




DOES EVERYTHING ROTATE AROUND PRECISION? **NO PROBLEM WITH MICROMAR.**



► | Micrometers belong alongside calipers to the most frequently used hand measuring instruments. With their precision ground spindle, their carbide tipped measuring faces and their robust frame construction the modern micrometer from the Micromar series ensures maximum precision and a long working life. Our mechanical micrometers are extremely reliable and are easy to read due to the scales having a satin chrome finish, thus ensuring accuracy and user comfort. Our digital micrometers unite both the highly renowned mechanical precision from Mahr with most modern electronics. These digital micrometers offer simple operation with an error free reading as well as problem-free data of the determined parameters to an external evaluation instrument. Micromar 40 EW, the newest generation of waterproof digital micrometers ensures that even in the most difficult workshop conditions precise and reliable results are obtained. A speciality of Mahr is the micrometer with a dial comparator, with its built-in dial comparator, stationary anvil and constant measuring force they are particularly well suited for rapid measurements and highly precise serial measurements.

► | Micromar. Micrometers

Overview

Micromar Micrometers

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Micrometers

Micromar 40 EW / 40 EXL / 40 EX

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With Digital Display

Micromar 40 A / 40 SH / 40 SC / 40 SD / 40 AG / 40 W

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With Scales

Micromar 40 F / 40 T / 40 TS

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With Dial Comparator

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Inside Micrometers

Micromar 44 Cms / 44 F

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Self-Centering Inside Micrometers

Depth Micrometer

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With Scales

Micrometer Heads

Micromar 46 EX / 46 / 46H

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With Digital Display or Scales

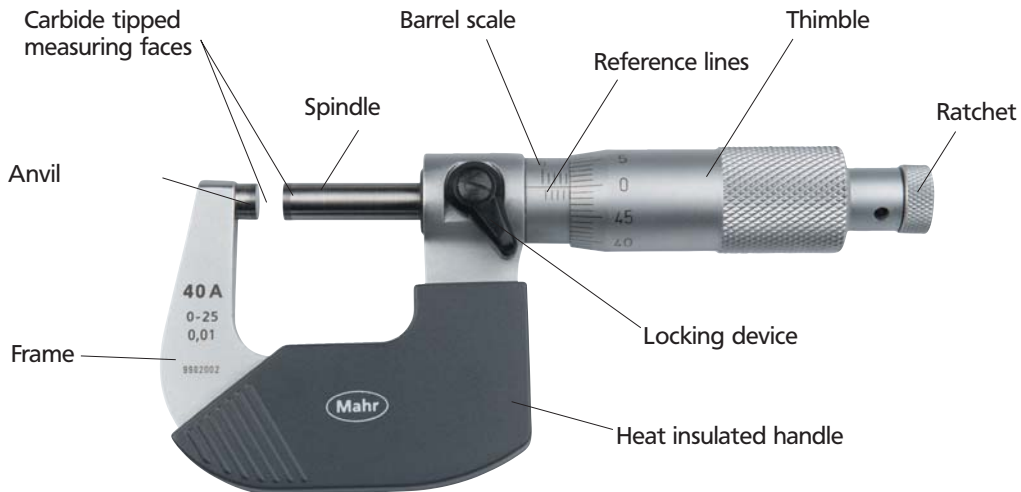
Measuring Tools Sets 50 B / 50 C / 50 D

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Micromar. Micrometer

Overview

Micromar - Design Features



Micromar - Types of Micrometers

Mahr - Micrometers are available with the following means of indication:

a) Digital Micrometer with digital display

b) Mechanical Micrometer with scale and dial

c) Mechanical Micrometer with scale



40 EW



40 F



40 A

Micromar. Micrometer

Overviews

Micromar - Variations

a) Micrometer



40 EW

b) Micrometer for inside dimensions



44 EX

c) Micrometer for depth measurement



45 T

d) Micrometer Head



46 EX

Function buttons of Digital Micrometers

Functions		Type		
		40 EW	40 EXL	40 EX 44 EX 46 EX
PR	Enter a numerical value (Reference Setting)	●	●	●
mm/inch	Switch between mm/inch	●	●	●
0/ABS	Set display to 0.000 mm/ .0000" for relative meas./ Set to a reference or preset value (PR)	●	●	●
DATA	Data transmission			●



Micromar. Micrometer

▶ | The new digital water proof Micrometer **Micromar 40 EW**. Even in the most difficult conditions precise and reliable results are obtained.

DIN 863

Highly precise measuring system, Patent pending

Ratchet is integrated in the thimble to enable one handed operation



Water proof measuring system according to Protection class **IP65**



Code Initial	IP	International Protection
First Numeral	6	Dust-tight
Second Numeral	5	Protected against powerful water jets

Rapid drive

Large display with 7.5 mm high digits

ABS

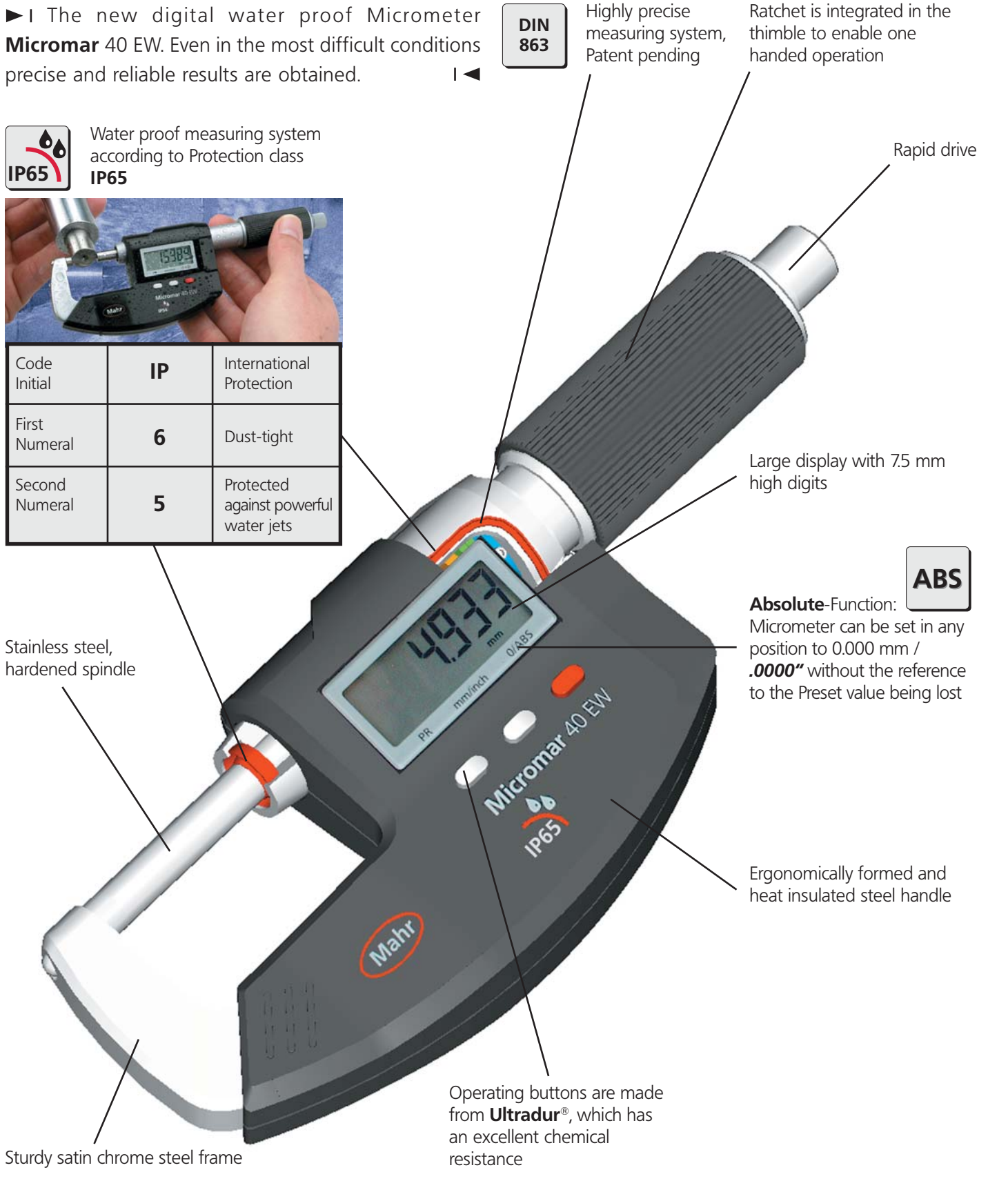
Absolute-Function: Micrometer can be set in any position to 0.000 mm / .0000" without the reference to the Preset value being lost

Stainless steel, hardened spindle

Ergonomically formed and heat insulated steel handle

Sturdy satin chrome steel frame

Operating buttons are made from **Ultradur®**, which has an excellent chemical resistance



Digital Micrometer 40 EW and 40 EXL

40 EW

ABS

DIN 863



40 EXL



Features

Functions:

0 (Zero setting the display for Relative measurement)
 ABS (Switching between Relative and Absolute measurement)
 mm/inch
 PR (Reference setting)

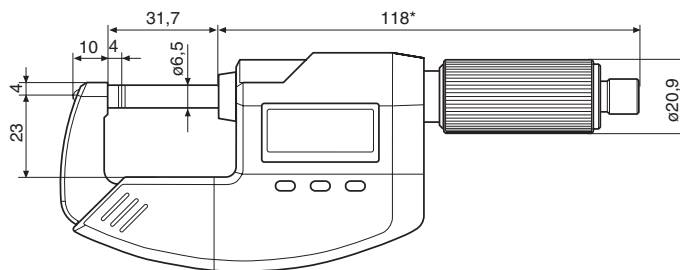
- Capacitive measuring system, life of battery approx. 2 years
- High contrast Liquid Crystal Display with 7.5 mm high digits

- Stain chrome steel frame, heat insulated
- Spindle and anvil are carbide tipped
- Spindle is made of stainless steel, hardened throughout and ground

- Ratchet is integrated in the thimble
- Rapid drive
- Scope of supply: Case, battery, operating instructions

Technical Data

	Measuring range		Resolution	Error limit G	Spindle thread pitch	Order no.
	mm	(inch)	mm/inch	µm	mm	
40 EW	0 - 25	(0-1")	0.001/ .00005"	4	0.635	4151700
40 EXL	0 - 25	(0-1")	0.001/ .00005"	4	0.635	4151600



