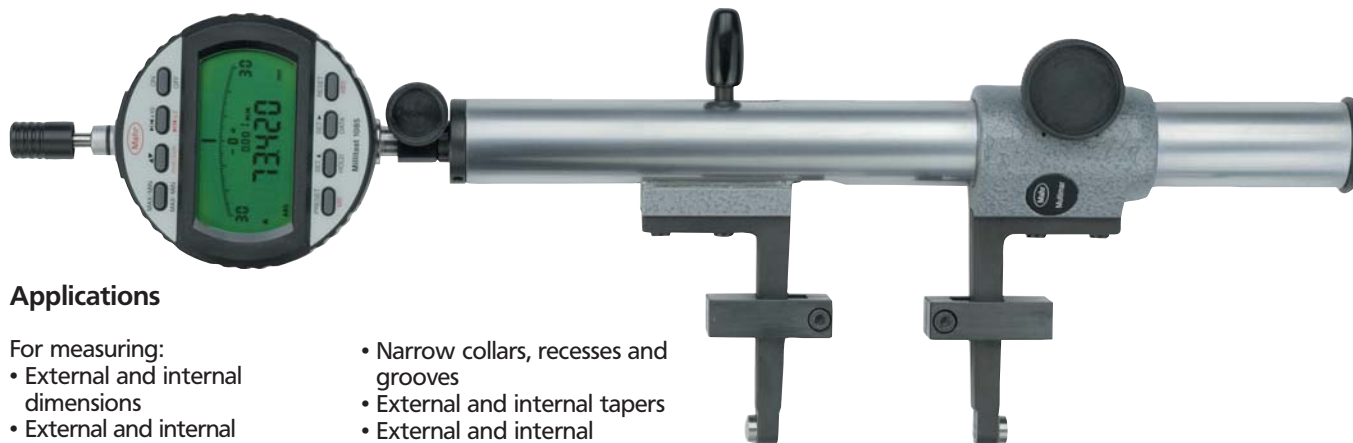


## Universal Measuring Instrument 844 T Multimar for External and Internal Dimensions



### Applications

For measuring:

- External and internal dimensions
- External and internal threads
- Centering shoulders
- Narrow collars, recesses and grooves
- External and internal tapers
- External and internal serrations and much more

### Features

- Rugged, ground and hard chrome plated column
- Moveable arm holder is mounted in precision ball guide to eliminate play and friction
- The stationary measuring arm holder can be moved for coarse adjustment along the column
- High measuring sensitivity and accuracy due to stability provided by movable arm holder
- Constant measuring force due to the built-in spring
- The direction of the measuring force can be changed for either internal or external measurements
- The reversible measuring arms can be used to extend the range of application

### Technical Data

Application range*		Extended application range mm/inch	Distance of moveable anvil mm/inch	Order no.**	Order no. wooden case
mm	(inch)				
25 - 110	(1 - 4.33")	25 - 185 / (1 - 7.28")	10/ .4"	4500001	4500010
100 - 260	(4 - 10.24")	100 - 335 / (4 - 13.18")	10/ .4"	4500002	4500011
250 - 610	(10 - 24.02")	250 - 685 / (10 - 26.96")	10/ .4"	4500003	4500012
600 - 1010	(24 - 39.75")	600 - 1085 / (24 - 42.71")	10/ .4"	4500004	4500013

\* These application ranges only apply to internal measurements. For external measurements the range of application is reduced by 25 mm (1"). The extension of the application range takes place when the measuring elements are rotated through 180°.

All Application ranges depend upon which anvil is being used.

\*\* Excludes indicating instrument

### Indicating Instruments

All indicating instruments that has a 8 mm mounting shank may be used.

Recommended are:

Indicating Instrument	Readings	Order no. mm/inch
Dial Indicator 810 S	0,01 mm/ .0005"	4311210
Zentimess 1010 / 1010 Z	0,01 mm/ .0005"	4332000/ 4332900
Compramess 1004 / 1004 Z	5 µm/ .0001"	4333000/ 4333900
Digital Indicator "Millitast" 1083	1 µm/ .00005**	4336800
Digital Indicator "Millitast" 1085	1 µm/ .00005**	4336301
µMaxµm XL (XLI-30000)	1 µm/ .00005**	XLI-30000

