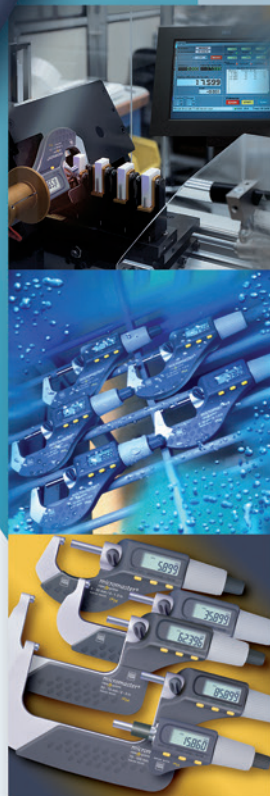


External Micrometers







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.

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.

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.

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.

- 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.
- Protection as per IEC 60529: IP40 (also valid with used RS data output) or IP54
- Measuring range 0 to 100: with SCS calibration certificate
- Measuring range > 100 mm: with inspection report and declaration of conformity
- 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

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 | | | | | | |
|----------|-----------|-----------|---------|--------------|------|-------|
| 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 output | 0 ÷ 75 |



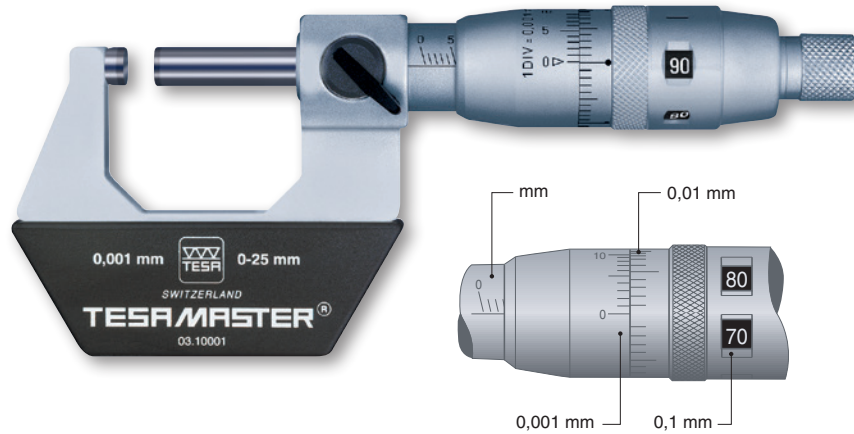
CONSISTING OF:

- 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



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.

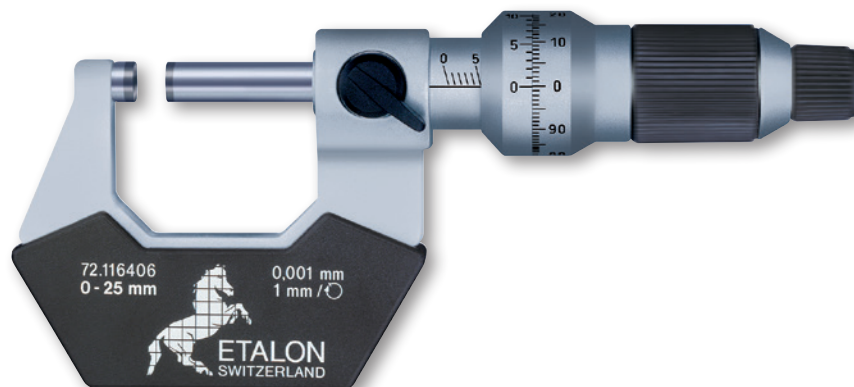


| No | | | |
|----------|-----------|----|-----|
| | mm | µm | µm |
| 00310001 | 0 ÷ 25 | 2 | 1 |
| 00310002 | 25 ÷ 50 | 2 | 1,5 |
| 00310003 | 50 ÷ 75 | 3 | 1,5 |
| 00310004 | 75 ÷ 100 | 3 | 1,5 |
| 00310005 | 100 ÷ 125 | 4 | 2 |
| 00310006 | 125 ÷ 150 | 4 | 2,5 |
| 00310007 | 150 ÷ 175 | 5 | 3 |
| 00310008 | 175 ÷ 200 | 5 | 3 |

- DIN 863 T1 NFE 11-095
- Scale division: 0,1 mm or 0,005 in
- Tungsten carbide
- Measuring range 0 to 100 mm with inspection report and declaration of conformity
- Measuring range > 100 mm with a declaration of conformity
- 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

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 | | | |
|-----------|----------|----|-----|
| | mm | µm | µm |
| 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
- Inspection report with a declaration of conformity
- 1 mm
- Max. 10 N
- Ø 6,5 mm
- Parallax-free vernier reading to 0,001 mm

- DIN 863 T1
NFE 11-095
- Tungsten carbide
tipped
- Measuring range
0 to 100 mm with
inspection report
and declaration of
conformity
- Measuring range
smaller than 100
mm with a declara-
tion of conformity
- 0.5 mm
- Max. 10 N
- ≤ 100 mm: Ø 6,5 mm
> 100 ≤ 300 mm:
Ø 8 mm

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.