Accessories

	Order no.
Battery 3V, Type CR 2032	4102520

Digital Micrometer 40 EX with Data Output



Features

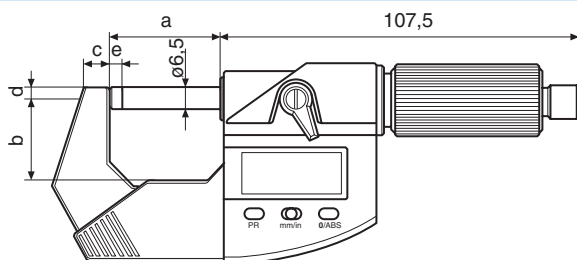
Functions:

- 0 (Zero setting)
- ABS (Switching between Relative and Absolute measurement)
- mm/inch
- PRESET (enter a numerical value)
- DATA (Data transmission via connection cable)

- Capacitive measuring system, life of battery approx. 2 years
- Data output: Opto RS232C or alternatively Digimatic
- High contrast LCD with 7.5 mm high digits
- Lacquered steel frame, heat insulated
- Spindle and anvil are carbide tipped
- Spindle is made of stainless steel, hardened throughout and ground
- Ratchet is integrated in the thimble
- Rapid drive
- Scope of supply: Case, battery, operating instructions

Technical Data

Measuring range		Resolution	Error limit	Spindle thread pitch	Order no.
mm	(inch)	mm/inch	G μm	mm	
0 - 25	(0-1")	0.001/ .00005"	4	0.635	4150570
25 - 50	(1-2")	0.001/ .00005"	4	0.635	4150571
50 - 75	(2-3")	0.001/ .00005"	5	0.635	4150572
75 - 100	(3-4")	0.001/ .00005"	5	0.635	4150573



Accessories

	Order no.
Battery 3V, Type CR 2032	4102520
Data Connection Cable Opto RS232C (2 m), with SUB-D jack 9-pin	16 EXr 4102410
Data Connection Cable Digimatic (2 m), Flat plug 10-pin	16 EXd 4102411

Dimensions

mm	a	b	c	d	e
0 - 25 mm / 0-1"	31.5	24	6.5	4.5	3.5
25 - 50 mm / 1-2"	56.6	31.5	10	4.5	3.5
50 - 75 mm / 2-3"	82.5	44	10	4.5	3.5
75 -100 mm / 3-4"	107.5	56.5	10	4.5	3.5

Digital Micrometer Set 40 EXS

Application range	Order no.	Remarks
0 - 100 mm (0 - 4")	4150590	Includes: wooden case, setting standards 25 mm, 50 mm and 75 mm



Accessories for Data Processing see Chapter 11

Micrometer 40 A

DIN
863

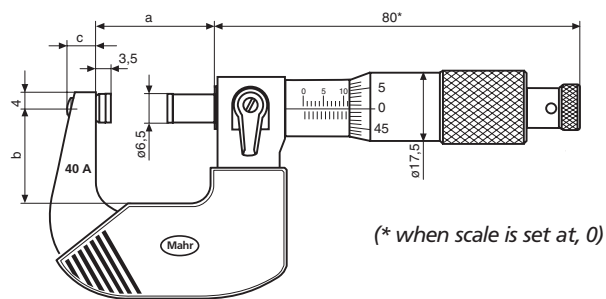


Features

- Chrome plated steel frame
- Spindle and anvil made of hardened steel, carbide tipped
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device
- Scope of supply: Case, setting standard (from measuring range 25-50 mm / 1-2"), operating instructions

Technical Data

Measuring range	Readings	Error limit G	Spindle thread pitch	Order no.
0 - 25 mm	0.01 mm	4 μm	0.5 mm	4134000
25 - 50 mm	0.01 mm	4 μm	0.5 mm	4134001
50 - 75 mm	0.01 mm	5 μm	0.5 mm	4134002
75 - 100 mm	0.01 mm	5 μm	0.5 mm	4134003
100 - 125 mm	0.01 mm	6 μm	0.5 mm	4134004
125 - 150 mm	0.01 mm	6 μm	0.5 mm	4134005
150 - 175 mm	0.01 mm	7 μm	0.5 mm	4134006
175 - 200 mm	0.01 mm	7 μm	0.5 mm	4134007
0 - 1"	.0001"	.00016"	.025"	4134900
1 - 2"	.0001"	.00016"	.025"	4134901
2 - 3"	.0001"	.00020"	.025"	4134902
3 - 4"	.0001"	.00020"	.025"	4134903
4 - 5"	.0001"	.00024"	.025"	4134904
5 - 6"	.0001"	.00024"	.025"	4134905
6 - 7"	.0001"	.00028"	.025"	4134906
7 - 8"	.0001"	.00028"	.025"	4134907



Dimensions

mm	a	b	c
0 - 25 mm / 0-1"	31	25.5	7
25 - 50 mm / 1-2"	56	34.5	12
50 - 75 mm / 2-3"	81	47.5	12
75 - 100 mm / 3-4"	106	58.5	13
100 - 125 mm / 4-5"	131	71.5	13
125 - 150 mm / 5-6"	156	83.5	13
150 - 175 mm / 6-7"	182	95.5	13
175 - 200 mm / 7-8"	207	108.5	13

Accessories

Stand, setting standards, etc. please refer to page 3-21
Test Set for Micrometers 419 C, please refer to page 13-7

Micrometer Sets 40 SA

Application range	Order no.	Remarks
0 - 100 mm (4 Micrometers)	4134050	Incl. wooden case, setting standards 25 mm and 75 mm
100 - 200 mm (4 Micrometers)	4134051	Incl. wooden case, setting standards 125 mm and 175 mm
0 - 4" (4 Micrometers)	4134960	Incl. wooden case, setting standards 1" and 3"
4 - 8" (4 Micrometers)	4134961	Incl. wooden case, setting standards 5" and 7"



Micrometer 40 SH / SC

DIN 863

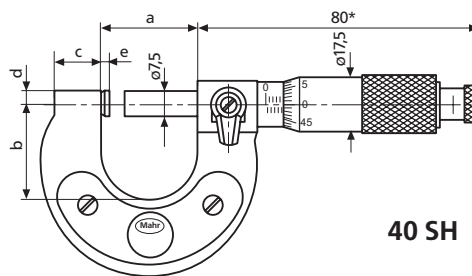


Features

- Chrome plated steel frame
- Maximum stability
- Spindle and anvil made of hardened steel, carbide tipped or ceramic measuring faces (40 SC)
- Spindle is made of stainless steel, hardened throughout and ground
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device
- Scope of supply: Case (measuring range 0 - 100 mm)

Technical Data

Measuring range	Readings	Error limit G	Spindle thread pitch	Order no.
40 SH 0- 25 mm	0.01 mm	4 μm	0.5 mm	4131000
25- 50 mm	0.01 mm	4 μm	0.5 mm	4131001
50- 75 mm	0.01 mm	5 μm	0.5 mm	4131002
75-100 mm	0.01 mm	5 μm	0.5 mm	4131003
100-125 mm	0.01 mm	6 μm	0.5 mm	4131004
125-150 mm	0.01 mm	6 μm	0.5 mm	4131005
150-175 mm	0.01 mm	7 μm	0.5 mm	4131006
175-200 mm	0.01 mm	7 μm	0.5 mm	4131007
0 - 1"	.0001"	.00016"	.025"	4131900
1 - 2"	.0001"	.00016"	.025"	4131901
2 - 3"	.0001"	.0002"	.025"	4131902
3 - 4"	.0001"	.0002"	.025"	4131903
40 SC 0-25 mm	0.01 mm	4 μm	0.5 mm	4131200
25-50 mm	0.01 mm	4 μm	0.5 mm	4131201



(* when scale is set at, 0)

Dimensions

mm	a	b	c	d	e
0 - 25 mm / 0-1"	31	28	13	3.25	3
25 - 50 mm / 1-2"	56	40	13	3.25	3
50 - 75 mm / 2-3"	81	53	13	3.25	3
75 - 100 mm / 3-4"	106	65	13	3.25	3
100 - 125 mm	130	75.5	15	4	3.5
125 - 150 mm	155	88	15	4	3.5
150 - 175 mm	180	100.5	15	4	3.5
175 - 200 mm	205	113	15	4	3.5

Accessories

Stand, setting standards, etc. please refer to page 3-21
 Test Set for Micrometers 419 C, please refer to page 13-7

Micrometer Sets 40 SSH

Application range	Order no.	Remarks
0 - 100 mm (4 Micrometers)	4133001	Incl. wooden case, setting standards 25 mm and 75 mm
100 - 200 mm (4 Micrometers)	4133005	Incl. wooden case, setting standards 125 mm and 175 mm
0 - 4" (4 Micrometers)	4133010	Incl. wooden case, setting standards 1" and 3"



Micrometer 40 SD with extra large thimble

DIN
863

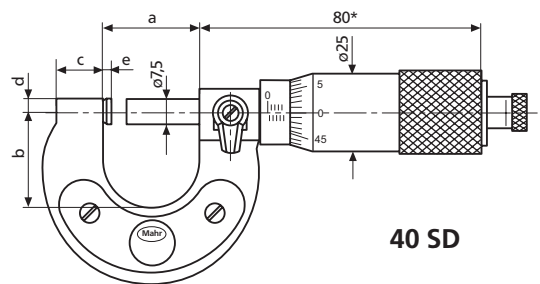


Features

- Reading error is reduced due to the 1 mm measuring span per rotation of the thimble
- Chrome plated steel frame
- Maximum stability
- Spindle and anvil made of hardened steel, carbide tipped
- Spindle is made of stainless steel, hardened throughout and ground
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device
- Scope of supply: Case

Technical Data

Measuring range mm	Readings mm	Error limit G μm	Spindle thread pitch mm	Order no.
0 - 25	0.01	4	1	4135000
25 - 50	0.01	4	1	4135001
50 - 75	0.01	5	1	4135002
75 - 100	0.01	5	1	4135003



40 SD

(* when scale is set at, 0)

Dimensions

Measured in mm	a	b	c	d	e
0 - 25	31	28	13	3.25	3
25 - 50	56	40	13	3.25	3
50 - 75	81	53	13	3.25	3
75 - 100	106	65	13	3.25	3

Accessories

Stand, setting standards, etc. please refer to page 3-21
Test Set for Micrometers 419 C, please refer to page 13-7

Micrometer 40 AG

DIN 863



Features

- Lacquered steel frame
- Spindle and anvil made of hardened steel, carbide tipped
- Scales with satin-chrome finish
- Heat insulators
- Ratchet is integrated in the thimble
- Locking device

- Scope of supply: Case, setting standard

Note:

