

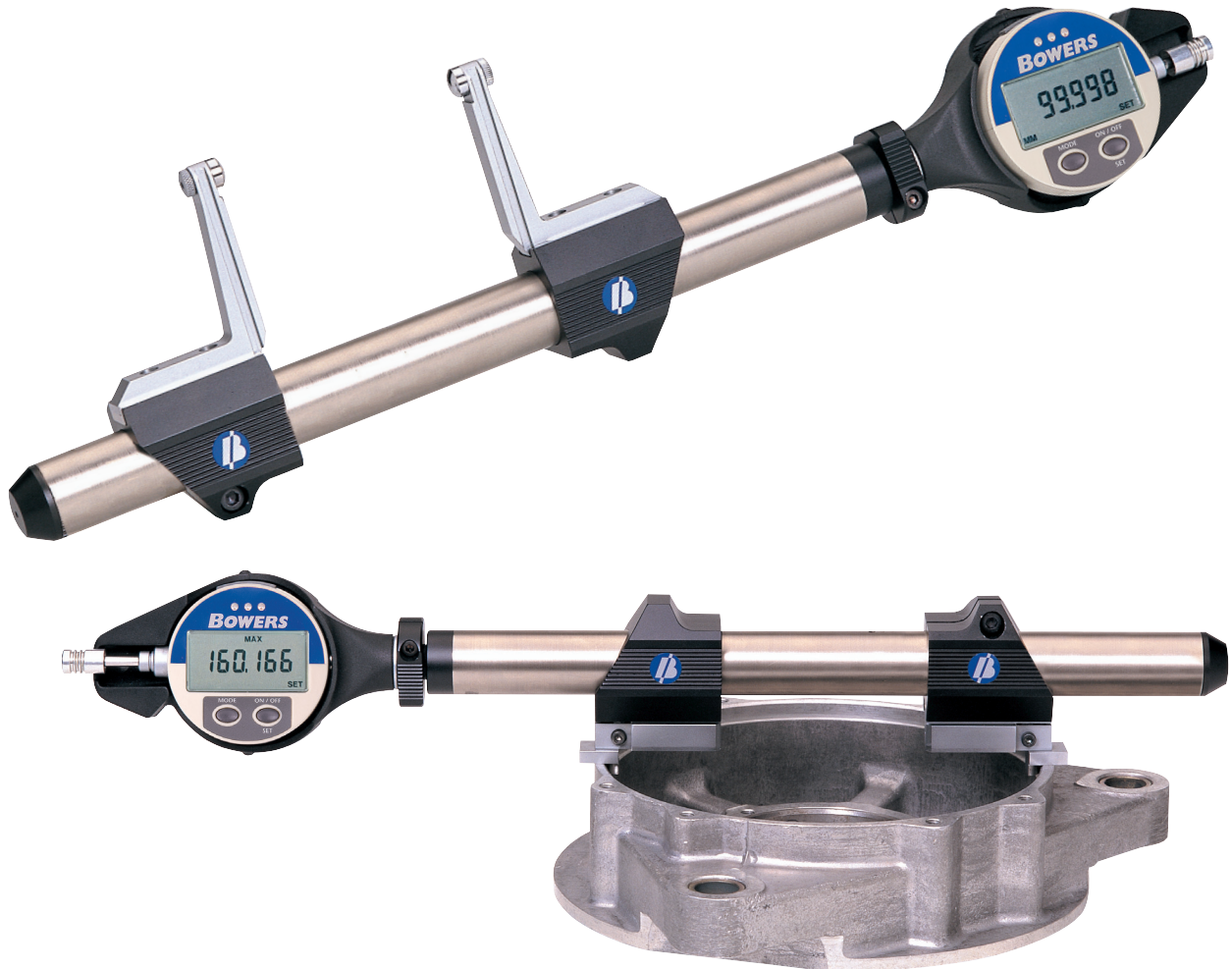
Universal Gauge

The **Bowers Universal Gauge's** ingenious modular format enables it to be quickly configured to suit almost any measuring challenge, both internal and external. The Universal's clever constant measuring pressure device ensures accuracy and consistency of reading.

