



External Micrometers



PRECISION MEASUREMENT

Precision measurement requires the use of micrometers. In 1848, the first measuring tool of this type was patented by the French inventor Jean Laurent Palmer as "calibre à vis et à vernier circulaire" (screw caliper with a circular vernier). Today, we continue to make external micrometers with these typical features. The introduction of the micrometer to the mechanical world came about due to the visit of the two American engineers, Joseph R. Brown and Lucian Sharpe to the Paris Exhibition in 1867. At that time, their attention was drawn to Palmer's invention, which greatly interested them. After some improvements of Palmer's design, the product was manufactured on a large scale and marketed successfully by the two partners. History repeated itself years later as TESA SA decided to manufacture external micrometers, making them the first products produced by the company.

Whether for internal or external measurement, TESA micrometers are distinguishable for their construction and quality. All our models respect the ABBE principle with the exception of the models with large measuring anvils for the measurement of gear teeth for example.



State of the art machining techniques are used for grinding the micrometer spindles, to ensure extreme accuracy and a true reproduction of the thread with negligible pitch deviations. For this reason we can guarantee a very low measuring uncertainty to our instrument users. TESA micrometers are designed to meet the most exacting demands. They are robust and ergonomically designed.

Max. permissible errors

			
Measuring range mm	Maximum permissible errors* μm	Number of interference fringes or rings	μm
0 ÷ 25	4	6	2
25 ÷ 50	4	6	2
50 ÷ 75	5	10	3
75 ÷ 100	5	10	3
100 ÷ 125	6		3
125 ÷ 150	6		3
150 ÷ 175	7		4
175 ÷ 200	7		4
200 ÷ 225	8		4
225 ÷ 250	8		4
250 ÷ 275	9		5
275 ÷ 300	9		5
300 ÷ 325	10		5
325 ÷ 350	10		5
350 ÷ 375	11		6
375 ÷ 400	11		6
400 ÷ 425	12		6
425 ÷ 450	12		6
450 ÷ 475	13		7
475 ÷ 500	13		7

* Including the errors of the measuring element as well as any deviations in the flatness and parallelism of the measuring faces, plus any errors due to the flexing of the frame.

We offer an extensive range of micrometers, from a classic model through to micrometers for special applications, and also micrometer heads, complete sets, accessories and all items needed for calibration. They are available in analogue or digital versions, and also digital versions with results output.



TESA MICROMASTER Electronic Micrometers with Digital Display

With patented TESA CAPA μ SYSTEM.

- Measuring span of 30 mm.
- Large easy-to-read digital display.
- Models:
 - EASY IP40 with a single function key.
 - IP54 with water spray protection as well as IP54 RS with an RS232 interface.



No	mm	mm	in	in		
06030010	0 ÷ 30	0 ÷ 30	0 ÷ 1.2	0 ÷ 1.2	IP40	–
06030020	0 ÷ 30	0 ÷ 30	0 ÷ 1.2	0 ÷ 1.2	IP54	–
06030021	25 ÷ 50	23 ÷ 53	1 ÷ 2	0.9 ÷ 2.1	IP54	–
06030022	50 ÷ 75	48 ÷ 78	2 ÷ 3	1.9 ÷ 3.1	IP54	–
06030023	75 ÷ 100	74 ÷ 104	3 ÷ 4	2.9 ÷ 4.1	IP54	–
06030030	0 ÷ 30	0 ÷ 30	0 ÷ 1.2	0 ÷ 1.2	IP54	RS232
06030031	25 ÷ 50	23 ÷ 53	1 ÷ 2	0.9 ÷ 2.1	IP54	RS232
06030032	50 ÷ 75	48 ÷ 78	2 ÷ 3	1.9 ÷ 3.1	IP54	RS232
06030033	75 ÷ 100	74 ÷ 104	3 ÷ 4	2.9 ÷ 4.1	IP54	RS232
06030071	100 ÷ 125	98 ÷ 127	4 ÷ 5	3.9 ÷ 5.01	IP54	RS232
06030072	125 ÷ 150	123 ÷ 152	5 ÷ 6	4.9 ÷ 6.01	IP54	RS232
06030073	150 ÷ 175	149 ÷ 178	6 ÷ 7	5.9 ÷ 7.01	IP54	RS232
06030074	175 ÷ 200	174 ÷ 203	7 ÷ 8	6.9 ÷ 8.01	IP54	RS232
06030075	200 ÷ 225	199 ÷ 229	8 ÷ 9	7.9 ÷ 9.01	IP54	RS232
06030076	225 ÷ 250	224 ÷ 254	9 ÷ 10	8.9 ÷ 10.01	IP54	RS232
06030077	250 ÷ 275	250 ÷ 279	10 ÷ 11	9.9 ÷ 11.01	IP54	RS232
06030078	275 ÷ 300	275 ÷ 304	11 ÷ 12	10.9 ÷ 12.01	IP54	RS232
OPTIONAL ACCESSORIES:						
01961000	Lithium battery, 3V, CR2032					
00160201	TESA micrometer stand with clamp aperture 16 mm					
072110123	ETALON micrometer stand with clamp aperture 20 mm					
04761062	Opto-USB cable, duplex, bidirectional communication					

MICROMASTER IP54 SET

Set consisting of 3 Micromaster external micrometers covering 0 ÷ 75 mm measuring range.

No	=	
06030029	Set of 3 MICROMASTER IP54 with RS232	0 ÷ 75 output



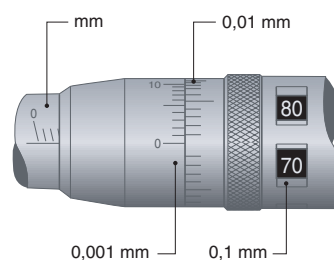
CONSISTING OF:

06030030	MICROMASTER RS IP54 digital micrometer, 0 ÷ 30 mm, 0,001 mm resolution, IP54 rating and RS232 output.
06030031	MICROMASTER RS IP54 digital micrometer, 25 ÷ 50 mm, 0,001 mm resolution, IP54 rating and RS232 output.
06030032	MICROMASTER RS IP54 digital micrometer, 50 ÷ 75 mm, 0,001 mm resolution, IP54 rating and RS232 output.
02119021	Etalon setting standard, 50 mm

-  DIN 863 T1
-  0,001 mm / 0.00005 in
-  LCD, digit height: 7 mm
-  Floating zero
-  Conversion mm/in
-  Tungsten carbide tipped
-  3V lithium battery
-  1 to 2 a (≈ 2000 h/a)
-  Automatic shut-down after 10 min. Display setting is maintained as long as power supply remains stable.
-  -10°C to 60°C
-  10°C to 40°C
-  80 %, noncondensing
-  Protection as per IEC 60529: IP40 (also valid with used RS data output) or IP54
-  CE
-  Plastic case
-  Measuring range 0 to 100: with SCS calibration certificate
-  Measuring range > 100 mm: with inspection report and declaration of conformity
-  Identification number
-  Display lock (except for model EASY)
-  RS232 interface, opto-coupled
-  0,5 mm
-  Max. 10 N
-  ≤ 100 mm: Ø 6,5 mm
> 100 mm: Ø 8 mm

TESAMASTER High Precision Micrometers with Digital Counter Reading to 0,1 mm

Analogue indication of full millimetres, hundredths and fractions of hundredths. Accurate, parallax-free reading on the vernier down to 0,001 mm.