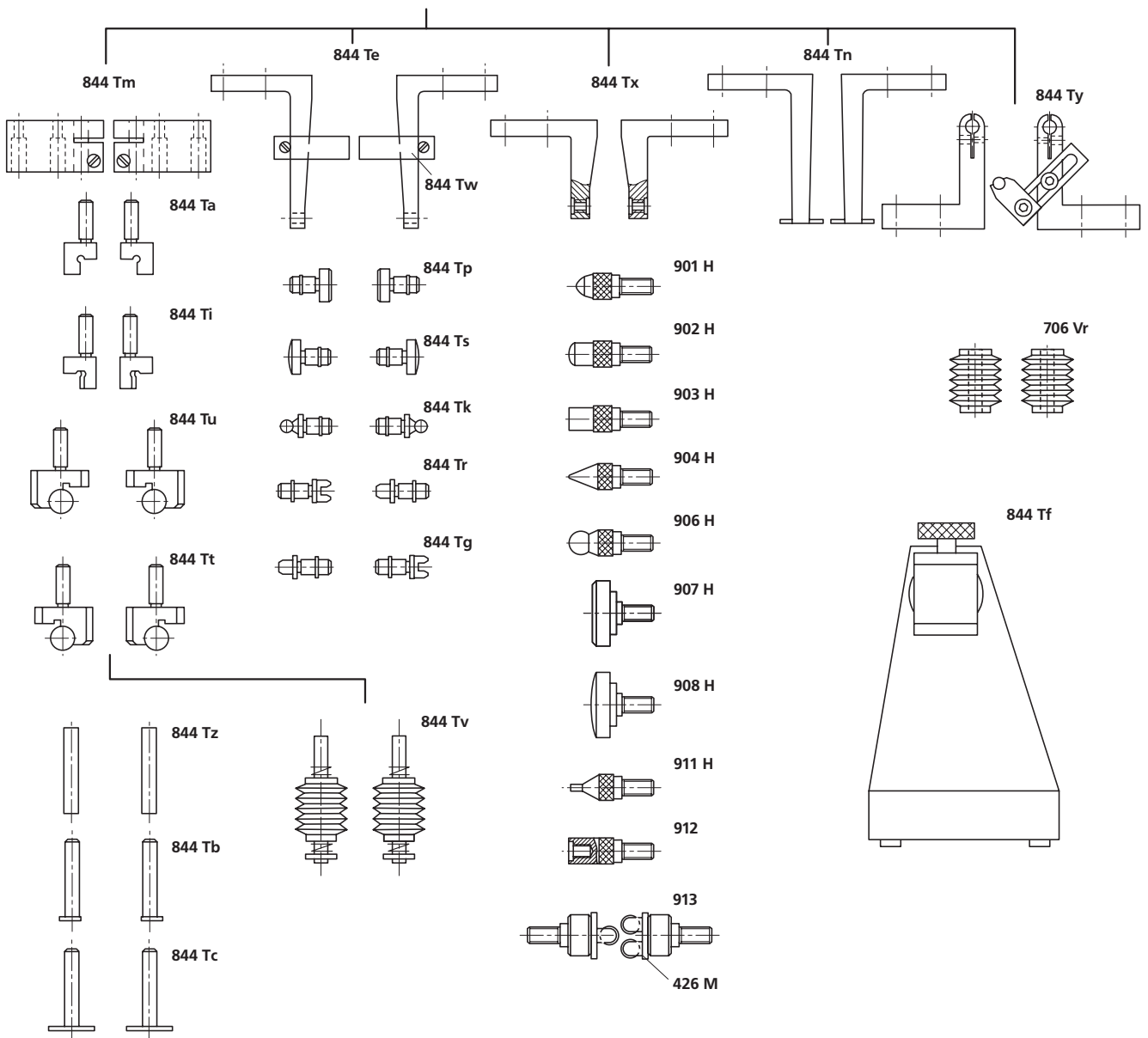
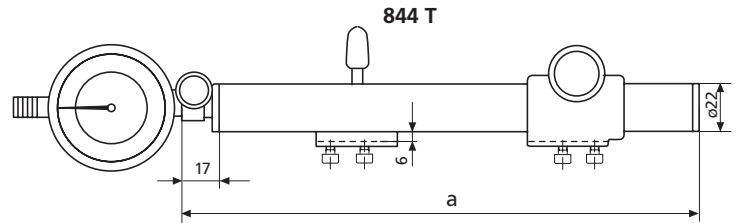
\* Resolution

Digital Indicators see Chapter 5

## Universal Measuring Instrument 844 T Multimar Measuring Arms, Mounting Attachments and Anvils

### Dimensions

Application ranges		a
mm	(inch)	mm/inch
25 - 110	(1 - 4.33")	245/9.6"
100 - 260	(4 - 10.93")	395/15.5"
250 - 610	(10 - 24")	745/29.3"
600 - 1010	(24 - 40")	1145/45.0"