A large variety of measuring contacts and adaptors are available for the Universal Gauge enabling countless measuring tasks to be completed with ease. Accessories for the measurement of threads, grooves, splines, gears, hole centres, and many others are available as standard and special adaptations for more unusual applications can be quoted on request.

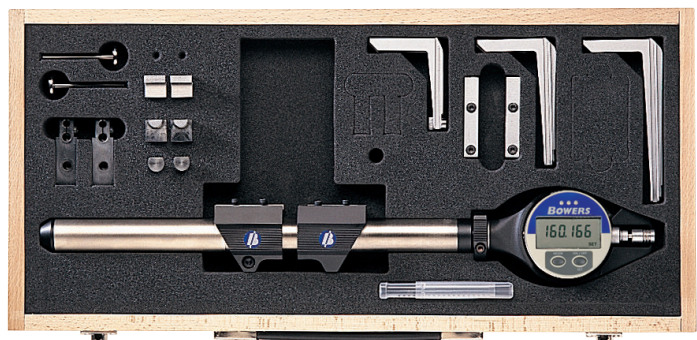
WiFi

RS232



Features

- Internal and external measurement
- Large measuring range possible 0-3000mm (0-118")
- 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
- Special anvil designs available P.O.A





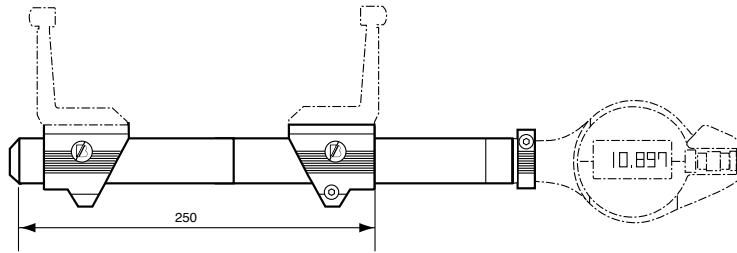
Universal Gauge

Standard Gauge

Model No: **TGU1000**

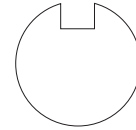
Measuring Range Internal 30-250mm (1.20-10.030")

Measuring Range External 0-215mm (0-8.50")

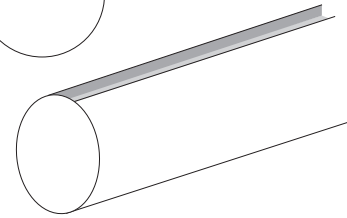


Guideway Version

also available on request



Model No: **TGU1000G**

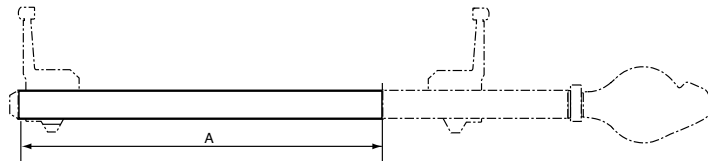


Note: Extensions not possible with guideway version

Extensions

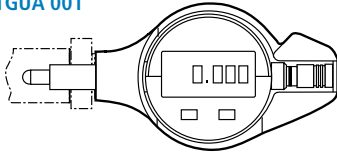
A	Model No.	Range Internal	Range External
150	TGUA033	30-400mm (1.2-15.00")	0-365mm (0-14")
500	TGUA032	30-750mm (1.2-29.00")	0-715mm (0-28.0")

