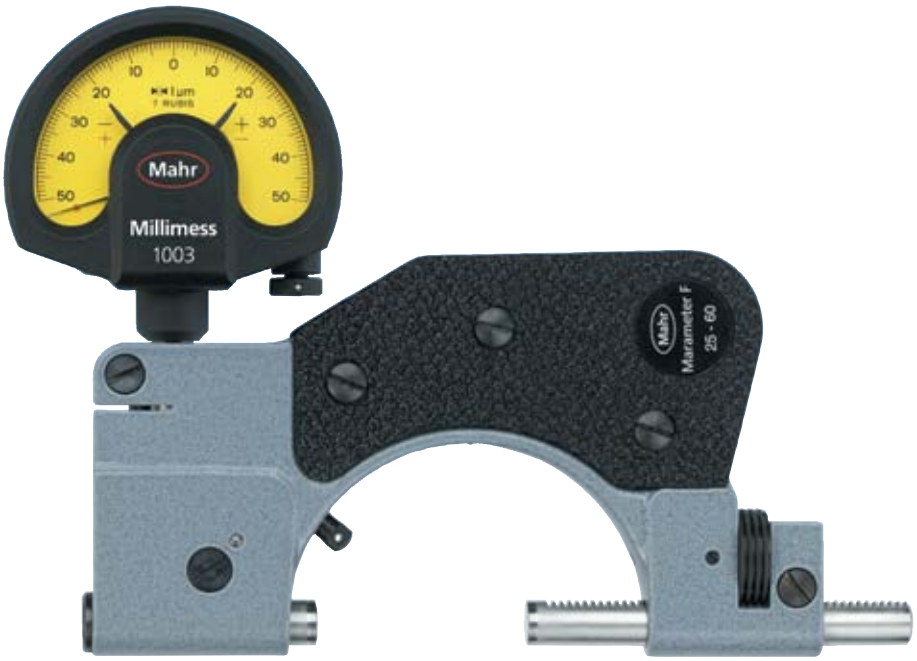
# Indicating Snap Gages 840 F / 840 FC MaraMeter F




## Features

- For cylindrical parts such as shafts, bolts and spindles, for thickness and length measurements
- Rugged, forged steel frame with heat insulators
- Measuring spindle is mounted in long guide way with lever-controlled retraction
- Anvil spindle can easily be fine adjusted
- Measuring spindle and anvil spindle are both made of hardened stainless steel, carbide-tipped or ceramic (840 FC) measuring faces
- Adjustable center stop for automatic alignment
- Maximum wear resistance due to non-contact positioning in conjunction with carbide-tipped measuring faces
- Constant measuring force as a result of built-in spring, thus eliminating user influence
- Universally applicable and extremely versatile. Each instrument spans a broad measuring range, within this range any dimension and fit can be very quickly and easily adjusted
- Supplied with: Wooden case, steel flat contact point 903

## Technical Data

| | Measuring range | | | | Repeatability $f_w$ | Distance of moveable anvil | Measuring force** | Measuring face | | Order no.* |
|---|---|---|---|---|---|---|---|---|---|---|
| | mm | | | *(inch)* | µm | mm | N | Flatness µm | Parallelism µm | |
| **840 F** | 0 | - | 25 | ***(0 - 1")*** | ≤ 0.5 | 2 | 7.5 | ≤ 0.2 | ≤ 1 | **4450000** |
| | 25 | - | 60 | ***(1 -2.36")*** | ≤ 0.5 | 2 | 7.5 | ≤ 0.2 | ≤ 2 | **4450001** |
| | 50 | - | 100 | ***(2 -4")*** | ≤ 1 | 2.5 | 7.5 | ≤ 0.2 | ≤ 2 | **4450002** |
| | 100 | - | 150 | ***(4 -6")*** | ≤ 1 | 2.5 | 7.5 | ≤ 0.2 | ≤ 2 | **4450003** |
| | 150 | - | 200 | ***(6 -8")*** | ≤ 1 | 2.5 | 7.5 | ≤ 0.2 | ≤ 2 | **4450004** |
| **840 FC** | 0 | - | 25 | ***(0 -1")*** | ≤ 0.5 | 2 | 7.5 | ≤ 0.2 | ≤ 1 | **4450100** |
| | 25 | - | 60 | ***(1 -2.36")*** | ≤ 0.5 | 2 | 7.5 | ≤ 0.2 | ≤ 2 | **4450101** |

* *Excludes indicating instrument* ** *Further measuring forces are available on request*

## Indicating Instruments

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

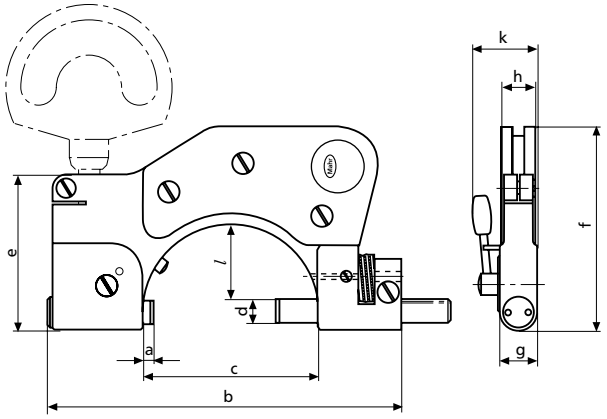
| Dial Comparator | Readings mm / *inch* | Order no. mm / *inch* |
|---|---|---|
| **Millimess 1004 / *1004 Z*** | 5 µm / ***.0001"*** | **4333000 / *4333900*** |
| **Millimess 1003 / *1003 Z*** | 1 µm / ***.00005"*** | **4334000 / *4334900*** |
| **Millimess 1003 XL** | 2 µm | **4334001** |
| **Millimess 1002 / *1002 Z*** | 0.5 µm / ***.00002"*** | **4335000 / *4335900*** |
| **Extramess 2000** | 0.2 µm / ***.00001"*** | |
| | 0.5 µm / ***.00002"*** | **4346000*** |
| | 1 µm / ***.00005"*** | |
| **Extramess 2001** | 0.2 µm / ***.00001"*** | |
| | 0.5 µm / ***.00002"*** | **4346100*** |
| | 1 µm / ***.00005"*** | |
| ***µMaxµm II*** | 0.0005 mm / ***.00002"*** | **2034205**** |


**2000**


**1003**

Digital Indicators see Chapter 5
Electrical Indicating Instruments see Chapter 7

* *230 V, for 115 V please refer to page 6-5*
** *requires contact 4360107*




| Meas. range mm | 0 - 25 | 25 - 60 | 50 - 100 | 100 - 150 | 150 - 200 |
|---|---|---|---|---|---|
| **a*** | 5 | 5 | 6.5 | 6.5 | 6.5 |
| **b** | 97 | 140 | 193 | 258 | 316 |
| **c** | 34 | 68 | 110 | 162 | 212 |
| **d** | 8 | 9 | 10 | 12 | 12 |
| **e** | 54 | 60 | 60 | 70 | 75 |
| **f** | 65 | 77 | 103 | 141 | 171 |
| **g** | 12 | 13 | 14 | 16 | 16 |
| **h** | 13 | 13 | 13 | 12 | 12 |
| **k** | 23 | 25 | 28 | 31 | 31 |
| ***l*** | 14 | 30 | 54 | 81 | 106 |