DIN 863 T1
NF E 11-095



Scale
division: 0,1 mm
or 0.005 in



Tungsten carbide



Plastic case



Measuring range
0 to 100 mm
with inspection
report and declara-
tion of conformity



Measuring range
> 100 mm with
a declaration of
conformity



Identification
number



0,5 mm



Max. 10 N

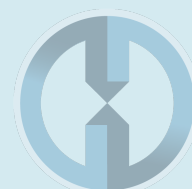


≤ 100 mm: Ø 6,5 mm
> 100 mm: Ø 8 mm



Vernier reading
to 0,001 mm
or 0.0001 in

No			
	mm	µm	µm
00310001	0 ÷ 25	2	1
00310002	25 ÷ 50	2	1,5
00310003	50 ÷ 75	3	1,5
00310004	75 ÷ 100	3	1,5
00310005	100 ÷ 125	4	2
00310006	125 ÷ 150	4	2,5
00310007	150 ÷ 175	5	3
00310008	175 ÷ 200	5	3
00310009	200 ÷ 225	6	3,5
00310010	225 ÷ 250	6	3,5




 DIN 863 T1
NFE 11-095

 Tungsten carbide
tipped


Plastic case


 Inspection report
with a declaration
of conformity

 Identification
number


1 mm



Max. 10 N

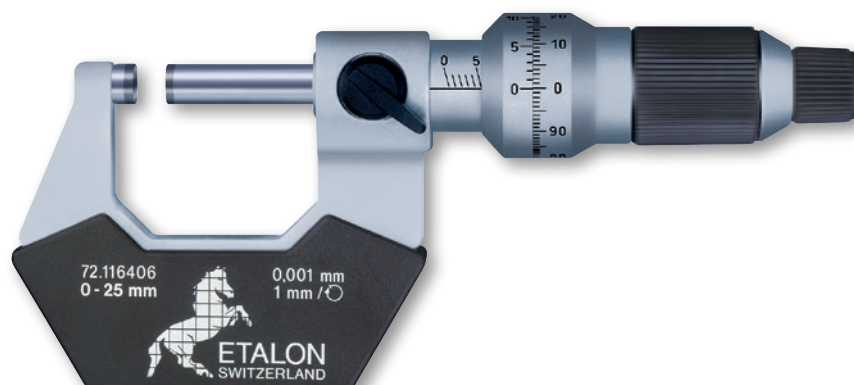


Ø 6,5 mm


 Parallax-free
vernier reading
to 0,001 mm

ETALON MICRORAPID 226 with 1 mm Revolution

High precision micrometers – Fast, accurate reading – No reading error of the millimetre fractions – Barrel with scale to 1 mm – Thimble with 100 graduations and vernier reading to 0,001 mm.



No			
072116406	0 ÷ 25	2	1
072116407	25 ÷ 50	2	1,5
072116408	50 ÷ 75	3	1,5
072116409	75 ÷ 100	3	1,5


 DIN 863 T1
NFE 11-095

 Tungsten carbide
tipped


Plastic case


 Measuring range
0 to 100 mm
with inspection
report and declara-
tion of conformity

 Measuring
range > 100 mm
with a declaration
of conformity

 Identification
number


0,5 mm



Max. 10 N


 ≤ 100 mm:
Ø 6,5 mm,
> 100 ≤ 200 mm:
Ø 8 mm


0 to 100 mm

ETALON 260 Standard Models with Analogue Indication

The knurled sleeve only needs to be reversed to render the friction drive built into the thimble inactive.



No				
071115887	0 ÷ 25	0,002	2	2
071115888	25 ÷ 50	0,002	2	2
071115889	50 ÷ 75	0,002	3	3
071115890	75 ÷ 100	0,002	3	3
071115891	100 ÷ 125	0,01	4	3
071115892	125 ÷ 150	0,01	4	3
071115893	150 ÷ 175	0,01	5	4
071115894	175 ÷ 200	0,01	5	4



TESA ISOMASTER Standard Models with Analogue Indication

Slanted full millimetres on the barrel are set apart from the straight half millimetres to virtually eliminate reading errors.

The knurled sleeve needs only to be reversed to render the friction drive built into the thimble inactive.



No	mm	mm
00110101	0 ÷ 25	0,01
00110102	25 ÷ 50	0,01
00110103	50 ÷ 75	0,01
00110104	75 ÷ 100	0,01
00110105	100 ÷ 125	0,01
00110106	125 ÷ 150	0,01
00110107	150 ÷ 175	0,01
00110108	175 ÷ 200	0,01
00110109	200 ÷ 225	0,01
00110110	225 ÷ 250	0,01
00110111	250 ÷ 275	0,01
00110112	275 ÷ 300	0,01

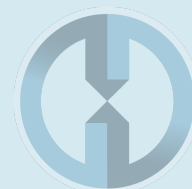


Set of 4 TESA ISOMASTER Micrometers

The models covering application range 0 to 100 mm provide the quality that you need at competitive prices.



No	=	mm
00110113	Set of 4 ISOMASTER micrometers	0 ÷ 100
CONSISTING OF:		
00110101	ISOMASTER AA external micrometer with vernier scale, 0 ÷ 25 mm and resolution to 0,01 mm	
00110102	ISOMASTER AA external micrometer with vernier scale, 25 ÷ 50 mm and resolution to 0,01 mm	
00110103	ISOMASTER AA external micrometer with vernier scale, 50 ÷ 75 mm and resolution to 0,01 mm	
00110104	ISOMASTER AA external micrometer with vernier scale, 75 ÷ 100 mm and resolution to 0,01 mm	



ETALON Basic to 0,01 mm

Standard micrometer with measuring range from 0 to 100 mm



No	mm
00119046	0 ÷ 25
00119047	25 ÷ 50
00119048	50 ÷ 75
00119049	75 ÷ 100

Set of 4 ETALON Basic Micrometers 0,01 mm Reading



No	=	mm
00119050	Set of 4 ETALON micrometers	0 ÷ 100
CONSISTING OF:		
00119046	ETALON micrometer with measuring range 0 ÷ 25 mm	
00119047	ETALON micrometer with measuring range 25 ÷ 50 mm	
00119048	ETALON micrometer with measuring range 50 ÷ 75 mm	
00119049	ETALON micrometer with measuring range 75 ÷ 100 mm	



DIN 863 T1
NFE 11-095

Tungsten carbide
tipped

Plastic case

Inspection report
with a declaration
of conformity

No
Identification
number

0,5 mm

Max. 10 N

Ø 6,5 mm

0,01 mm



DIN 863 T1
NFE 11-095

Tungsten carbide
tipped

Plastic case

Inspection report
with a declaration
of conformity

No
Identification
number

0,5 mm

Max. 10 N

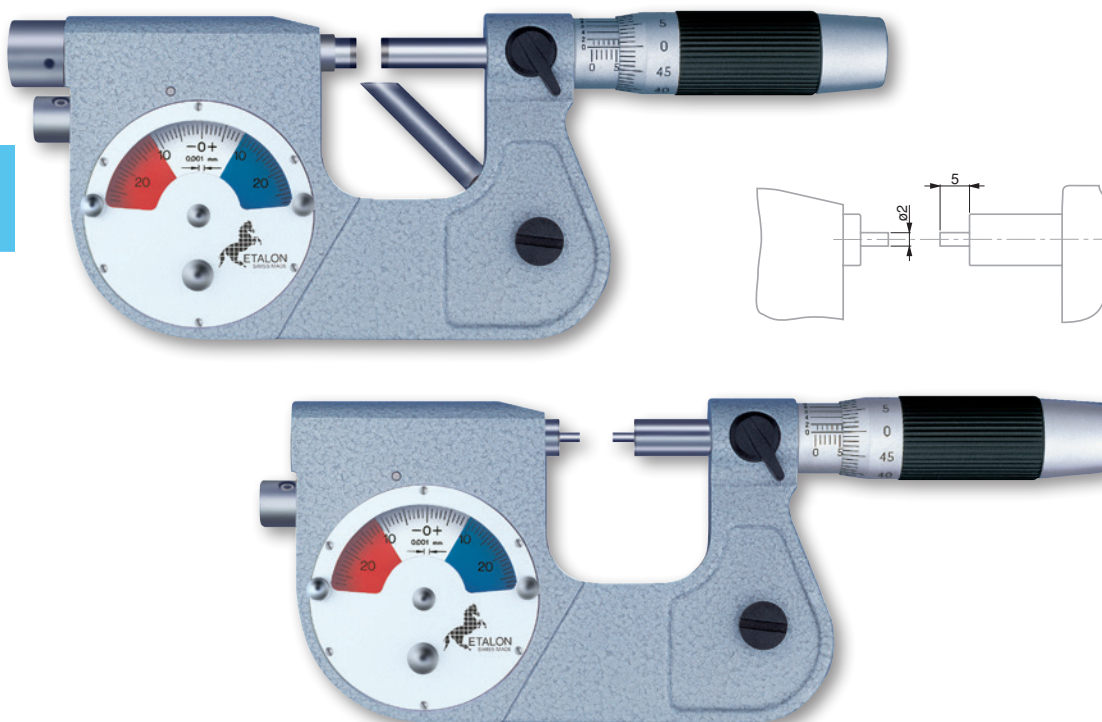
Ø 6,5 mm

0,01 mm



MICRO-ETALON 225 - Precision Micrometers with a Dial Indicator

Feature a mobile anvil along with a built-in dial indicator. Ideal for comparative measurements on small part series. The nominal dimension is set on the micrometer while deviations are read on the dial indicator. Retractable anvil by means of a push-button. Rotating dial for fine adjustment, also with adjustable tolerance markers.