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



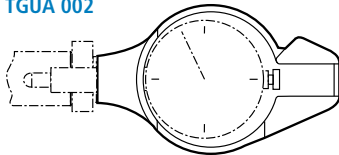
Digital Indicator and Protective Shroud

Model No **TGUA 001**



Protective Shroud for Dial/Digital Indicator

Model No. **TGUA 002**



Measuring Arms

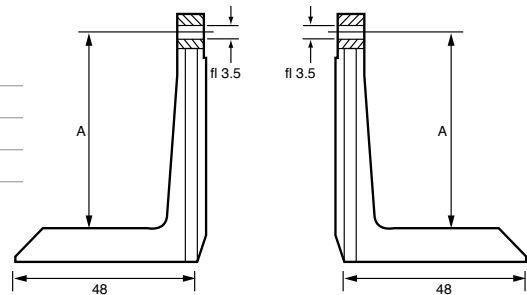
(Reversible for inside/outside diameters)

A Model No.

50 **TGUA 006**

75 **TGUA 007**

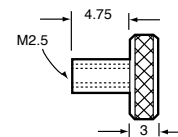
100 **TGUA 008**



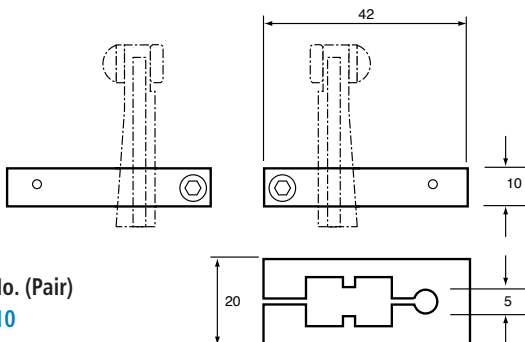
Clamping Insert

Model No.

