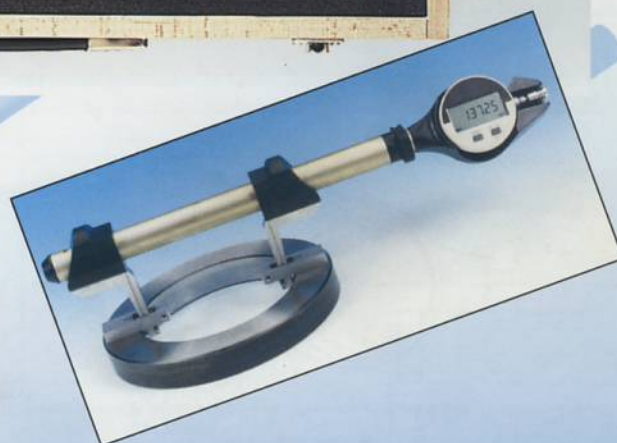
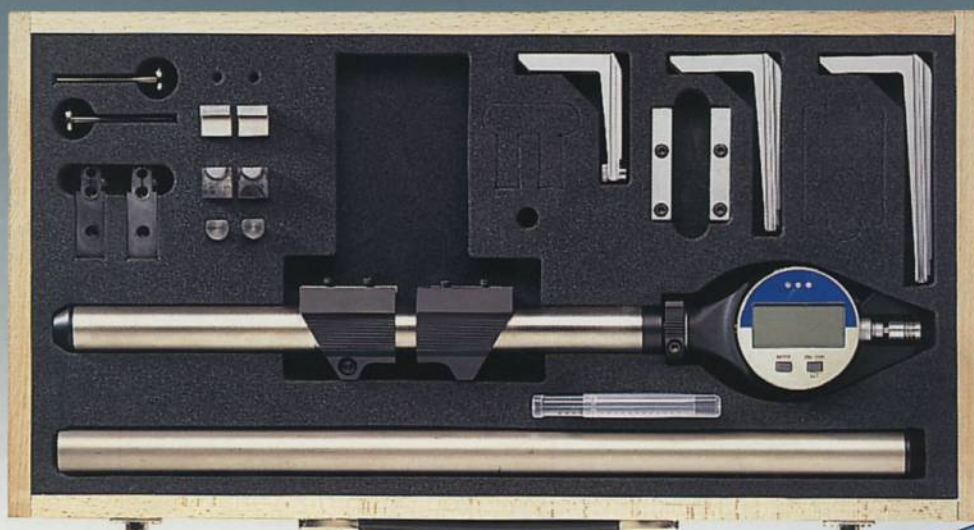


The new Bowers Universal Measuring gauge has been designed for measurement of internal and external dimensions such as inside & outside diameters, internal & external threads, grooves, tapers, splines, shallow spigots and recess diameters etc. The large variety of accessories can be interchanged to enable the measurement of virtually any type of work piece.

*La nouvelle Jauge de Mesure Universelle de fabrication Bowers a été conçue pour le mesure des côtes intérieur et extérieur, à savoir: diamètres internes et externes, filetages intérieurs et extérieurs, gorges, conicité, cannelures, petits emboîtements, diamètres en retrait etc... Une grande gamme d'accessoires interchangeables permet pratiquement toutes les mesures.*

Das neue Universal-Messgerät der Firma Bowers wurde für sowohl Innen als auch Außenmessungen konzipiert, z. B.: Innen- und Außen-Durchmesser, Nuten, Kegelförmigkeit, Innen- und Außenverzahnungen, schmale Ansätze/ Zentriersitze und Einstiche etc. Die Messung von fast allen Werkstücksarten wird durch reichhaltiges Zubehör ermöglicht.



- Internal and external measurement
- Large measuring range 0-3000mm (0-118") – longer lengths available
- Constant Measuring Force
- Digital or mechanical readout display
- Large range of accessories for standard measurement of threads, grooves, splines, diameters, lengths, shallow spigots and recess diameters etc
- Anvil travel of 15mm
- Special anvil designs available P.O.A.