DIN 863 T3
(Style D13)



Micrometer:
max. perm.
error of 2 μm .
Dial indicator: 1 μm .



Dial indicator:
repeatability
limit of 0.5 μm



Tungsten carbide
tipped



Plastic case



Declaration
of conformity



0,5 mm



Anvil:
4,5 to 5,5 N



6,5 mm dia.
Model
with small
measuring faces:
2 mm dia.,
5 mm long



Micrometer with
vernier reading
to 0,002 mm.
Dial indicator:
0,001 mm.



Dial indicator:
 $\pm 0,025$ mm

No		
	mm	
072108669	0 ÷ 25	Standard inserts
072108691	25 ÷ 50	Standard inserts
072108722	0 ÷ 20	Pointed inserts
OPTIONAL ACCESSORY:		
072110978	Protective cover for dial indicator	

Protective Cover for Micro-Etalon 225

Made in transparent plastic – Can be mounted on the bezel – Protects the indicator against dust particles and liquids – Prevents both tolerance markers from being accidentally displaced.



072110978 Protective cover for dial indicator





DIN 863 T3
(Style D14)
NFE 11-090

Meas. element:
max. perm. error
of 2 µm

Mobile anvil:
repeatability
limit of
0,5 µm.

Tungsten carbide
tipped

Adjustable part
support (except
model with small
measuring faces).

Plastic case

Declaration
of conformity

0,5 mm

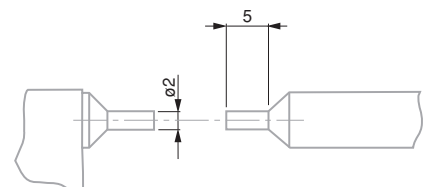
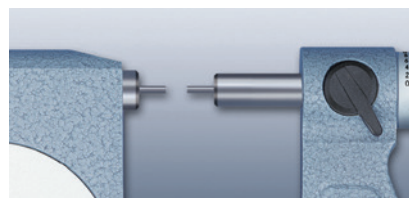
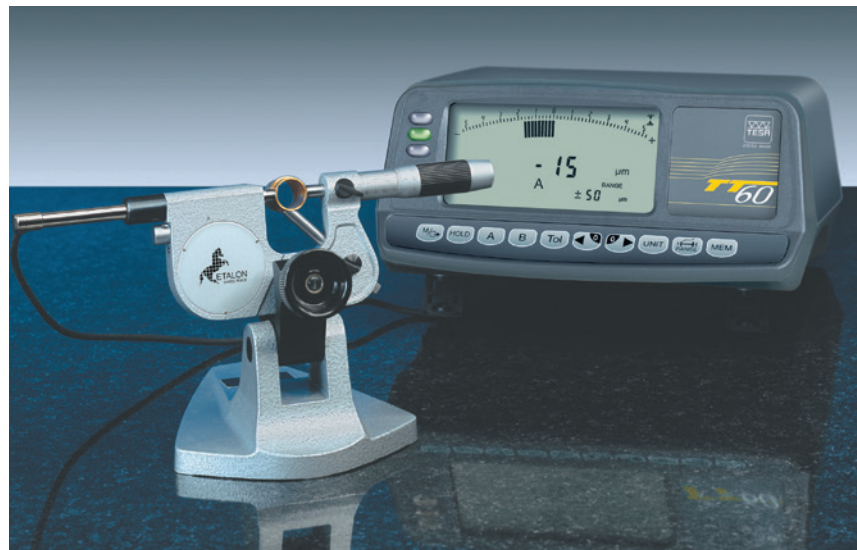
Anvil:
2 up to 8 N,
adjustable

6,5 mm or 2 mm dia.
and length of 5 mm
for models with small
measuring faces.

Vernier reading
to 0,002 mm

ETALON MICROSPEL 280

These micrometers have a mobile anvil along with an 8 mm diameter clamping bore for mounting a sensor with linear action such as a TESA GT 21/22 electronic probe. Specially designed for batch inspection of small precision made parts.

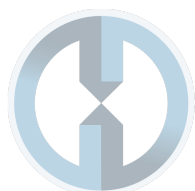


mm

072110816 0 ÷ 25 Standard inserts

072110853 0 ÷ 20 Pointed inserts

Electronic probe and micrometer stand are not part of the delivery scope and must be ordered separately.

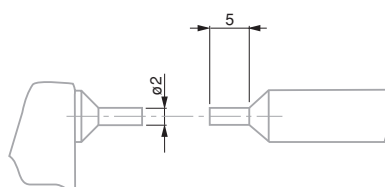


MICROMASTER Micrometers with Small Measuring Faces

For measuring grooves, feather grooves, splines and other difficult to reach locations – Small measuring faces specially made to check small precision workpieces.



No	mm	in
06030034	0 ÷ 30	0 ÷ 1.2
06030035	30 ÷ 60	1.2 ÷ 2.3
OPTIONAL ACCESSORY:		
01961000	Lithium battery 3V, CR2032	



DIN 863 T3
(Style D3)



0,001 mm /
0.00005 in



Conversion
mm/in



Fixed measuring
faces: tungsten
carbide.



Degree of protection
(IEC 60529):
IP54 or IP40 with
use of the digital
output



Plastic case



Measuring range
0 to 100: with a
SCS calibration
certificate.



Identification
number



RS232 interface,
opto-coupled.



For additional
technical data:
see standard.

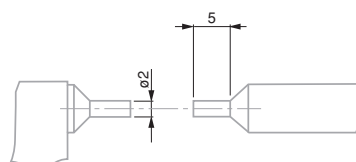


Max. 10 N

TESAMASTER AD Micrometers with Small Measuring Faces



No	mm
00311301	0 ÷ 25



DIN 863 T3
(Style D3)
NFE 11-090



Scale division
0,1 mm



Fixed measuring
faces: tungsten
carbide



Plastic case



Inspection report
with a declaration
of conformity



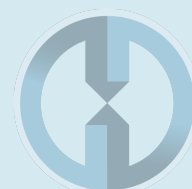
Identification
number



Max. 10 N



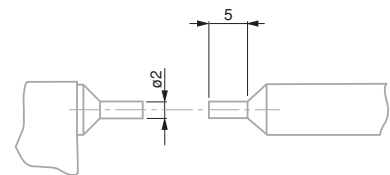
Vernier reading
to 0,001 mm



MICRORAPID Micrometers with Small Measuring Faces



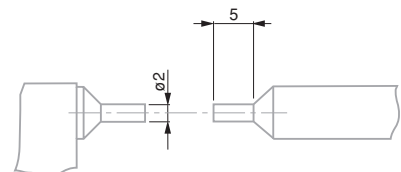
	
072116410	0 ÷ 20



ISOMASTER AD Micrometers with Small Measuring Faces



	
00210101	0 ÷ 25
00210102	25 ÷ 50



DIN 863 T3
(Style D3)
NFE 11-090

Fixed measuring
faces: tungsten
carbide

Plastic case

Inspection report
with a declaration
of conformity

No
Identification
number

1 mm

Max. 10 N

0,001 mm.
Parallax-free
reading on vernier



DIN 863 T3
(Style D3)
NFE 11-090

Fixed measuring
faces:
tungsten carbide

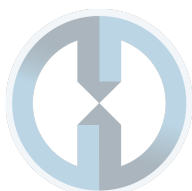
Plastic case

Inspection report
with a declaration
of conformity

No
Identification
number

Max. 10 N

0,01 mm



MICROMASTER Micrometers with Two Spherical Measuring Faces

Rounded measuring faces on both anvil and spindle for measuring concave surfaces on components, e.g. ball-bearing guides or wall thickness.



No	mm	in
06030081	0 ÷ 25	0 ÷ 1
06030082	20 ÷ 50	0.8 ÷ 1.9
06030083	45 ÷ 75	1.8 ÷ 2.9
06030084	70 ÷ 100	2.8 ÷ 3.9

MICROMASTER Micrometers with One Spherical Measuring Face

For the measurement of wall thickness of tubing and other similar tasks.



No	mm	in
06030079	0 ÷ 30	0 ÷ 1.2
06030080	25 ÷ 50	1 ÷ 2

-  DIN 863 T3 (Style D1)
-  0,001 mm / 0.00005 in
-  Tungsten carbide
-  Plastic case
-  Inspection report with a declaration of conformity
-  Identification number
-  RS232
-  Additional technical data: see standard.
-  Max. 10 N
-  Spherical: 3,5 mm radius.