* *In initial position*

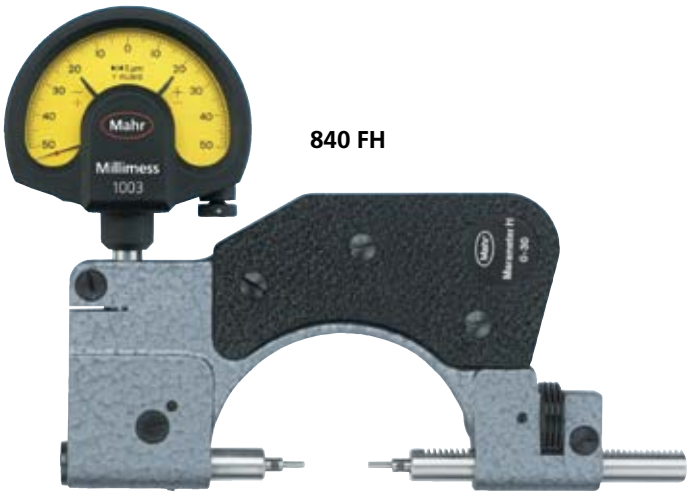
## Accessories

**Reference Discs 390** see Chapter 13

**Gage Blocks** see Chapter 13

**Holder 840 Fk** and **Stand 840 Ff** see Page 9-15

## Indicating Snap Gage 840 FH with interchangeable anvils




**840 FH**

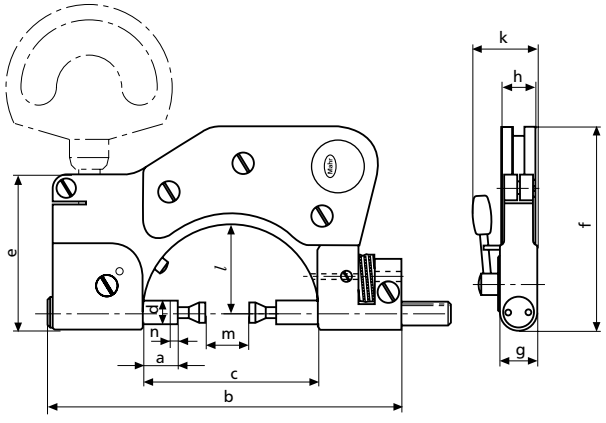
### Features

- Measuring spindle and anvil spindle have precision tapered bores for mounting interchangeable anvils 40 He
- For cylindrical parts such as shafts, bolts and spindles
- Rugged, forged steel frame with heat insulators
- Measuring spindle is mounted in long guide way with lever-controlled retraction
- Anvil spindle can easily be fine adjusted
- Measuring spindle and anvil spindle and both made from hardened stainless steel
- Maximum wear resistance due to non-contact positioning
- Constant measuring force as a result of built-in spring, thus eliminating user influence
- Universally applicable
- All kinds of measurement problems can be solved with the broad range of interchangeable anvils
- Supplied with: Wooden case, steel flat contact point 903 (for indicating instrument), spanner DIN 902-3.5. Excludes the indicating instrument and anvils

### Technical Data

| | Measuring range* | | Repeatability | Distance of moveable anvil | Measuring force | Order no.** |
|---|---|---|---|---|---|---|
| | mm | *(inch)* | $f_w$ µm | mm | N | |
| **840 FH** | 0 - 30 | ***(0 - 1.18")*** | ≤ 1 | 2 | 7.5 | **4451000** |
| | 30 - 80 | ***(1.18 -3")*** | ≤ 1 | 2.5 | 7.5 | **4451005** |

* *Measuring is dependent upon the length of the anvils being used*
** *Excludes indicating instrument (and anvils)*




| **Meas. range m** (mm) | **840 FH** 0 - 30 | 30 - 80 |
|---|---|---|
| **a*** | 12.5 | 7.5 |
| **b** | 140 | 193 |
| **c** | 68 | 110 |
| **d** | 9 | 10 |
| **e** | 60 | 60 |
| **f** | 77 | 103 |
| **g** | 13 | 13 |
| **h** | 13 | 13 |
| **k** | 25 | 28 |
| ***l*** | 34 | 59 |
| **n**** | 2 | 2.5 |

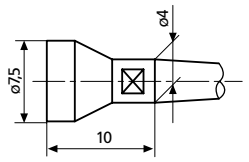
* *In initial position*
** *Distance of moveable anvil*

## Interchangeable Anvils for Indicating Snap Gage 840 FH

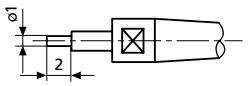
with tapered shank

| Catalog no. | Features | Order no. |
|---|---|---|
| **40 He 0H*** | Flat faces | **4152036** |
| **40 He 1** | Stepped flat faces | **4152011** |
| **40 He 1H*** | Stepped flat faces | **4152033** |
| **40 He 2** | Stepped flat faces | **4152012** |
| **40 He 2H*** | Stepped flat faces | **4152032** |
| **40 He 3** | Discs | **4152013** |
| **40 He 4** | Discs with V-groove | **4152014** |
| **40 He 5** | Blades | **4152015** |
| **40 He 6** | Offset blades | **4152016** |
| **40 He 7** | Recessed blades | **4152017** |
| **40 He 8** | Recessed flat faces with V-grooves on sleeve | **4152018** |
| **40 He 9** | Recessed flat faces with slip on support | **4152019** |
| **40 He 10** | With clearance bores | **4152020** |
| **40 He 11** | Point | **4152021** |

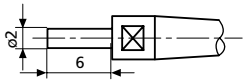
* *Carbide version*



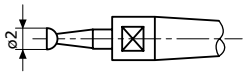

**40 He 0H**



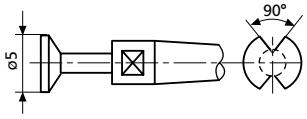

**40 He 1**



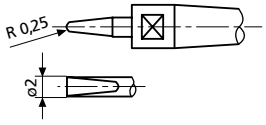

**40 He 2**



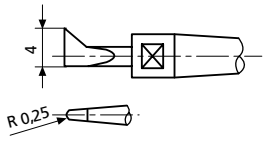

**40 He 3**



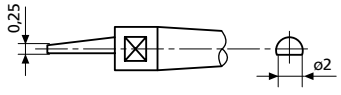

**40 He 4**



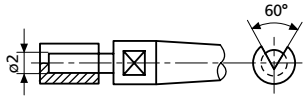

**40 He 5**



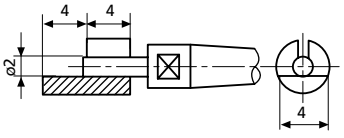

**40 He 6**



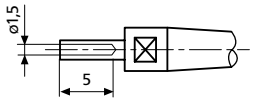

**40 He 7**



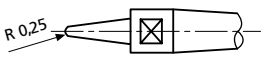

**40 He 8**




**40 He 9**




**40 He 10**




**40 He 11**

## Indicating Instruments

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

| Dial Comparator | | Readings mm / *inch* | Order no. mm / *inch* |
|---|---|---|---|
| **Millimess** | **1004 / *1004 Z*** | 5 µm / ***.0001"*** | **4333000/*4333900*** |
| **Millimess** | **1003 / *1003 Z*** | 1 µm / ***.00005"*** | **4334000/*4334900*** |
| **Millimess** | **1003 XL** | 2 µm / | **4334001** |
| **Millimess** | **1002 / *1002 Z*** | 0.5 µm / ***.00002"*** | **4335000/*4335900*** |
| **Extramess** | **2000** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346000*** |
| | | 1 µm / ***.00005"*** | |
| **Extramess** | **2001** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346100*** |
| | | 1 µm / ***.00005"*** | |
| ***µMaxµm II*** | | .0005 mm / ***.00002"*** | **2034205**** |