- Mesures internes et externes
- Grande gamme de mesure (de 0 à 3000mm)
- Pression de mesure constante
- Comparateur analogique ou à affichage digital
- Large gamme d'accessoires pour le mesure standard de filetages standards, gorges, cannelures, diamètres, longueurs, emboîtements de petites profondeurs diamètres en retrait etc
- Course de mesure de touche de 15mm
- Touches spéciales disponibles - prix sur demande

- Innen- und Außenmessung
- Großer Messbereich 0-3000mm
- Konstanter Messdruck
- Digital- oder Analog-Anzeige
- Reichhaltiges Zubehör zur Messung von Gewinden, Nuten, Innen- und Außenverzahnungen, Durchmessern, Längen, schmalen Ansätzen, Zentriersitze und Einstichen etc.
- Messweg Messeinsätze: 15mm
- Sondermesseinsätze auf Anfrage erhältlich

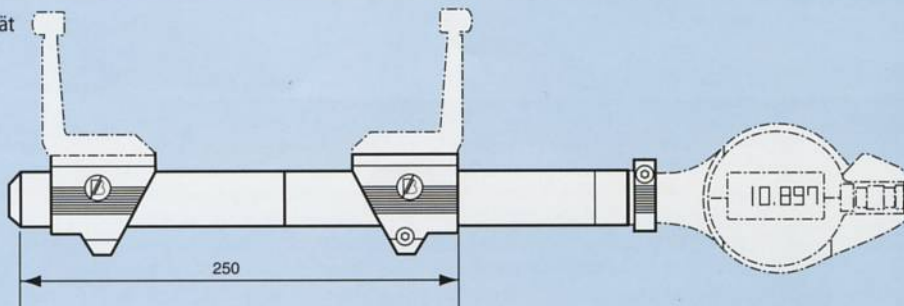
# Universal Measuring Gauge Accessories

Jauge Universelle - accessoires

Universal-Messgerät - Zuberhör

## Standard Gauge/ Jauge Standard/ Universal-Grundgerät

| Model No | Measuring Range<br>Internal | Measuring Range<br>External |
|----------|-----------------------------|-----------------------------|
| TGU 1000 | 30-250mm<br>(1.20-10.00")   | 0-215mm<br>(0-8.50")        |



## Extensions/ Rallonges/ Verlängerungen

| A   | Model No | Range Internal           | Range External     |
|-----|----------|--------------------------|--------------------|
| 150 | TGUA 033 | 30-400mm<br>(1.2-15.00") | 0-365<br>(0-14.0") |
| 500 | TGUA 032 | 30-750mm<br>(1.2-29.0")  | 0-715<br>(0-28.0") |

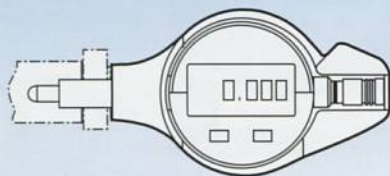
Intermediate & additional lengths can be made up by using 150 or 500mm extensions

Rallonges supplémentaires de longueur 150 et 500mm disponibles  
Verlängerungen Länge 150 und 500mm auch erhältlich



## Digital Indicator & protective shroud

Comparateur à affichage digital avec protection anti-choc  
Digital-Anzeige mit Schutzkappe



Model No  
TGUA 001

## Protective shroud for dial/ digital indicator

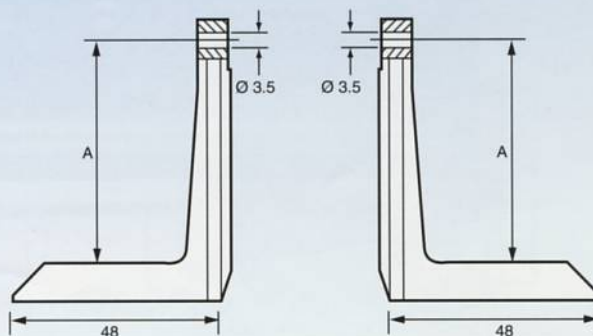
Comparateur analogique avec protection anti-choc  
Schutzkappe für Analog-Messuhr



Model No  
TGUA 002

## Measuring Arms (reversible for inside/outside diameters)

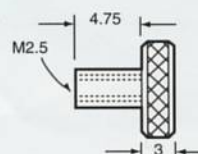
Bras de mesure (réversibles pour mesure diamètres internes/externes)  
Messarme (umkehrbar zur Innen-Außenmessung)



| A   | Model No |
|-----|----------|
| 50  | TGUA 006 |
| 75  | TGUA 007 |
| 100 | TGUA 008 |

