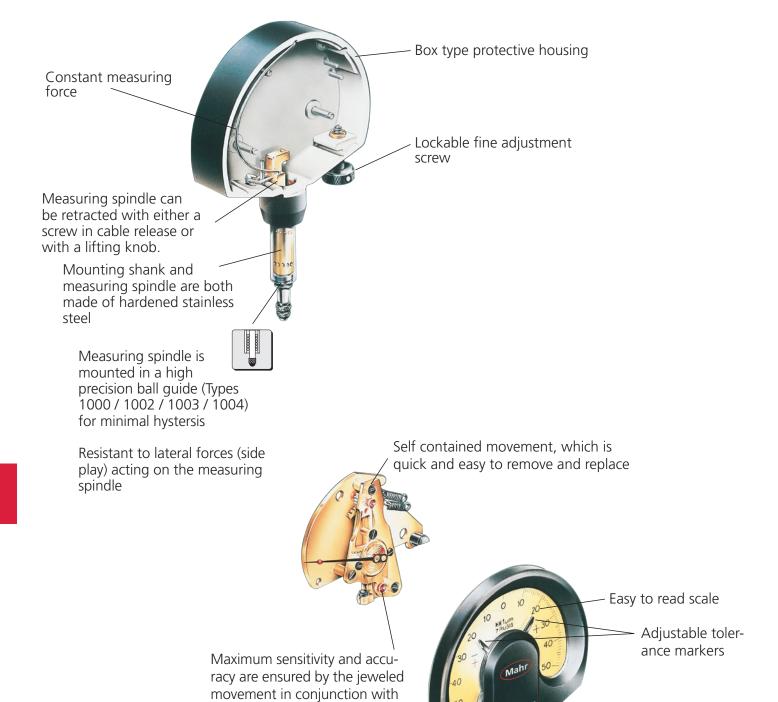
Millimess | Digital and Dial Comparators

through more precise components, greater accuracy and a much improved hysteresis. Millimess dial comparators are especially suitable for radial run-out, straightness and flatness measureding advantages include its easy handling, reliable readability and

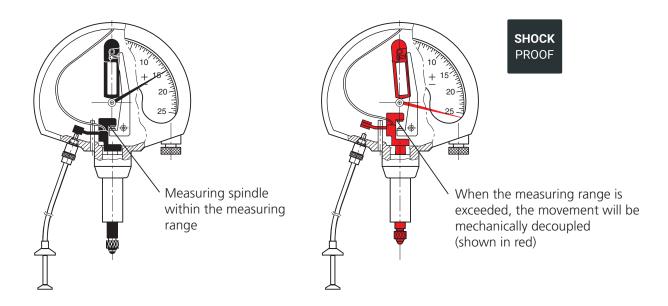


Millimess | Digital and Dial Comparators – Design

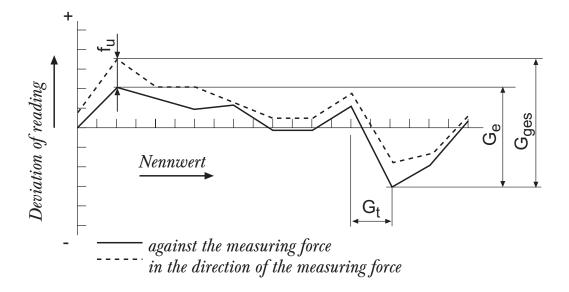


the precision gears and pinions

Millimess | Shockproof Mechanism



Millimess | Metrological characteristics



Millimess | Versions



Inductive Digital Comparator



Mechanical Dial Comparator



Mechanical Dial Comparator with limit contacts

Millimess 1003 / 1003 T / 1002 / 1002 T

Mechanical Dial Comparator





FEATURES

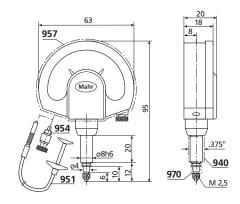
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral 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
- Package contains: case



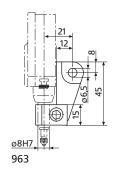
TECHNICAL DATA

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
Graduation value	μm		1	0.5	1	0.5	
Type of dial face		50-0	0–50	25-0-25	50-0-50	25–0)–25
Error limit G _e	μm		1	0.5	1	0	.5
Error limit G _{ges}	μm	1	.2	0.6	1.2	0.6	
Error limit G _t	μm	0.7 0.4 0.7		0	.4		
Hysteresis f _u	μm	0.5 0.3 0.5 0.3			.3		
Repeatability f _w	μm	0	0.5 0.3		0.5	0	.3
Standard		DIN 879–1 Factory DIN 879–1 Factory standard		standard			
Overtravel	mm			2	.8		
Measuring force	N	1					
Scale diameter	mm	50					
Dial color		Yellow White Yellow			ow		
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