Digital Indicators see Chapter 5
Electrical Indicating Instruments see Chapter 7
** 230 V, for 115 V please refer to page 6-5 ** requires contact 4360107*

## Accessories

**Spanner** (Included in scope of supply)
for **840 FH**, to loosen anvils
**Order no.** **4880210**

**Reference Discs 390** see Chapter 13

**Gage Blocks** see Chapter 13

**Holder 840 Fk** and **Stand 840 Ff** see Page 9-15

## Indicating Snap Gages 840 FG with interchangeable anvils


**840 FG**

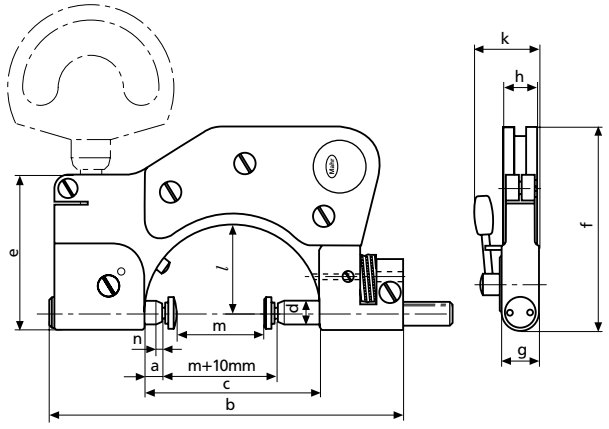
### Features

- Measuring spindle and anvil spindle have a M 2.5 connection thread, thus enabling the use of interchangeable anvils that are also used in dial indicators and dial comparators
- For cylindrical parts such as shafts, bolts and spindles
- Rugged, forged steel frame with heat insulators
- Measuring spindle is mounted in long guide way with lever-controlled retraction
- Anvil spindle can easily be fine adjusted
- Measuring spindle and anvil spindle and both made from hardened stainless steel
- Maximum wear resistance due to non-contact positioning
- Constant measuring force as a result of built-in spring, thus eliminating user influence
- Universally applicable
- All kinds of measurement problems can be solved with the broad range of interchangeable anvils
- Supplied with: Wooden case, steel flat contact point 903 (for indicating instrument). Excludes the indicating instrument and anvils

### Technical Data

| | Measuring range* | | | | Repeatability | Distance of moveable anvil | Measuring force | Order no.** |
|---|---|---|---|---|---|---|---|---|
| | mm | | | *(inch)* | $f_w$ µm | mm | N | |
| **840 FG** | 0 | - | 50 | ***(0 - 2")*** | ≤ 1 | 2 | 7.5 | **4454000** |
| | 40 | - | 90 | ***(1.57 - 3.57")*** | ≤ 1 | 2.5 | 7.5 | **4454001** |

* *Measuring is dependent upon the length of the anvils being used*
** *Excludes indicating instrument (and anvils)*




| **Meas. range m** (mm) | **840 FG** 0 - 50 | 40 - 90 |
|---|---|---|
| **a*** | 5 | 6.5 |
| **b** | 140 | 193 |
| **c** | 68 | 110 |
| **d** | 9 | 10 |
| **e** | 60 | 60 |
| **f** | 77 | 103 |
| **g** | 13 | 14 |
| **h** | 13 | 13 |
| **k** | 25 | 28 |
| ***l*** | 34 | 59 |
| **n**** | 2 | 2.5 |

* *In initial position*
** *Distance of moveable anvil*

# Interchangeable Anvils for Indicating Snap Gage 840 FG

| Catalog no. | Features | Order no. |
|---|---|---|
| **901 H** | Standard contact point with carbide ball, ball dia. 3 mm | **4360002** |
| **902 H** | Spherical contact point, with carbide face, R = 6 mm | |
| | Length *l* in mm | |
| | 10 | **4360041** |
| | 15 | **4360043** |
| | 20 | **4360044** |
| **903 H*** | Flat contact point, carbide tipped | |
| | Length *l* in mm | |
| | 6 | **4360101** |
| | 10 | **4360103** |
| | 15 | **4360105** |
| | 20 | **4360106** |
| **904 H** | Conical contact point, carbide tipped | **4360131** |

**906 H** **Ball Contact Points**

with carbide ball,
manufacuring tolerance ball dia. 0/-6 µm

| Ball dia. d mm | *l* mm | Order no. | Ball dia. d mm | *l* mm | Order no. |
|---|---|---|---|---|---|
| 1 | 8.5 | **4360150** | 5.5 | 9 | **4360161** |
| 1.25 | 8.5 | **4360151** | 6 | 9 | **4360162** |
| 1.5 | 8.5 | **4360152** | 6.35 (1/4") | 9 | **4360163** |
| 1.75 | 8.5 | **4360153** | 6.5 | 10 | **4360164** |
| 2 | 8.5 | **4360154** | 7 | 10 | **4360165** |
| 2.5 | 8.5 | **4360155** | 7.5 | 11 | **4360166** |
| 3 | 8.5 | **4360156** | 8 | 11 | **4360167** |
| 3.5 | 8.5 | **4360157** | 8.5 | 12 | **4360168** |
| 4 | 8.5 | **4360158** | 9 | 12 | **4360169** |
| 4.5 | 8.5 | **4360159** | 10 | 13 | **4360170** |
| 5 | 9 | **4360160** | | | |

## Indicating Instruments

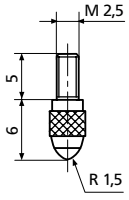
All indicating instruments that has a 8 mm mounting shank may be used. Recommended are:

| Dial Comparator | | Readings mm / *inch* | Order no. mm / *inch* |
|---|---|---|---|
| **Millimess** | **1004 / *1004 Z*** | 5 µm / ***.0001"*** | **4333000/*4333900*** |
| **Millimess** | **1003 / *1003 Z*** | 1 µm / ***.00005"*** | **4334000/*4334900*** |
| **Millimess** | **1003 XL** | 2 µm / | **4334001** |
| **Millimess** | **1002 / *1002 Z*** | 0.5 µm / ***.00002"*** | **4335000/*4335900*** |
| **Extramess** | **2000** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346000*** |
| | | 1 µm / ***.00005"*** | |
| **Extramess** | **2001** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346100*** |
| | | 1 µm / ***.00005"*** | |
| ***µMaxµm II*** | | .0005 mm / ***.00002"*** | **2034205**** |