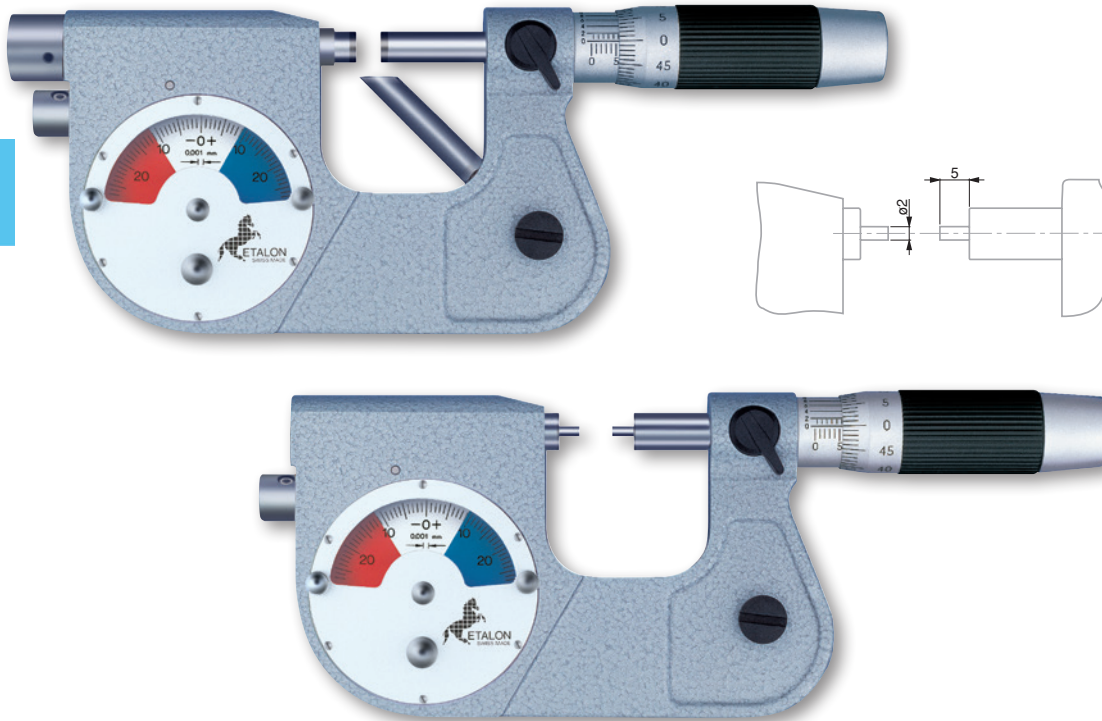


| No | | |
|-----------------------|--|---------|
| | | mm |
| 00110113 | Set of 4 ISOMASTER micrometers | 0 ÷ 100 |
| CONSISTING OF: | | |
| 00110101 | ISOMASTER AA external micrometer with vernier scale, 0 ÷ 25 mm and resolution to 0,01 mm | |
| 00110102 | ISOMASTER AA external micrometer with vernier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



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
- 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: ± 0,025 mm

| | 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.

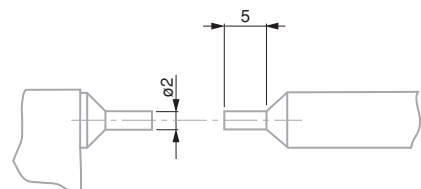
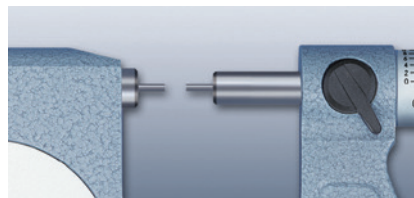
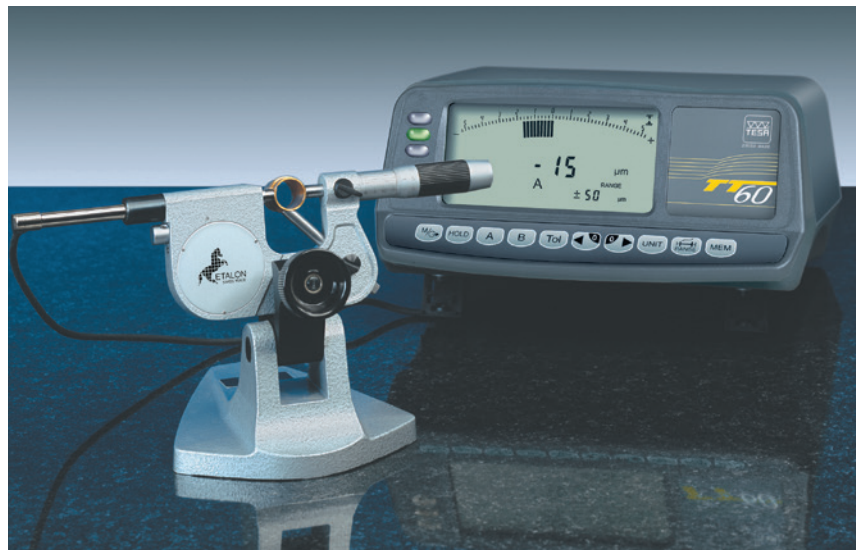