Mahr

Millimess 1004 / 1004 T / 1003 XL / 1003 XLT

Mechanical Dial Comparator



FEATURES

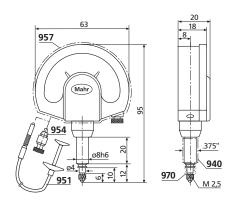
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral 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
- Package contains: case



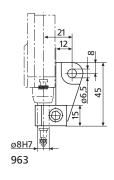
TECHNICAL DATA

Order no.		4333000	4333005	4334001	4334006	
Product type		1004	1004 T	1003 XL	1003 XLT	
Measuring range	μm	± 130				
Graduation value	μm		5	2	2	
Type of dial face			130–0) - 130		
Error limit G _e	μm	3.	.5	2	2	
Error limit G _{ges}	μm	4 2.4			.4	
Error limit G _t	μm	3	3	1	.4	
Hysteresis f _u	μm					
Repeatability f_w	μm			I		
Standard			Factory	standard		
Overtravel	mm		2	.5		
Measuring force	N	1				
Scale diameter	mm	50				
Dial color		White Yellow			low	
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

Millimess 1003

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
- Package contains: case



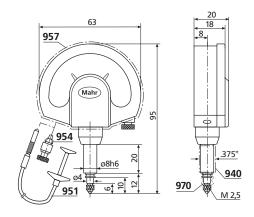
Application:

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

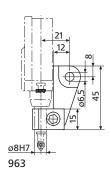
TECHNICAL DATA

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 s	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



Millimess 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
- Package contains: cable release, case

Application:

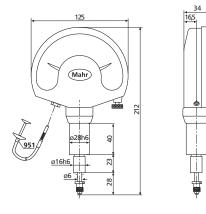
- Very clear, reliable and fatigue-free readings due to extra-large display.
- Ideal for test stations at which high volume production parts are measured or where the display can only be read from a distance.
- For use in a stable measuring table. We recommend: MarStand 824 GT measuring table
- M2.5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



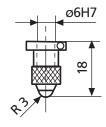
TECHNICAL DATA

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	2
Error limit G _t	μm	0	.7
Hysteresis f _u	μm		1
Repeatability f _w	μm	0	.5
Standard		Factory s	standard
Overtravel	mm		4
Measuring force	N	3	.5
Scale diameter	mm	11	10
Dial color		Yell	low

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 1010 / 1010 T / 1050 / 1050 T

Mechanical Dial Comparator



FEATURES

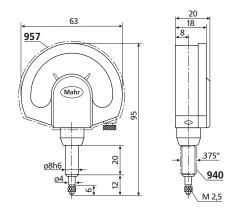
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral 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
- Package contains: case



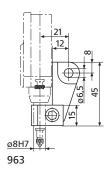
TECHNICAL DATA

Order no.		4332000	4332005	4330000	4330005
Product type		1010	1010 T	1050	1050 T
Measuring range	mm	±0	.25	±1	.5
Graduation value	mm	0.	01	0.	05
Type of dial face		25–0	0–25	15–0	D–15
Error limit G _e	μm	-	7	3	5
Error limit G _{ges}	μm	3	3	4	.0
Error limit G _t	μm	4	4	2	4
Hysteresis f _u	μm	2	2	10	
Repeatability f _w	μm	2 10		0	
Standard			Factory s	standard	
Overtravel	mm	2	.5	0	.3
Measuring force	N	1			
Scale diameter	mm	50			
Dial color		White			
IP protection category:			IP 54		

Order no.	Mounting shaft	Scale diameter
	mm	mm
4332000	8	50
4332005	8	50
4330000	8	50
4330005	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
4375002	Lug back to mount on mounting shank 8h6 mm	963

Mahr

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

Mechanical Dial Comparator



FEATURES

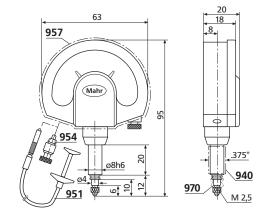
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral 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"



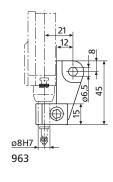
TECHNICAL DATA

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"		± .00	020"	± .0050"		± .0100"		
Graduation value	inch	.000	002"	.000	05"	.00	.0001"		.0005"	
Type of dial face		.001"-0	0001"	.002"-0	0002"	.005"-	.005"-0005"		001"	
Error limit G _e	inch	.000	002"	.000	05"	.00	01"	.000	35"	
Error limit G _{qes}	inch	.000	003"	.000	06"	.000	012"	.0004"		
Error limit G _t	inch	.000	014"	.000	035"	.00005"		.00025"		
Hysteresis f _u	inch	.000	01"	.000	025"	.00003"		.0001"		
Repeatability f _w	inch	.000	01"	.000	025"	.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