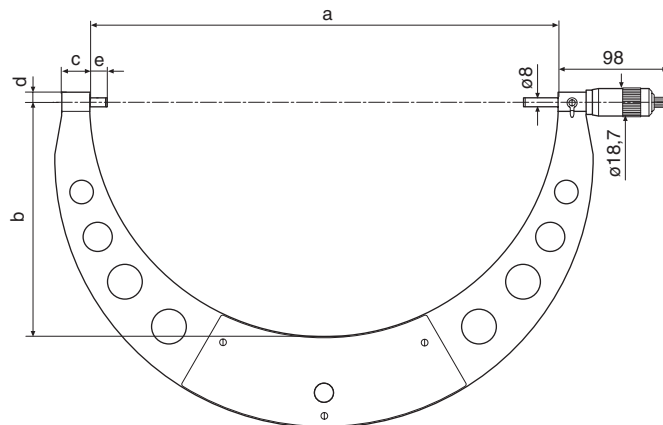
All Micrometers with measuring ranges between 400 mm to 500 mm, the frame is made from a steel tube

Technical Data

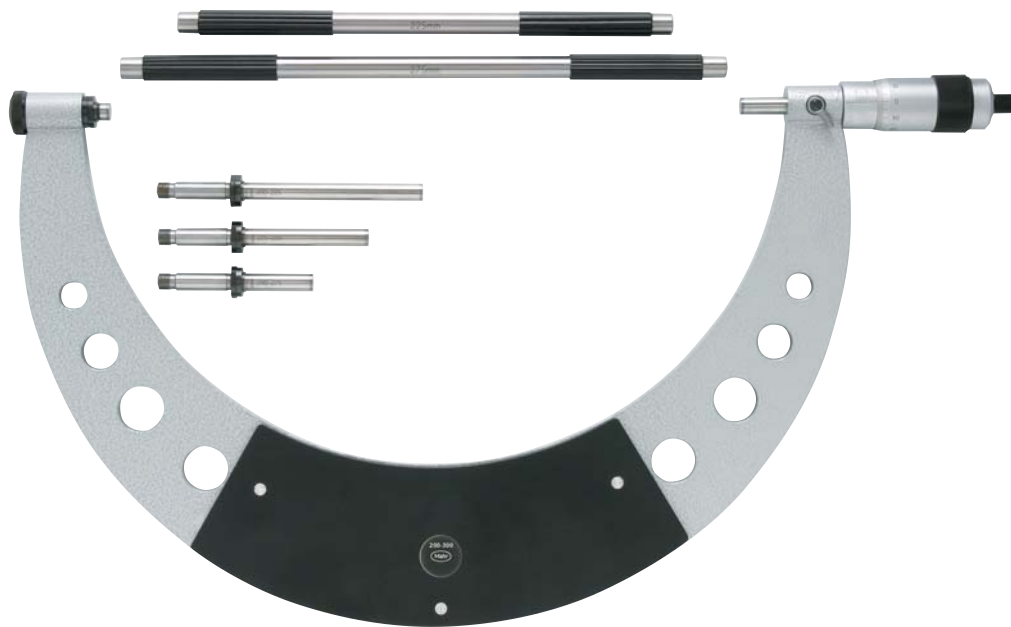
Measuring range mm	Readings mm	Error limit G μm	Spindle thread pitch mm	Order no.
200 - 225	0.01	8	0.5	4134500
225 - 250	0.01	8	0.5	4134501
250 - 275	0.01	9	0.5	4134502
275 - 300	0.01	9	0.5	4134503
300 - 325	0.01	10	0.5	4134504
325 - 350	0.01	10	0.5	4134505
350 - 375	0.01	11	0.5	4134506
375 - 400	0.01	11	0.5	4134507
400 - 425	0.01	12	0.5	4134508
425 - 450	0.01	12	0.5	4134509
450 - 475	0.01	13	0.5	4134510
475 - 500	0.01	13	0.5	4134511

Dimensions

Measured in mm	a	b	c	d	e
200 - 225	242.5	121.5	25	5	12
225 - 250	267.5	134	25	5	12
250 - 275	317.5	159	25	5	25
275 - 300	317.5	159	25	5	12
300 - 325	342.5	171.5	25	5	12
325 - 350	367.5	184	25	5	12
350 - 375	392.5	196.5	25	5	12
375 - 400	417.5	209	25	5	12
400 - 425	442	223	25	5	12
425 - 450	467	236	25	5	12
450 - 475	492	248	25	5	12
475 - 500	517	259	25	5	12



Micrometer 40 W



Features

- Lacquered steel frame
 - Spindle and anvil made of hardened steel, carbide tipped
 - Scales with satin-chrome finish
 - Heat insulators
 - Ratchet is integrated in the thimble
 - Exchangeable anvils
 - Locking device
- Scope of supply:
Case, setting standards

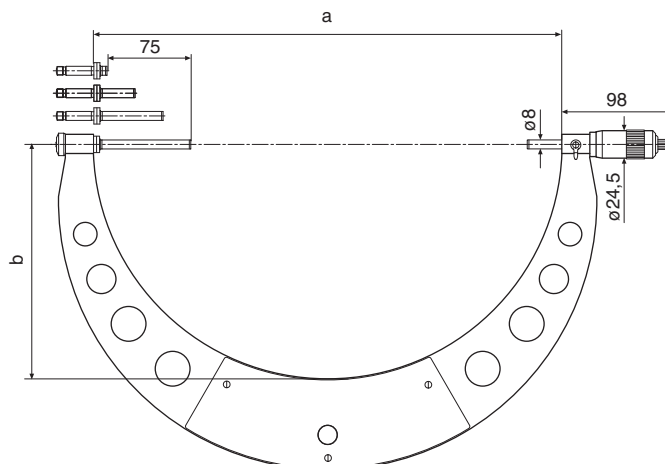
Note:
All Micrometers with measuring ranges from 400 mm up to 1000 mm, the frame is made from a steel tube

Technical Data

Measuring range mm	Readings mm	Error limit G μm	Spindle thread pitch mm	Order no.
0 - 100	0.01	5	1	4137500
100 - 200	0.01	7	1	4137501
200 - 300	0.01	9	1	4137502
300 - 400	0.01	11	1	4137503
400 - 500	0.01	13	1	4137504
500 - 600	0.01	21	1	4137505
600 - 700	0.01	23	1	4137506
700 - 800	0.01	26	1	4137507
800 - 900	0.01	28	1	4137508
900 - 1000	0.01	30	1	4137509

Dimensions

Measured in mm	a	b
0 - 100	117.5	59
100 - 200	217.5	109
200 - 300	317.5	159
300 - 400	417.5	209
400 - 500	517.5	259
500 - 600	617.5	309
600 - 700	717.5	360
700 - 800	817.5	410
800 - 900	917.5	460
900 - 1000	1017.5	510



Micrometer with integrated Dial Comparator 40 F / FC

DIN 863



Application

- For rapid measurements of diameters of cylindrical parts (shafts, bolts and shanks)
- Measurements of thickness and length
- Recommended for standard precision parts

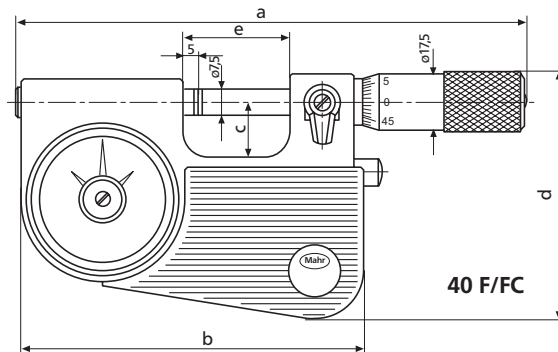
Features

- Chrome plated steel frame with heat insulators
- Maximum stability
- Retraction of the movable anvil and carbide-tipped measuring faces ensures maximum wear resistance
- Longer service life due to the ceramic measuring faces (40 FC)
- Measuring spindle made of stainless steel, hardened throughout and ground, lockable
- Scales with satin-chrome finish
- Constant measuring force
- Dial Comparator is integrated in frame
- Adjustable tolerance markers
- Scope of supply: Case

Technical Data

	Measuring range	Retraction	Measuring faces Flatness	Measuring faces Parallelism	Measuring force	Order no.	Remarks
40 F	0-25 mm	1 mm	≤0.2 μm	≤1 μm	9 N	4150000	
	25-50 mm	1 mm	≤0.2 μm	≤1 μm	9 N	4150001	
	0-1"	.04"	≤00001"	≤00005"	9 N	4150900	
	1-2"	.04"	≤00001"	≤00005"	9 N	4150901	
40 FC	0-25 mm	1 mm	≤0.2 μm	≤1 μm	9 N	4150200	Ceramic measuring faces
	25-50 mm	1 mm	≤0.2 μm	≤1 μm	9 N	4150201	

Micrometer			Dial Comparator		
Readings	Error limit	Spindle thread (DIN 879)	Error limit G_e	Meas. range pitch	Spindle thread
G_{me}	pitch	(DIN 879)			
0.01 mm .0001"	≤2 μm ≤.00008"	0.5 mm .025"	1 μm .00005"	±65 μm ±.0025"	1 μm .00005"



Dimensions

mm		a*	b	c	d	e
40 F/FC	0-25 mm (0-1")	149	100	16	71	32
	25-50 mm (1-2")	174	125	30	85	56

* in zero position

Accessories

Stand, setting standards, etc. please refer to page 3-21
Test Set for Micrometers 419 C, please refer to page 13-7

Micrometer with Dial Comparator 40 T

DIN 863



Application

- For rapid measurements of diameters of cylindrical parts (shafts, bolts and shanks)
- Measurements of thickness and length
- Recommended for standard precision parts

Features

- Rugged steel frame, heat insulated and chrome plated (up to measuring range 100 - 150 mm)
- Maximum stability
- Retraction of the movable anvil and carbide-tipped measuring faces ensures maximum wear resistance
- Measuring spindle made of stainless steel, hardened throughout and ground, lockable
- Scales with satin-chrome finish
- Constant measuring force
- Heat insulators
- Scope of supply: Dial Comparator 1003, wooden case

Technical Data

Measuring range	Retraction	Measuring faces Flatness	Measuring faces Parallelism	Measuring force	Order no. with 1003+	Order no. w/o 1003
0 - 25 mm	1.2 mm	≤0.2 μm	≤2 μm	6.5 N	4154000	4154017
25 - 50 mm	1.2 mm	≤0.2 μm	≤2 μm	6.5 N	4154001	4154018
50 - 100 mm	1.2 mm	≤0.2 μm	≤2 μm	6.5 N	4154002	4154019
100 - 150 mm	1.2 mm	≤0.2 μm	≤2 μm	7.5 N	4154003	4154020
150 - 200 mm	1.2 mm	≤0.2 μm	≤2 μm	7.5 N	4154004	4154021