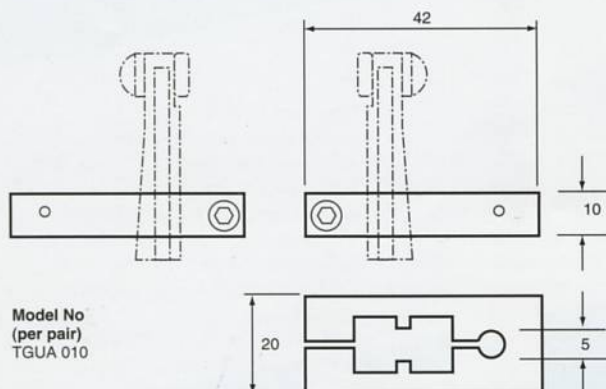
## Clamping Insert

Insert de serrage  
Spanneinsatz

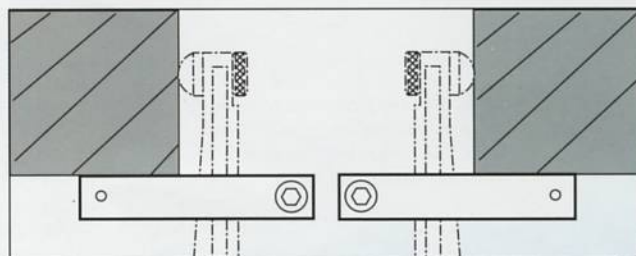


Model No  
TGUA 003

## Adjustable depth stops for measuring arms/ Arrêt de profondeur pour bras de mesure/ Tiefenanschlätze für Meßarme



Model No  
(per pair)  
TGUA 010



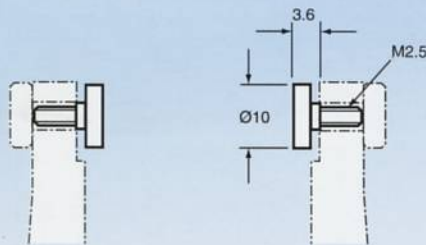
## Contacts for use with measuring arms

### *Touches à utiliser avec les bras de mesure*

### Messeinsätze zur Verwendung mit den Messarmen

#### Flat for outside diameters/ lengths

*Touches plates pour diamètres externes / mesures de longueurs*  
 Messteller für Außen-Durchmesser / Längen

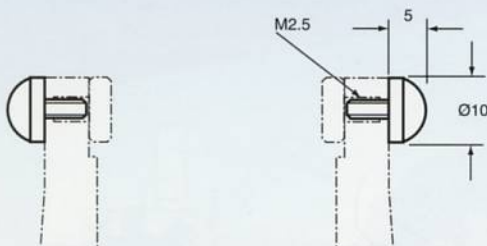


Model No  
TGUA 004

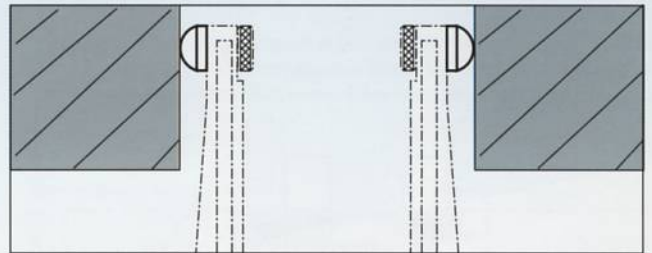


#### Spherical for inside diameters

*Touches sphériques pour diamètres internes*  
 Ballige Messflächen zur Innenmessung

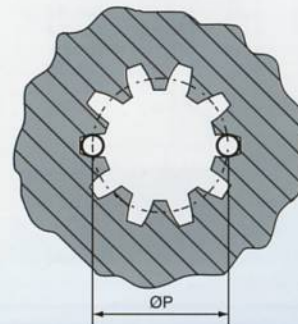
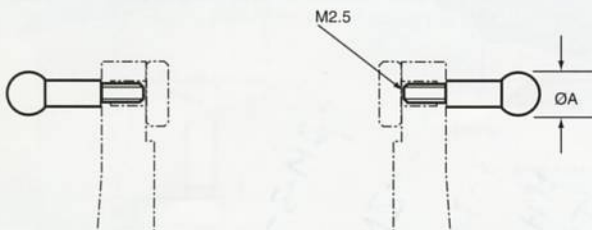