| 072110978 | Protective cover for dial indicator |
|-----------|-------------------------------------|

- 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).
- 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 MICROSPÉL 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.



| No | 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.

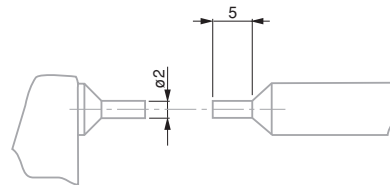


MICROMASTER Micrometer with Small Measuring Faces

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 |
| OPTIONAL ACCESSORY: | | |
| 01961000 | Lithium battery 3V, CR2032 | |

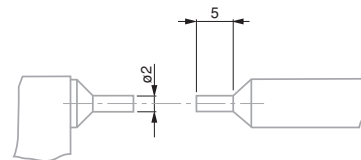


- DIN 863 T3 (Style D3)
- 0,001 mm / 0.00005 in
- Conversion mm/in
- Fixed measuring faces: tungsten carbide.
- Degree of protection (IEC 60529): IP54 or IP40 with use of the digital output
- Measuring range 0 to 100: with a SCS calibration certificate.
- RS232 interface, opto-coupled.
- For additional technical data: see standard.
- Max. 10 N






TESAMASTER AD Micrometer with Small Measuring Faces



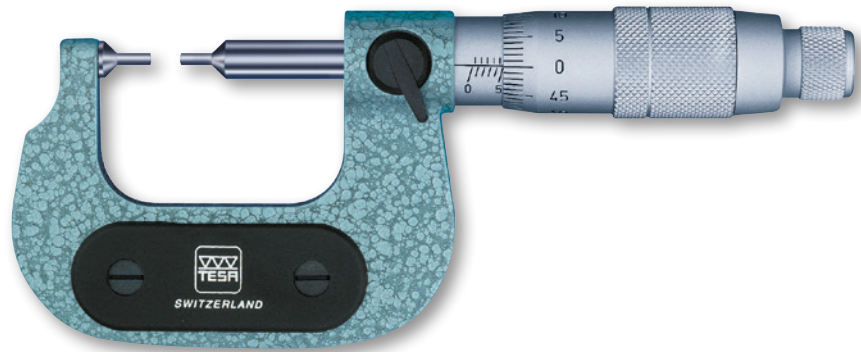
| | |
|----------|--------|
| No | |
| | mm |
| 00311301 | 0 ÷ 25 |



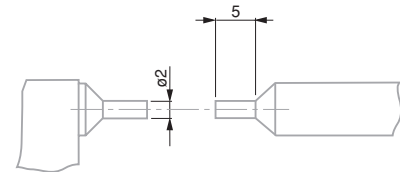
- DIN 863 T3 (Style D3) NFE 11-090
- Scale division 0,1 mm
- Fixed measuring faces: tungsten carbide
- Inspection report with a declaration of conformity
- Max. 10 N
- Vernier reading to 0,001 mm

-  DIN 863 T3
(Style D3)
NFE 11-090
-  Fixed measuring
faces:
tungsten carbide
-  Inspection report
with a declaration
of conformity
-  Max. 10 N
-  0,01 mm

ISOMASTER AD Micrometer with Small Measuring Faces



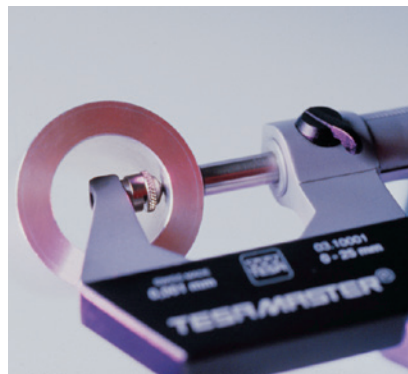
| | |
|---|---|
|  |  |
| 00210101 | mm 0 ÷ 25 |



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

Spherical Element for External Micrometers

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



| | |
|--|---|
|  |  |
| 072103522 | mm 5 |



MICROMASTER Micrometer 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.



| | | |
|----------|--------|-------|
| | | |
| 06030081 | 0 ÷ 25 | 0 ÷ 1 |

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

MICROMASTER Micrometer with One Spherical Measuring Face

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



| | | |
|----------|--------|---------|
| | | |
| 06030079 | 0 ÷ 30 | 0 ÷ 1.2 |

- DIN 863 T3 (Style D1)
- 0,001 mm or 0.00005 in
- Anvil in tungsten carbide. Micrometric spindle in tungsten carbide
- Inspection report with a declaration of conformity
- 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.

