-0-50
Error limit G_e	µm		1.5
Error limit G_{ges}	µm		2
Error limit G_t	µm		0.7
Hysteresis f_u	µm		1
Repeatability f_w	µm		0.5
Standard		Factory standard	
Overtravel	mm	4	
Measuring force	N	3.5	
Scale diameter	mm	110	
Dial color		Yellow	

Order no.	Mounting shaft	Scale diameter
	mm	mm
4338100	28	110
4339100	28	110



ACCESSORIES

Order no.	Product name	Product type
4362001	Contact point, Steel ball	921
4362002	Contact point, Ruby ball	921 R
4372000	Cable release (250 mm)	951
4338008	Rubber bellows for 1000 A/B	

Millimess 1002 Z/1002 ZT/1003 Z/1003 ZT/1004 Z/1004 ZT/1010 Z/1010 ZT

Mechanical Dial Comparator



FEATURES

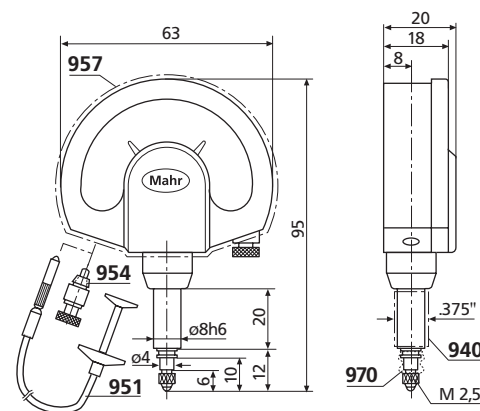
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral forces (side play) acting on the measuring spindle
- Maximum sensitivity and accuracy are ensured by the jeweled movement in conjunction with the precision gears and pinions
- Box type protective housing
- Constant measuring force
- Measuring spindle can be retracted with either a screw in cable release or with a lifting knob
- **Package contains:** case, adapter bush 940, 8 mm to 3/8"



TECHNICAL DATA

Order no.		4335900	4335905	4334900	4334905	4333900	4333905	4332900	4332905		
Product type		1002 Z	1002 ZT	1003 Z	1003 ZT	1004 Z	1004 ZT	1010 Z	1010 ZT		
Measuring range	inch	± .0010"		± .0020"		± .0050"		± .0100"			
Graduation value	inch	.00002"		.00005"		.0001"		.0005"			
Type of dial face		.001"–0–.001"		.002"–0–.002"		.005"–0–.005"		.01"–0–.01"			
Error limit G_e	inch	.00002"		.00005"		.0001"		.00035"			
Error limit G_{ges}	inch	.00003"		.00006"		.00012"		.0004"			
Error limit G_t	inch	.000014"		.000035"		.00005"		.00025"			
Hysteresis f_u	inch	.00001"		.000025"		.00003"		.0001"			
Repeatability f_w	inch	.00001"		.000025"		.00003"		.0001"			
Standard		Factory standard									
Overtravel	mm								2.5		
Measuring force	N									1	
Scale diameter	mm									50	
Dial color										White	
IP protection category:		IP 54		IP 54		IP 54		IP 54			

Order no.	Mounting shaft	Scale diameter
	mm	mm
4335900	8	50
4335905	8	50
4334900	8	50
4334905	8	50
4333900	8	50
4333905	8	50
4332900	8	50
4332905	8	50



ACCESSORIES

Order no.	Product name	Product type
4310103	Adapter bushing (.375" / 8 mm)	940
4372000	Cable release (250 mm)	951
4372030	Lifting knob	954
4373030	Splash guard cover	957
4334786	Rubber bellows	970
4375002	Lug back to mount on mounting shank 8h6 mm	963