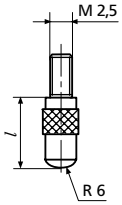
Digital Indicators see Chapter 5
Electrical Indicating Instruments see Chapter 7

** 230 V, for 115 V please refer to page 6-5 ** requires contact 4360107*

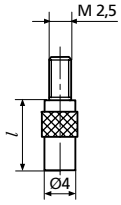
**901 H**



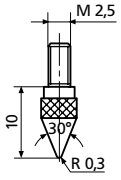

**902 H**



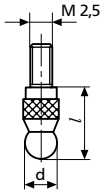

**903 H**



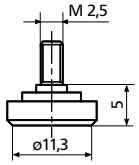

**904 H**



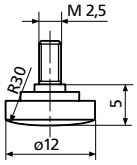

**906 H**



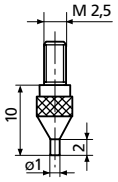

**907**




**908 H**




**911 H**




| Catalog no. | Features | Order no. |
|---|---|---|
| **907** | Flat contact plates* steel, dia. 11.3 mm, A = 1 cm² | **4360200** |
| **907 H** | Flat contact plates*, carbide tipped, dia. 7 mm | **4360201** |
| **908** | Spherical contact plates, steel | **4360210** |
| **908 H** | Spherical contact plates, carbide tipped | **4360211** |
| **911 H** | Pin contact point, carbide tipped, dia. 1 mm, plan | **4360240** |

** When using a flat contact plate the opposite facing anvil must be a spherical contact plate.*

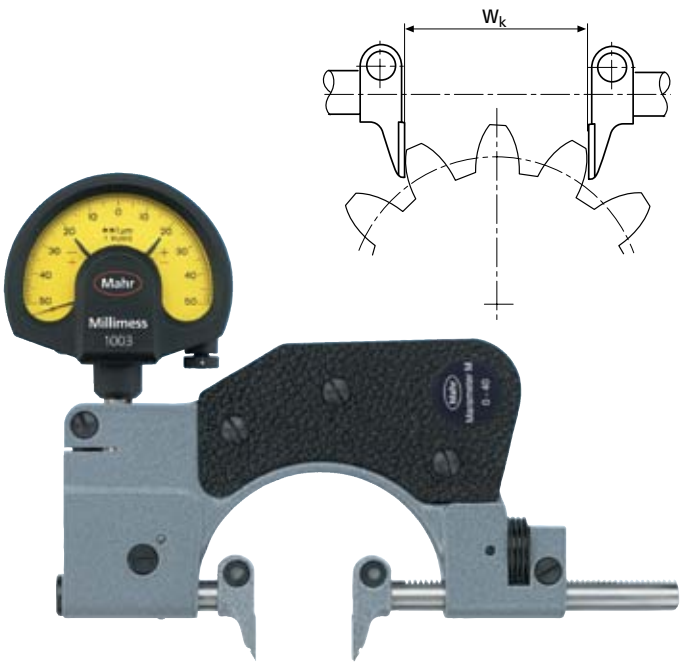
## Accessories

**Reference Discs 390** see Chapter 13

**Gage Blocks** see Chapter 13

**Holder 840 Fk** and **Stand 840 Ff** see Page 9-15

# Indicating Snap Gages 840 FM MaraMeter M with measuring jaws



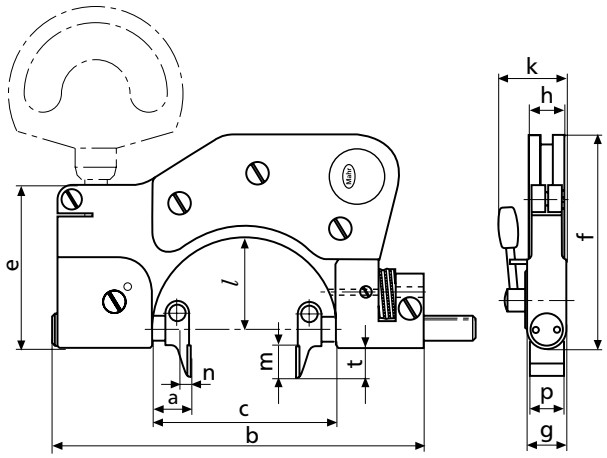

## Features

- For diameters of small hubs, registers, shoulders on shafts and groove widths as well as for tooth span Wk as indirect, reference-free determination of tooth thickness on spur gears with straight and helical teeth
- Rugged, forged steel frame with heat insulators
- Measuring spindle is mounted in long guide way with lever-controlled retraction
- Anvil spindle can easily be fine adjusted
- Maximum wear resistance due to non-contact positioning in conjunction with carbide-tipped measuring faces
- Measuring spindle and anvil spindle made of hardened stainless steel; with extending carbide-tipped measuring jaws
- Constant measuring force as a result of built-in spring, thus eliminating user influence
- Universally applicable and extremely versatile, each instrument spans a broad measuring range, within this range any dimension and fit can be very quickly and easily adjusted
- Supplied with: Wooden case, steel flat contact point 903

## Technical Data

| | Measuring range mm | | | (inch) | Repeatability $f_w$ µm | Measuring force N | Measuring face Area mm | Flatness µm | Parallelism µm | Tooth span measurements as per module m | Order no.* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **840 FM** | 0 | - | 40 | ***(0 - 1.57")*** | 1 | 7.5 | 12 x 12 | ≤ 0.5 | ≤ 2 | 0.5 | **4452000** |
| | 40 | - | 80 | ***(1.57 - 3")*** | 1 | 7.5 | 12 x 12 | ≤ 0.5 | ≤ 3 | 0.5 | **4452001** |
| | 80 | - | 130 | ***(3 - 5")*** | 1 | 9 | 15 x 17 | ≤ 0.5 | ≤ 3 | 1.0 | **4452002** |
| | 130 | - | 180 | ***(5 - 7")*** | 1 | 9 | 15 x 17 | ≤ 0.5 | ≤ 3 | 1.0 | **4452003** |

* *Excludes indicating instrument*




### Dimensions

| **Meas. range** (mm) | 0 - 40 | 40 - 80 | 80 - 130 | 130 - 180 |
|---|---|---|---|---|
| **Dist mov. anvil** n (mm) | 2 | 2.5 | 2.5 | 2.5 |
| **a*** | 14 | 14 | 19 | 15 |
| **b** | 140 | 193 | 258 | 316 |
| **c** | 68 | 110 | 162 | 212 |
| **e** | 60 | 60 | 70 | 75 |
| **f** | 77 | 103 | 141 | 171 |
| **g** | 13 | 14 | 16 | 16 |
| **h** | 13 | 13 | 12 | 12 |
| **k** | 25 | 28 | 31 | 31 |
| ***l*** | 34 | 59 | 87 | 112 |
| **m** | 12 | 12 | 17 | 17 |
| **p** | 12 | 12 | 15 | 15 |
| **t** | 11 | 11 | 17 | 17 |