-  DIN 863 T3 (Style D1)
-  0,001 mm or 0.00005 in
-  Anvil in tungsten carbide. Micrometric spindle in tungsten carbide
-  Plastic case
-  Inspection report with a declaration of conformity
-  Identification number
-  RS232
-  Other technical data see standard.
-  Max. 10 N
-  Anvil with a 3,5 mm spherical face (MICROMASTER) or 3,25 mm (ETALON). Spindle with a flat measuring face.



ETALON Micrometers with One Spherical Measuring Face



	
071115940	mm 0 ÷ 25



DIN 863 T3
(Style D1)



Anvil with TIC
coating.
Tungsten carbide
spindel



Plastic case



Inspection report
with a declaration
of conformity



Identification
number



Other technical
data on
MICROMASTER:
see appropriate
standard.



Max. 10 N



Anvil with 3,25 mm
spherical measuring
face. Spindle with a
flat measuring face



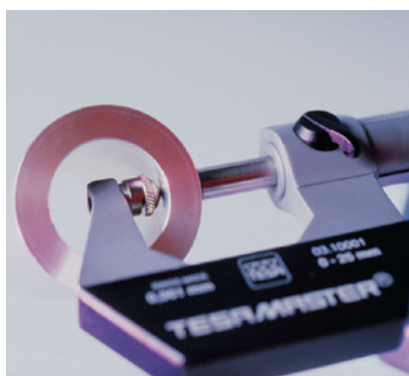
0,002 mm



Steel ball tip,
hardened and
lapped.
Dull-chrome
brass retainer

Spherical Element for External Micrometers

Holder with a ball tip to fit measuring faces Ø 6,5 mm – Used to measure tubing wall thickness or components with concave surfaces etc.



	
072103522	mm 5

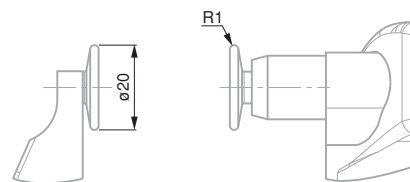


MICROMASTER Micrometers for Soft Materials

With two large, round-edge measuring faces – Measure the thickness of materials such as paper and plastic sheets, felt, cloth and other soft materials. Non-rotating measuring spindle – without spindle lock.

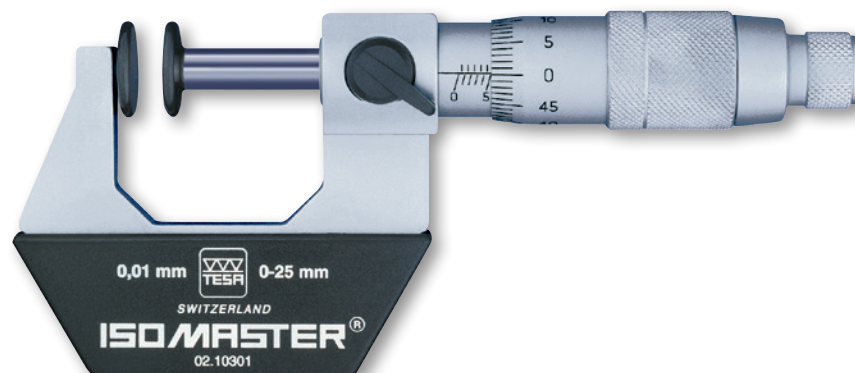


No	mm	in
06030085	0 ÷ 30	0 ÷ 1.2



- DIN 863 T3 (Style D6)
- 0,001 mm / 0.00005 in
- Conversion mm/in
- Max. permissible error: 4 µm
- Hardened steel
- Plastic case
- Inspection report with a declaration of conformity
- Identification number
- RS232
- Additional technical data: see standard.
- Max. 10 N
- Non-rotating, 20 mm diameter.
- Flatness tolerance: 3 µm
- Tolerance in Parallelism: 6 µm

ISOMASTER AF Micrometers for Soft Materials



No	mm
00210301	0 ÷ 25

- DIN 863 T3 (Style D6)
- Hardened steel
- Plastic case
- Inspection report with a declaration of conformity
- Identification number
- Max. 10 N
- Ø 15 mm
- 0,01 mm
- Flatness tolerance: 3 µm
- Tolerance in parallelism: 6 µm





DIN 863 T3
(Style D7)

0,001 mm /
0.00005 in

Conversion
mm/in

Hardened steel

Suitable from
module 0,5 onwards

Plastic case

Inspection report
with a declaration
of conformity

Identification
number

RS232

Additional technical
data: see standard.

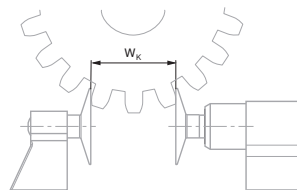
Max. 10 N

Non-rotating
spindle
≤ 85 mm: 25 mm dia.
> 85 ≤ 115 mm: 30
mm dia.

MICROMASTER Micrometers for Gear Pitch Measurement

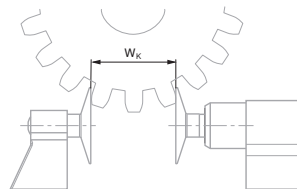
Flanges with ring-shaped measuring faces for root tangent lengths, W_k on gear pitches, distance between grooves and slots as well as other hard-to-reach locations.

Non-rotating measuring spindle, without spindle lock.



No	mm	in
06030041	0 ÷ 30	0 ÷ 1.2
06030042	25 ÷ 55	1 ÷ 2.1
06030043	55 ÷ 85	2.1 ÷ 3.35
06030044	85 ÷ 115	3.35 ÷ 4.5

ISOMASTER AE Micrometers for Gear Tooth / Pitch Measurement



No	mm
00210201	0 ÷ 25
00210202	25 ÷ 50
00210203	50 ÷ 75
00210204	75 ÷ 100
00210205	100 ÷ 125
00210206	125 ÷ 150



DIN 863 T3
(Style D7)
NFE 11-090

Hardened
steel

Suitable from
module 0,6

Plastic case

Inspection report
with a declaration
of conformity

Identification
number

Max. 10 N

≤ 100 mm:
25 mm dia.
> 100 ≤ 150 mm:
32 mm dia

0,01 mm

		Maximum permissible error disregarding a rim of 1 mm during inspection of the measuring faces and having partial contact with the measuring face.	Maximum permissible error with full contact of the measuring face (DIN863-T1)	Flatness	Parallelism
				Maximum flexure of the frame	
mm	µm	µm	µm	µm	µm
0 ÷ 30	10	4	2	5	2
25 ÷ 55	10	4	2	5	2
55 ÷ 85	11	5	2	5	3
85 ÷ 115	12	5	2	6	4



MICROMASTER with 7 Pairs of Interchangeable Measuring Inserts

Non-rotating spindle, without spindle lock.



No	mm	in
06030045	0 ÷ 30	0 ÷ 1.2
CONSISTING OF:		
06030099	MICROMASTER single micrometer for use with interchangeable measuring inserts, 0-30 mm	
00269027	Full set of 7 pairs of inserts	



0,001 mm /
0.00005 in



Conversion
mm/in



Micrometer element
with a max. perm.
error of 4 µm



Hardened steel



7,5 mm diameter
non-rotating
spindle.
With a fixing bore for
a measuring insert.
Adjustable attach-
ment on the anvil for
a measuring insert,
with lock.



