



# original **UNIMETER™**

- for internal and external precision measurements
- indicator reading for comparative measurements

UNIMETER is robust, flexible and easy to handle.

UNIMETER consists of a precision cylinder on which two measuring jaws are placed. The upper front jaw is movable when measuring, and its movement is free from play and friction. The deflection of this movable jaw is transferred to an indicator, normally a dial gauge or a microcator. The rear measuring jaw which is fixed when measuring, is adjustable along the cylinder and can be secured at any desired distance from the upper jaw.

UNIMETER is set by means of gauge blocks, reference rings or similar to the required gauge size. The rear jaw is secured in a suitable position. After setting the indicator to zero, the Unimeter is ready for use.

UNIMETER measuring range can be increased by extension bars.

UNIMETER can easily be adapted to unique applications.

UNIMETER is delivered in a wooden case.

UNIMETER is delivered excl. dial indicator.

## Type UNI I

for internal measurement

Measuring jaws with parallel, cylindric measuring surfaces.

### Application

Measuring internal diameter



Type	Art.No	Measuring range, mm	Maximum movement of the measuring jaw, mm	Maximum measuring depth, mm
UNI 2 I	19945	28-247	3	32
UNI 2 LI	19947	28-347	3	32
UNI 2 ELI	27972	28-447	3	32



## Extension of UNI-2

Connection piece  
Art.No 18030



Extension bar

- 300mm Art.No 18655  
- 500mm Art.No 18654

End plug for  
extension bar

Art.No 17194

## Type UNI O

for external measurement

Measuring jaws with parallel, flat measuring surfaces.

### Application

Measuring gear teeth thickness



Measuring length



Measuring external diameter



Type	Art.No	Measuring range mm	Maximum movement of the measuring jaw mm	Maximum measuring depth mm	For gears with Basic values		
					Min. diam. pitch mm	Max. diam. pitch mm	Max. D at diam. pitch 10 mm
UNI 2 O	19948	0-220	3	35	1,5	1,5	620
UNI 2 LO	19948	0-320	3	35	1,5	1,5	750
UNI 2 ELO	27772	0-420	3	35	1,5	25 at D max. 300	750

## Type UNI M for measuring anvils

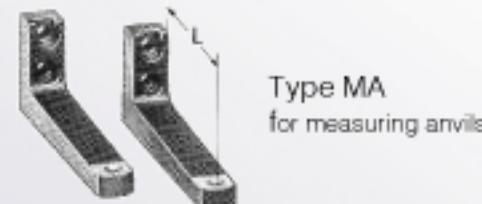
MI: for internal measurement  
MO: for external measurement



Type	Art.No	Measuring range <sup>1)</sup> in mm				Measuring movement, max. movement of the measuring jaw, mm	Measuring depth mm (MA 50)
		Spherical plate	Point anvil	Ball	Thread anvil <sup>2)</sup>		
UNI 2 MI	18815	29-254	38-283	38-281	31-256		
UNI 2 LMI	18816	29-354	38-363	38-361	31-356	10	50
UNI 2 ELMI	30000	29-454	38-483	38-461	31-456		
UNI 2 MO	19921	9-234	max 225	2-227	max 225		
UNI 2 LMO	20418	9-334	max 325	2-327	max 325	10	50
UNI 2 ELMO	30001	9-434	max 425	2-427	max 425		

- 1) By mounting the fixed, adjustable jaw in reversed position, the measuring range is extended by 22 mm.
- 2) Indicated measuring ranges are approximate and only apply to small measuring anvils. The measuring ranges vary with the size of the measuring anvils.

Measuring arm type MA	Art.No	L-length
MA 25	23201	25 mm
MA 50	23202	50 mm
MA 75	23203	75 mm
MA 100	23204	100 mm

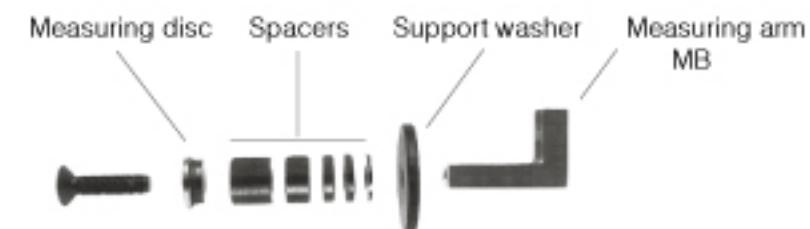


Type MA  
for measuring anvils



## Type UNI M for measuring discs

MI: for internal measurement  
MO: for external measurement



Type	Art.No	Measuring range <sup>1)</sup> mm	Measuring movement, max. movement of measuring jaw mm	Measuring depth mm (MB 30)
UNI 2 MI	18815	46-256		
UNI 2 LMI	18816	46-356		
UNI 2 ELMI	30000	46-456		
UNI 2 MO	19921	16-226		
UNI 2 LMO	20418	16-326		
UNI 2 ELMO	30001	16-426	10	30

- 1) By mounting the fixed, adjustable jaw in reversed position, the measuring range is extended by 22 mm.