Model No  
TGUA 005

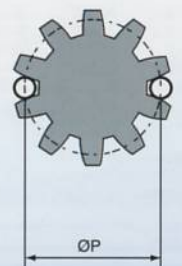


#### Ball Anvils for measurement of Pitch diameter (P) on internal or external gears/ splines

*Touches à billes pour le mesure de diamètres de pas sur cannelures internes / externes*  
 Kugelmesseinsätze zur Messung des Flankendurchmessers auf innen / Außenverzahnungen



Internal/ Interne/ Innen



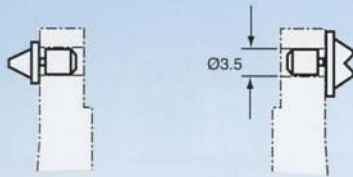
External/ Externe/ Außen

| Module | Nominal Ball Dia 'A' | Model No | DP | Nominal Ball Dia 'A' | Model No |
|--------|----------------------|----------|----|----------------------|----------|
| 0.6    | 1.0                  | TGUA 100 | 40 | 0.043                | TGUA 150 |
| 0.7    | 1.25                 | TGUA 101 | 36 | 0.049                | TGUA 151 |
| 0.9    | 1.5                  | TGUA 102 | 32 | 0.054                | TGUA 152 |
| 1.0    | 1.75                 | TGUA 103 | 24 | 0.071                | TGUA 153 |
| 1.25   | 2.0                  | TGUA 104 | 20 | 0.089                | TGUA 154 |
| 1.5    | 2.5                  | TGUA 105 | 16 | 0.108                | TGUA 155 |
| 1.75   | 3.0                  | TGUA 106 | 12 | 0.144                | TGUA 156 |
| 2.0    | 3.5                  | TGUA 107 | 10 | 0.177                | TGUA 157 |
| 2.5    | 4.0                  | TGUA 108 | 8  | 0.216                | TGUA 158 |
| 2.75   | 4.5                  | TGUA 109 | 6  | 0.295                | TGUA 159 |
| 3.0    | 5.0                  | TGUA 110 | 5  | 0.354                | TGUA 160 |
| 3.25   | 5.5                  | TGUA 111 | 4  | 0.394                | TGUA 161 |
| 3.5    | 6.0                  | TGUA 112 |    |                      |          |
| 4.0    | 7.00                 | TGUA 113 |    |                      |          |
| 5.0    | 9.00                 | TGUA 114 |    |                      |          |
| 6.0    | 10.00                | TGUA 115 |    |                      |          |

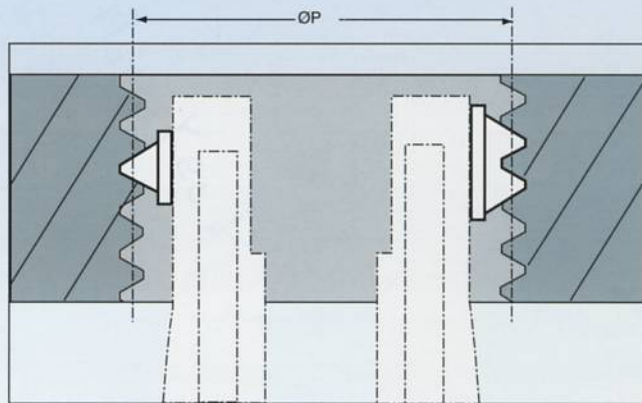
### Thread anvils for Internal Pitch diameter

*Touche pour mesure de diamètres de filetages internes*

Gewindemesseinsätze zur Messung von Innengewinden



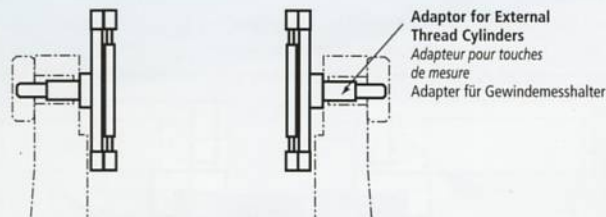
| Metric Pitch<br>60° | Model No<br>(per set) | Unified<br>60°<br>T.P.I. | Model No<br>(per set) | Whitworth<br>55°<br>T.P.I. | Model No<br>(per set) |
|---------------------|-----------------------|--------------------------|-----------------------|----------------------------|-----------------------|
| 0.4-0.45            | TGUA 30I              | 64.0                     | TGUA 40I              | 60-48                      | TGUA50I               |
| 0.5-0.6             | TGUA 31I              | 56-44                    | TGUA 41I              | 40-32                      | TGUA51I               |
| 0.7-0.8             | TGUA 32I              | 40-32                    | TGUA 42I              | 28-22                      | TGUA52I               |
| 1.0-1.25            | TGUA 33I              | 28-20                    | TGUA 43I              | 20-16                      | TGUA53I               |
| 1.5-1.75            | TGUA 34I              | 18-14                    | TGUA 44I              | 14-11                      | TGUA54I               |
| 2.0-2.5             | TGUA 35I              | 13-10                    | TGUA 45I              | 10-8                       | TGUA55I               |
| 3.0-3.5             | TGUA 36I              | 9.0-7.0                  | TGUA 46I              | 7-6                        | TGUA56I               |
| 4.0-5.0             | TGUA 37I              | 6.0-5.0                  | TGUA 47I              | 5-4                        | TGUA57I               |
| 5.5-6.0             | TGUA 38I              | 4.5-4.0                  | TGUA 48I              | 3.5-2.75                   | TGUA58I               |
|                     |                       |                          |                       | 2.625-2                    | TGUA59I               |