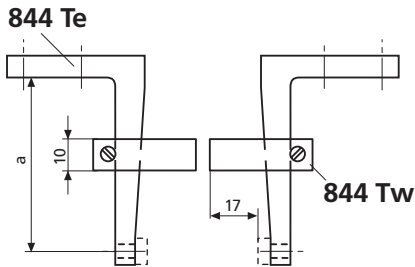
## Measuring Arms, Stops and Mounting Attachments

### Measuring Arms 844 Te

- For outside and inside dimensions
- Mounting dia. 3.5 mm which accommodates interchangeable anvils 844 Ts, 844 Tp, 844 Tk, 844 Tr and 844 Tg
- Measuring arms can be rotated in the measuring arm holder in order to extend the measuring range

Throat depth a mm	25	50	100
Order no.	4500020	4500021	4500022*

\* Not suitable for Digital Universal Caliper 25 ES

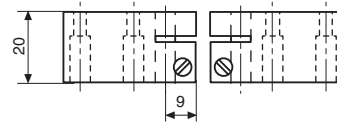


### Mounting Attachments 844 Tm

- Accommodates the following anvils 844 Ta, 844 Ti, 844 Tu, 844 Tt, 844 Tb, 844 Tc, 844 Tr as well as cylindrical measuring pins 844 Tz
- Faces may be used as stops
- Reversible arm holders for extending measuring range

Order no. 4500030

#### 844 Tm



### Stops 844 Tw

- To set the measuring depth limit. To be mounted on Measuring Arms 844 Te. Reversible for inside and outside measurements.

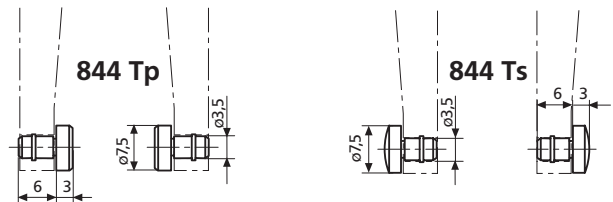
Order no. 4500109

## Anvils for Outside and Inside Measurements

### Anvils for Measuring Arms 844 Te

- Hardened steel
- With cylindrical mounting shank and retainer ring which allows free rotation inside the bore of Arms 844 Te

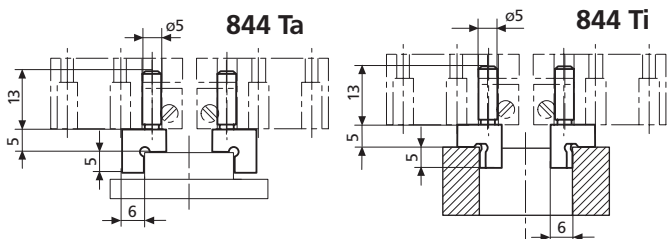
Cat. no.		Order no.
844 Tp	Flat, for outside diameters, distances and widths	4500040
844 Ts	Spherical, for inside diameters	4500045



### Shoulder anvils for mounting attachments 844 Tm

- Made of hardened steel
- For measuring narrow collars, registers and similar measuring tasks
- With cylindrical mounting shank to attach into the bore of the mounting attachments 844 Tm

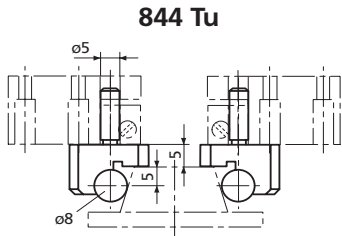
Cat. no.		Order no.
844 Ta	Flat, for outside diameters	4500050
844 Ti	Semi-cylindrical, for inside diameters	4500055



## Anvils for Taper and Distances

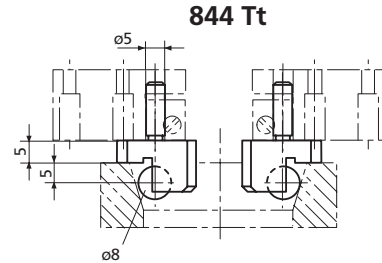
### Roller Anvils 844 Tu\* for outside tapers

- To measure the diameter of outside tapers and dovetail guides
- Roller made of hardened steel



### Ball Anvils 844 Tt\* for inside tapers

- To measure the diameter of inside tapers with a distance of 5 mm from the taper face
- Ball made of hardened steel



Cat. no.	Order no.
844 Tu*	4500047
Roller dia.	8 mm
Roller length	14 mm
Distance of roller to stop face	5 mm ±3 µm

Cat. no.	Order no.
844 Tt*	4500046
Ball dia.	8 mm
Distance of ball to taper face	5 mm ±3 µm

\* For inside and outside surfaces that are parallel to each other, combination sets consisting of one Roller Anvil 844 Tu and one Ball Anvil 844 Tt are recommended.