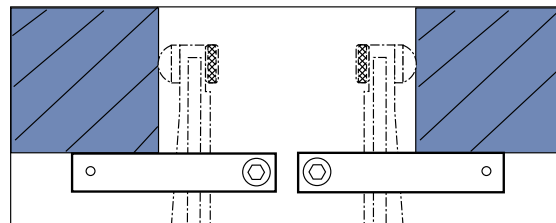
TGUA 003



Adjustable Depth Stops for Measuring Arms



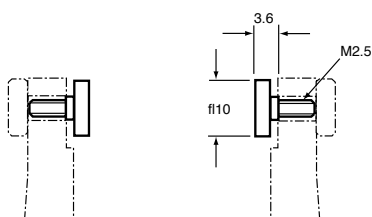
Model No. (Pair)
TGUA 010



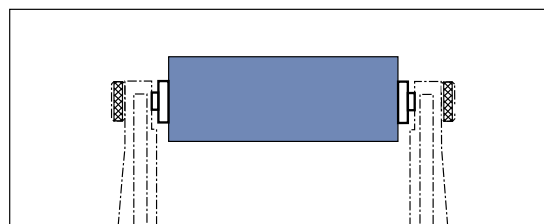
Universal Gauge

CONTACTS FOR USE WITH MEASURING ARMS

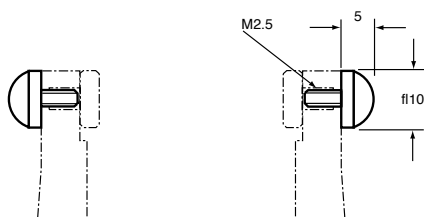
Flat for Outside Diameters/Lengths



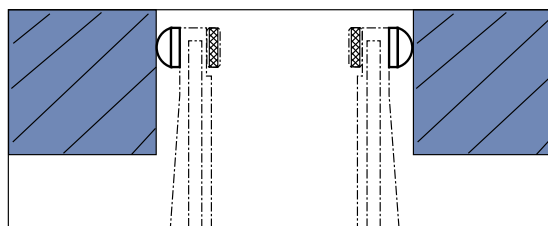
Model No.
TGUA 004



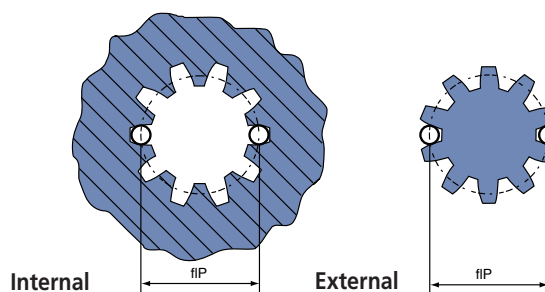
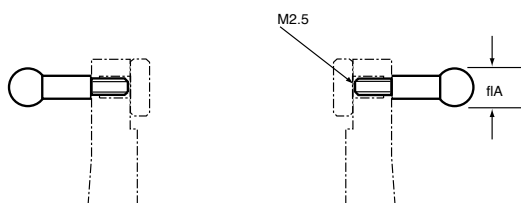
Spherical for Inside Diameters



Model No.
TGUA 005



Ball Anvils for Measurement of Pitch Diameter (P) on Internal or External Gears/Splines



Module	Nominal Ball Dia 'A'	Model No.
0.6	1.0	TGUA 100
0.7	1.25	TGUA 101
0.9	1.5	TGUA 102
1.0	1.75	TGUA 103
1.25	2.0	TGUA 104
1.5	2.5	TGUA 105
1.75	3.0	TGUA 106
2.0	3.5	TGUA 107
2.5	4.0	TGUA 108
2.75	4.5	TGUA 109
3.0	5.0	TGUA 110
3.25	5.5	TGUA 111
3.5	6.0	TGUA 112
4.0	7.00	TGUA 113
5.0	9.00	TGUA 114
6.0	10.00	TGUA 115

DP	Nominal Ball Dia 'A'	Model No.
40	0.043	TGUA 150
36	0.049	TGUA 151
32	0.054	TGUA 152
24	0.071	TGUA 153
20	0.089	TGUA 154
16	0.108	TGUA 155
12	0.144	TGUA 156
10	0.177	TGUA 157
8	0.216	TGUA 158
6	0.295	TGUA 159
5	0.354	TGUA 160
4	0.394	TGUA 161

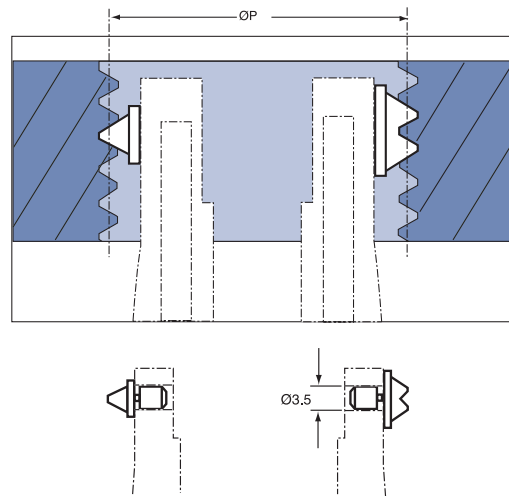
Other sizes available P.O.A.



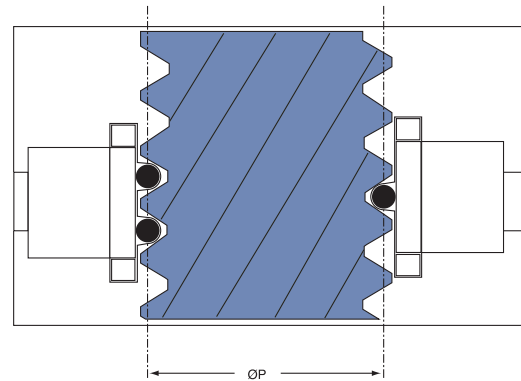
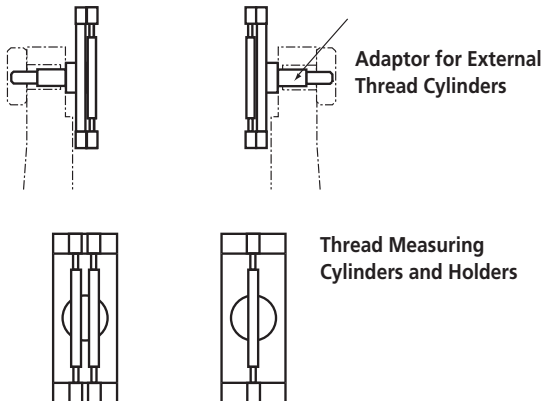
Universal Gauge