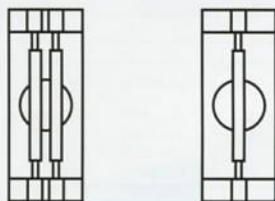
### Thread Cylinders & Holders for External Threads

*Touche de mesure et supports pour mesure de filetages externes*

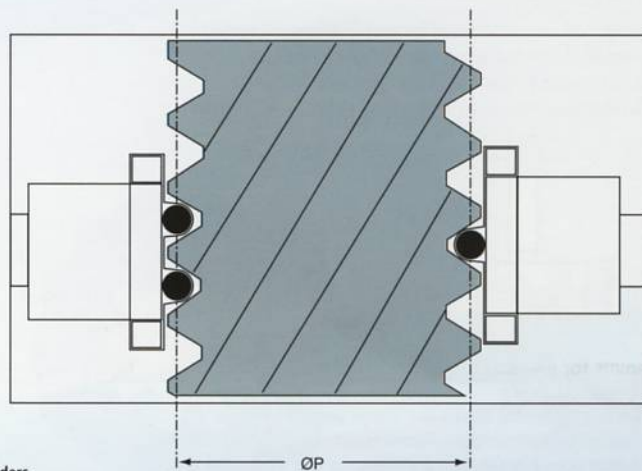
Gewindemessdrähte mit Haltern zur Außengewindemessung



Adaptor for External  
Thread Cylinders  
*Adapteur pour touches  
de mesure*  
Adapter für Gewindemesshalter

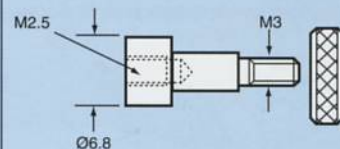


Thread Measuring Cylinders and Holders  
*Touche de mesure et supports pour mesure de filetages*  
Gewindemessdrähte mit Haltern zur Außengewindemessung