## Anvils for Recesses

### Measuring Units with Measuring Blades for Mounting Attachments 844 Tm

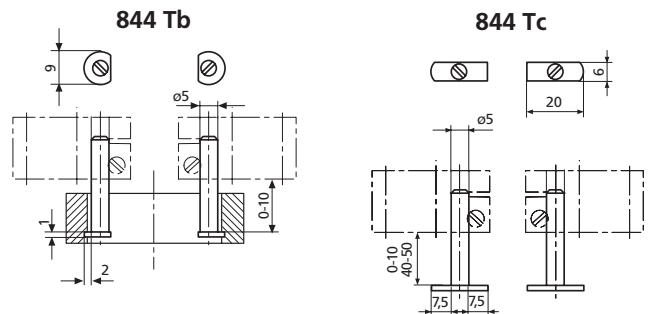
- For measuring registers and recesses on inside and outside diameters. Each unit consists of a pin type holder and a mounted measuring blade. The holder is length adjustable in Mounting Attachment 844 Tm and serves for setting the measuring depth
- The face of the Mounting Attachment 844 Tm serves as stop

#### 844 Tb

- With round measuring blades
- Recommended for recesses up to 2 mm depth

#### 844 Tc

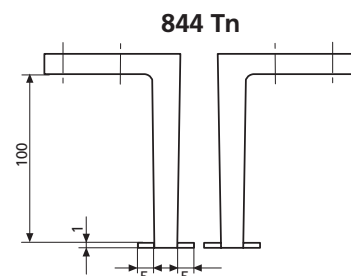
- With long measuring blades
- Recommended for recesses up to 7.5 mm depth



Cat. no.	Blades Length mm	dia. mm	Adjusting ranges mm	Order no.
844 Tb	–	9	0 – 10	4500015
844 Tc	20	–	0 – 10	4500114
	20	–	40 – 50	4500115

### Measuring Arms 844 Tn

- Hardened steel
- For recesses and grooves on inside and outside diameters at large measuring depth



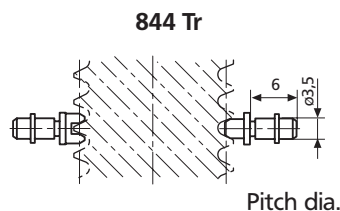
Throat depth	100 mm
Order no.	4500036*

\* Not suitable for Digital Universal Caliper 25 ES

## Thread Anvils

### Interchangeable Anvils 844 Tr for external threads

Shank dia. 3.5 mm  
 Shank length 6 mm  
 Requires: Measuring Arms 844 Te



#### For pitch diameters

Pair consists of V-anvil and blade.

Metric external thread (60°)			Whitworth external thread (55°)			American UST external thread (60°)		
Pitch	V-anvil	Blade	Pitch	V-anvil	Blade	Pitch	V-anvil	Blade
mm	Order no.	Order no.	range tpi	Order no.	Order no.	range tpi	Order no.	Order no.
0,5 - 0,7	4501000	4501200	40 - 32	4501007	4501207	40 - 32	4501018	4501418
0,7 - 1	4501001	4501201	32 - 24	4501008	4501208	32 - 24	4501019	4501419
1,25 - 2	4501002	4501202	24 - 18	4501009	4501209	24 - 18	4501020	4501420
2 - 3,5	4501003	4501203	18 - 14	4501010	4501210	18 - 14	4501021	4501421
3,5 - 5	4501004	4501204	14 - 10	4501011	4501211	14 - 10	4501022	4501422
5 - 7	4501005	4501205	10 - 7	4501012	4501212	10 - 7	4501023	4501423
7 - 9	4501006	4501206	7 - 4,5	4501013	4501213	7 - 4,5	4501024	4501424
			4,5 - 3	4501014	4501214	4,5 - 3	4501025	4501425
			3 - 2,5	4501015	4501215			

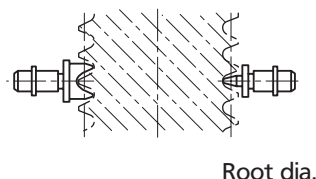
#### For root diameters

Pair consists of V-anvil and blade. Each pitch requires a separate V-anvil. Blade can be used for several pitches.