Thread Anvils for Internal Pitch Diameter

Metric Pitch 60°	Model No. (Per Set)	Unified 60° T.P.I	Model No. (Per Set)	Whitworth 55° T.P.I	Model No. (Per Set)
0.4-0.45	TGUA 301	64.0	TGUA 401	60-48	TGUA 501
0.5-0.6	TGUA 311	56-44	TGUA 411	40-32	TGUA 511
0.7-0.8	TGUA 321	40-32	TGUA 421	28-22	TGUA 521
1.0-1.25	TGUA 331	28-20	TGUA 431	20-16	TGUA 531
1.5-1.75	TGUA 341	18-14	TGUA 441	14-11	TGUA 541
2.0-2.5	TGUA 351	13-10	TGUA 451	7-6	TGUA 551
3.0-3.5	TGUA 361	9.0-7.0	TGUA 461	7-6	TGUA 561
4.0-5.0	TGUA 371	6.0-5.0	TGUA 471	5-4	TGUA 571
5.0-6.0	TGUA 381	4.5-4.0	TGUA 481	3.5-2.75	TGUA 581
				2.625-2	TGUA 591



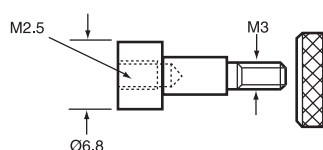
Thread Cylinders and Holders for External Threads



Metric Pitch 60°	P Value in mm	Unified 60° T.P.I	P Value in inches	Whitworth 55° T.P.I	P Value in inches	Cylinder Diameter	Model No (Per Set)
0.25-30	0.0465-0.0899	—	—	80	.00421	0.170mm (.00669")	TGUA 30E
—	—	80	.00315	72	.00438	0.195mm (.00768")	TGUA 31E
.35	0.0831	72	.00337	64	.00491	0.220mm (.00866")	TGUA 32E
.40	0.0965	64	.00369	60	.00454	0.250mm (.00984")	TGUA 33E
.45-.50	0.0996-0.1430	56	.00404	48	.00670	0.290mm (.01142")	TGUA 34E
.60	0.1847	48	.00485	40	.00864	0.335mm (.01319")	TGUA 35E
.65	0.1730	44-40	.00433-.00630	36	.00879	0.390mm (.01535")	TGUA 36E
.70-.75	0.1514-0.1946	36-32	.00615-.00915	32	.00914	0.455mm (.01535")	TGUA 37E
.80-.90	0.1628-0.2494	28-26	.01006-.01244	28-26	.00998-.01261	0.530mm (.02087")	TGUA 38E
1.0	0.2459	24	.01167	24-22	.01157-.01520	0.620mm (.02854")	TGUA 39E
1.25	0.3576	20	.01476	20-19	.01476-.01728	0.725mm (.02854")	TGUA 40E
1.5	0.4039	18-16	.01287-.01889	18-16	.01228-.01895	0.895mm (.03524")	TGUA 41E
1.75	0.4155	14-13	.01855-.02331	14	.01811	1.100mm (.04331")	TGUA 42E
2.0	0.3820	12-11	.01902-.02558	12-11	.01809-.02536	1.350mm (.05315")	TGUA 43E
2.5	0.5151	10-9	.02164-.03126	10-9	.02033-.03100	1.650mm (.06496")	TGUA 44E
3.0-3.5	0.5481-0.9809	8-7	.02754-.04301	8-7	.02598-.04313	2.050mm (.08071")	TGUA 45E
4.0-4.5	0.9141-1.3472	6	.04395	6	.04306	2.550mm (.10039")	TGUA 46E
5.0-5.5	1.1303-1.5631	5-4.5	.04722-.06647	5-4.5	.04525-.06659	3.200mm (.12598")	TGUA 47E

Other sizes available P.O.A.