* *In initial position*

## Accessories

**Indicating instruments,** see Page 9-9
**Reference Discs 390** see Chapter 13
**Gage Blocks** see Chapter 13
**Holder 840 Fk** and **Stand 840 Ff** see Page 9-15

# **Accessories** for Dial Indicators and Dial Comparators


## **Holder 840 Fk** for Dial Indicators and Dial Comparators

- For attaching to the following measuring instruments **840 F/FC, 840 FH, 840 FG, 840 FM** and **852**
- Straight transfer of the spindle movement to the indicator
- Following the Abbe principle allows an even higher degree of accuracy than the already excellent level obtained with the standard set-up employing 90° transmission
- When the indicating instrument is in the shown position it is often easier to read
- For stationary application when in conjunction with the **Stand 840 Ff**

| Catalog no. | Suitable for instruments with measuring ranges (mm) | | | | | Order no. |
|---|---|---|---|---|---|---|
| | **840 F/FC** | **840 FH** | **840 FG** | **840 FM** | **852** | |
| **840 Fk/1** | 0 - 25 | | | | | **4450050** |
| **840 Fk/2** | 25 - 60 | 0 - 30 | 0 - 50 | 0 - 40 | 0 - 45 | **4450051** |
| **840 Fk/3** | 50 - 100 | 30 - 80 | 40 - 90 | 40 - 80 | 45 - 85 | **4450052** |
| **840 Fk/4** | 100 - 150<br>150 - 200 | | | 80 - 130<br>130 - 180 | 85 - 140<br>140 - 190 | **4450053** |


## **Stand 840 Ff**

- For stationary application in conjunction with the following measuring instruments **840 F/FC, 840 FH, 840 FG, 840 FM, 840 E** and **852**
- User has both hands free for insertion of work piece and retraction of moving spindle
- Indicating instrument is always in operator's field of vision
- Rugged, rigid cast-iron stand with clamp for locking the indicating snap gage
- Indicating snap gage is locked in mounting hole for dial comparator
- Only in conjunction with **Holder 840 Fk**

| Catalog no. | Suitable for instruments with measuring ranges (mm) | | | | | Order no. |
|---|---|---|---|---|---|---|
| | **840 F/FC** | **840 FH** | **840 FG** | **840 FM** | **852** | |
| **840 Ff** | 0 - 25<br>25 - 60 | 0 - 30 | 0 - 50 | 0 - 40 | 0 - 45 | **4450020** |

## Indicating Snap Gages 840 FS MaraMeter S

### Features

- For all kinds of cylindrical work pieces, whether directly on a machine tool or in the production control
- Rigid frame; convenient handle with heat insulators open on one end to eliminate heat transfer from user's hand
- Both spindles are made of hardened stainless steel and mounted in long guide ways
- Carbide-tipped measuring faces slightly chamfered at the front to facilitate positioning
- Projects over width of frame for measurement of narrow registers or when measuring directly at shoulders
- Maximum accuracy. Straight transfer of spindle movement to indicator. During the measurement, the weight of the gage rests on the anvil spindle
- Adjustable center stop for automatic alignment
- Indicating instrument is protected against possible impact during handling by a laterally projecting guard
- Direct indication and evaluation of measurement results
- Universally applicable and extremely versatile, each instrument spans a broad measuring range, within this range any dimension and fit can be very quickly and easily adjusted
- Constant measuring force as a result of built-in spring, thus eliminating user influence

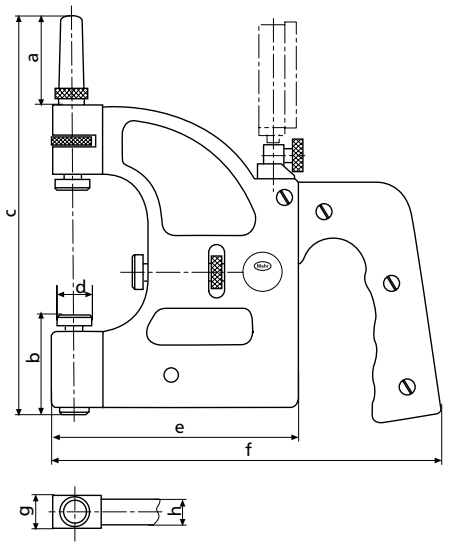
- Supplied with:
  Wooden case, allen key

### Technical Data

| | Measuring range | | | | Repeatability $f_w$ | Measuring force | Distance of moveable anvil | Measuring faces | | Weight | Order no.* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | mm | | | *(inch)* | µm | N | mm | Flatness µm | Parallelism µm | kg | |
| **840 FS** | 10 | - | 30 | ***(.39 - 1.18")*** | 1 | 13.5 | 0.7 | ≤ 0.5 | ≤ 3 | 0.6 | **4455000** |
| **840 FS** | 30 | - | 60 | ***(1.18 - 2.36")*** | 1 | 13.5 | 0.7 | ≤ 0.5 | ≤ 3 | 0.9 | **4455001** |
| **840 FS** | 60 | - | 100 | ***(2.36 - 4")*** | 1 | 13.5 | 0.7 | ≤ 0.5 | ≤ 3 | 1.3 | **4455002** |
| **840 FS** | 100 | - | 150 | ***(4 - 6")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 3 | 1.7 | **4455003** |
| **840 FS** | 150 | - | 200 | ***(6 - 8")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 3 | 2.0 | **4455004** |
| **840 FS** | 200 | - | 250 | ***(8 - 10")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 3 | 2.2 | **4455005** |
| **840 FS** | 250 | - | 300 | ***(10 - 12")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 3 | 2.5 | **4455006** |
| **840 FS** | 300 | - | 350 | ***(12 - 14")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 4 | 3.3 | **4455007** |
| **840 FS** | 350 | - | 400 | ***(14 - 16")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 4 | 3.3 | **4455008** |
| **840 FS** | 400 | - | 450 | ***(16 - 18")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 4 | 4.3 | **4455009** |
| **840 FS** | 450 | - | 500 | ***(18 - 20")*** | 1 | 15 | 0.7 | ≤ 0.5 | ≤ 4 | 4.7 | **4455010** |

** Excludes indicating instrument*

## Technical Data




### Dimensions

| Meas. range mm | dia. d | a | b | c | e | f | g | h |
|---|---|---|---|---|---|---|---|---|
| 10 - 30 | 18 | 37 | 46 | 154 | 87 | 161 | 17 | 15 |
| 30 - 60 | 18 | 45 | 51 | 199 | 122 | 196 | 17 | 15 |
| 60 - 100 | 22 | 56 | 62 | 260 | 154 | 228 | 20 | 18 |
| 100 - 150 | 22 | 71 | 62 | 335 | 189 | 263 | 20 | 18 |
| 150 - 200 | 22 | 71 | 62 | 385 | 214 | 288 | 20 | 18 |
| 200 - 250 | 22 | 71 | 62 | 436 | 248 | 322 | 20 | 18 |
| 250 - 300 | 22 | 71 | 62 | 487 | 280 | 354 | 20 | 18 |
| 300 - 350 | 22 | 71 | 62 | 537 | 310 | 384 | 20 | 18 |
| 350 - 400 | 22 | 71 | 62 | 587 | 350 | 424 | 20 | 18 |
| 400 - 450 | 22 | 71 | 62 | 637 | 380 | 454 | 20 | 18 |
| 450 - 500 | 22 | 71 | 62 | 687 | 410 | 484 | 20 | 18 |