Plastic case



Inspection report
with a declaration
of conformity



Identification
number



RS232

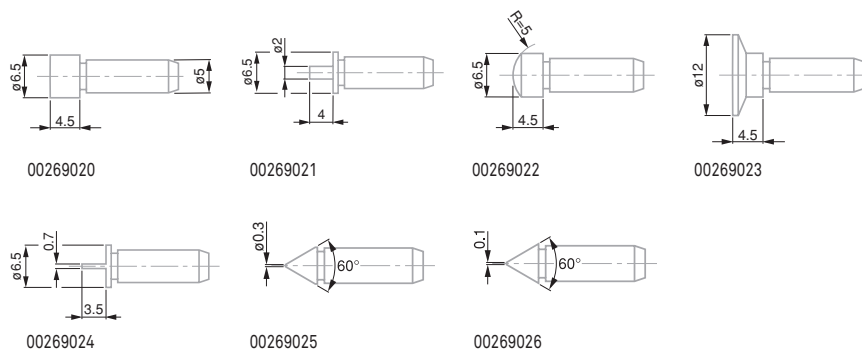


Additional technical
data: see standard



Max. 10 N

Full Set of Measuring Inserts for MICROMASTER with Interchangeable Inserts



00269027 Full set of 7 pairs of inserts

COMPOSITION OF THE SETS:

00269020 Pair of flat inserts

00269021 Pair of spline inserts

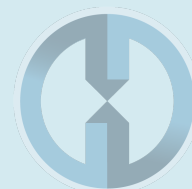
00269022 Pair of spherical inserts

00269023 Pair of disc inserts

00269024 Pair of blade inserts

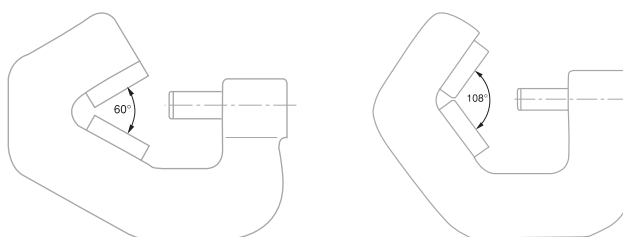
00269025 Pair of point inserts

00269026 Pair of knife edge inserts



MICROMASTER Micrometers with Prismatic Measuring Faces

Measure test pieces with an odd number of grooves such as milling cutters, taps, drills and spline shafts as well as polygons. Determine roundness errors on cylindrical surfaces. The angle of the prism aperture is designed for workpieces having 3 or 5 flutes.



No			
	mm	in	
06030087	1 ÷ 7	0.04 ÷ 0.27	3 flute test pieces (60°)
06030088	5 ÷ 20	0.20 ÷ 0.80	3 flute test pieces (60°)
06030089	20 ÷ 35	0.80 ÷ 1.38	3 flute test pieces (60°)
06030090	35 ÷ 50	1.38 ÷ 1.97	3 flute test pieces (60°)
06030091	50 ÷ 65	1.97 ÷ 2.56	3 flute test pieces (60°)
06030092	65 ÷ 80	2.56 ÷ 3.15	3 flute test pieces (60°)
06030093	1 ÷ 7	0.04 ÷ 0.27	5 flute test pieces (108°)
06030094	5 ÷ 25	0.20 ÷ 0.98	5 flute test pieces (108°)
06030095	25 ÷ 45	0.98 ÷ 1.77	5 flute test pieces (108°)
06030096	45 ÷ 65	1.77 ÷ 2.56	5 flute test pieces (108°)
06030097	65 ÷ 85	2.56 ÷ 3.35	5 flute test pieces (108°)

Cylindrical Setting Standards for Micrometers

No			
	μm	μm	
00440001	0,5	—	5
00440002	0,7	1	20
00440003	0,7	1	25
00440004	1	1	35
00440005	1,2	1,5	45
00440006	1,2	1,5	50
00440007	1,5	1,5	65



DIN 863 T3
(Style D 10)

0,001 mm /
0.00005 in

Conversion
mm/in

Tungsten carbide

Plastic case

Inspection report
with a declaration
of conformity

Identification
number

RS232

Additional technical
data: see standard.

0,75 mm for 3-flute
test pieces
or 0,559 mm for
5-flute test pieces.

Max. 10 N

Angle of the prism
aperture:
60° for 3-flute test
pieces
or 108° for 5-flute
test pieces.



Alloyed steel,
hardend

With a protective
cap from the nomi-
nal size of 20 mm.
Effective diameter
engraved on the
front face.

Declaration
of conformity

Identification
number

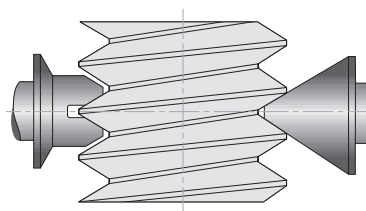
MICROMASTER AC Micrometers for Thread Measurement

Used for pitch diameter inspection. Anvil with adjustable holder for mounting a measuring insert with prismatic faces. Fine screw adjustment and locking device. The spindle has a fixing bore for a cone-shaped measuring insert.



No	mm	in
06030062	0 ÷ 25	0 ÷ 1
06030063	25 ÷ 50	1 ÷ 2
06030064	50 ÷ 75	2 ÷ 3
06030065	75 ÷ 100	3 ÷ 4
06030066	100 ÷ 125	4 ÷ 5
06030067	125 ÷ 150	5 ÷ 6

Note: Measuring inserts and setting standards must be ordered separately.



DIN 863 T3
(Style D18)



0,001 mm /
0.00005 in



Conversion
mm/in



Plastic case



Inspection report
with a declaration
of conformity



Identification
number



RS232



Additional
technical data:
see appropriate
standard

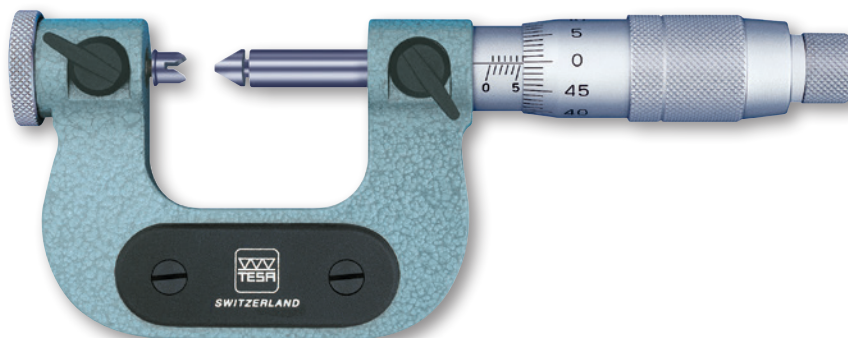


Max. 10 N



30 mm measuring
span

ISOMASTER AC Micrometers for Thread Measurement Models



No	mm
00210001	0 ÷ 25
00210002	25 ÷ 50
00210003	50 ÷ 75
00210004	75 ÷ 100

Measuring inserts and setting standards must be ordered separately.



DIN 863 T3
(Style D18)
NFE 11-090



Plastic case



Declaration
of conformity



Identification
number



0,5 mm



Max. 10 N



0,01 mm





Hardened steel



Supplied in sets or pairs

Fixing rod:
3,5 mm dia.,
15,5 mm long

Interchangeable Thread Inserts for TESA Micrometers Series AC

With measuring faces specially designed for checking pitch diameters.



For unified inch threads, UN, UNC, UNF.... 60° flank angle

For Whitworth threads, 55° flank angle

For ISO metric threads, flank angle 60°



00250015 Set of inserts
64 ÷ 2.5 in

COMPOSITION OF THE SETS:

00250000 AC UN,UNC,UNF
64 ÷ 42 in

00250001 AC UN,UNC,UNF
42 ÷ 25 in

00250002 AC UN,UNC,UNF
25 ÷ 17 in

00250003 AC UN,UNC,UNF
17 ÷ 10 in

00250004 AC UN,UNC,UNF
10 ÷ 6.5 in

00250005 AC UN,UNC,UNF
6.5 ÷ 4 in

00250006 AC UN,UNC,UNF
4 ÷ 2.5 in



00250115 Set of inserts, whitworth
60 ÷ 3 in

COMPOSITION OF THE SETS:

00250100 AC whitworth 60 ÷ 48 in

00250101 AC whitworth 48 ÷ 40 in

00250102 AC whitworth 40 ÷ 32 in

00250103 AC whitworth 32 ÷ 24 in

00250104 AC whitworth 24 ÷ 18 in

00250105 AC whitworth 18 ÷ 14 in

00250106 AC whitworth 14 ÷ 10 in

00250107 AC whitworth 10 ÷ 7 in

00250108 AC whitworth 7 ÷ 4.5 in

00250109 AC whitworth 4.5 ÷ 3 in



00240015 Set of inserts
ISO 0.40 ÷ 6.00

COMPOSITION OF THE SETS:

00240000 ISO 0.4 ÷ 0.50

00240001 ISO 0.5 ÷ 0.60

00240002 ISO 0.6 ÷ 0.80

00240003 ISO 0.8 ÷ 1.00

00240004 ISO 1.0 ÷ .25

00240005 ISO 1.25 ÷ 1.50

00240006 ISO 1.5 ÷ 2.00

00240007 ISO 2.00 ÷ 2.50

00240008 ISO 2.5 ÷ 3.00

00240009 ISO 3.00 ÷ 4.00

00240010 ISO 4.00 ÷ 5.00

00240011 ISO 5.0 ÷ 6.00



Hardened steel

Insulating sleeve
marked
with actual sizeDeclaration
of conformityIdentification
number