- DIN 863 T3 (Style D1) NFE 11-090
- Titanium carbide coated for model No. 00112106. Hardened steel for other models.
- Inspection report with a declaration of conformity
- 0,5 mm
- Max. 10 N
- Radius of spherical faces: to 3,25 mm
- 0,01 mm

ISOMASTER AAS Micrometer with Two Spherical Measuring Faces

Rounded measuring faces for checking concave surfaces such as ball-bearing guides and wall thickness.



| | |
|----------|--------|
| | |
| | mm |
| 00110901 | 0 ÷ 25 |

- DIN 863 T3 (Style D 10) N
- 0,001 mm / 0,00005 in
- Conversion mm/in
- Tungsten carbide
- Inspection report with a declaration of conformity
- 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.

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.



| | 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°) |









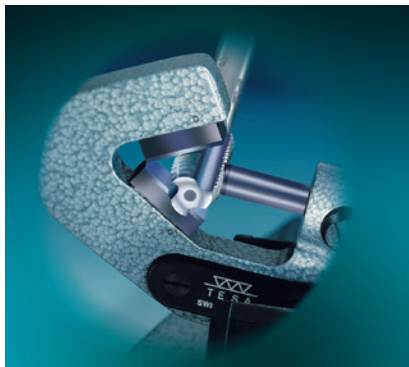
ISOMASTER AS Micrometers with Prismatic Measuring Faces



The micrometer ISOMASTER AS is used for measuring test pieces with an odd number of grooves such as milling cutters, taps, drills and spline shafts as well as polygons. It can also determine roundness errors on cylindrical workpieces.

The aperture angle of the prism is designed for workpieces having 3 or 5 flutes or their multiples.



-  DIN 863 T3 (Style D 10) NFE 11-090
-  Tungsten carbide tipped
-  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.
-  0,01 mm



| No |  mm |  |
|----------|---|---|
| 00410001 | 1 ÷ 7 | 3 flute test pieces (60°) |
| 00410002 | 5 ÷ 20 | 3 flute test pieces (60°) |
| 00410003 | 20 ÷ 35 | 3 flute test pieces (60°) |
| 00410004 | 35 ÷ 50 | 3 flute test pieces (60°) |
| 00410005 | 50 ÷ 65 | 3 flute test pieces (60°) |
| 00410102 | 5 ÷ 25 | 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 |



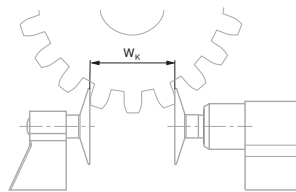
-  Alloyed steel, hardened
-  With a protective cap from the nominal size of 20 mm. Effective diameter engraved on the front face.

- DIN 863 T3 (Style D7)
- 0,001 mm / 0.00005 in
- Conversion mm/in
- Hardened steel
- Suitable from module 0,5 onwards
- Inspection report with a declaration of conformity
- 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.

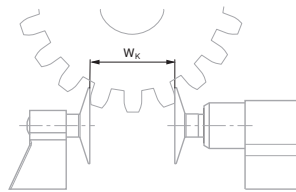
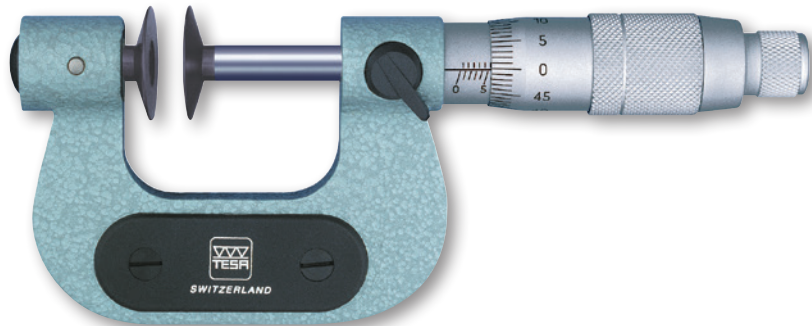
Non-rotating measuring spindle, without spindle lock.



| 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 |

- DIN 863 T3 (Style D7) NFE 11-090
- Hardened steel
- Suitable from module 0,6
- Inspection report with a declaration of conformity
- Max. 10 N
- ≤ 100 mm: 25 mm dia.
> 100 ≤ 150 mm: 32 mm dia.
- 0,01 mm