## Accessories

### Indicating Instruments

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

| Dial Comparator | | Readings mm / *inch* | Order no. mm / *inch* |
|---|---|---|---|
| **Millimess** | **1004 / *1004 Z*** | 5 µm / ***.0001"*** | **4333000/*4333900*** |
| **Millimess** | **1003 / *1003 Z*** | 1 µm / ***.00005"*** | **4334000/*4334900*** |
| **Millimess** | **1003 XL** | 2 µm / | **4334001** |
| **Millimess** | **1002 / *1002 Z*** | 0.5 µm / ***.00002"*** | **4335000/*4335900*** |
| **Extramess** | **2000** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346000*** |
| | | 1 µm / ***.00005"*** | |
| **Extramess** | **2001** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346100*** |
| | | 1 µm / ***.00005"*** | |
| ***µMaxµm II*** | | .0005 mm / ***.00002"*** | **2034205**** |

Digital Indicators see Chapter 5
Electrical Indicating Instruments see Chapter 7
** 230 V, for 115 V please refer to page 6-5 ** requires contact 4360107*


**2000**


**1003**

## Electronic Snap Gage 840 E MaraMeter E for extremely high accuracy


### Features

- Inductive measuring system incorporated directly into frame
- Readings selectable down to 0.01 µm
- Rugged, forged steel frame with heat insulators
- Measuring spindle mounted in extra long guideway with lever-controlled retraction
- Anvil spindle can easily be fine adjusted
- Measuring spindle and anvil spindle made of hardened stainless steel; measuring faces carbide-tipped
- Adjustable center stop for automatic alignment
- Extremely accurate due to the straight transfer of spindle movement to the inductive measuring system according to the Abbe principle
- Universally applicable and extremely versatile, each instrument spans a broad measuring range, within this range any dimension and fit can be very quickly and easily adjusted
- Maximum wear resistance due to non-contact positioning in conjunction with carbide-tipped measuring faces
- Constant measuring force as a result of built-in spring, thus eliminating user influence

- Supplied with:
  Wooden case

### Technical Data

| | Measuring range<br>mm | Readings / Resolution<br>adjustable to*<br>µm | Measuring force<br>N | Measuring faces<br>dia.<br>mm | Repeatability<br>$f_w$<br>µm | Measuring faces<br>Parallelism<br>µm | Order no.** |
|---|---|---|---|---|---|---|---|
| **840 E** | 0 - 25 | 0.01 | 4.5 | 7.5 | ≤ 0.1 | ≤ 0.3 | **4453000** |

* *Depending upon which indicating instrument is being used*
** *Excludes indicating instrument*

### Accessories

**Reference Discs 390** see Chapter 13

**Gage Blocks** see Chapter 13

**Stand 840 Ff** see Page 9-15

**Recommended indicating instruments:**
Electrical indicating instruments; recommended are C1216M, C1208M and 1240; please refer to Chapter 7

**C 1208M**

**1240**

# Indicating Bench Snap Gage 852 TS

## Applications

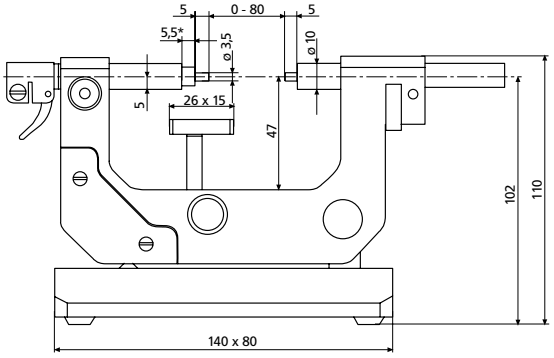
- For rapid measurements of diameters of cylindrical parts (shafts, bolts and shanks)
- For measuring pitch, root and outside diameters of all kinds of external threads as well as serrations
- For thickness and length measurement
- Particularly suited for batch produced parts

## Features

- Rugged steel frame, can be inclined up to 45° from the sturdy base
- Measuring spindle and anvil spindle are both made of hardened stainless steel, with mounting bore for insertion of interchangeable anvils
- Anvil spindle can easily be fine adjusted
- Height adjustable stop
- Constant measuring force as a result of built-in spring, thus eliminating user influence
- Universally applicable and extremely versatile, each instrument spans a broad measuring range

- Scope of supply:
  TC-tipped -anvils
  dia. D= 3.5 mm,
  Dial Comparator 1003

## Technical Data




| Measuring range** mm | (inch) | Repeatability $f_w$ µm | Retraction mm | Measuring force N | Measuring face Parallelism µm | Mounting dia. | Order no. |
|---|---|---|---|---|---|---|---|
| 0 - 80 | ***(0 - 3.15")*** | 1 | 1.2 | 6.5 | ≤ 2 | 8 mm | **4510030*** ** |
| | | | | | | 8 mm | **4510031 +** |
| | | | | | | .375" | **4510035 +** |

* *In initial position* ** *Depending upon which anvils are being used* *** *Delivery with a different indicating instrument is available upon request*
\+ *Excludes indicating instrument, order indicating instrument seperately.*

## Accessories

| | Order no. |
|---|---|
| **Standard TC-tipped anvils,** dia. D= 3.5 mm | **4510840** |

**Interchangeable Anvils** please refer to Pages 9-24 and 9-25

# Indicating Thread Snap Gage 852

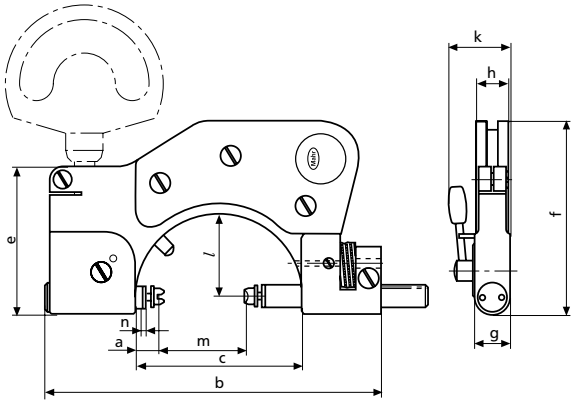

## Features

- For measuring pitch, root and outside diameters of all kinds of external threads as well as serrations
- Rugged, forged steel frame with heat insulators
- Measuring spindle is mounted in long guide way with lever-controlled retraction
- Anvil spindle can easily be fine adjusted
- Measuring spindle and anvil spindle are both made of hardened stainless steel, with mounting bore for insertion of interchangeable anvils
- Adjustable center stop for automatic alignment
- Maximum wear resistance due to non-contact positioning
- Constant measuring force as a result of built-in spring, thus eliminating user influence
- Universally applicable and extremely versatile. each instrument spans a broad measuring range
- Supplied with: Wooden case, steel flat contact point 903