| Metric Pitch<br>60°<br>mm | P Value<br>in mm | Unified<br>60° T.P.I. | P Value<br>in inches | 55°<br>Whitworth<br>T.P.I. | P Value<br>in inches | Cylinder Diameter | Model No<br>(per set) |
|---------------------------|------------------|-----------------------|----------------------|----------------------------|----------------------|-------------------|-----------------------|
| .25-.30                   | 0.0465-0.0899    | —                     | —                    | 80                         | .00421               | 0.170mm (.00669") | TGUA 30E              |
| .35                       | 0.0831           | 80                    | .00315               | 72                         | .00438               | 0.195mm (.00768") | TGUA 31E              |
| .40                       | 0.0965           | 72                    | .00337               | 64                         | .00491               | 0.220mm (.00866") | TGUA 32E              |
| .45-.50                   | 0.0996-0.1430    | 64                    | .00369               | 60                         | .00454               | 0.250mm (.00984") | TGUA 33E              |
| .60                       | 0.1847           | 56                    | .00404               | 48                         | .00670               | 0.290mm (.01142") | TGUA 34E              |
| .65                       | 0.1730           | 48                    | .00485               | 40                         | .00864               | 0.335mm (.01319") | TGUA 35E              |
| .70-.75                   | 0.1514-0.1946    | 44-40                 | .00433-.00630        | 36                         | .00879               | 0.390mm (.01535") | TGUA 36E              |
| .80-.90                   | 0.1628-0.2494    | 36-32                 | .00615-.00915        | 32                         | .00914               | 0.455mm (.01791") | TGUA 37E              |
| 1.0                       | 0.2459           | 28-26                 | .01006-.01244        | 28-26                      | .00998-.01261        | 0.530mm (.02087") | TGUA 38E              |
| 1.25                      | 0.3576           | 24                    | .01167               | 24-22                      | .01157-.01520        | 0.620mm (.02854") | TGUA 39E              |
| 1.5                       | 0.4039           | 20                    | .01476               | 20-19                      | .01476-.01728        | 0.725mm (.02854") | TGUA 40E              |
| 1.75                      | 0.4155           | 18-16                 | .01287-.01889        | 18-16                      | .01228-.01895        | 0.895mm (.03524") | TGUA 41E              |
| 2.0                       | 0.4155           | 14-13                 | .01855-.02331        | 14                         | .01811               | 1.100mm (.04331") | TGUA 42E              |
| 2.5                       | 0.5151           | 12-11                 | .01902-.02558        | 12-11                      | .01809-.02536        | 1.350mm (.05315") | TGUA 43E              |
| 3.0-3.5                   | 0.5481-0.9809    | 10-9                  | .02164-.03126        | 10-9                       | .02033-.03100        | 1.650mm (.06496") | TGUA 44E              |
| 4.0-4.5                   | 0.9141-1.3472    | 8-7                   | .02754-.04301        | 8-7                        | .02598-.04313        | 2.050mm (.08071") | TGUA 45E              |
| 5.0-5.5                   | 1.1303-1.5631    | 6                     | .04395               | 6                          | .04306               | 2.550mm (.10039") | TGUA 46E              |
|                           |                  | 5-4.5                 | .04722-.06647        | 5-4.5                      | .04525-.06659        | 3.200mm (.12598") | TGUA 47E              |

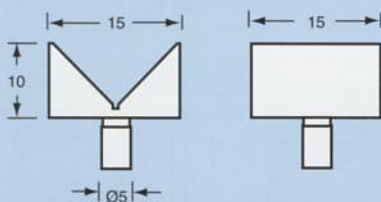
Adaptor for External Thread  
Cylinders or M2.5 Contact  
Tips/4-48 Contact Tips  
*Adapteur pour supports de  
touches de mesure de filetages  
externes, ou touches M2.5/4-48*  
Adapter für Außengewinde -  
Halter oder Meßeinsätze  
M2.5/4-48



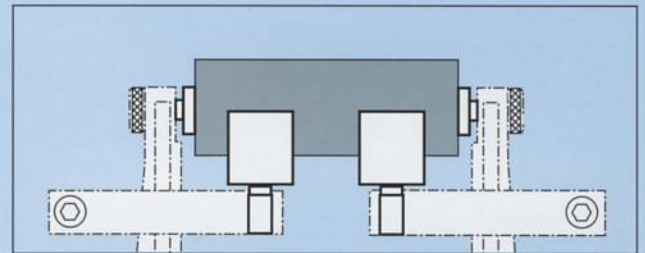
Model No  
M2.5 TGUA 017  
4-48 TGUA 018

Other sizes available P.O.A./ *Autres dimensions disponibles sur demande*/ Andere Meßgrößen auf Anfrage erhältlich

**Vee support for length measurement**  
*Support en V pour mesure de longueurs*  
 Abstütz-Prisma zur Längenmessung

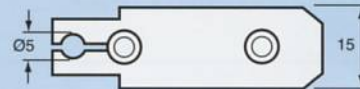
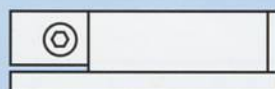
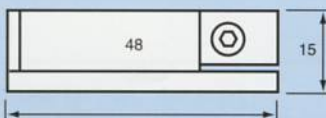


Model No. TGUA 022



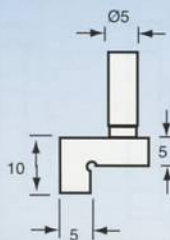
**Mounting attachment for use with the following anvils**

*Support à utiliser avec les touches suivantes:*  
 Aufnahmestück für die folgenden Messeinsätze