ISOMASTER AE Micrometers for Gear Tooth / Pitch Measurement



| No | mm |
|----------|----------|
| 00210201 | 0 ÷ 25 |
| 00210202 | 25 ÷ 50 |
| 00210203 | 50 ÷ 75 |
| 00210204 | 75 ÷ 100 |

| mm | µm | µm | µm | µm | µm | µm |
|----------|----|----|----|----|----|----|
| 0 ÷ 30 | 10 | 4 | 2 | 5 | 2 | 2 |
| 25 ÷ 55 | 10 | 4 | 2 | 5 | 2 | 2 |
| 55 ÷ 85 | 11 | 5 | 2 | 5 | 3 | 3 |
| 85 ÷ 115 | 12 | 5 | 2 | 6 | 4 | 4 |



MICROMASTER with 7 Pairs of Interchangeable Measuring Inserts

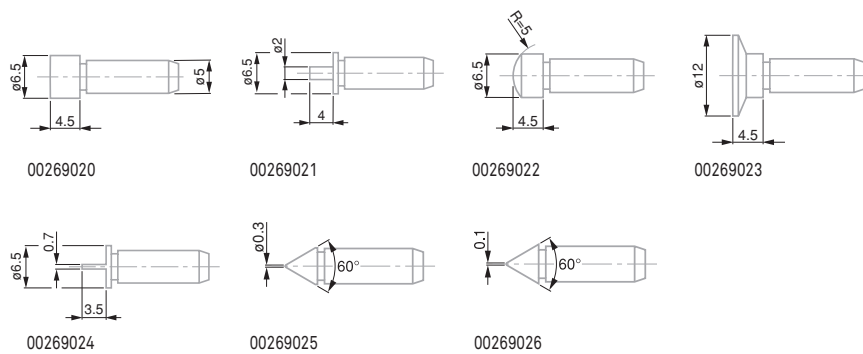
Non-rotating spindle, without spindle lock.



- 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 attachment on the anvil for a measuring insert, with lock.
- Inspection report with a declaration of conformity
- RS232
- Additional technical data: see standard
- Max. 10 N

| 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 | |

Full Set of Measuring Inserts for MICROMASTER with Interchangeable Inserts



| No | ≡ |
|--------------------------|--------------------------------|
| 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 |

N DIN 863 T3
(Style D18)

0,001 mm /
0.00005 in

Conversion
mm/in

Inspection report
with a declaration
of conformity

RS232

Additional
technical data:
see appropriate
standard

Max. 10 N

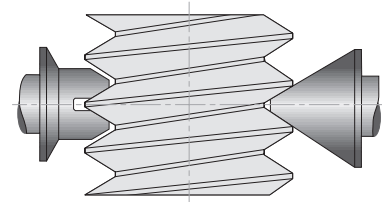
30 mm measuring
span

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 |



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

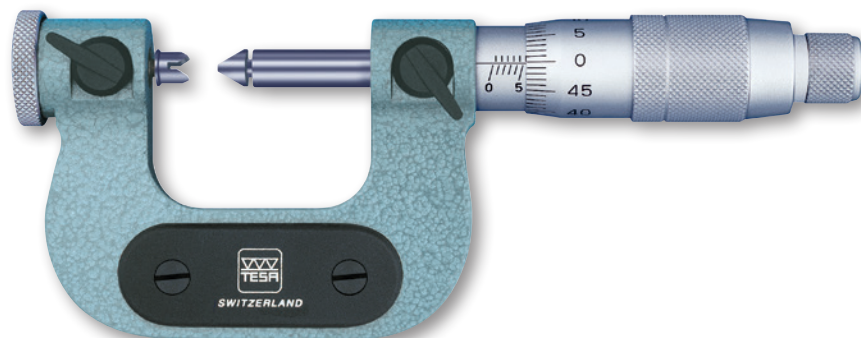
N DIN 863 T3
(Style D 18)
NFE 11-090

0,5 mm

Max. 10 N

0,01 mm

ISOMASTER AC Micrometers for Thread Measurement Models



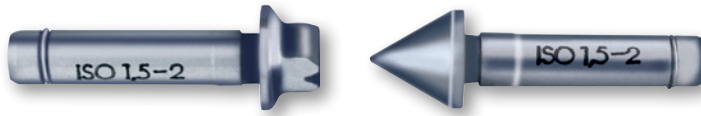
| No | mm |
|----------|----------|
| 00210001 | 0 ÷ 25 |
| 00210002 | 25 ÷ 50 |
| 00210003 | 50 ÷ 75 |
| 00210004 | 75 ÷ 100 |

Measuring inserts and setting standards must be ordered separately.



Interchangeable Thread Inserts for TESA Micrometers Series AC

With measuring faces specially designed for checking pitch diameters.