+ Alternative indicating instruments are available on request

Micrometer			Dial Comparator ⁺		
Readings	Error limit G_{me}	Spindle thread pitch	Error limit G_e (DIN 879)	Meas. range	Spindle thread pitch
0.01 mm	≤2 μm	0.5 mm	1 μm	±50 μm	1 μm

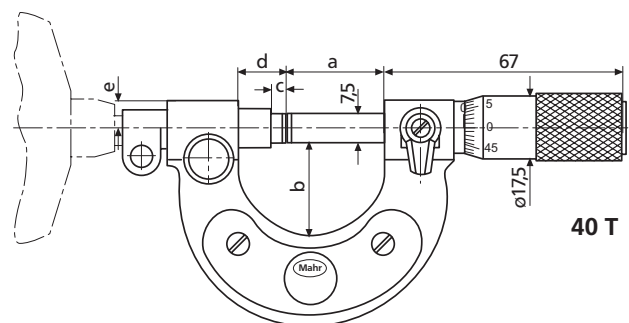
Dimensions

Measured in mm	a*	b	c	d*	e
0 - 25	27	28	4	11	8
25 - 50	52	40	4	11	8
50 - 100	76	65	5.5	30	8
100 - 150	127	87	5.5	30	8
150 - 200	177	112	5.5	30	8

* in zero position

Accessories

Stand, setting standards, etc. please refer to page 3-21
 Test Set for Micrometers 419 C, please refer to page 13-7



40 T

Precision Bench Micrometer 40 TS

DIN 863



Application

- For rapid measurements of diameters of cylindrical parts (shafts, bolts and shanks)
- Measurements of thickness and length
- Recommended for standard precision parts

Features

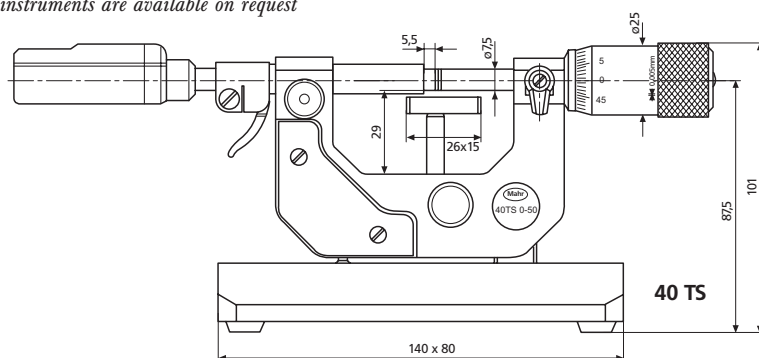
- Rugged steel frame, can be tilted up to 45° in relation to the sturdy base
- Retraction of the movable anvil and carbide-tipped measuring faces ensures maximum wear resistance
- Height-adjustable stop
- Constant measuring force
- Measuring spindle made of stainless steel, hardened throughout and ground, lockable
- Scales with satin-chrome finish
- Scope of supply: Dial Comparator 1003

Technical Data

Measuring range	Retraction	Measuring faces Flatness	Measuring faces Parallelism	Measuring force	Order no. with 1003*	Order no. w/o 1003	Order no. wooden case
0 - 50 mm 0 - 2"	1.2 mm .045"	≤0.2 μm ≤.00001"	≤2 μm ≤.00008"	6.5 N 6.5 N	4154030 4154930**	4154031 4154931	4154035 4154035

* Alternative indicating instruments are available on request

** 1003 Z



Indicating Thread Snap Gage 852 TS see page 9-17



Micrometer			Dial Comparator 1003/1003Z		
Readings	Error limit G_{me}	Spindle thread pitch	Error-limit G_e (DIN 879)	Meas. range	Readings
0.01 mm .00025"	≤2 μm ≤.00008"	0.5 mm .025"	1 μm .00005"	±50 μm ±.002"	1 μm .00005"

Accessories

Stand, setting standards, etc. please refer to page 3-21
Test Set for Micrometers 419 C, please refer to page 13-7

Micrometer 40 AB with reduced measuring faces



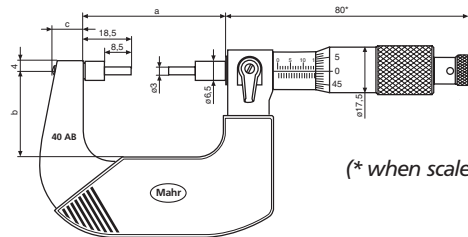
DIN 863

Features

- For measuring recesses, grooves etc.
- Chrome plated steel frame
- Spindle and anvil made of hardened steel, carbide tipped
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device
- Scope of supply: Case, setting standard (from measuring range 25 - 50 mm / 1 - 2"), operating instructions

Technical Data

Measuring range	Readings	Error limit G	Spindle thread pitch	Order no.
0 - 25 mm	0.01 mm	4 μm	0.5 mm	4134100
25 - 50 mm	0.01 mm	4 μm	0.5 mm	4134101
50 - 75 mm	0.01 mm	5 μm	0.5 mm	4134102
75 - 100 mm	0.01 mm	5 μm	0.5 mm	4134103
0 - 1"	.0001"	.00016"	.025"	4134920
1 - 2"	.0001"	.00016"	.025"	4134921
2 - 3"	.0001"	.00020"	.025"	4134922
3 - 4"	.0001"	.00020"	.025"	4134923



(* when scale is set at, 0)

Dimensions	a	b	c
0 - 25 mm / 0-1"	56	34.5	12
25 - 50 mm / 1-2"	81	47.5	12
50 - 75 mm / 2-3"	106	58.5	13
75 - 100 mm / 3-4"	131	71.5	13

Micrometer 40 AS with sliding spindle and measuring spades



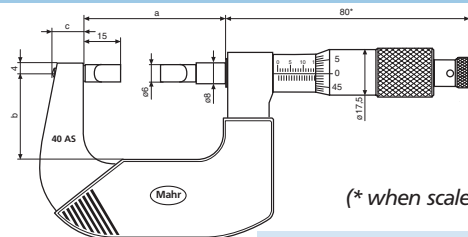
DIN 863

Features

- For measuring narrow recesses, grooves etc.
- Chrome plated steel frame
- Spindle and anvil made of hardened steel, carbide tipped
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Scope of supply: Case, setting standard (from measuring range 25 - 50 mm / 1 - 2"), operating instructions

Technical Data

Measuring range	Readings	Error limit G	Spindle thread pitch	Order no.
0 - 25 mm	0.01 mm	4 μm	0.5 mm	4134200
25 - 50 mm	0.01 mm	4 μm	0.5 mm	4134201
50 - 75 mm	0.01 mm	5 μm	0.5 mm	4134202
75 - 100 mm	0.01 mm	5 μm	0.5 mm	4134203
0 - 1"	.0001"	.00016"	.025"	4134930
1 - 2"	.0001"	.00016"	.025"	4134931
2 - 3"	.0001"	.00020"	.025"	4134932
3 - 4"	.0001"	.00020"	.025"	4134933



(* when scale is set at, 0)

Dimensions	a	b	c
0 - 25 mm / 0-1"	56	34.5	12
25 - 50 mm / 1-2"	81	47.5	12
50 - 75 mm / 2-3"	106	58.5	13
75 - 100 mm / 3-4"	131	71.5	13

Micrometer 40 AR with spherical anvils



DIN 863

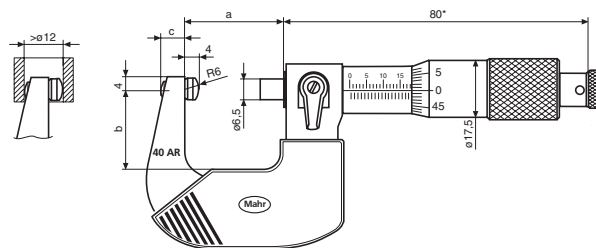
Features

- For measuring the thickness of a pipes wall etc.
- Chrome plated steel frame
- Spindle and anvil made of hardened steel, carbide tipped
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device
- Scope of supply: Case, setting standard (from measuring range 25 - 50 mm / 1 - 2"), operating instructions

Technical Data

Measuring range	Readings	Error limit G	Spindle thread pitch	Order no.
0 - 25 mm	0.01 mm	4 μ m	0.5 mm	4134250
25 - 50 mm	0.01 mm	4 μ m	0.5 mm	4134251
0 - 1"	.0001"	.00016"	.025"	4134940
1 - 2"	.0001"	.00016"	.025"	4134941

Dimensions	a	b	c
0 - 25 mm / 0-1"	31	25.5	7
25 - 50 mm / 1-2"	56	34.5	12



(* when scale is set at, 0)

Micrometer 40 AW with sliding spindle and disc-type anvils

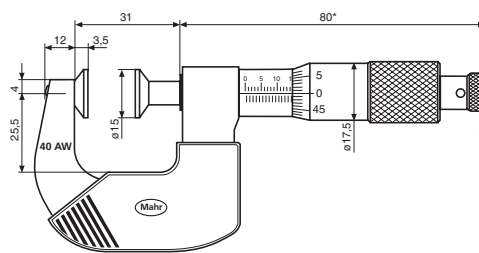


Features

- For measuring soft materials such as felt, rubber, cardboard etc.
- Chrome plated steel frame
- Spindle and anvil made of hardened steel
- Scales with satin-chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Scope of supply: Case, setting standard (from measuring range 25 - 50 mm / 1 - 2"), operating instructions

Technical Data

Measuring range	Readings	Error limit G	Parallelism	Flatness	Spindle thread pitch	Order no
0 - 25 mm	0.01 mm	8 μ m	5 μ m	2 μ m	0.5 mm	4134300
0 - 1"	.0001"	.0003"	.0002"	.001"	.025"	4134950



(* when scale is set at, 0)

Precision Micrometer 40 SM with disc-type anvils

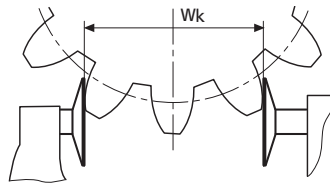
DIN
863



Features

- Chrome plated steel frame
- Maximum stability
- Spindle is hardened throughout and ground
- Disc-type anvils are hardened and lapped
- Scale have a satin chrome finish
- Heat insulators
- Rapid drive with integrated ratchet
- Locking device
- Scope of supply: Case (measuring range 0 - 95 mm)

Application



For measurements of
 • Tooth spans W_k as of module 0.8 as indirect determination of tooth thickness on spur gears with straight and helical teeth

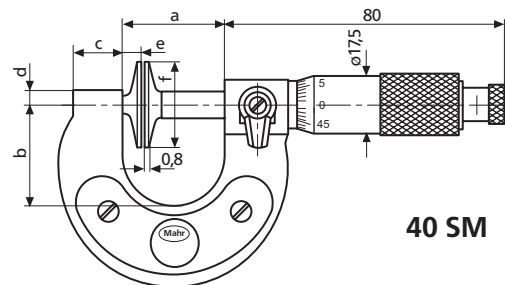
- Shoulders on shafts
- Undercut dimensions
- Registers
- Soft materials such as rubber, cardboard, felt, etc.