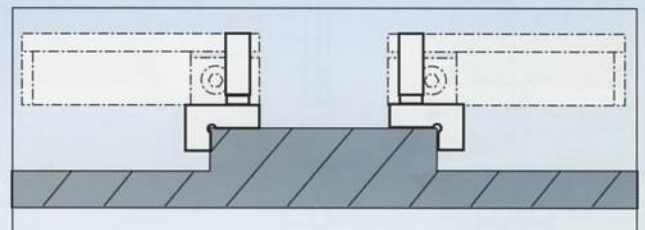


Model No. TGUA 009

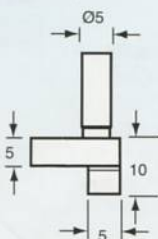
**Shoulder anvils flat outside spigot diameter**  
*Touches épaulées pour emboîtements extérieurs plats*  
 Schultermesseinsätze zur Messung von Außen-Zentriersitzen



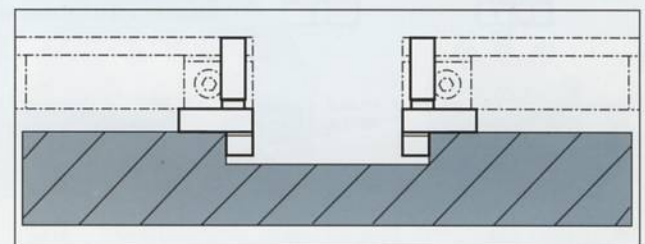
Model No. TGUA 011



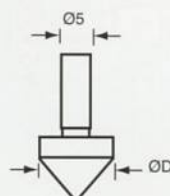
**Semi-cylindrical anvils for inside register diameters**  
*Touches cylindriques pour diamètres internes de lamages internes*  
 Zylindrische Messflächen zur Messung von Innen-Zentriersitzen



Model No. TGUA 012

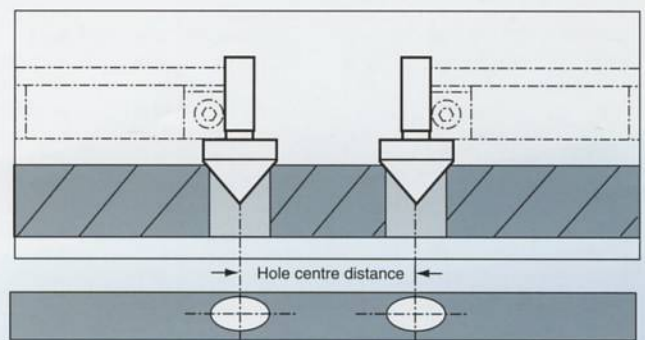


**Cone anvils for measuring Hole Centre Distance**  
*Touches coniques pour mesure d'entre-axes*  
 Kegelförmige Messeinsätze für Messungen von Bohrungsabständen



Model No. TGUA 019  
 TGUA 020  
 TGUA 021

Diameter 'D'  
 13  
 25  
 50



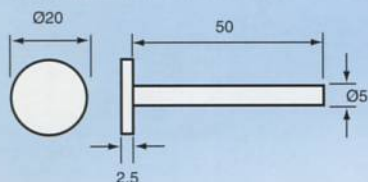
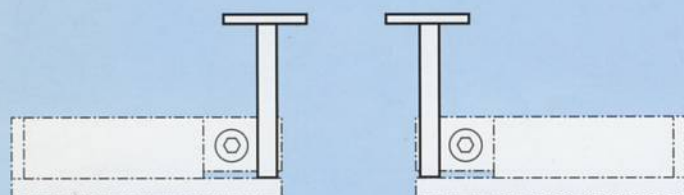
**TRIMOS SYLVAC METROLOGIE**  
 14, Rue Du Ballon - ZI Des Richardets  
 93165 NOISY-LE-GRAND Cedex  
 Tél 01 43 04 40 10 - Fax 01 43 05 69 07  
 E-mail : [tsm.ste@wanadoo.fr](mailto:tsm.ste@wanadoo.fr)  
 Site : [www.tsmfrance.com](http://www.tsmfrance.com)



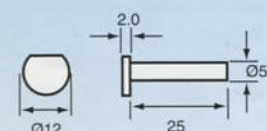
### Disc anvils for measuring Groove diameter