Adaptor for External Thread Cylinders or M2.5 Contact Tips/4-48 Contact Tips

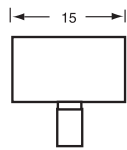
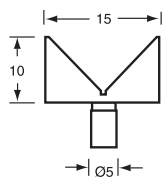


Model No.

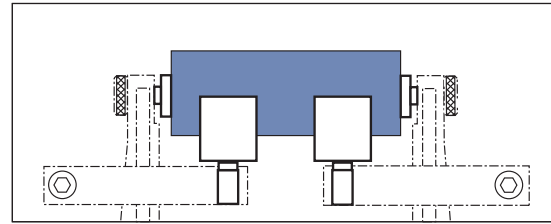
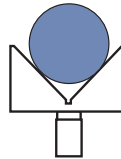
M2.5	TGUA 0017
4-48	TGUA 0018

Universal Gauge

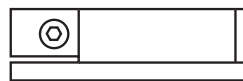
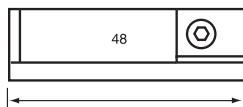
Vee Support for Length Measurement



Model No.
TGUA 022

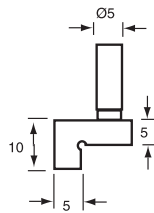


MOUNTING ATTACHMENTS FOR USE WITH THE FOLLOWING ANVILS

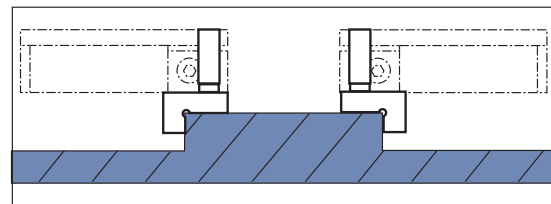


Model No.
TGUA 009

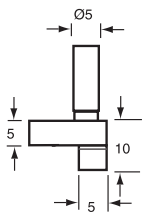
Shoulder Anvils Flat Outside Spigot Diameter



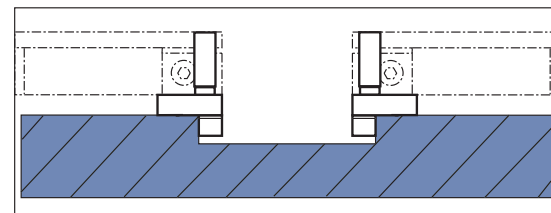
Model No.
TGUA 011



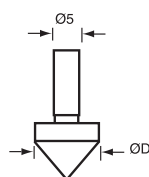
Semi-cylindrical Anvils for Inside Register Diameters