#### For pitch diameters

Trapezoid thread			Metric internal thread (60°)			Whitworth external thread (55°) American UST external thread (60°)		
Pitch	V-anvil	Blade	Pitch	V-anvil	Blade	Pitch	V-anvil	Blade
mm	Order no.	Order no.	mm	Order no.	Order no.	range tpi	Order no.	Order no.
1	4501150	4501350	0,5	4501026	4501232	40	4501083	4501284
1,5	4501151	4501351	0,6	4501027		36	4501108	
2	4501152	4501352	0,7	4501028	32	4501084		
3	4501153	4501353	0,75	4501029	28	4501085		
4	4501154	4501354	0,8	4501030	26	4501086	4501290	
5	4501155	4501355	0,9	4501031	24	4501087		
6	4501156	4501356	1	4501032	22	4501088		
7	4501157	4501357	1,25	4501033	20	4501089	4501293	
8	4501158	4501358	1,5	4501034	19	4501090		
9	4501159	4501359	1,75	4501035	18	4501091	4501299	
10	4501160	4501360	2	4501036	16	4501092		
			2,5	4501037	14	4501093	4501296	
			3	4501038	12	4501094		
			3,5	4501039	11	4501095	4501299	
			4	4501040	10	4501096		
			4,5	4501041	9	4501097	4501302	
			5	4501042	8	4501098		
			5,5	4501043	7	4501099	4501306	
			6	4501044	6	4501100		
			7	4501045	5	4501101	4501306	
			8	4501046	4,5	4501102		
			9	4501047	4	4501103	4501306	
					3,5	4501104		
					3,25	4501105	4501306	
					3	4501106		

844 Tr

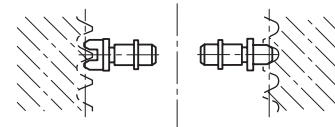


## Thread Anvils

### Interchangeable Anvils 844 Tg for internal threads

Shank dia. 3.5 mm  
Shank length 6 mm  
Requires: Measuring Arms 844 Te

844 Tg



Pitch dia.

#### For pitch diameters

Pair consists of V-anvil and blade.

Metric internal thread (60°)			Whitworth internal thread (55°)			American UST internal thread (60°)		
Pitch mm	V-anvil Order no.	Tapered anvil Order no.	Pitch range tpi	V-anvil Order no.	Tapered anvil Order no.	Pitch range tpi	V-anvil Order no.	Tapered anvil Order no.
0,5 - 0,7	4174300	4174600	40 - 32	4174343	4174643	40 - 32	4174415	4174615
0,7 - 1	4174301	4174601	32 - 24	4174344	4174644	32 - 24	4174416	4174616
1,25 - 2	4174302	4174602	24 - 18	4174345	4174645	24 - 18	4174417	4174617
2 - 3,5	4174303	4174603	18 - 14	4174346	4174646	18 - 14	4174418	4174618
3,5 - 5	4174304	4174604	14 - 10	4174347	4174647	14 - 10	4174419	4174919
5 - 7	4174305	4174605	10 - 7	4174348	4174648	10 - 7	4174420	4174620
7 - 9	4174306	4174606	7 - 4,5	4174349	4174649	7 - 4,5	4174421	4174621
			4,5 - 3	4174350	4174650	4,5 - 3	4174422	4174622
			3 - 2,5	4174351	4174651			

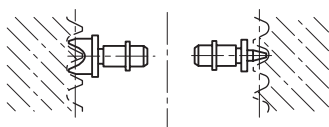
#### For outside diameters

Pair consists of V-anvil and blade. Each pitch requires a separate V-anvil. Pointed anvil can be used for several pitches.

#### For pitch diameters

Trapezoid thread			Metric internal thread (60°)			Whitworth internal thread (55°) American UST internal thread (60°)			
Pitch mm	V-anvil Order no.	Tapered anvil Order no.	Pitch mm	V-anvil Order no.	Pointed anvil Order no.	Pitch range tpi	V-anvil Order no.	Pointed anvil Order no.	
1	4501830	4501831	0,5	4174313	4174619	40	4174431	4174632	
1,5	4501832	4501833	0,6	4174314		36	4174427		
2	4501834	4501835	0,7	4174315		32	4174432		
3	4501836	4501837	0,75	4174316		28	4174433		
4	4501838	4501839	0,8	4174317		26	4174435		
5	4501840	4501841	0,9	4174318		24	4174436		
6	4501842	4501843	1	4174319		22	4174437		4174939
7	4501844	4501845	1,25	4174321		20	4174438		4174943
8	4501846	4501847	1,5	4174322		19	4174439		
9	4501848	4501849	1,75	4174323		18	4174440		4174943
10	4501850	4501851	2	4174325	16	4174442			
			2,5	4174326	14	4174443	4174947		
			3	4174327	12	4174445			
			3,5	4174329	11	4174446	4174949		
			4	4174330	10	4174447			
			4,5	4174331	9	4174449	4174949		
			5	4174333	8	4174450			
			5,5	4174334	7	4174451	4174949		
			6	4174335	6	4174453			
			7	4174337	5	4174454	4174655		
			8	4174338	4,5	4174455			
			9	4174339	4	4174457	4174660		
					3,5	4174458			
					3,25	4174459	4174660		
					3	4174460			

844 Tg



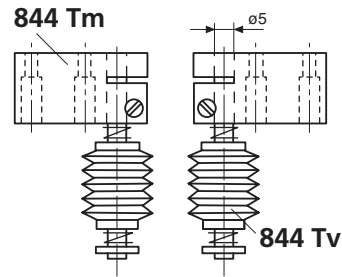
Root dia.