- Hardened steel
- Supplied in sets or pairs
- Fixing rod: 3,5 mm dia., 15,5 mm long

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

For Whitworth threads, 55° flank angle

For ISO metric threads, flank angle 60°

| No | = |
|---------------------------------|----------------------------|
| 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 |

| No | = |
|---------------------------------|-------------------------------------|
| 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 |

| No | = |
|---------------------------------|--------------------------------|
| 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 |

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



- Hardened steel
- Insulating sleeve marked with actual size

60° flank angle, metric

60° flank angle, imperial

55° flank angle, metric


| No | A | T | Flank angle | mm |
|----------|---|---|-------------|-----|
| 00240501 | | | 60° | 25 |
| 00240502 | | | 60° | 50 |
| 00240503 | | | 60° | 75 |
| 00240504 | | | 60° | 100 |
| 00240505 | | | 60° | 125 |

| No | A | T | Flank angle | in |
|----------|---|---|-------------|----|
| 00250501 | | | 60° | 1 |
| 00250502 | | | 60° | 2 |
| 00250503 | | | 60° | 3 |
| 00250504 | | | 60° | 4 |
| 00250505 | | | 60° | 5 |

| No | A | T | Flank angle | mm |
|----------|---|---|-------------|----|
| 00240601 | | | 55° | 25 |
| 00240602 | | | 55° | 50 |
| 00240603 | | | 55° | 75 |

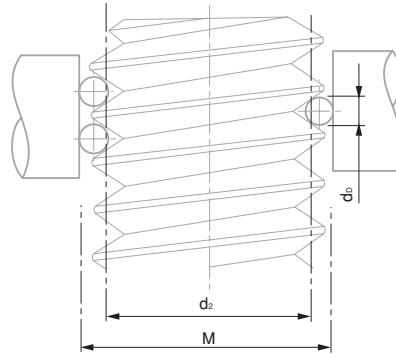
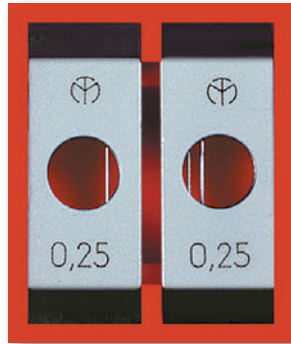
 Steel wires, hardened




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

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

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 | \varnothing 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 |

 Wires in hardened steel

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

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

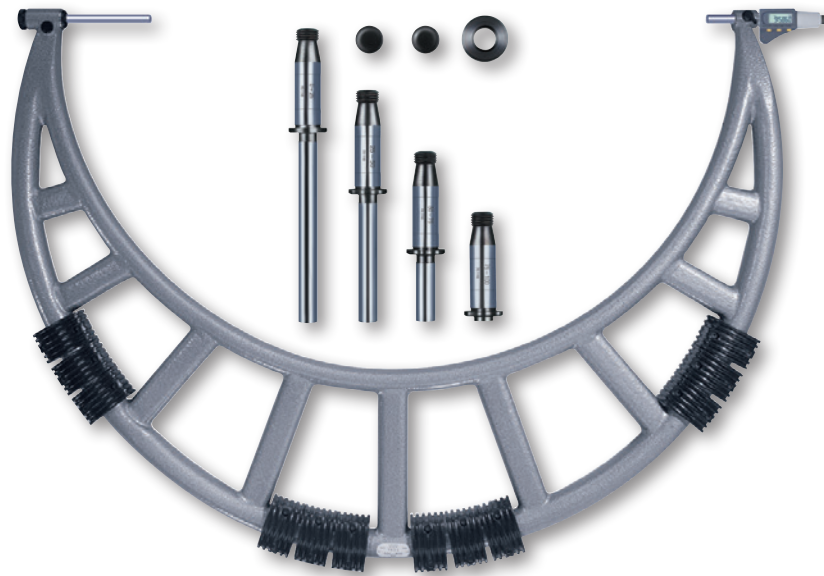
Set of 16 Pairs of XB Wires for Thread Measurement

| No | \varnothing Diameter of the wires dD in mm |
|----------|---|
| 00240700 | 0,17 ÷ 3,20 |



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 | | | | |
|----------|-----------|---------------|----|-----|
| | mm | in | µm | µm |
| 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 |
|----------|--------------------|



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 |

- DIN 863 T3 (Style D16)
- 0,001 mm / 0.00005 in
- LCD, digit height: 7 mm
- Conversion mm/in
- Tungsten carbide tipped
- Inspection report with declaration of conformity
- RS232
- Additional technical data: see standard
- 0,5 mm
- Max. 10 N
- Ø 8 mm
- 30 mm measuring span
- 0 ≤ 500 mm: malleable cast iron.
> 500 ≤ 1000 mm: steel tube with insulating grips. Maximum flexing of the frame under a measuring force of 10 N: see table