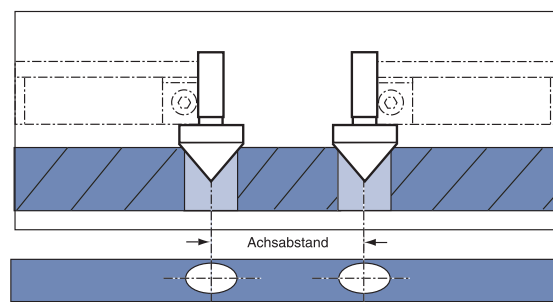
Model No.
TGUA 012



Cone Anvils for Measuring Hole Centre Distance



Model No.	Diameter 'D'
TGUA 019	13
TGUA 020	25
TGUA 021	50

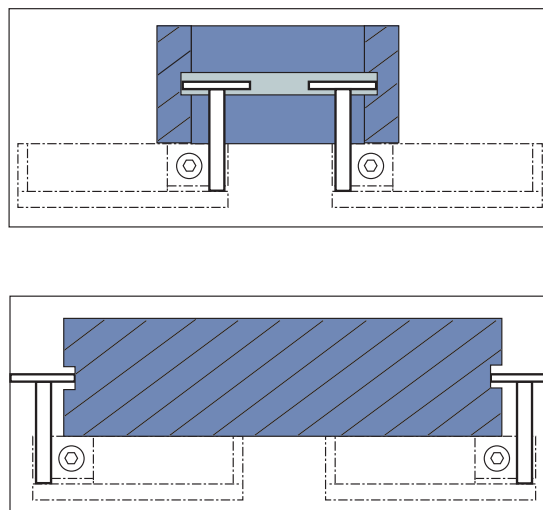
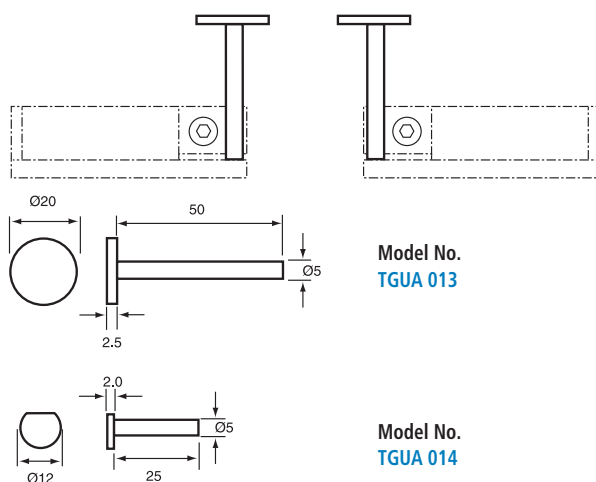




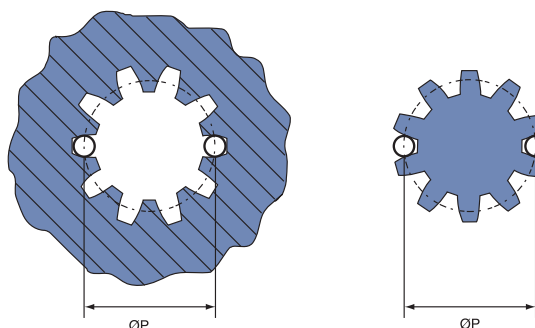
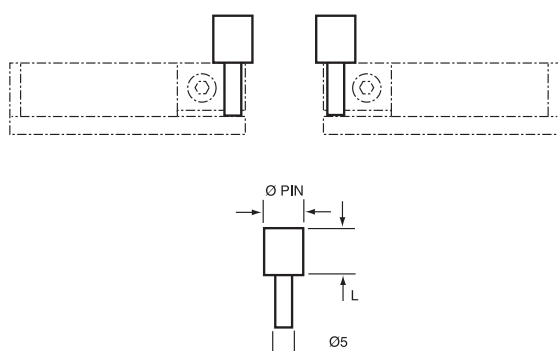
Universal Gauge

Although extremely comprehensive, the collection of Universal Gauge accessories cannot cover every measuring application, if your particular gauging need is not catered for within our standard range, specialised adaptors, contact points, etc can be quoted from a component drawing.