Millimess 1110 N / 1110 NT

Mechanical Dial Comparator with Limit Contacts

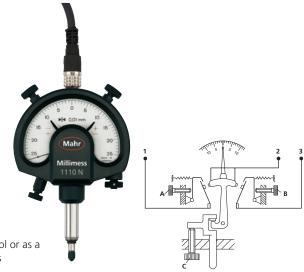


FEATURES

- 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
- Adjustable limit contacts made from high grade precious metal
- Limit contacts are particularly well protected against vibration and mechanical overload
- Package contains: case, instruction manual, adjusting knob 953, connection cable 1,2 m

Application:

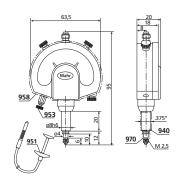
• Can be applied, for example, as tolerance control or as a precision contacter in automatic control systems



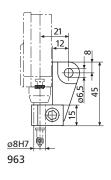
TECHNICAL DATA

Order no.		4343100	4343105
Product type		1110 N	1110 NT
Measuring range	mm	±0	.25
Graduation value	mm	0.	01
Type of dial face		25–0)–25
Error limit G _e	μm	6	.5
Error limit G _{qes}	μm	1	2
Error limit G _t	μm	ī	5
Hysteresis f _u	μm	3	.5
Repeatability f _w	μm	3	.5
Standard		Factory :	standard
Overtravel	mm	2	.5
Measuring force	N	2	2
Scale diameter	mm	5	0
Dial color		Wł	nite
IP protection category:			IP 54
Maximum switching capacity	mW	24	10
Maximum switching voltage	V	2	4
Maximum switching current	mA	10	00
Switching accuracy with non-inductive load of 10 mA/24 V	μm	1	.5

Order no.	Mounting shaft	Scale diameter
	mm	mm
4343100	8	50
4343105	8	50



ACCESSORIES



Order no.	Product name	Product type
4372000	Cable release (250 mm)	951
4372020	Setting knob for setting the limit contacts without an additional setting standard	953
4372030	Lifting knob	954
4373031	Splash guard cover	958
4310103	Adapter bushing (.375" / 8 mm)	940
4334786	Rubber bellows	970
4375002	Lug back to mount on mounting shank 8h6 mm	963
4345694	Connection cable (5 m), axial	
4345695	Connection cable (1.2 m), axial	

Mahr

Millimess 1150 N / 1150 NT

Mechanical Dial Comparator with Limit Contacts



FEATURES

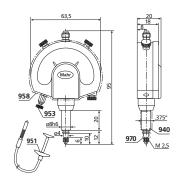
- Large, high contrast dial face
- Adjustable tolerance markers
- Lockable fine adjustment screw
- Shockproof movement
- Mounting shank and measuring spindle are both made of hardened stainless steel
- Measuring spindle is mounted in a high precision ball guide for minimal hysteresis
- Resistant to lateral 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
- Adjustable limit contacts made from high grade precious metal
- Limit contacts are particularly well protected against vibration and mechanical overload
- Package contains: case, instruction manual, adjusting knob 953, connection cable 1.2 m



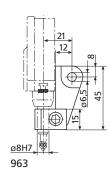
TECHNICAL DATA

Order no.		4342100	4342105
Product type		1150 N	1150 NT
Measuring range	mm	±1.5	
Graduation value	mm	0.0)5
Type of dial face		15–0) - 15
Error limit G _e	μm	3!	5
Error limit G _{qes}	μm	60	0
Error limit G _t	μm	2:	5
Hysteresis f _u	μm	1	7
Repeatability f_w	μm	1	7
Standard		Factory standard	
Overtravel	mm	0.	3
Measuring force	N	1.	5
Scale diameter	mm	50	0
Dial color		Wh	ite
IP protection category:			IP 54
Maximum switching capacity	mW	24	10
Maximum switching voltage	V	24	4
Maximum switching current	mA	10	0
Switching accuracy with non-inductive load of 10 mA/24 V	μm	7	

Order no.	Mounting shaft	Scale diameter
	mm	mm
4342100	8	50
4342105	8	50



ACCESSORIES



Order no.	Product name	Product type
4372000	Cable release (250 mm)	951
4372020	Setting knob for setting the limit contacts without an additional setting standard	953
4372030	Lifting knob	954
4373031	Splash guard cover	958
4310103	Adapter bushing (.375" / 8 mm)	940
4334786	Rubber bellows	970
4375002	Lug back to mount on mounting shank 8h6 mm	963
4345694	Connection cable (5 m), axial	
4345695	Connection cable (1.2 m), axial	