Technical Data

Measuring range mm	Readings mm	Error limit G μm	Spindle thread pitch mm	Measuring faces		Order no.
				Flatness μm	Parallelism μm	
0 - 20	0.01	4	0.5	≤ 0.6	≤ 4	4145000
20 - 45	0.01	4	0.5	≤ 0.6	≤ 4	4145001
45 - 70	0.01	5	0.5	≤ 0.6	≤ 4	4145002
70 - 95	0.01	5	0.5	≤ 0.6	≤ 4	4145003
95 - 120	0.01	6	0.5	≤ 0.6	≤ 5	4145004
120 - 145	0.01	6	0.5	≤ 0.6	≤ 5	4145005
145 - 170	0.01	7	0.5	≤ 0.6	≤ 5	4145006
170 - 195	0.01	7	0.5	≤ 0.6	≤ 5	4145007

Dimensions

Measured in mm	a	b	c	d	e	f
0 - 20	31	28	13	3.25	4.5	25
20 - 45	56	40	13	3.25	4.5	25
45 - 70	81	53	13	3.25	4.5	25
70 - 95	106	65	13	3.25	4.5	25
95 - 120	130	75.5	15	4	4.5	30
120 - 145	155	88	15	4	4.5	30
145 - 170	180	100.5	15	4	4.5	30
170 - 195	205	113	15	4	4.5	30



40 SM

Accessories

Stand, setting standards, etc. please refer to page 3-21
 Test Set for Micrometers 419 C, please refer to page 13-7

Thread Micrometer 40 Z

DIN 863



Features

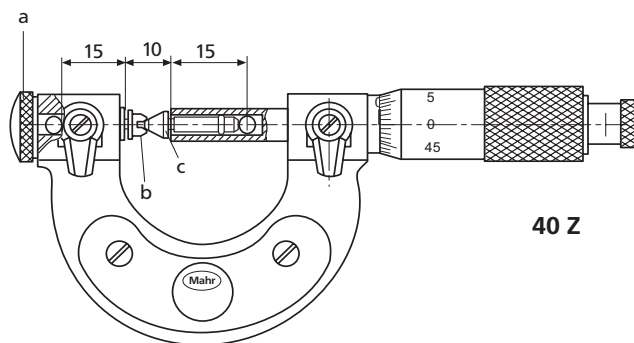
- For measuring pitch, root and outside diameters
- Rugged steel frame, heat insulated
- Spindle is hardened throughout, ground and is also provided with a locking device
- Adjustable anvil
- Both the spindle and anvil have a mounting bore for accommodating interchangeable anvils
- Flat end surface of the anvil shank rests on a hardened steel ball which is at the bottom of the mounting bore
- Scales have a satin-chrome finish

Technical Data

Readings	0.01 mm
Mounting bores for anvils	3.5 mm
Spindle thread pitch	0.5 mm
Thimble dia.	17.5 mm
Accuracy	DIN 863

Measuring range mm	Error limit G_{me}	Order no.	Order no. wooden case
0 - 25*	4 μm	4170000	4170010
25 - 50	4 μm	4170001	4170011
50 - 75	5 μm	4170002	4170012
75 - 100	5 μm	4170003	4170013
100 - 125	6 μm	4170004	4170014
125 - 150	6 μm	4170005	4170015
150 - 175	7 μm	4170006	4170016
175 - 200	7 μm	4170007	4170017

* Setting only with Thread Setting Plug Gages 715 E, when the interchangeable anvils span over several leads

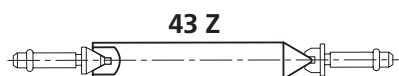


a = Regulating range ± 0.5 mm
 b = V-anvil
 c = Tapered anvil

Accessories

Setting Standards 43 Z

For setting Thread Micrometers 40 Z. With point on one side and V-groove on the other, both matching pitch angle of thread to be checked. One setting standard is sufficient for two adjacent frame sizes.



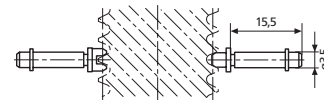
Length mm	Accuracy $\pm \mu\text{m}$	Thread angle 60° Order no.	Thread angle 55° Order no.
25	4	4175000	4175100
50	4.5	4175001	4175101
75	4.5	4175002	4175102
100	4.5	4175003	4175103
125	5	4175004	4175104
150	5	4175005	4175105
175	5	4175006	4175106
200	5.5	4175630	4175636

Interchangeable Anvils for Thread Micrometer 40 Z

For pitch, root and outside diameters. Hardened, wear-resistant special steel. With cylindrical mounting shank and retainer ring which ensures locking while permitting rotation in bore of spindle and anvil.

For pitch diameters

Set consists of V-anvil and tapered anvil. For pitch range 0.2 - 0.45 mm V-anvil covers 3 thread leads. Therefore setting with Thread Setting Plug Gages 715 E, as opposed to Setting Standards 43 Z for other applications.



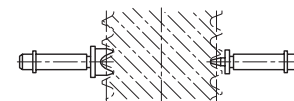
Pitch mm	Metric thread (60°)		Pitch range tpi	Whitworth thread (55°)		Pitch range tpi	American UST thread (60°)	
	V-anvil Order no.	Tapered anvil Order no.		V-anvil Order no.	Tapered anvil Order no.		V-anvil Order no.	Tapered anvil Order no.
0.2	4173007	4173407	40 - 32	4173043	4173443	60 - 48	4173113	4173513
0.25	4173008	4173408	32 - 24	4173044	4173444	48 - 40	4173114	4173514
0.3	4173009	4173409	24 - 18	4173045	4173445	40 - 32	4173115	4173515
0.35	4173010	4173410	18 - 14	4173046	4173446	32 - 24	4173116	4173516
0.4	4173011	4173411	14 - 10	4173047	4173447	24 - 18	4173117	4173517
0.45	4173012	4173412	10 - 7	4173048	4173448	18 - 14	4173118	4173518
0.5 - 0.7	4173000	4173400	7 - 4.5	4173049	4173449	14 - 10	4173119	4173519
0.7 - 1	4173001	4173401	4.5 - 3	4173050	4173450	10 - 7	4173120	4173520
1.25 - 2	4173002	4173402	3 - 2.5	4179408	4179409	7 - 4.5	4173121	4173521
2 - 3.5	4173003	4173403				4.5 - 3	4173122	4173522
3.5 - 5	4173004	4173404						
5 - 7	4173005	4173405						
7 - 9	4173006	4173406						

For pitch diameters

Set consists of V-anvil and tapered anvil. Shank length 15.5 mm

For root diameters

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



Trapezoid threads			Metric thread (60°)			Whitworth thread (55°) American UST 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	4173250	4173650	0.5	4173213		40	4173331	
1.5	4173251	4173651	0.6	4173214		36	4173321	4173334
2	4173252	4173652	0.7	4173215		32	4173332	
3	4173253	4173653	0.75	4173216	4173220	28	4173333	
4	4173254	4173654	0.8	4173217		26	4173335	
5	4173255	4173655	0.9	4173218		24	4173336	
6	4173256	4173656	1	4173219		22	4173337	4173341
7	4173257	4173657	1.25	4173221		20	4173338	
8	4173258	4173658	1.5	4173222	4173224	19	4173339	
9	4173259	4173659	1.75	4173223		18	4173340	
10	4173260	4173660	2	4173225		16	4173342	4173344
			2.5	4173226	4173228	14	4173343	
			3	4173227		12	4173345	4173348
			3.5	4173229		11	4173346	
			4	4173230	4173232	10	4173347	
			4.5	4173231		9	4173349	4173452
			5	4173233		8	4173350	
			5.5	4173234	4173236	7	4173451	
			6	4173235		6	4173453	
			7	4173237		5	4173454	4173456
			8	4173238	4173240	4.5	4173455	
			9	4173239		4	4173457	
						3.5	4173458	4173461
						3.25	4173459	
						3	4173460	

For outside diameter

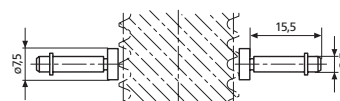
Pair of Flat Anvils 40 Za with flat measuring faces

Made of hardened steel

Order no. 4173210

Carbide tipped

Order no. 4511190



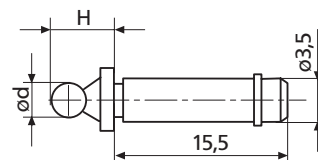
Interchangeable Anvils for Thread Micrometer 40 Z

Ball Anvils

For measuring gears and for special applications. Carbide ball. With cylindrical mounting shank and retainer ring.

For mounting into mounting bores of Thread Micrometers 40 Z and 852.