Disc Anvils for Groove Diameter Measurement



Cylindrical Measuring Pins for Internal and External Gear Measurement



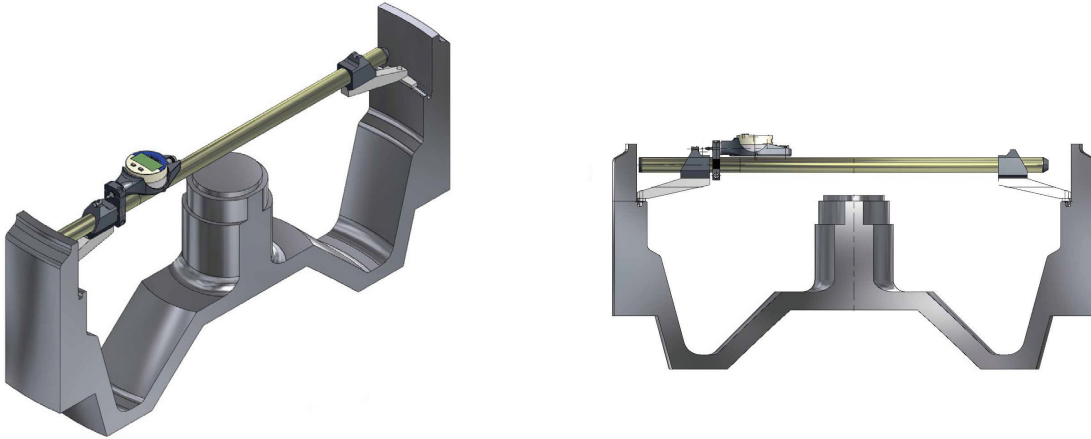
Module	Nominal Pin Dia	Length L	Model No.
1.25	2.0	10 (0.4")	TGUA 200
1.5	2.5	10 (0.4")	TGUA 201
1.75	3.0	15 (0.6")	TGUA 202
2.0	3.5	15 (0.6")	TGUA 203
2.5	4.0	15 (0.6")	TGUA 204
2.75	4.5	20 (0.8")	TGUA 205
3.0	5.0	20 (0.8")	TGUA 206
3.25	5.5	20 (0.8")	TGUA 207
3.5	6.0	20 (0.8")	TGUA 208
4.0	7.00	25 (1.0")	TGUA 209
5.0	9.00	25 (1.0")	TGUA 210
6.0	10.00	25 (1.0")	TGUA 211

DP	Nominal Pin Dia	Length L	Model No.
20	0.089	10 (0.4")	TGUA 250
16	0.108	10 (0.4")	TGUA 251
12	0.144	15 (0.6")	TGUA 252
10	0.177	20 (0.8")	TGUA 253
8	0.216	20 (0.8")	TGUA 254
6	0.295	25 (1.0")	TGUA 255
5	0.354	25 (1.0")	TGUA 256
4	0.394	25 (1.0")	TGUA 257

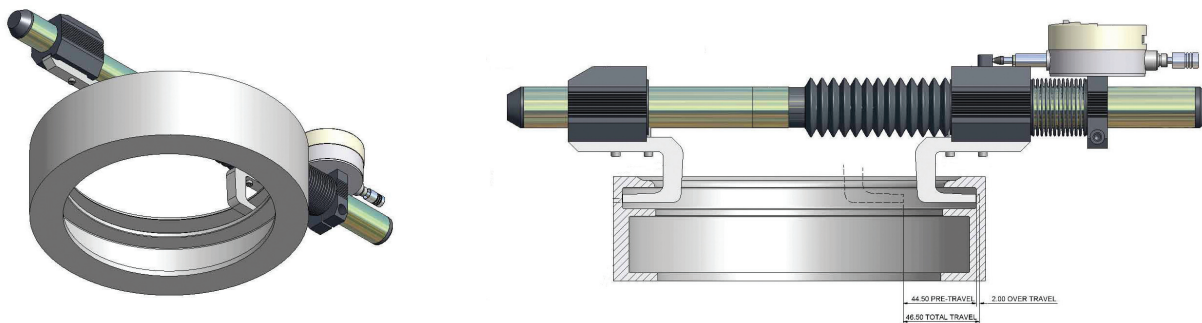
Other sizes available P.O.A.

Universal Gauge Special Applications

Universal Gauge with top-mounted indicator and extended reach measuring arms



Universal Gauge with extended 50mm travel (e.g. for internal grooves)



Special Universal Gauge for measuring across large diameter component with central boss