*Touche à disques pour mesure de diamètres de gorges*

*Messeinsätze mit Messteller zur Messung von Nuten-Durchmessern*

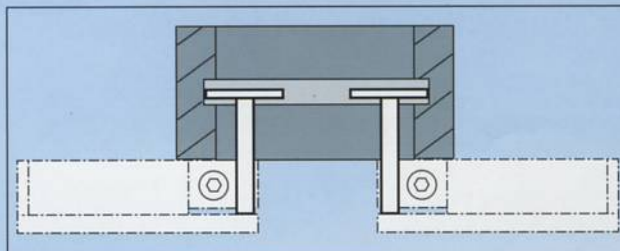


Model No  
TGUA 013

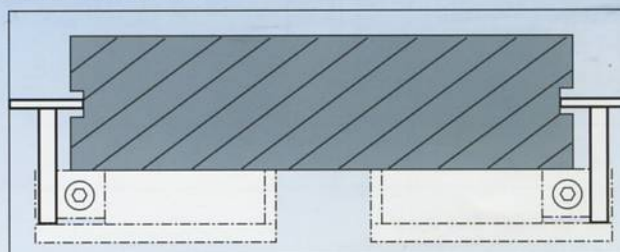


Model No  
TGUA 014

### Internal/ Interne/ Innen



### External/ Externe/ Außen



### Cylindrical measuring pins for internal & external gear measurement

*Piges de mesure cylindriques pour mesure de cannelures internes / externes*

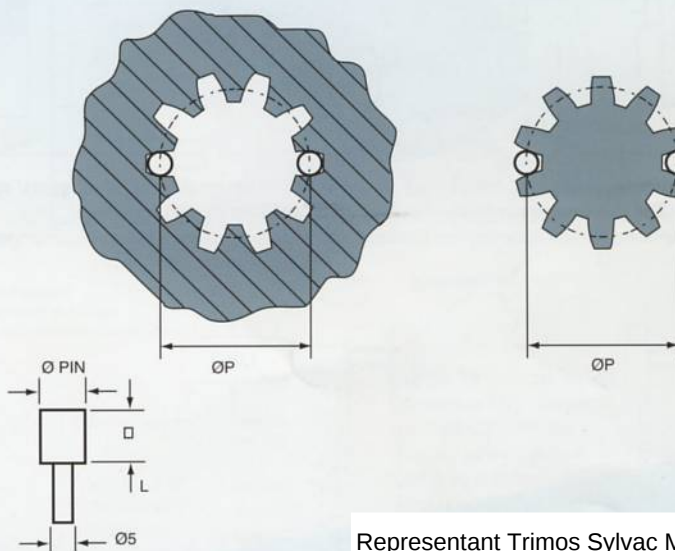
*Zylindrische Meßstifte zur Messung von Innen- und Außenverzahnungen*



| Module | Nominal<br>Pin Dia | Length 'L' | Model No | DP | Nominal<br>Pin Dia | Length 'L' | Model No |
|--------|--------------------|------------|----------|----|--------------------|------------|----------|
| 1.25   | 2.0                | 10 (0.4")  | TGUA 200 | 20 | 0.089              | 10 (0.4")  | TGUA 250 |
| 1.5    | 2.5                | 10 (0.4")  | TGUA 201 | 16 | 0.108              | 10 (0.4")  | TGUA 251 |
| 1.75   | 3.0                | 15 (0.6")  | TGUA 202 | 12 | 0.144              | 15 (0.6")  | TGUA 252 |
| 2.0    | 3.5                | 15 (0.6")  | TGUA 203 | 10 | 0.177              | 20 (0.8")  | TGUA 253 |
| 2.5    | 4.0                | 15 (0.6")  | TGUA 204 | 8  | 0.216              | 20 (0.8")  | TGUA 254 |
| 2.75   | 4.5                | 20 (0.8")  | TGUA 205 | 6  | 0.295              | 25 (1.0")  | TGUA 255 |
| 3.0    | 5.0                | 20 (0.8")  | TGUA 206 | 5  | 0.354              | 25 (1.0")  | TGUA 256 |
| 3.25   | 5.5                | 20 (0.8")  | TGUA 207 | 4  | 0.394              | 25 (1.0")  | TGUA 257 |
| 3.5    | 6.0                | 20 (0.8")  | TGUA 208 |    |                    |            |          |
| 4.0    | 7.00               | 25 (1.0")  | TGUA 209 |    |                    |            |          |
| 5.0    | 9.00               | 25 (1.0")  | TGUA 210 |    |                    |            |          |
| 6.0    | 10.00              | 25 (1.0")  | TGUA 211 |    |                    |            |          |

Other sizes available P.O.A.

*Autres dimensions disponibles sur demande*  
*Andere Meßgrößen auf Anfrage erhältlich*



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