Shank dia. 3.5 mm
 Shank length 15.5 mm
 Accuracy of ball dia. $\pm 2 \mu\text{m}$



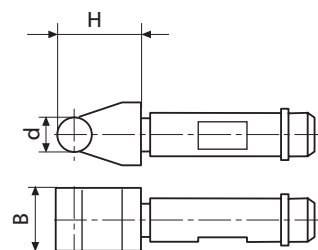
dia. d mm	H mm	Order no.	dia. d mm	H mm	Order no.	dia. d mm	H mm	Order no.	dia. d mm	H mm	Order no.
0.5	5.0	4179150	1.385	5.9	4179164	2.284	6.8	4179174	3.658	8.2	4179184
0.551	5.1	4179151	1.5	6.0	4170552	2.386	6.9	4179175	3.7	8.2	4170571
0.62	5.1	4179152	1.524	6.0	4179165	2.438	6.9	4179176	4	8.5	4170559
0.623	5.1	4179153	1.54	6.0	4179166	2.5	7.0	4170556	4.5	9.0	4170560
0.63	5.1	4179154	1.6	6.1	4179167	2.667	7.2	4179177	4.835	9.3	4179185
0.722	5.2	4179155	1.65	6.2	4179168	2.704	7.2	4179178	5	9.5	4170561
0.862	5.4	4179156	1.7	6.2	4179169	2.713	7.2	4179179	5.25	9.8	4179186
0.895	5.4	4179157	1.75	6.3	4170553	2.721	7.2	4179180	5.486	10.0	4179187
0.965	5.5	4179158	1.782	6.3	4179170	2.743	7.2	4179181	5.5	10.0	4170562
1	5.5	4170550	1.8	6.3	4179171	2.75	7.3	4170565	6	10.5	4170563
1.1	5.6	4179159	1.829	6.3	4179172	3	7.5	4170557	6.096	10.6	4179188
1.118	5.6	4179160	1.9	6.4	4179173	3.048	7.5	4179182	6.35	10.9	4179189
1.125	5.6	4179161	2	6.5	4170554	3.2	7.7	4170570	6.5	11.0	4170567
1.25	5.8	4170551	2.032	6.5	4170568	3.25	7.8	4170566	7	11.5	4170572
1.35	5.9	4179162	2.2	6.7	4170569	3.4	7.9	4179183	8	12.5	4170573
1.372	5.9	4179163	2.25	6.8	4170564	3.5	8.0	4170558	9	13.5	4170574
									10	14.5	4170575

Further sizes are available on request (material: steel)

Roller Blades

For measuring gears and for special applications. The measuring roller is made of carbide. To be mounted in the mounting bores of Thread Micrometers 40 Z and 852.

Shank dia. 3.5 mm
 Shank length 15.5 mm
 Accuracy of ball dia. $\pm 2 \mu\text{m}$



dia. d mm	Dimension H mm	Dimension B dia mm	Order no.
1	5.5	5	4510200
1.25	5.8	5	4510201
1.5	6.0	5	4510202
1.75	6.3	5	4510203
2	6.5	5.5	4510204
2.5	7.0	5.5	4510206
3	7.5	5.5	4510207
3.5	8.0	5.5	4510208
4	8.5	5.5	4510209
4.5	9.0	5.5	4510210
5	9.5	6	4510211
5.5	10.0	6	4510212
6	10.5	6	4510213

Further sizes are available on request (material: steel)

Accessories for Micrometers



41 H

Stand 41 H

- For mounting a micrometer
- Enables the user to use both hands to operate the micrometer and/or to insert a work piece
- Sturdy, heavy-duty base, hammer-dimple enamel
- Clamping jaws are rubber lined to protect micrometer, the clamping jaws can be tilted
- Both the clamping jaws and hinge are fixed in place with one screw

Dimensions
(D x W x H)

130 x 100 x 90 mm

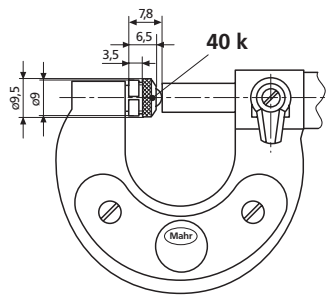
Order no.

4158000

Ball shaped Anvil Attachment 40 k

- For measuring the thickness, for example: of pipe walls
- Slips over every anvil or the spindle with a dia. 7.5 mm
- Carbide ball, Ball dia. 5 ± 0.002 mm

Order no. 4130099



40 k

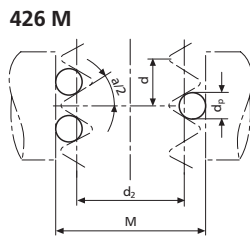
Setting Standards 43 A

- For testing the basic setting of a micrometer
- Heat insulated handle
- Manufacturing tolerance js 2



Thread Pin Gage 426 M in holder

- For determining the pitch diameter of external threads according to the three wire method
- Slips over every anvil or the spindle
- Pin gages are hardened and lapped



426 M

Length mm	Order no.	Length inch	Order no.
25	4159400	1"	4159940
50	4159401	2"	4159941
75	4159402	3"	4159942
100	4159403	4"	4159943
125	4159404	5"	4159944
150	4159405	6"	4159945
175	4159406	7"	4159946

Wooden Cases for Micrometer

For measuring ranges over 100 mm the following wooden cases are available:

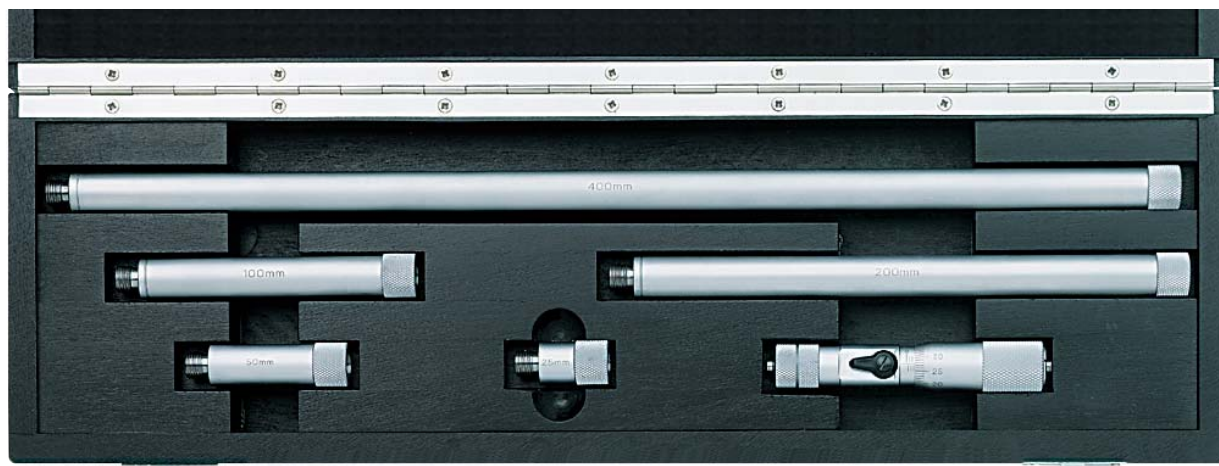
Pin gage dia.	Manufacturing tol.	Mounting hole
0.17 - 5.05 mm	$\pm 0.5 \mu\text{m}$	$\varnothing 7.5 \text{ mm}^*$

* $\varnothing 6.35/6.5/8 \text{ mm}$ are available on request

Order no. and further details see page 13-18

	40 SH	40 SM	Order no.
Meas. range mm	100-125	95-120	4130064
	125-150	120-145	4130065
	150-175	145-170	4130066
	175-200	170-195	4130067

Inside Micrometer 44 Cms Set



Features

- Rigid, lightweight tubular construction
 - Spindle is hardened throughout and ground
 - Locking lever
 - Scales with satin-chrome finish
 - Carbide tipped spherical measuring faces
 - Interchangeable extensions 44 Cv with cylindrical gage rods that are spring-mounted in protective sleeves; for the extension of the measuring range
 - Protection sleeves have a satin chrome finish
- Span of error**
 Basic unit in combination with any of the extensions
 $4 \mu\text{m} + 10 \times 10^{-6} \times l$
 (l = length of the combination mm)

Technical Data

Catalog no.	Measuring range mm	Meas. head 44 Cm Readings mm	Spindle thread pitch mm	Extensions 44 Cv length in mm	Order no.	Remarks
44 Cms1	100 - 150	0.01	0.5	25	4168020	Incl. case
44 Cms2	100 - 300			25 / 50 / 100	4168021	Incl. case
44 Cms3	100 - 500			25 / 50 / 100 / 200	4168022	Incl. case
44 Cms4	100 - 900*			25 / 50 / 100 / 200 / 400	4168023	Incl. case

* up to 2500 mm can be achieved with 2 extensions: 44 Cv 800 mm

Accessories

Individual Extensions 44 Cv			Inside Micrometer 44 Cm			
Length a mm	dia. b mm	Order no.	Measuring range mm	Reading mm	Spindle thread pitch mm	Order no.
25	15	4167030	100 - 125	0.01	0.5	4168001
50	15	4167031				
100	15	4167032				
200	15	4167033				
400	15	4167034				
800	22	4167035	Case for Inside Micrometer 44 Cm and extension sets Cvs1 or Cvs2			4168015
Wooden case for 2 extensions 44Cv 800 mm						4168016

Inside Micrometer 44 F

DIN 863



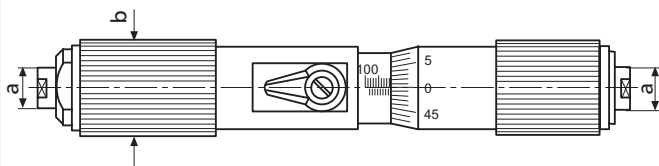
Features

- Rigid, lightweight tubular construction
- Spindle is hardened throughout and ground
- Measuring faces spherically lapped, one measuring face adjustable
- Scales with satin-chrome finish
- From 100-125 mm meas. range, heat insulators and locking device
- Scope of supply: Case

Technical Data

Measuring range mm	Readings mm	Error limit G μm	Spindle thread pitch mm	Order no.
30 - 40	0.01	4	0.5	4163000
40 - 50	0.01	4	0.5	4163001
50 - 70	0.01	5	0.5	4163002
70 - 100	0.01	5	0.5	4163003
100 - 125	0.01	6	0.5	4163004
125 - 150	0.01	6	0.5	4163005
150 - 175	0.01	7	0.5	4163006
175 - 200	0.01	7	0.5	4163007

Dimensions



Meas. range in mm	a	b
30 - 70	7	12.5
70 - 100	7	13.5
100 - 200	8	20

Accessories

Ring Gage 355 E for testing the basic setting Page 13-20

Special wear resistant steel, hardened and lapped
 Dimensions according to DIN 2250 C
 Manufacturing tolerance in accordance to DIN 2250
 Uncertainty of the engraved actual dimension 1/2 IT1



Self-Centering Inside Micrometer 44 A

DIN 863



Application

- For measuring:
- through holes
 - blind holes
 - centering shoulders

Features

- Scales with satin-chrome finish
- Spindle is hardened throughout and ground
- Rapid drive with integrated ratchet
- Self-centering measuring head consists of 3 laterally positioned anvils, each are offset at intervals of 120°
- Anvils from 12.5 mm are carbide tipped
- From 12.5 mm the anvils can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made from aluminum to reduce weight
- Scope of supply: Case