## Thread Measuring Rollers

### Interchangeable Anvils 844 Tv for External and Internal Threads

With mounting shank which fits into Mounting Attachments 844 Tm. Each with two springs to facilitate positioning on the thread.

Mounting Shank dia.: 5 mm  
Requires: Measuring Arms 844 Tm



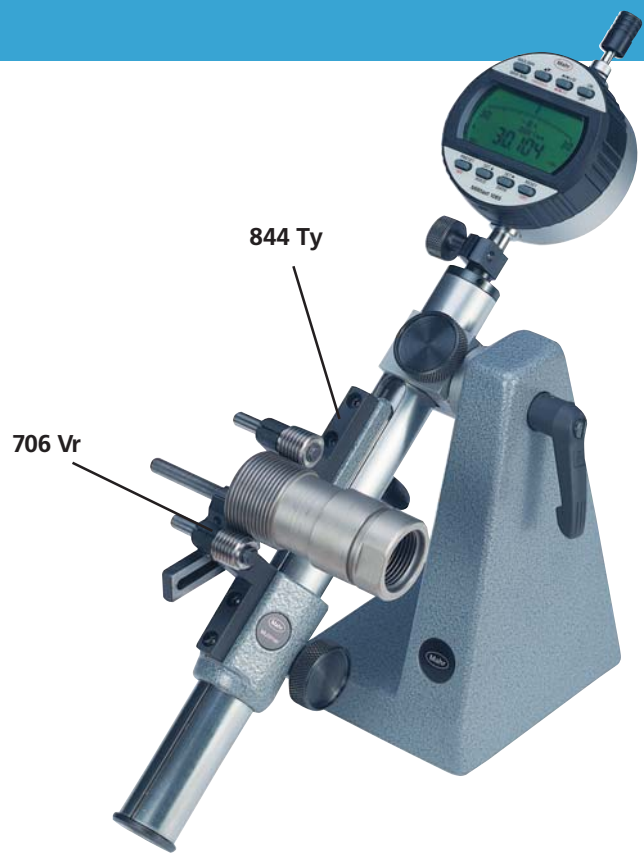
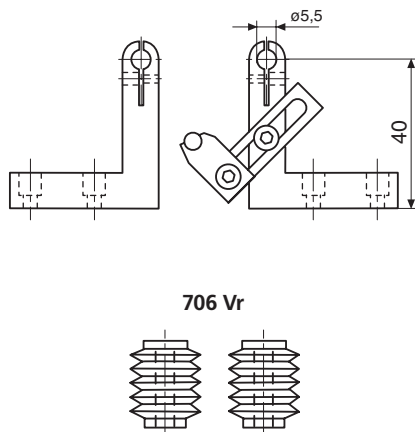
Metric Thread (60°)		Whitworth Thread (55°)		American UST Thread (60°)	
Pitch mm	Order no.	Range tpi	Order no.	Range tpi	Order no.
		40	4501769	40	4501819
		36	4501768	36	4501818
		32	4501767	32	4501817
		30	4501766	30	4501816
		28	4501765	28	4501815
0,5	4501705	24	4501764	24	4501814
0,6	4501706	22	4501763	22	4501813
0,7	4501707	20	4501762	20	4501812
0,75	4501708	19	4501761	19	4501811
0,8	4501709	18	4501760	18	4501810
0,9	4501710	16	4501759	16	4501809
1	4501711	14	4501758	14	4501808
1,25	4501712	13	4501757	13	4501807
1,5	4501713	12	4501756	12	4501806
1,75	4501714	11	4501755	11	4501805
2	4501715	10	4501754	10	4501804
2,5	4501716	9	4501753	9	4501803
3	4501717	8	4501752	8	4501802
3,5	4501718	7	4501751	7	4501801
4	4501719	6	4501750	6	4501800
4,5	4501720				
5	4501721				
5,5	4501722				
6	4501723				

**Special Threads.** Interchangeable Measuring Rollers for special threads are also available on request.

## Measuring Roller Holder 844 Ty

Measuring Roller Holder 844 Ty  
With location bolts for the Measuring Rollers 706 Vr, also with  
stop and stop pin