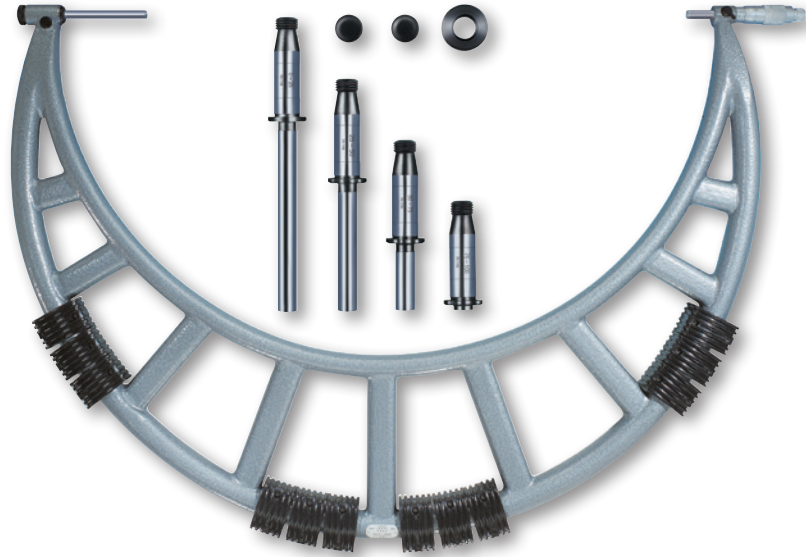
- Element body: Ø 11 mm, length 100 mm. Dial gauge 01410211: dial Ø 40 mm, two directional reading.
- With dial gauge and clamp
- Max. 10 N
- Ø 8 mm
- 0,01 mm
- ± 1,5 mm

- DIN 863 T3 (Style D16) NFE 11-090
- Tungsten carbide tipped
- 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: | | | |
| 00140301 | Dial gauge element | | |

Measuring range up to 1500 mm also available upon request.

- 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
- 8 mm diameter

Interchangeable Anvils for ISOMASTER AB Series

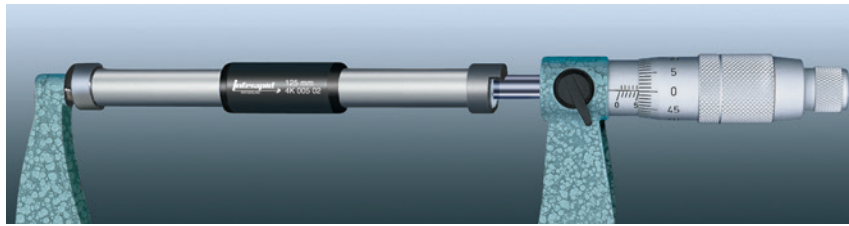
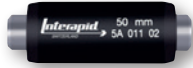
Set of 4 interchangeable anvils with increasing length in steps of 25 mm. The anvils are adjusted and numbered in pairs, thus eliminating the need for resetting the indication when exchanging either of them. Supplied as standard accessories with the AB series micrometers.



| No | |
|----------|---------------------------|
| 00140101 | Interchangeable anvils AB |



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

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 |

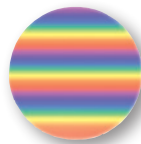
 Length tolerance with reference to the nominal dimension: $\pm 100 \mu\text{m}$

 Each set is supplied in a wooden case

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

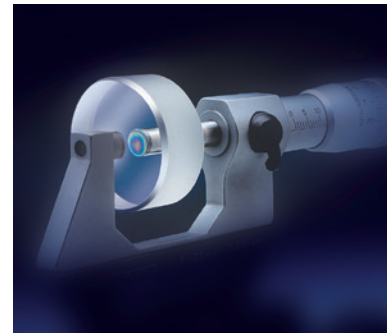
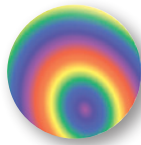
 Tolerances in parallelism for optical parallels with lengths:
 $\leq 27,335 \text{ mm}: 0,4 \mu\text{m}$
 $\geq 52,00 \div 77,335 \text{ mm}: 0,5 \mu\text{m}$

 $\varnothing 31 \text{ mm}$



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.



| No | = | G |
|----------|--|---------------------|
| | | mm |
| 02510000 | Set interference glass 12 \div 12,375 mm | 12,00 \div 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 \div 27,335 mm | 27,00 \div 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 \div 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 \div 77,335 mm | 77,00 \div 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

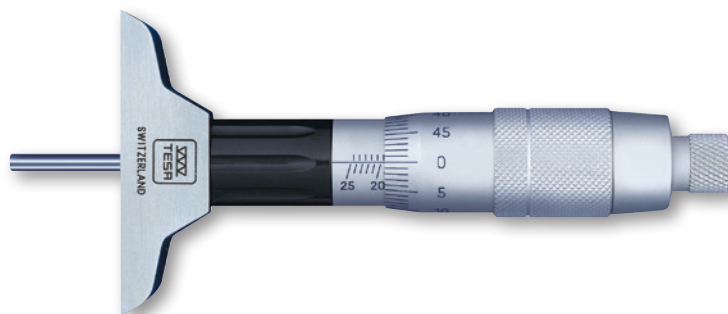
Set of 6 depth rods.