Technical Data

Measuring range mm	Readings mm	Error limit G * μm	Order no.
6 - 8	0.005	4	4190000
8 - 10	0.005	4	4190001
10 - 12.5	0.005	4	4190002
12.5 - 16	0.005	4	4190003
16 - 20	0.005	4	4190004
20 - 25	0.005	4	4190005
25 - 30	0.005	4	4190006
30 - 35	0.005	4	4190007
35 - 40	0.005	4	4190008
40 - 50	0.005	4	4190009
50 - 60	0.005	5	4190010
60 - 70	0.005	5	4190011
70 - 85	0.005	5	4190012
85 - 100	0.005	5	4190013
100 - 125	0.005	6	4190014
125 - 150	0.005	6	4190015
150 - 175	0.005	7	4190016
175 - 200	0.005	7	4190017

* Over the full length of the anvils

Self-Centering Inside Micrometer Sets 44 AS

Measuring range mm	Number of Micrometers	Ring gages \varnothing mm	Order no.
6 - 12.5	3	8 / 10	4190050
12.5 - 25	3	16 / 20	4190051
25 - 50	4	30 / 40	4190052
50 - 100	4	60 / 85	4190053

- Scope of supply: Case and ring gage (includes a traceable calibration certificate for the ring gage)



Digital Self-Centering Inside Micrometer 44 EX



Application

- For measuring:
- through holes
 - blind holes
 - centering shoulders

Features

Functions:

- 0 (Setting the display to zero for Relative measurement)
- ABS (Switching between Relative and Absolute measurement)
- mm/inch
- PR (Reference setting)

- Basic Instrument consists of: Basic Unit 44 EXg and Measuring Head 44 Ak

- Threaded connection for changing the measuring heads

- Self-Centering measuring head consists of 3 laterally positioned anvils, each are offset at intervals of 120°

- Anvils from 12.5 mm are carbide tipped

- From 12.5 mm the anvils can be used to measure to the bottom of a bore

- From 40 mm all measuring heads are made from aluminum to reduce weight

- Scope of supply: Case

Technical Data

Measuring range		Readings	Error limit G*	Order no.
mm	(inch)	mm/inch	µm	
6 - 8	(.25 - .3125")	0.001/ .00005"	4	4191000
8 - 10	(.3125 - .4")	0.001/ .00005"	4	4191001
10 - 12.5	(.4 - .5")	0.001/ .00005"	4	4191002
12.5 - 16	(.5 - .625")	0.001/ .00005"	4	4191003
16 - 20	(.625 - .775")	0.001/ .00005"	4	4191004
20 - 25	(.775 - 1.0")	0.001/ .00005"	4	4191005
25 - 30	(1.0 - 1.2")	0.001/ .00005"	4	4191006
30 - 35	(1.2 - 1.4")	0.001/ .00005"	4	4191007
35 - 40	(1.4 - 1.6")	0.001/ .00005"	4	4191008
40 - 50	(1.6 - 2.0")	0.001/ .00005"	4	4191009
50 - 60	(2.0 - 2.35")	0.001/ .00005"	5	4191010
60 - 70	(2.35 - 2.75")	0.001/ .00005"	5	4191011
70 - 85	(2.75 - 3.35")	0.001/ .00005"	5	4191012
85 - 100	(3.35 - 4.0")	0.001/ .00005"	5	4191013
100 - 125	(4.0 - 4.9")	0.001/ .00005"	6	4191014
125 - 150	(4.9 - 5.9")	0.001/ .00005"	6	4191015
150 - 175	(5.9 - 6.9")	0.001/ .00005"	7	4191016
175 - 200	(6.9 - 7.9")	0.001/ .00005"	7	4191017

* Over the full length of the anvils

Digital Self-Centering Inside Micrometer Sets 44 EXS

Measuring range		Number of measuring heads 44 Ak	Ring gages ø mm	Order no.*
mm	(inch)			
6 - 12.5	(.25 - .5")	3	8 / 10	4191050
12.5 - 25	(.5 - 1")	3	16 / 20	4191051
25 - 50	(1 - 2")	4	30 / 40	4191052
50 - 100	(2 - 4")	4	60 / 85	4191053

- Scope of supply: 1 Basic Unit 44 EXg, Measuring Heads 44 Ak, case and ring gages (includes a traceable calibration certificate for the ring gage)



Self-Centering Measuring Pistol 844 A



Application

- For measuring:
- through holes
 - blind holes
 - centering shoulders

Features

- Basic Instrument consists of: 844 Ag and Measuring Head 44 Ak
- Threaded connection for changing the measuring heads
- Self-Centering measuring head consists of 3 laterally positioned anvils, each are offset at intervals of 120°
- Anvils from 12.5 mm are carbide tipped
- From 12.5 mm the anvils can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made from aluminum to reduce weight
- Scope of supply: Case

Technical Data

Measuring range		Error limit G *	Order no.**
mm	(inch)		
6 - 8	(.25 - .3125")	3 / 0.00015	4487600
8 - 10	(.3125 - .4")	3 / 0.00015	4487601
10 - 12.5	(.4 - .5")	3 / 0.00015	4487602
12.5 - 16	(.5 - .625")	3 / 0.00015	4487603
16 - 20	(.625 - .775")	3 / 0.00015	4487604
20 - 25	(.775 - 1")	3 / 0.00015	4487605
25 - 30	(1.0" - 1.2")	3 / 0.00015	4487606
30 - 35	(1.2 - 1.4")	3 / 0.00015	4487607
35 - 40	(1.4 - 1.6")	3 / 0.00015	4487608
40 - 50	(1.6 - 2.0")	3 / 0.00015	4487609
50 - 60	(2.0 - 2.35")	4 / 0.00016	4487610
60 - 70	(2.35 - 2.75")	4 / 0.00016	4487611
70 - 85	(2.75 - 3.35")	4 / 0.00016	4487612
85 - 100	(3.35 - 4.0")	4 / 0.00016	4487613
100 - 125	(4.0 - 4.9")	5 / 0.0002	4487614
125 - 150	(4.9 - 5.9")	5 / 0.0002	4487615
150 - 175	(5.9 - 6.9")	6 / 0.00025	4487616
175 - 200	(6.9 - 7.9")	6 / 0.00025	4487617

The following indicating instruments are recommended:

Indicating instr.	Order no.
Millitast 1082	4336200
Millitast 1083	4336801
Millitast 1085	4336300
XLI-40000	XLI-40000

Self-Centering Measuring Pistol Set 844 AS

Measuring range	Number of measuring heads	Ring Gages	Order no. with Digital Indicator 1083	Order no.**
mm (inch)		ø mm		
6 - 12.5	(.25 - .5")	3	8 / 10	4487660 4487650
12.5 - 25	(.5 - 1")	3	16 / 20	4487661 4487651
25 - 50	(1 - 2")	4	30 / 40	4487662 4487652
50 - 100	(2 - 4")	4	60 / 85	4487663 4487653

- Scope of supply: 1 Basic Instrument 844 Ag, Measuring Heads 44 Ak, case and ring gages (includes a traceable calibration certificate for the ring gage)

* Indicator is not taken into consideration, over the full length of the anvils

** Excludes indicator



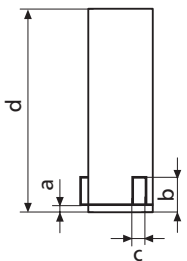
Accessories for 44 A, 44 EX, 844 A

Measuring Heads 44 Ak

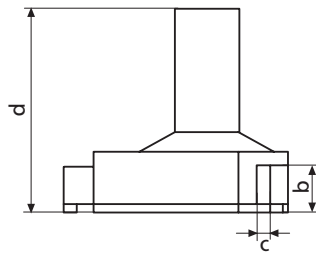
- Self-Centering measuring head consists of 3 laterally positioned anvils, each are offset at intervals of 120°
- Anvils from 12.5 mm are carbide tipped
- As of 12.5 mm the anvils can be used to measure to the bottom of a bore
- From 40 mm all measuring heads are made from aluminum to reduce weight

Measuring range mm	(inch)	Order no.
6 - 8	(.25 - .3125")	4190030
8 - 10	(.3125 - .4")	4190031
10 - 12.5	(.4 - .5")	4190032
12.5 - 16	(.5 - .625")	4190033
16 - 20	(.625 - .775")	4190034
20 - 25	(.775 - 1.0")	4190035
25 - 30	(1.0 - 1.2")	4190036
30 - 35	(1.2 - 1.4")	4190037
35 - 40	(1.4 - 1.6")	4190038
40 - 50	(1.6 - 2.0")	4190039
50 - 60	(2.0 - 2.35")	4190040
60 - 70	(2.35 - 2.75")	4190041
70 - 85	(2.75 - 3.35")	4190042
85 - 100	(3.35 - 4.0")	4190043
100 - 125	(4.0 - 4.9")	4190044
125 - 150	(4.9 - 5.9")	4190045
150 - 175	(5.9 - 6.9")	4190046
175 - 200	(6.9 - 7.9")	4190047

Meas. range 6 - 12.5 mm



Meas. range 12.5 - 200 mm



Measuring range mm	a	b	c	d
6 - 8	1.3	4.3	2	64
8 - 10	1.8	4.8	2	64
10 - 12.5	2	6	2.5	64
12.5 - 16	-	7	3	65
16 - 20	-	8.5	4	65
20 - 25	-	11	4	70
25 - 30	-	11	4	70
30 - 35	-	12	5	71
35 - 40	-	12	5	71
40 - 50	-	18	5	79
50 - 60	-	18	7	79
60 - 70	-	18	7	79
70 - 85	-	18	7	97
85 - 100	-	18	7	97
100 - 125	-	19	7	132
125 - 150	-	19	7	132
150 - 175	-	19	7	132
175 - 200	-	19	7	132

Ring Gage 44 Ae

- Can be used for 2 consecutive measuring ranges
- Manufacturing tolerance in accordance to DIN 2250C
- Includes a traceable calibration certificate

dia. mm	Order no.	dia. mm	Order no.
8	4190300	40	4190305
10	4190301	60	4190306
16	4190302	85	4190307
20	4190303	125	4190308
30	4190304	175	4190309

Basic Unit 44 EXg

Threaded connection for changing the measuring heads.

Measuring range mm	(inch)	Order no.
6 - 12.5	(.25 - .5")	4190104
12.5 - 100	(.5 - 4.0")	4190105
20 - 100	(.775 - 4.0")	4190101
100 - 200	(4.0 - 7.9")	4190102

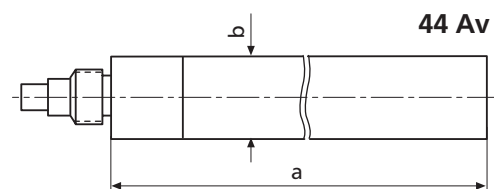
Basic Unit Measuring Pistol 844 Ag

Threaded connection for changing the measuring heads. Any indicating instrument with an 8 mm mounting shank can be used.