## Technical Data

| | Measuring range* mm | | | (inch) | Repeatability $f_w$ µm | Measuring force N | Order no.** |
|---|---|---|---|---|---|---|---|
| **852** | 0 | - | 45 | ***(0 - 1.77")*** | 1 | 7.5 | **4510000** |
| **852** | 45 | - | 85 | ***(1.77 - 3.34")*** | 1 | 7.5 | **4510001** |
| **852** | 85 | - | 140 | ***(3.34 - 5.51")*** | 1 | 9 | **4510002** |
| **852** | 140 | - | 190 | **(5.51 - 7.48")** | 1 | 9 | **4510003** |

* *Depending upon which anvils are being used, purchase seperately*
** *Excludes indicating instrument and anvils*




| Meas. range m (mm) | 0-45 | 45-85 | 85-140 | 140-190 |
|---|---|---|---|---|
| Dist mov. anvil n (mm) | 2 | 2.5 | 2.5 | 2.5 |
| a* | 13 | 8 | 10 | 6 |
| b | 140 | 193 | 258 | 316 |
| c | 68 | 110 | 162 | 212 |
| e | 60 | 60 | 70 | 75 |
| f | 77 | 103 | 141 | 171 |
| g | 13 | 14 | 16 | 16 |
| h | 13 | 13 | 12 | 12 |
| k | 25 | 28 | 31 | 31 |
| *l* | 34 | 59 | 87 | 112 |

*a* = In initial position*

## Technical Data

### Indicating Instruments

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

| Dial Comparator | | Readings mm / *inch* | Order no. mm / *inch* |
|---|---|---|---|
| **Millimess** | **1004 / *1004 Z*** | 5 µm / ***.0001"*** | **4333000/*4333900*** |
| **Millimess** | **1003 / *1003 Z*** | 1 µm / ***.00005"*** | **4334000/*4334900*** |
| **Millimess** | **1003 XL** | 2 µm | **4334001** |
| **Millimess** | **1002 / *1002 Z*** | 0.5 µm / ***.00002"*** | **4335000/*4335900*** |
| **Extramess** | **2000** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346000*** |
| | | 1 µm / ***.00005"*** | |
| **Extramess** | **2001** | 0.2 µm / ***.00001"*** | |
| | | 0.5 µm / ***.00002"*** | **4346100*** |
| | | 1 µm / ***.00005"*** | |
| ***µMaxµm II*** | | .0005 mm / ***.00002"*** | **2034205**** |

Digital Indicators see Chapter 5
Electrical Indicating Instruments see Chapter 7
** 230 V, for 115 V please refer to page 6-5 ** requires contact 4360107*

**2000**

**1003**

## Accessories

**Interchangeable Anvils** please refer to Pages 9-19
**Holder 840 Fk** and **Stand 840 Ff** (for 0-45 mm) see Page 9-15

# Indicating Thread Snap Gage 853 for taps

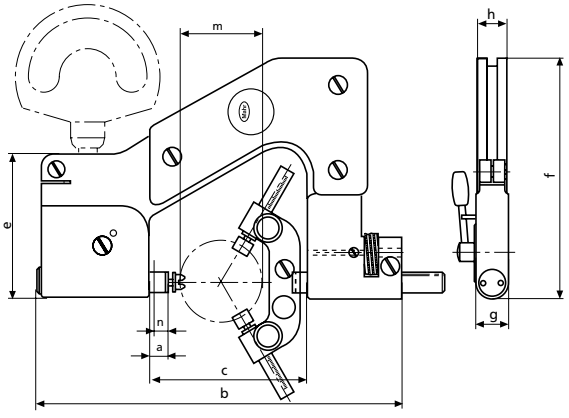

## Features

- For pitch, root and outside diameters on taps in conjunction with inter-changeable anvils
- Measuring spindle mounted in long guideway, lever-controlled retraction with mounting bore for inter-changeable anvils
- Anvil spindle adjustable with thumbscrew via worm and rack, for mounting inter-changeable support yokes
- Measuring spindle and anvil spindle are made of hardened stainless steel
- Further features are similar to the model 852; for details please refer to Page 9-20
- Supplied with: Wooden case, steel flat contact point 903

## Technical Data

| | Measuring range mm | | | (inch) | Repeatability $f_w$ µm | Measuring force N | Order no.* |
|---|---|---|---|---|---|---|---|
| **853** | 1.2 | - | 35 | ***(.04 - 1.37")*** | 2 | 7.5 | **4511000** |
| **853** | 35 | - | 75 | ***(1.37 - 3")*** | 2 | 7.5 | **4511001** |

** Excludes indicating instrument and the support yokes 853 q & anvils*




| Meas. range m (mm) | 1.2-35 | 35-75 |
|---|---|---|
| Dist mov. anvil n (mm) | 8 | 8 |
| a* | 12 | 11.5 |
| b | 152 | 192 |
| c | 66 | 110 |
| e | 60 | 65 |
| f | 98 | 125 |
| g | 14 | 14 |
| h | 11.5 | 14 |

*a* = In initial position*

## Technical Data

### Interchangeable Support Yokes 853 q

Depending upon the number of flutes, allowance has to be made for a compensation factor when reading the result. See table below:

| | No. of flutes of taps | For measuring range mm | | | Compensation factor** | Order no. |
|---|---|---|---|---|---|---|
| **853 qk 3** | 3 | 1.2 | - | 35 | x 1 | **4511024** |
| **853 qk 5** | 5 | 1.2 | - | 35 | x 1.34 | **4511026** |
| **853 qk 7** | 7 | 1.2 | - | 35 | x 1.42 | **4511028** |
| **853 qg 3** | 3 | 35 | - | 75 | x 1 | **4511025** |
| **853 qg 5** | 5 | 35 | - | 75 | x 1.34 | **4511027** |
| **853 qg 7** | 7 | 35 | - | 75 | x 1.42 | **4511029** |

** *Allowance is to be made for other compensation methods when using the Holder 840 Fk*

### Indicating Instruments

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

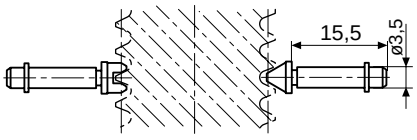
| | | Readings | Order no. |
|---|---|---|---|
| **MarCator** | **810 S** | 0.001 mm | **4311000** |
| **Millimess** | **1004/*1004 Z*** | 5 µm / ***.0001"*** | **4333000/*4333900*** |
| **Millimess** | **1010/*1010 Z*** | 0.01 mm / ***.0005"*** | **4332000/*4332900*** |
| **MarCator** | **1087R/*1087 ZR*** | 1 µm / ***.00005"*** | **4337660/*4337670*** |

## Accessories

**Interchangeable Anvils** see from Pages 9-24 and 9-25

## Interchangeable Anvils for 852, 852 TS and 853

For pitch, root and outside diameters. Special wear-resistant hardened steel. With cylindrical mounting shank and retainer ring which ensures locking while permitting rotation in bore of indicating snap gages.