| 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
- Inspection report with a declaration of conformity
- 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
- 0,5 mm
- 3 mm diameter measuring rods. Measuring face on the base: see table
- 0,01 mm

N DIN 863 T2 (Style E)

000 0,001 mm / 0.00005 in

mm/in Conversion mm/in

0.4 Max. perm. error of 4 µm

T Tungsten carbide tipped

IR Inspection report with a declaration of conformity

RS RS232 interface, opto-coupled

AT Additional technical data: see standard

0.5 0,5 mm

10N Max. 10 N

6.5 6,5 mm dia.

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.

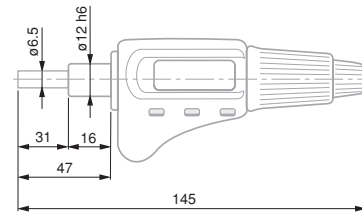
MICROMASTER Micrometer Heads

Without spindle lock



06030040

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

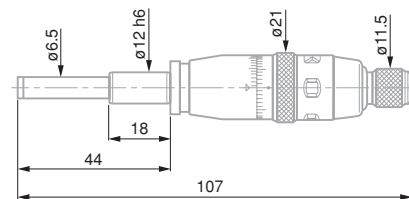


TESAMASTER AR Micrometer Heads

Without spindle lock.



| No | | |
|----------|--------|------|
| | mm | |
| 00312301 | 0 ÷ 25 | 12h6 |



N DIN 863 T2 (Style E)

000 Value of the scale: 0,1 mm

0.2 Max. perm. error of 2 µm

T Tungsten carbide tipped

0.5 0,5 mm

10N Max. 10 N

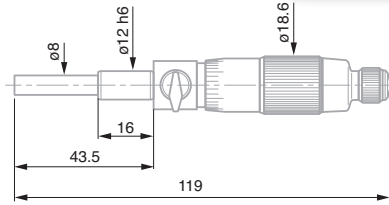
6.5 6,5 mm dia

V Vernier reading to 0,001 mm



ETALON 266 Micrometer Heads

With spindle lock.



DIN 863 T2 (Style E) NFE 11-090

Max. perm. error: 3 μm

Tungsten carbide tipped

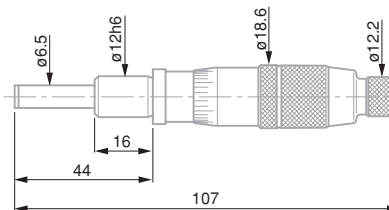
0,5 mm

Vernier reading to 0,002 mm

| | | | | |
|-----------|--------|-----|------|---|
| | | | | |
| 072115943 | 0 ÷ 25 | Ø 8 | 12h6 | • |

ISOMASTER AR Micrometer Heads

Without spindle lock.



DIN 863 T2 (Style E) NFE 11-090

Max. perm. error of 3 μm

Tungsten carbide tipped

0,5 mm

Max. 10 N

6,5 mm dia

0,01 mm

| | | |
|----------|--------|------|
| | | |
| 00211201 | 0 ÷ 25 | 12h6 |

- ISO 13385-1
- Stainless steel, hardened
- Inspection report with a declaration of conformity
- Technical data: see appropriate standard
- Tungsten carbide tipped

TESA DUO-SET 1



No **=**

00530020 TESA DUO-SET 1

CONSISTING OF:

No **=**



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

- DIN 862
- Stainless steel, hardened
- Inspection report with a declaration of conformity
- Technical data: according to the appropriate standard
- Tungsten carbide tipped

TESA DUO-SET 2



No **=**

00530021 TESA DUO-SET 2

CONSISTING OF:

No **=**



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



TESA DUO-SET 13



- ISO 13385-1
- Stainless steel, hardened.
- SCS calibration certificate
- Technical data: see appropriate standard
- Tungsten carbide tipped

| No | = | |
|----------------|---|--|
| 00531004 | | TESA DUO-SET 13 |
| CONSISTING OF: | | |
| No | = | |
| | | |
| 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 |

TESA DUO-SET 16



- DIN 862
- Stainless steel, hardened
- SCS calibration certificate
- Technical data: see appropriate standard
- Tungsten carbide tipped

| No | = | |
|----------------|---|--|
| 00531007 | | TESA DUO-SET 16 |
| CONSISTING OF: | | |
| No | = | |
| | | |
| 00530094 | | Standard TWIN-CAL, electronic caliper, with measuring range 150 mm, resolution of 0,01 mm and IP40 protection rating. Round depth rod. 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 |