Measuring arm type MB	Art.No	L-length
MB 30	23211	30 mm
MB 50	23212	50 mm



Type MB  
for discs  
Hole with thread M6



# Type UNI MR

For internal and external measurement



Type MA

for exchangeable measuring anvils  
L= 25, 50, 75, 100 mm

Type MB

for exchangeable measuring discs, hole with thread M8  
L= 30, 50 mm

Type MC

for various measuring anvils  
cyl. hole Ø 4 mm H7  
L= 30, 50 mm

Type	Art.No.	Type	Art.No.	Type	Art.No.
MA 25	23201	MB 30	23211	MC 30	23221
MA 50	23202	MB 50	23212	MC 50	23222
MA 75	23203				
MA 100	23204				

Type MR for measuring anvils (measuring arm MA to be ordered)	Art.No.	Measuring range in mm				Measuring movement, max. movement of the measuring jaw, mm	Measuring depth mm (MA 50)
		Spherical plate	Point anvil	Ball	Thread anvil		
UNI 2 MR (int) (ext)	21587	29-254 9-234	38-283 max 225	38-281 2-227	31-256 max 225	10	50
UNI 2 LMR (int) (ext)	22489	29-354 9-334	38-383 max 325	38-381 2-327	31-356 max 325	10	50
UNI 2 ELMR(int) (ext)	30004	29-454 9-434	38-463 max 425	35-451 2-427	31-456 max 425	10	50

Type MR for measuring discs (measuring arm MB to be ordered)	Art No	Measuring range, mm	Measuring movement, max. movement of the measuring jaw, mm		Measuring depth, mm (MB 30)
UNI 2 MR (int) (ext)	21587	46-256 16-226	10	30	
UNI 2 LMR (int) (ext)	22489	46-358 16-328	10	30	
UNI 2 ELMR(int) (ext)	30004	46-456 16-426	10	30	

Application  
further page 7



## Application type M and MR with measuring arm MA

Range of application	Measuring anvils - to be ordered separately	Examples		
Measuring of bores	Plate with spherical measuring surface (also available: Plate with flat measuring surface, Nr. 17799 P)	 No 17799		
Measuring of narrow grooves, O-ring grooves and undercuts.	Point anvil Ø 2 mm with spherical measuring surface, L = 5 mm. Other length on request, max L = 25 mm.	 No 17615		
Measuring of Vee-grooves, gear tooth thickness on internal gears, pitch diameter on internal splines etc.	Measuring anvil with soldered steel ball Ø 3 mm. Other dimensions on request, also carbide balls	 Nr 21847		
Measuring thread pitch diameters	The measuring anvils rotate to follow the helix of the thread Form and pitch of thread to be indicated in order Example: M x 2 mm BSW x 10 t.p.i. UN x 4 t.p.i.	 For thread dimensions		
	M 0,5-0,7 pitch 0,7-1,0 1,25-2,0 2,0-3,5 3,5-5,0 5,0-7,0 BSW 14-10 t.p.i. 10-7 7-4,5 4,5-3,0	Art. no 22610 22611 18041 18042 18043 18044 18045 18046 18047 18048	UN 32-24 t.p.i. 24-18 18-14 14-10 10-7 7-4,5 4,5-3,0	Art. No 22613 22612 20430 18049 18050 18051 18052
Measuring of shoulders at different levels, locating flanges, etc.	1 Measuring disc 27453, Ø 15 mm, measuring height 4 mm 2. Spacers 27168-27172, length 1,2,3,6 and 10 mm respectively 3. Support washer 27166, Ø 30 mm, thickness 3 mm	 F6S 6		
	Measuring disc, spacer and support washer are attached to the measuring jaw by screw F6S 6			

Special applications to be quoted on request.

# Order form

to be copied and faxed

UNIMETER			Accessories		
Art.No	Type	Pcs	Art.No	Type	Pcs
19945	UNI-2I		18654	Extension 500 mm	
19947	UNI-2LI		18655	Extension 300 mm	
27972	UNI-2ELI		18030	Connection piece	
19946	UNI-2O		17194	End plug for extension	
19948	UNI-2LO				
27772	UNI-2ELO				
18815	UNI-2MI				
18816	UNI-2LMI				
30000	UNI-2ELMI				
19921	UNI-2MO				
20418	UNI-2LMO				
30001	UNI-2ELMO				
21567	UNI-2MR				
22469	UNI-2LMR				
30004	UNI-2ELMR				

Measuring anvils			Measuring arms		
Art.No	Type	Pcs	Art.No	Type	Pcs
17799	Measuring anvil, spherical		23201	MA25	
17799P	Measuring anvil, flat		23202	MA50	
17615	Measuring anvil, point anvil Ø 2 mm		23203	MA75	
17615L	Measuring anvil, point anvil max L = 25 mm		23204	MA100	
21847	Measuring anvil, steel ball Ø 3		23211	MB30	
22222	Measuring anvil, soldered steel ball 3<Ø<10 mm		23212	MB50	
33333	Measuring anvil, soldered carbide ball Ø max 5 mm		23221	MC30	
44444	Measuring anvil, soldered steel ball 5<Ø<10 mm		23222	MC50	

Name: .....	Comments: .....
Company: .....	.....
Address: .....	.....
Fax no: .....	.....
Tel no: .....	.....
Date: .....	.....
Order no: .....	.....

Your distributor:

Granlund Tools AB

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