Setting Standards for Screw Thread Micrometers - Metric, 60° or 55° flank angle



60° flank angle, metric

60° flank angle, imperial

55° flank angle, metric



Flank angle mm

00240501 60° 25

00240502 60° 50

00240503 60° 75

00240504 60° 100

00240505 60° 125



Flank angle in

00250501 60° 1

00250502 60° 2

00250503 60° 3

00250504 60° 4

00250505 60° 5



Flank angle mm

00240601 55° 25

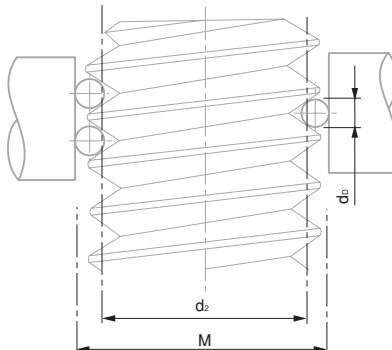
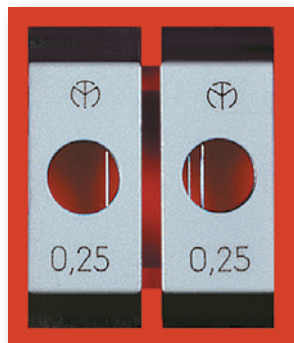
00240602 55° 50

00240603 55° 75



XB Wires for Screw Threads

For measuring pitch diameter of threads using the three-wire method. Actual flank diameter d_2 can either be determined arithmetically or with the aid of the relevant tables based on the measured actual size M – Suitable for all standard micrometers with measuring faces of 6,5 mm diameter.



No	Ø Diameter of the wires dD in mm	ISO metric threads Pitch in mm	Whitworth threads Number of threads per in	Unified inch-threads UN, UNC, UNF Number of threads per in
00240701	0,17	0,25 / 0,3	–	–
00240702	0,22	0,35	–	72
00240703	0,25	0,4	60	64
00240704	0,29	0,45 / 0,5	–	56
00240705	0,335	0,6	48 / 40	48 / 44
00240706	0,455	0,7 ÷ 0,8	–	32
00240707	0,53	0,9	32 / 28	28
00240708	0,62	1,0	26 / 24	24
00240709	0,725	1,25	22 ÷ 19	20
00240710	0,895	1,5	18 / 16	18 / 16
00240711	1,10	1,75	14	14 / 13
00240712	1,35	2,0	12 / 11	12 / 11
00240713	1,65	2,5	10 / 9	10 / 9
00240714	2,05	3,0 / 3,5	8 / 7	8 / 7
00240715	2,55	4,0 / 4,5	6	6
00240716	3,20	5,0 / 5,5	5 / 4,5	5 / 4,5

Set of 16 Pairs of XB Wires for Thread Measurement

No	Ø Diameter of the wires dD in mm
00240700	0,17 ÷ 3,20



Steel wires, hardened

Single pairs are supplied in a plastic box, full set in a wooden case

Declaration of conformity

Wires are mounted on holders: 2-wire holder rests on anvil while the single wire holder is used on spindle side

Wires in hardened steel

Single pairs supplied in a plastic case, full set in a wooden box.

Declaration of conformity

Wires mounted on holders: the 2 wire holder rests on the anvil, whilst the single wire holder is used on the spindle side.



DIN 863 T3
(Style D12)
NFE 11-090

Hardened steel
anvil.
Tungsten carbide
spindle

Plastic case

Inspection report
with a declaration
of conformity

No
Identification
number

0,5 mm

Max. 10 N

5 mm Ø on anvil.
6,5 mm Ø on spindle

0,01 mm

ETALON Basic for Tube Wall Thickness Measurement

Barrel-shaped anvil for measuring tube wall thickness and other curved workpieces.

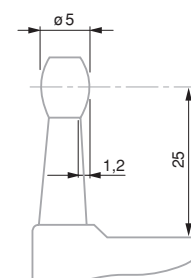


No



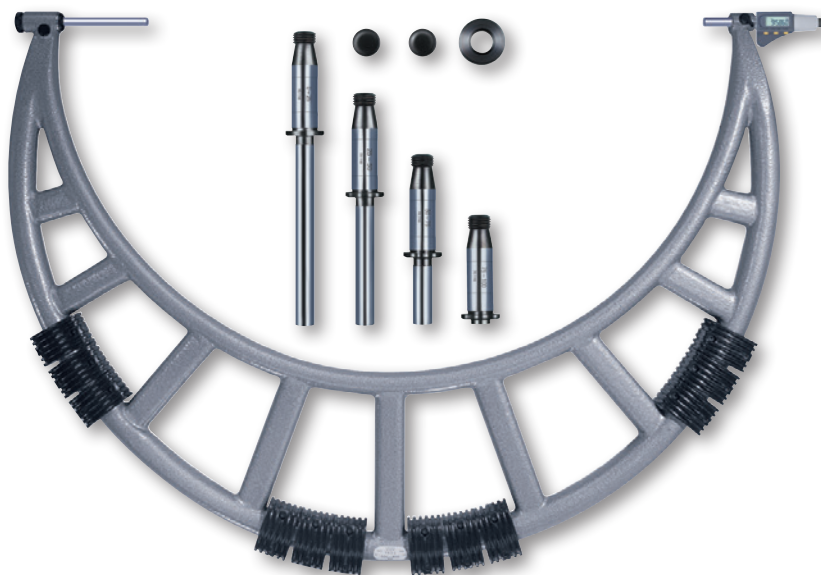
mm
0 ÷ 25

00219066



MICROMASTER with Interchangeable Anvils

All sets include 4 interchangeable anvils with increasing length in steps of 25 mm. The anvils are adjusted (and numbered) in sets, thus rendering the correction of the indication unnecessary whenever an anvil is exchanged.



No				
06030047	0 ÷ 100	0 ÷ 3.94	6	3
06030048	100 ÷ 200	3.94 ÷ 7.87	7	4,5
06030049	200 ÷ 300	7.87 ÷ 11.81	8	7
06030050	300 ÷ 400	11.81 ÷ 15.75	9	9
06030051	400 ÷ 500	15.75 ÷ 19.69	10	9

OPTIONAL ACCESSORIES:

00140301	Dial gauge element for ABY series micrometers
00140101	Interchangeable anvils AB1W

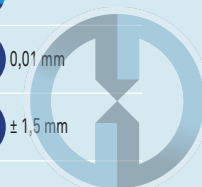
Measuring range up to 1500 mm also available upon request.



Dial Gauge Element for MICROMASTER and AB Micrometers

Can replace the interchangeable anvils on AB series micrometers. Makes finding the culmination point easier. Ensures a constant measuring force.

No	
00140301	Dial gauge element for ABY series micrometers





DIN 863 T3
(Style D16)
NFE 11-090



Tungsten carbide
tipped



Wooden case



Declaration
of conformity



Identification
number



0,5 mm



Max. 10 N



8 mm diameter



0,01 mm



0 ≤ 500 mm:
malleable
cast iron;
500 ≤ 1000 mm:
steel tube
with insulating
grips. Max. flexure
of the frame under a
measuring force of
10 N: see the
table opposite

ISOMASTER AB with Interchangeable Anvils

Lightweight, but rugged anvil micrometers. Set No. 00140101 includes 4 interchangeable anvils with increasing length in steps of 25 mm.

Anvils are adjusted and numbered in pairs, thus rendering any correction of the indication unnecessary whenever an anvil is exchanged.



No			
	mm	μm	μm
00111901	0 ÷ 100	6	3
00111902	100 ÷ 200	7	4,5
00111903	200 ÷ 300	8	7
00111904	300 ÷ 400	9	9
00111905	400 ÷ 500	10	9
OPTIONAL ACCESSORIES:			
00140101	Interchangeable anvils AB1W		
00140301	Dial gauge element for ABY series micrometers		

Measuring range up to 1500 mm also available upon request.

Interchangeable Anvils for ISOMASTER ABY Series

Set of 4 interchangeable anvils with increasing length in steps of 25 mm. The anvils are adjusted and numbered in pairs, thus eliminating the need for resetting the indication when exchanging either of them. Supplied as standard accessories with the AB series micrometers.