Order no. 4502463



## Thread Measuring Rollers 706 Vr

To be mounted on the Measuring Roller Holder 844 Ty

Metric Thread (60°)		Whitworth Thread (55°)		American UST Thread (60°)	
Pitch mm	Order no.	Range tpi	Order no.	Range tpi	Order no.
		40	4521219	40	4521319
		36	4521218	36	4521318
		32	4521217	32	4521317
		30	4521216	30	4521316
		28	4521215	28	4521315
0,5	4521105	24	4521214	24	4521314
0,6	4521106	22	4521213	22	4521313
0,7	4521107	20	4521212	20	4521312
0,75	4521108	19	4521211	19	4521311
0,8	4521109	18	4521210	18	4521310
0,9	4521110	16	4521209	16	4521309
1	4521111	14	4521208	14	4521308
1,25	4521112	13	4521207	13	4521307
1,5	4521113	12	4521206	12	4521306
1,75	4521114	11	4521205	11	4521305
2	4521115	10	4521204	10	4521304
2,5	4521116	9	4521203	9	4521303
3	4521117	8	4521202	8	4521302
3,5	4521118	7	4521201	7	4521301
4	4521119	6	4521200	6	4521300
4,5	4521120				
5	4521121				
5,5	4521122				
6	4521123				

**Special Threads.** Interchangeable Measuring Rollers for special threads are also available on request.

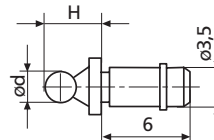


## Ball Anvils 844 Tk

Made of carbide. With cylindrical mounting shank and retainer ring which allows free rotation inside the bore of Measuring Arms 844 Te

Shank dia. 3.5 mm  
 Shank length 6 mm  
 Manufacturing tol. ball dia.  $\pm 2 \mu\text{m}$

Requires: Meas. arm 844 Te



Dia. d mm	H mm	Order no.	Dia. d mm	H mm	Order no.	Dia. d mm	H mm	Order no.	Dia. d mm	H mm	Order no.
0,5	3,0	4502620	1,5	4,0	4500352	2,386	4,9	4502645	4	6,5	4500359
0,551	3,1	4502621	1,524	4,0	4502635	2,438	4,9	4502646	4,5	7,0	4500360
0,62	3,1	4502622	1,54	4,0	4502636	2,5	5,0	4500356	4,835	7,3	4502655
0,623	3,1	4502623	1,6	4,1	4502637	2,667	5,2	4502647	5	7,5	4500361
0,63	3,1	4502624	1,65	4,2	4502638	2,704	5,2	4502648	5,25	7,8	4502656
0,722	3,2	4502625	1,7	4,2	4502639	2,713	5,2	4502649	5,486	8,0	4502657
0,862	3,4	4502626	1,75	4,3	4500353	2,721	5,2	4502650	5,5	8,0	4500362
0,895	3,4	4502627	1,782	4,3	4502640	2,743	5,2	4502651	6	8,5	4500363
0,965	3,5	4502628	1,8	4,3	4502641	2,75	5,3	4500618	6,096	8,6	4502658
1	3,5	4500350	1,829	4,3	4502642	3	5,5	4500357	6,35	8,9	4502545
1,1	3,6	4502629	1,9	4,4	4502643	3,048	5,5	4502652	6,5	9,0	4502542
1,118	3,6	4502630	2	4,5	4500354	3,25	5,8	4502541	7	9,5	4502547
1,125	3,6	4502631	2,032	4,5	4502543	3,4	5,9	4502653	8	10,5	4502548
1,25	3,8	4500351	2,25	4,8	4502540	3,5	6,0	4500358	9	11,5	4502549
1,35	3,9	4502632	2,284	4,8	4502644	3,658	6,2	4502654	10	12,5	4502550
1,372	3,9	4502633	2,3	4,8	4502544						
1,385	3,9	4502634									

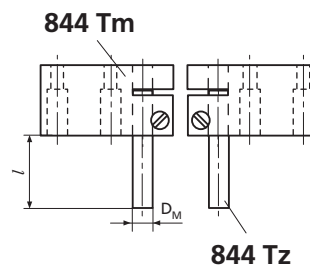
Further sizes on request (material: Steel)

## Cylindrical Measuring Pins 844 Tz

Made from steel, with shank for mounting into the Mounting Attachment 844 Tm.