### Sets consist of:

**For pitch diameters**
852 - 1 V-anvil and 1 blade
853 - 1 V-anvil and 2 radiused blades

**For root diameters**
852 - 1 V-anvil and 1 blade
853 - 1 V-anvil and 2 blades

**For outside diameters**
852 - 2 flat-face anvils
853 - 3 flat-face anvils

### Anvils for pitch diameters for 852 and 852 TS

| Metric thread (60°) | | | Whitworth thread (55°) | | | American UST thread (60°) | | |
|---|---|---|---|---|---|---|---|---|
| Pitch | V-anvil | Blade | Pitch range | V-anvil | Blade | Pitch range | V-anvil | Blade |
| mm | **Order no.** | **Order no.** | tpi | **Order no.** | **Order no.** | tpi | **Order no.** | **Order no.** |
| 0.2* | **4173007** | **4173707** | 40 - 32 | **4173043** | **4173743** | 60 - 48 | **4173113** | **4173813** |
| 0.25* | **4173008** | **4173708** | 32 - 24 | **4173044** | **4173744** | 48 - 40 | **4173114** | **4173814** |
| 0.3* | **4173009** | **4173709** | 24 - 18 | **4173045** | **4173745** | 40 - 32 | **4173115** | **4173815** |
| 0.35* | **4173010** | **4173710** | 18 - 14 | **4173046** | **4173746** | 32 - 24 | **4173116** | **4173816** |
| 0.4* | **4173011** | **4173711** | 14 - 10 | **4173047** | **4173747** | 24 - 18 | **4173117** | **4173817** |
| 0.45* | **4173012** | **4173712** | 10 - 7 | **4173048** | **4173748** | 18 - 14 | **4173118** | **4173818** |
| 0.5 - 0.7 | **4173000** | **4173700** | 7 - 4.5 | **4173049** | **4173749** | 14 - 10 | **4173119** | **4173819** |
| 0.7 - 1 | **4173001** | **4173701** | 4.5 - 3 | **4173050** | **4173750** | 10 - 7 | **4173120** | **4173820** |
| 1.25 - 2 | **4173002** | **4173702** | 3 - 2.5 | **4179408** | **4179410** | 7 - 4.5 | **4173121** | **4173821** |
| 2 - 3.5 | **4173003** | **4173703** | | | | 4.5 - 3 | **4173122** | **4173822** |
| 3.5 - 5 | **4173004** | **4173704** | | | | | | |
| 5 - 7 | **4173005** | **4173705** | | | | | | |
| 7 - 9 | **4173006** | **4173706** | | | | | | |

### Anvils for pitch diameters for Indicating Thread Snap Gage 853

| Metric thread (60°) | | | Whitworth thread (55°) | | | American UST thread (60°) | | |
|---|---|---|---|---|---|---|---|---|
| Pitch | V-anvil | Blade | Pitch range | V-anvil | Blade | Pitch range | V-anvil | Blade |
| mm | **Order no.** | **Order no.** | tpi | **Order no.** | **Order no.** | tpi | **Order no.** | **Order no.** |
| 0.2 | **4173051** | **4174007** | 40 - 32 | **4173043** | **4176043** | 60 - 48 | **4173124** | **4176113** |
| 0.25 | **4173052** | **4174008** | 32 - 24 | **4173044** | **4176044** | 48 - 40 | **4173125** | **4176114** |
| 0.3 | **4173053** | **4174009** | 24 - 18 | **4173045** | **4176045** | 40 - 32 | **4173115** | **4176115** |
| 0.35 | **4173054** | **4174010** | 18 - 14 | **4173046** | **4176046** | 32 - 24 | **4173116** | **4176116** |
| 0.4 | **4173055** | **4174011** | 14 - 10 | **4173047** | **4176047** | 24 - 18 | **4173117** | **4176117** |
| 0.45 | **4173056** | **4174012** | 10 - 7 | **4173048** | **4176048** | 18 - 14 | **4173118** | **4176118** |
| 0.5 - 0.7 | **4173000** | **4174000** | 7 - 4.5 | **4173049** | **4176049** | 14 - 10 | **4173119** | **4176119** |
| 0.7 - 1 | **4173001** | **4174001** | 4.5 - 3 | **4173050** | **4176050** | 10 - 7 | **4173120** | **4176120** |
| 1.25 - 2 | **4173002** | **4174002** | 3 - 2.5 | **4179408** | **4179411** | 7 - 4.5 | **4173121** | **4176121** |
| 2 - 3.5 | **4173003** | **4174003** | | | | 4.5 - 3 | **4173122** | **4176122** |
| 3.5 - 5 | **4173004** | **4174004** | | | | | | |
| 5 - 7 | **4173005** | **4174005** | | | | | | |
| 7 - 9 | **4173006** | **4174006** | | | | | | |

### Carbide anvils for 852, 852TS and 853

| | | |
|---|---|---|
| 1.25 - 2 | **4511105** | **4511104** |
| 2 - 3.5 | **4511108** | **4511107** |
| 3.5 - 5 | **4511140** | **4511139** |
| 5 - 7 | **4511142** | **4511141** |

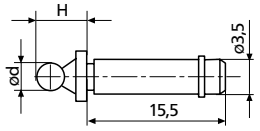
** V-anvil covers 3 pitches*

# Interchangeable Anvils for 852 and 852 TS

## Ball Anvils

For measuring gears and for special applications. Carbide ball. With cylindrical mounting shank and retainer ring.
For mounting into mounting bores of thread micrometers 40 Z and 852.

Shank dia. 3.5 mm
Shank length 15.5 mm
Manufacturing tolerance
Ball dia. ± 2 µm



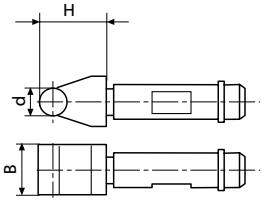

| dia. **d** mm | **H** mm | **Order no.** | dia. **d** mm | **H** mm | **Order no.** | dia. **d** mm | **H** mm | **Order no.** |
|---|---|---|---|---|---|---|---|---|
| 0.5 | 5.0 | **4179150** | 1.65 | 6.2 | **4179168** | 3.048 | 7.5 | **4179182** |
| 0.551 | 5.1 | **4179151** | 1.7 | 6.2 | **4179169**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

*Further sizes are available upon request (material: steel or carbide)*

## Roller Blades

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

Shank dia. 3.5 mm
Shank length 15.5 mm
Manufacturing tolerance
Ball dia. ± 2 µm




*Further sizes are available upon request (material: steel)*

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

## For outside diameters

### Anvil 40 Za, flat

Measuring face dia. with 853 smallest measurable O.D. dia. 7.5 mm / 5 mm

Hardened steel **Order no.** **4173210**
Carbide tipped **Order no.** **4511190**