No	
00140101	Interchangeable anvils AB1W



DIN 863 T3
(Style D16)
NFE 11-090



Tungsten carbide
tipped



Set includes
2 guard plates for
the frame as well
as 1 clamping nut

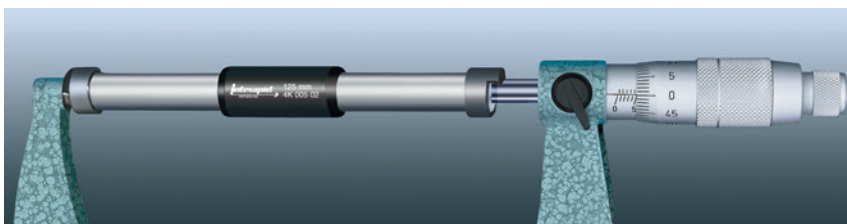
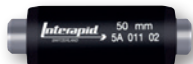


Identification
number



8 mm diameter

INTERAPID Setting Standards



No	mm
02140001	25
02140002	50
02140003	75
02140004	100
02140005	125
02140006	150
02140007	175
02140008	200
02140009	225
02140010	250

No	mm
02140011	275
02140012	300
02140013	325
02140014	350
02140015	375
02140016	400
02140017	425
02140018	450
02140019	475
02140020	500

Measuring range up to 1500 mm also available upon request.

ETALON Cylindrical Step Gauges

For adjustment of the display and calibration.



No	mm
072112020	5 ÷ 100
072112021	5 ÷ 150

Guide Collars for Setting Standards

Making the positioning of INTERAPID setting standards quick and easy.



No	mm	mm
02140103	100 ÷ 175	8
02140108	200 ÷ 1475	8



Maximum permissible error over the length:
 $\pm (1 + L/100) \mu\text{m}$,
 L in mm



Hardened steel



Inspection report with actual measured length



Declaration of conformity



Identification number



Cylindrical gauge block with plastic insulating grip and dull chrome shaft



Two measuring faces, flat and rounded



With lengths:
 $\leq 175 \text{ mm} = 10 \text{ mm}$
 $\geq 200 \text{ mm} = 13 \text{ mm}$



Maximum permissible errors for nominal diameters:
 $\leq 80 \text{ mm} = 1,5 \mu\text{m}$
 $\geq 90 \leq 120 \text{ mm} = 2,0 \mu\text{m}$
 $\geq 130 \text{ mm} = 2,5 \mu\text{m}$



Alloyed steel, hardened



Declaration of conformity



Mounted on a wooden base. Supplied with dust cover.



Diameters in steps of 5 mm ($\leq 50 \text{ mm}$) or 10 mm ($> 50 \text{ mm}$).





Angle can be locked using a single bolt.



Lacquered cast iron base



Clamp aperture:
16 mm (TESA)
or 20 mm (ETALON)

Micrometer Stands

For external micrometers up to 300 mm as well as many other hand-held tools.



00160201	TESA micrometer stand with clamp aperture 16 mm
072110123	ETALON micrometer stand with clamp aperture 20 mm



Length tolerance with reference to the nominal dimension: $\pm 100 \mu\text{m}$



Each set is supplied in a wooden case



Declaration of conformity



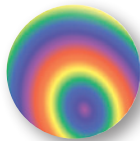
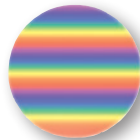
Flatness tolerances for optical parallels with lengths:
 $\leq 27,335 \text{ mm}$
 $= 0,15 \mu\text{m} \geq 52,00 \div 77,335 \text{ mm} = 0,2 \mu\text{m}$



Tolerances in parallelism for optical parallels with lengths:
 $\leq 27,335 \text{ mm}: 0,4 \mu\text{m}$
 $\geq 52,00 \div 77,335 \text{ mm}: 0,5 \mu\text{m}$

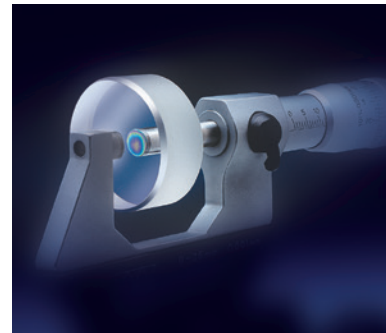


31 mm



Optical Flats with Two Parallel Faces

Used for examining the flatness and parallelism of the measuring faces on external micrometers as well as other similar measuring instruments. The difference in length of the optical flats within a set matches a quarter or a third of the spindle pitch of 0,5 mm.



		mm
02510000	Set interference glass 12 ÷ 12,375 mm	12,00 ÷ 12,375
02510001	Interference glass 12	12,00
02510002	Interference glass 12,125	12,125
02510003	Interference glass 12,25 mm	12,25
02510004	Interference glass 12,375 mm	12,375
02510100	Set interference glass 27 ÷ 27,335 mm	27,00 ÷ 27,335
02510101	Interference glass 27 mm	27,00
02510102	Interference glass 27,165 mm	27,165
02510103	Interference glass 27,335 mm	27,335
02510200	Set interference glass 52 - 52,3	52,00 ÷ 52,335
02510201	Interference glass 52 mm	52,00
02510202	Interference glass 52,165 mm	52,165
02510203	Interference glass 52,335 mm	52,335
02510300	Set interference glass 77 ÷ 77,335 mm	77,00 ÷ 77,335
02510301	Interference glass 77,00 mm	77,00
02510302	Interference glass 77,165 mm	77,165
02510303	Interference glass 77,335 mm	77,335



MICROMASTER Depth Micrometers

Non-rotating measuring rod. Sets with a step length of 30 mm.



No	mm	in	mm
06030069	0 ÷ 90	0 ÷ 3.5	50 x 15
06030070	0 ÷ 180	0 ÷ 7	100 x 15

Set of Depth Rods for Micromaster

Set of 6 depth rods.



No	mm
06060021	0 ÷ 180

ISOMASTER AQ Depth Micrometers

Measuring rods with a step length of 25 mm.



No	mm	mm
00211002	0 ÷ 75	50 x 15
00211003	0 ÷ 150	50 x 15
00211004	0 ÷ 75	100 x 15
00211005	0 ÷ 150	100 x 15



DIN 863 T2
(Style T)



0,001 mm /
0.00005 in



Conversion
mm/in



Max. perm. error
(meas. element):
3 µm



Measuring rods with
hardened steel tips



Non-rotating
spindle



Plastic case



Inspection report
with a declaration
of conformity



Identification
number



RS232 data output



0,5 mm



3 mm diameter
measuring rods



30 mm



DIN 863 T2
(Style T)
NFE 11-097



Max. perm. error
of the measuring
element: 3 µm



Measuring rods
with hardened
steel ends



Plastic case



Declaration
of conformity



Identification
number



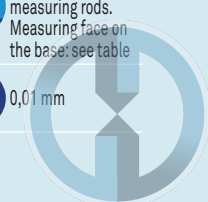
0,5 mm



3 mm diameter
measuring rods.
Measuring face on
the base: see table



0,01 mm



MICROMETER HEADS

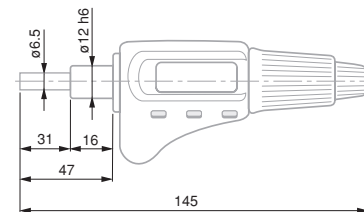
Micrometer heads used principally for the measurement of displacement on special fixtures such as roller tables, XY tables. Mounted using the cylindrical coupling shaft.

MICROMASTER Micrometer Heads

Without spindle lock



No		
	mm	
06030038	0 ÷ 30	12h6
06030039	30 ÷ 0	12h6
06030040	30 ÷ 0	12h6

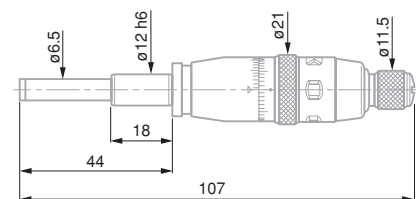


TESAMASTER AR Micrometer Heads

Without spindle lock.



No		
	mm	
00312301	0 ÷ 25	12h6



DIN 863 T2 (Style E)

0,001 mm / 0,00005 in

Conversion mm/in

Max. perm. error of 4 µm

Tungsten carbide tipped

Inspection report with a declaration of conformity

RS232 interface, opto-coupled

Additional technical data: see standard

0,5 mm

Max. 10 N

6,5 mm dia.