Measuring range mm	(inch)	Order no.
6 - 100	(.25 - 4.0")	4487630
20 - 100	(.775 - 4.0")	4487631
100 - 200	(4.0 - 7.9")	4487632

Depth Extension Rod 44 Av

Measuring range mm	(inch)	Length a mm	dia. b mm	Order no.
6 - 10	(.25 - .4")	75	5.8	4190090
10 - 20	(.4 - .775")	75	9.5	4190091
20 - 25	(.775 - 1")	150	19.0	4190092
25 - 200	(1 - 7.9")	150	22.0	4190093



Depth Micrometer 45 T



Application

- Depth measurement
- Measuring the space between grooves and groove widths (in conjunction with a Disc anvil 45 Tm)



Features

- Measuring spindle is hardened throughout and ground
- Hardened chrome plated cross beam, the contact surface is lapped
- Hardened anvil
- When using the interchangeable extensions re-calibrating the depth micrometer is not necessary
- Scales with satin-chrome finish
- Scope of supply: Extensions 25 mm and 50 mm, case

Technical Data

Total measuring range mm	Range of micrometer mm	Readings mm	Spindle thread pitch mm	Error limit with standard anvil μm	Extensions mm	Length tolerance of extensions μm	Order no.
0-100	25	0.01	0.5	$\leq 5 \mu\text{m}$	25/50	$\pm 1.5 \mu\text{m}$	4180000

Standard depth measurements

With a standard anvil, if necessary with an extension

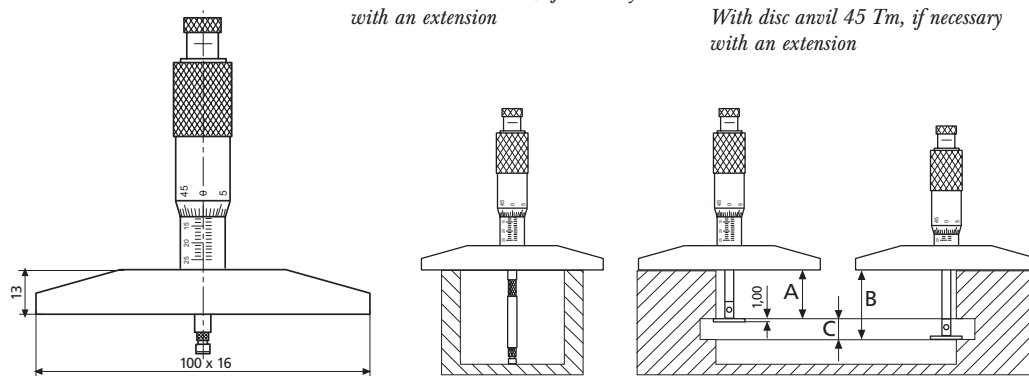
Measuring the space between grooves and the widths of a groove

With disc anvil 45 Tm, if necessary with an extension

Dimension A: Can be direct read of the thimble

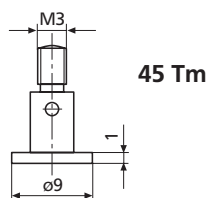
Dimension B: The reading plus 1.00 mm (thickness of the disc anvil)

Dimension C: Dimension B minus Dimension A

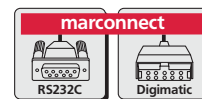


Accessories

		Order no.
Disc anvil 45 Tm for groove spacing and groove widths		4180011
Extension 45 Tv Length L	Length tolerance	
25 mm	$\pm 1.5 \mu\text{m}$	4180001
50 mm	$\pm 1.5 \mu\text{m}$	4180002
100 mm	$\pm 1.5 \mu\text{m}$	4180003



Digital Micrometer Head 46 EX



Features

Functions:

0 (Zero setting)
 ABS (Switching between Relative and Absolute measurement)
 mm/inch

PRESET (enter a numerical value)
 DATA (Data transmission via connection cable)

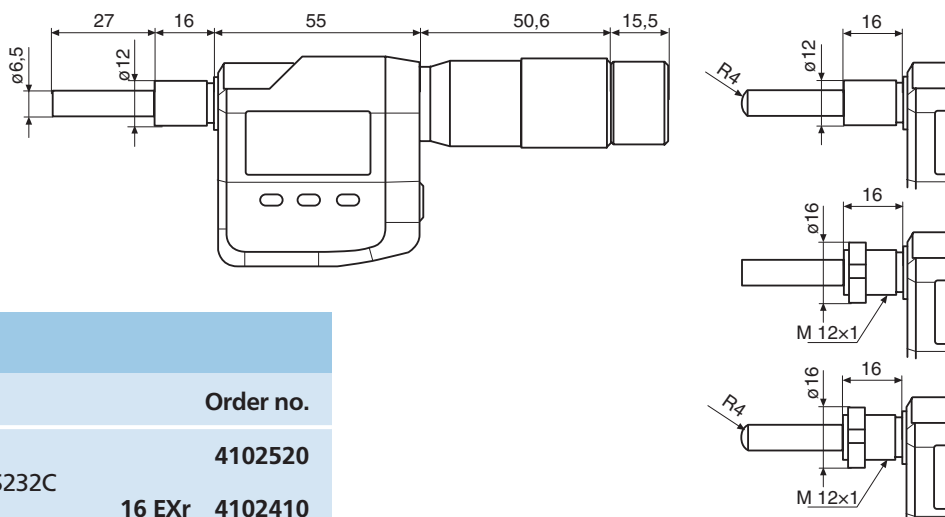
- Patented capacitive measuring system with an energy saving function, life of the battery approx. 2 years
- Ratchet with integrated coupler

- Scope of supply: Case, Adapter dia. 12 mm to dia. 16 mm, end cap (in case ratchet stop is not required)

Technical Data

Measuring range mm (inch)	Readings mm/inch	Error limit G_{me} μm	Measuring face	Mounting shaft mm	Order no.
0-25 (0-1")	0.001/ .00005"	4	flat	12	4184301
0-25 (0-1")	0.001/ .00005"	4	flat	12*	4184303
0-25 (0-1")	0.001/ .00005"	4	spherical	12	4184302
0-25 (0-1")	0.001/ .00005"	4	spherical	12*	4184304

* with locking nut



Accessories

	Order no.
Battery 3V, Type CR 2032	4102520
Data Connection Cable Opto RS232C (2 m), with SUB-D jack 9-pin	16 EXr 4102410
Data Connection Cable Digimatic (2 m), Flat plug 10-pin	16 EXd 4102411

Accessories for Data Processing see Chapter 11

Micrometer Head 46



Features

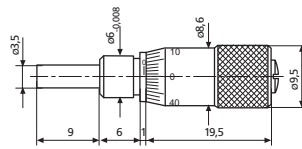
- Spindle is made of stainless steel, hardened throughout and ground
- Scales with satin-chrome finish

Technical Data

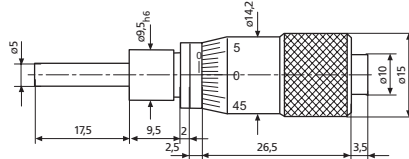
	Measuring range mm	Readings mm	Error limit G_{me}		Spindle thread pitch mm	Spindle dia. mm	Order no.
			μm	DIN 863			
46	0 - 6.5	0.01	3	●	0.5	3.5	4183021
	0 - 13	0.01	3	●	0.5	5	4183025
	0 - 25	0.01	3	●	0.5	6.35	4183030
	0 - 25*	0.01	3	●	0.5	6.35	4183024
	0 - 50	0.01	5	●	0.5	7.5	4183023
46 H	0 - 25**	0.01	3	●	0.5	7.5	4184000

* with locking nut

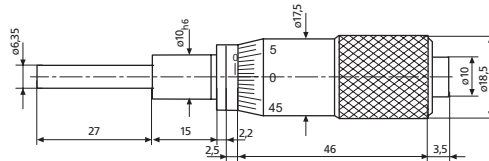
** with ratchet, carbide tipped



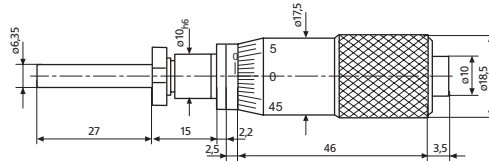
4183021
Meas. range 0-6.5 mm



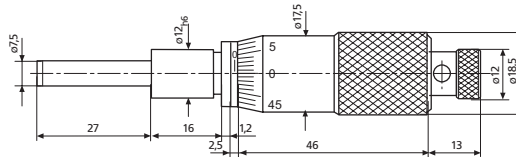
4183025
Meas. range 0-13 mm



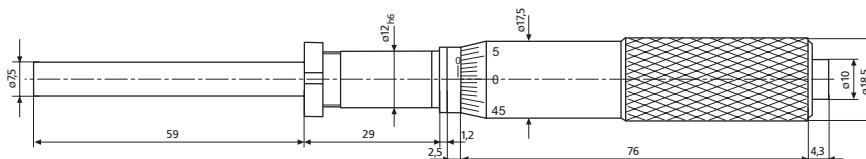
4183030
Meas. range 0-25 mm



4183024
Meas. range 0-25 mm
with locking nut



4184000
Meas. range 0-25 mm
carbide tipped



4183023
Meas. range 0-50 mm

Measuring Tools Set 50 B



50 B

50 C

consists of				Order no.	Order no.
16 FN 150 mm	40 A 0 - 25 mm	Knife edge square 50 x 75	Steel rule 150 mm	Metric	Inch
X	X			4189500	2032079
X	X	X		4189501	2032080
X	X	X	X	4189502	

Measuring Tools Set 50 C

consists of				Order no.	Order no.
16 EX* 150 mm	40 A 0 - 25 mm	Knife edge square 50 x 75	Steel rule 150 mm	Metric	Inch
X	X			4189600	2032081
X	X	X		4189601	2032082
X	X	X	X	4189602	

* with round depth rod, without data output

Measuring Tools Set 50 D



Technical Data

16 EX* mm/inch	40 EX mm/inch	consists of			Order no.	Remarks
		16 U 0 - 6"	40 A 0 - 1"	6" rule 8 ^{ths} , 16 ^{ths} , 32 ^{nds} , 64 ^{ths}		
X	X	X	X	X	2032172	Mechanical
				X	2032173	Digital

* 150 mm / 6" with round depth rod, without data output