Manufacturing tol.  $\pm 2 \mu\text{m}$

Dia. $D_M$ mm	Length $l$ mm	Order no.
1	6	4500500
1,25	6	4500501
1,5	6	4500502
1,75	10	4500503
2	10	4500504
2,5	10	4500506
3	15	4500507
3,5	15	4500508
4	15	4500509
4,5	20	4500510
5	20	4500511
5,5	20	4500512
6	20	4500513

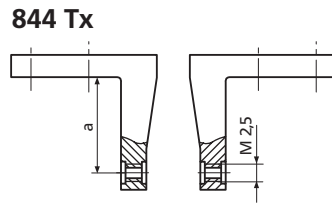


Further sizes on request (material: Steel)

## Measuring Arms 844 Tx and associated Anvils

### Measuring Arms 844 Tx

- With M 2.5 connection thread to screw in interchangeable anvils.
- For internal and external dimensions on specially formed work pieces
- Meas. Arms on Meas. Arm Holder can be rotated to extend meas. range



Throat depth a mm	25	50	100
Order no.	4500080	4500081	4500082*

\* Not suitable for Digital Universal Caliper 25 ES

### Standard Contact Points 901, Ball dia. 3 mm

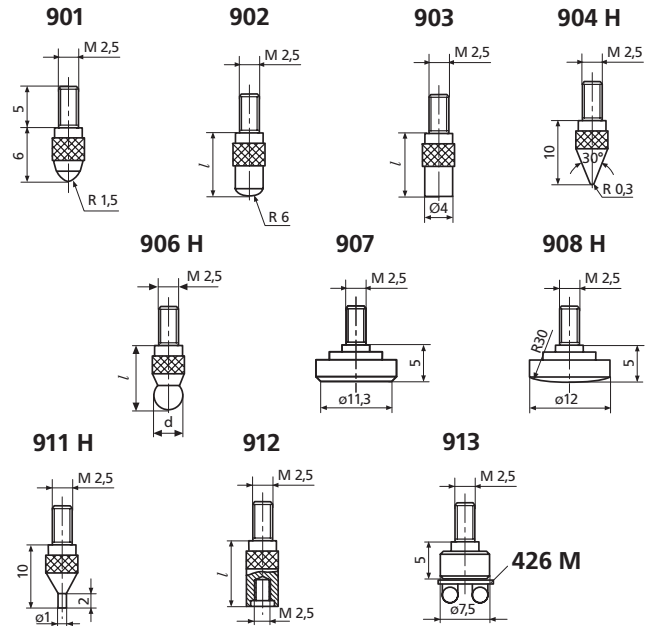
Cat. no.		Order no.
901	with Steel ball	4360001
901 H	with Carbide ball	4360002
901 R	with Ruby ball	4360003

### Spherical Contact Points 902/Flat Contact Points 903

Length <i>l</i> mm	902	902 H	903	903 H
	Steel	Carbide Contact face	Steel	Carbide tipped
Order no.	Order no.	Order no.	Order no.	Order no.
4	4360007	–	4360070	–
6	4360009	–	4360071	4360101
8	4360010	4360040	4360072	4360102
10	4360011	4360041	4360073	4360103
12	4360012	4360042	4360074	4360104
15	4360013	4360043	4360075	4360105
20	4360014	4360044	4360076	4360106
25	4360015	4360045	4360077	4360107
30	4360016	4360046	4360300	4360110
35	4360017	4360047	4360078	4360108
40	4360019	4360049	4360310	4360111
45	4360026	4360050	4360303	–
50	4360018	4360048	4360079	4360109
55	4360031			
65	4360035			
75	4360020			
85	4360036			
95	4360029			

### Measuring Spindle Extensions 912

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



### Ball Contact Points 906 H

With carbide ball, manufacturing tolerance ball dia. 0/-6µm

Ball dia. d mm	<i>l</i> mm	Order no.	Ball dia. d mm	<i>l</i> 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			

### Special Contact Points

	Order no.
Conical Contact Points, carbide tipped	904 H 4360131
Flat Contact Points*, steel, A = 1 cm <sup>2</sup>	907 4360200
carbide tipped, dia. 7 mm	907 H 4360201
Spherical Contact Points, steel	908 4360210
carbide tipped	908 H 4360211
Pin Contact Point, carbide tipped, dia. 1 mm, flat	911 H 4360240
Flat Contact Point, for mounting pin gage holder 426 M for measuring threads using the 3 wire method	913 4360400

\* Please note: when using an anvil with a flat contact face the opposite anvil must have spherical face

## Stand 844 Tf for Universal Measuring Instrument 844 T

- For stationary use of the Universal Measuring Instrument 844 T Measuring range 25 - 110mm
- User has both hands free for insertion of work piece
- The indicating instrument is always in the operator's line of vision
- Strong, stable cast base with clamping device for Universal Measuring Instrument

Order no.                **4450512**



844 Tf