DIN 863 T2 (Style E)

Value of the scale: 0,1 mm

Max. perm. error of 2 µm

Tungsten carbide tipped

Declaration of conformity

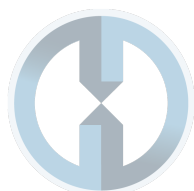
Identification number

0,5 mm

Max. 10 N

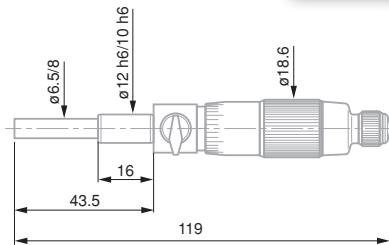
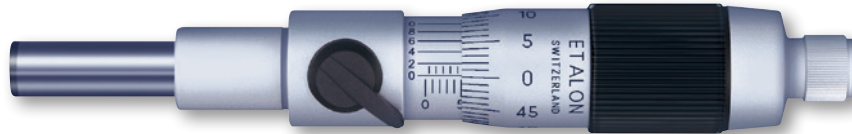
6,5 mm dia

Vernier reading to 0,001 mm



ETALON 266 Micrometer Heads

With spindle lock.



072115943	0 ÷ 25	Ø 8	12h6	•



DIN 863 T2
(Style E)
NFE 11-090



Max. perm.
error: 3 µm



Tungsten carbide
tipped



Declaration
of conformity



Identification
number



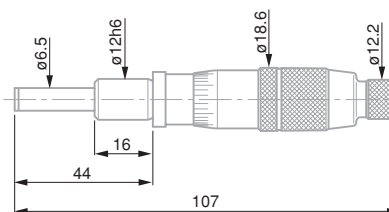
0,5 mm



Vernier reading
to 0,002 mm

ISOMASTER AR Micrometer Heads

Without spindle lock.



00211201	0 ÷ 25	12h6



DIN 863 T2
(Style E)
NFE 11-090



Max. perm.
error of 3 µm



Tungsten carbide
tipped



Declaration
of conformity



Identification
number



0,5 mm



Max. 10 N



6,5 mm dia



0,01 mm





DIN 862

Stainless steel,
hardenedInspection report
with a declaration
of conformityTechnical data:
according to the
appropriate
standardTungsten carbide
tipped

TOOL SETS

Tool sets for the workshop, including one caliper and one micrometer.
Several digital and analogue models to choose from. Ideal tool sets for apprentices.

TESA SWISS TOOL SET



No

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00510033 TESA SWISS TOOL SET 0-25 mm micrometer, 0-150 mm caliper

CONSISTING OF:

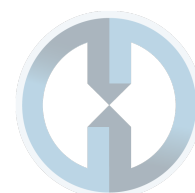
No

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mm

00510041	Vernier caliper with measuring range of 150 mm and resolution of 0,02 mm	0 ÷ 150
00560013	Depth foot for calipers up to 150 mm	
00110101	ISOMASTER AA external micrometer with vernier scale, 0 ÷ 25 mm and resolution to 0,01 mm	0 ÷ 25
00560031	Case for set of instruments	



TESA DUO-SET 1



ISO 13385-1

Stainless steel,
hardened

Inspection report
with a declaration
of conformity

Technical data:
see appropriate
standard

Tungsten
carbide tipped


00530020 TESA DUO-SET 1

CONSISTING OF:



mm

00510008 CCMA-M dial caliper with measuring range of 150 mm,
resolution to 0,02 mm and 2 mm travel per revolution.

0 ÷ 150

00560013 Depth foot for calipers up to 150 mm

00110101 ISOMASTER AA external micrometer with vernier scale,
0 ÷ 25 mm and resolution to 0,01 mm

0 ÷ 25

00560031 Case for set of instruments

TESA DUO-SET 2



DIN 862

Stainless steel,
hardened

Inspection report
with a declaration
of conformity

Technical data:
according to the
appropriate
standard

Tungsten
carbide tipped


00530021 TESA DUO-SET 2

CONSISTING OF:



mm

00510008 CCMA-M dial caliper with measuring range of 150 mm,
resolution to 0,02 mm and 2 mm travel per revolution.

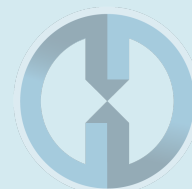
0 ÷ 150

00560013 Depth foot for calipers up to 150 mm

00310001 TESAMASTER external micrometer with measuring range
0 ÷ 25 mm and vernier scale reading to resolution 0,001 mm.

0 ÷ 25

00560031 Case for set of instruments





DIN 862

Stainless steel,
hardenedInspection report
with a declaration
of conformityTechnical data:
in accordance with
appropriate standardTungsten
carbide tipped

TESA DUO-SET 8



No

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00531101 TESA DUO-SET 8

CONSISTING OF:

No

=



mm

00530094 Standard TWIN-CAL, electronic caliper, with measuring range 150 mm, resolution of 0,01 mm and IP40 protection rating. Round depth rod.

00560013 Depth foot for calipers up to 150 mm

00110101 ISOMASTER AA external micrometer with vernier scale, 0 ÷ 25 mm and resolution to 0,01 mm

0 ÷ 25

00560031 Case for set of instruments

TESA DUO-SET 9



No

=

00531102 TESA DUO-SET 9

CONSISTING OF:

No

=



mm

00530094 Standard TWIN-Cal, electronic caliper, with measuring range 150 mm, 0 ÷ 150 mm resolution of 0,01 mm and IP40 protection rating. Round depth rod.

00560013 Depth foot for calipers up to 150 mm

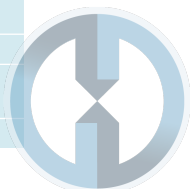
00310001 TESAMASTER external micrometer with measuring range 0 ÷ 25 mm and vernier scale reading to resolution 0,001 mm.

0 ÷ 25

00560031 Case for set of instruments



DIN 862

Stainless steel,
hardenedInspection report
with a declaration
of conformityTechnical data:
according to the
appropriate
standardTungsten
carbide tipped

TESA DUO-SET 14



ISO 13385-1

Stainless steel,
hardened

SCS calibration
certificate

Technical data:
see appropriate
standard

Tungsten
carbide tipped


00531005 TESA DUO-SET 14

CONSISTING OF:



mm

00530320 TWIN-Cal electronic caliper with measuring range 150 mm,
resolution 0,01 mm, IP67 rating and round depth rod.

0 ÷ 150

00560013 Depth foot for calipers up to 150 mm

06030010 MICROMASTER EASY digital micrometer, 0 ÷ 30 mm,
0,001 mm resolution.

0 ÷ 30

00560090 Case for set of instruments

TESA DUO-SET 13



ISO 13385-1

Stainless steel,
hardened.

SCS calibration
certificate

Technical data:
see appropriate
standard

Tungsten
carbide tipped


00531004 TESA DUO-SET 13

CONSISTING OF:



mm

00530319 TWIN-Cal electronic caliper with measuring range 150 mm,
resolution 0,01 mm, IP67 rating and square depth rod.

150

00560013 Depth foot for calipers up to 150 mm

06030020 MICROMASTER IP54 digital micrometer, 0 ÷ 30 mm,
0,001 mm resolution, IP54 rating.

0 ÷ 30

00560090 Case for set of instruments





ISO 13385-1

Stainless steel,
hardenedSCS calibration
certificateTechnical data:
see appropriate
standardTungsten
carbide tipped**TESA DUO-SET 15****No****=****00531006** TESA DUO-SET 15

CONSISTING OF:

No**=**

mm

00530321 TWIN-Cal electronic caliper with measuring range 150 mm, resolution $0 \div 150$ 0,01 mm, IP67 rating, round depth rod and thumb wheel.**00560013** Depth foot for calipers up to 150 mm**06030030** MICROMASTER RS IP54 digital micrometer, $0 \div 30$ mm, 0,001 mm resolution, IP54 rating and RS232 output.**00560090** Case for set of instruments

DIN 862

Stainless steel,
hardenedSCS calibration
certificateTechnical data:
see appropriate
standardTungsten
carbide tipped**TESA DUO-SET 16****No****=****00531007** TESA DUO-SET 16

CONSISTING OF:

No**=**

mm

00530094 Standard TWIN-Cal, electronic caliper, with measuring range 150 mm, 150 resolution of 0,01 mm and IP40 protection rating. Round depth rod.**00560013** Depth foot for calipers up to 150 mm**06030010** MICROMASTER EASY digital micrometer, $0 \div 30$ mm, 0,001 mm resolution.**00560090** Case for set of instruments

