



baty

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bore
gauges

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Baty International has been in business since 1932. Originally, a manufacturer of high precision dial indicators and other associated instruments such as cylinder bore gauges.

Baty soon diversified into non-contact measurement with Optical Profile Projectors and the Baty 'Shadograph' series has since become an industry standard in profile projectors. These products are still manufactured in Sussex in accordance with ISO 9001:2000.

For decades Baty has employed a team of Field Based Service Engineers. Today, our service department is the largest ISO 9001:2000 accredited Projector Service Organisation in the UK offering on-site Service, Training, Retrofits, and Repair for all makes of Profile Projector and Vision Systems.

In keeping with its gauging roots, Baty acquired John Bull and British Indicators, extending its gauging range to include calipers and flexible fixturing.

The range was then completed in the eighties when our first camera based Video Inspectors were developed. Video Edge Detection (VED) was soon added giving rise to increased accuracy, repeatability and measuring speed.

Now all our vision systems offer the best of both worlds with the combination of non-contact (VED) and contact measurement using Renishaw's extensive touch probe range.

Today, Baty is an ISO 9001:2000 accredited company that offers a range of Metrology Instruments from Hand Tools to Vision Systems, offering measuring solutions for almost every measurement application in modern manufacturing and now, we've put them together into one catalogue for your convenience.

So, whether you need a digital caliper or a full CNC multi-sensing Vision system...

...it's here.

We look forward to talking to you.

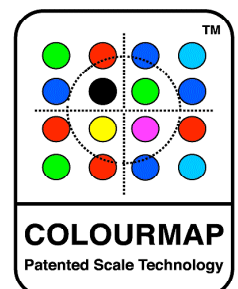
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ANALOGUE BORE MICROMETERS

This premium quality, high precision bore micrometer range is designed and manufactured in England to exacting standards.

The micrometer heads feature a precision ground cone which is displaced by the micrometer barrel. The displaced cone in turn acts on the measuring anvils to expand the head to the size of the bore to be measured. The measuring anvils feature an inset carbide pin to provide a line of contact with the bore's surface, this serves to naturally align the micrometer with the axis of the measured bore to ensure repeatable results. A ratchet clutch in the barrel provides consistent measuring force.

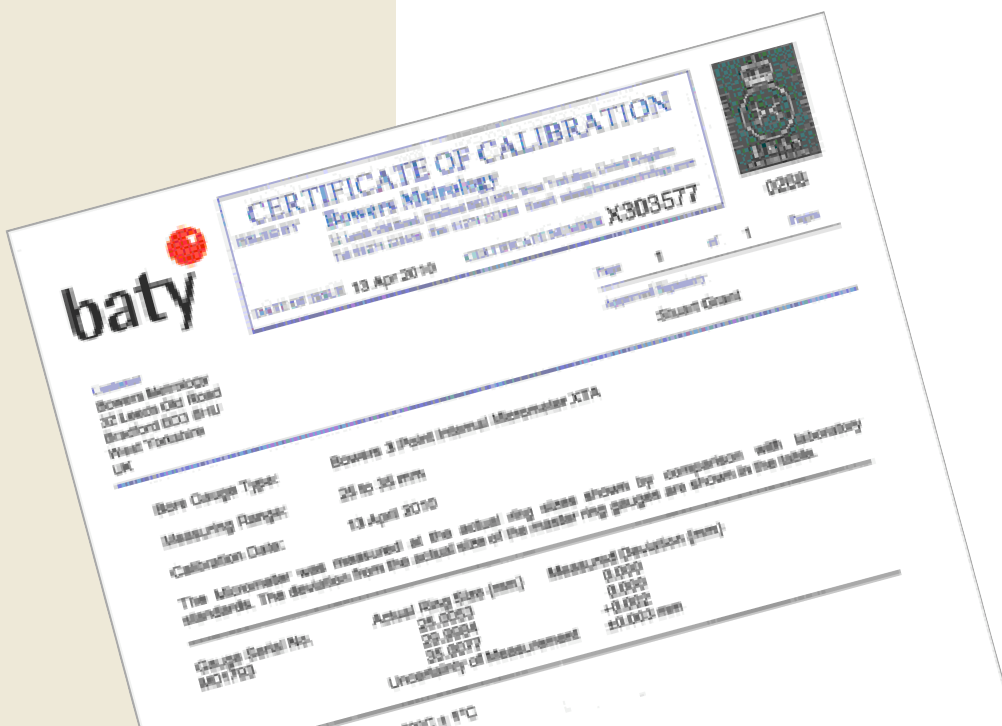
Each micrometer is serial numbered and individually calibrated, a specific UKAS calibration certificate is included for each micrometer and setting ring showing measured values over the measuring range using standards that are traceable directly to the National Standard.

The carbide pins in the measuring anvils extend almost to the end of the micrometer head to facilitate blind bore measurement. In addition, special anvils are available to measure internal screw threads, grooves, undercuts, internal splines etc etc. please contact for a quotation for your special application requirements.



Boxed Sets

Model	Measuring Range
BMSET-2-3	2 - 3mm
BMSET-3-6	3 - 6mm
BMSET-6-10	6 - 10mm
BMSET-10-20	10 - 20mm
BMSET-20-50	20 - 50mm
BMSET-50-100	50 - 100mm
BMSET-100-150	100 - 150mm
BMSET-150-200	150 - 200mm



ANALOGUE BORE MICROMETERS



Features

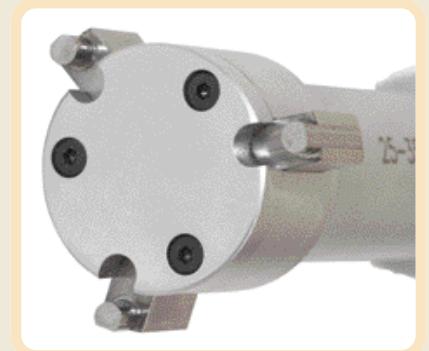
Standard: DIN 863

- Range 2-300mm
- 2-6mm 2 point / 6-300mm 3 point measurement
- Tungsten carbide contact points above 12.5mm
- Traceable certificates supplied as standard with all micrometers and setting rings
- Blind bore measurement from 2 - 6mm and above 12.5mm diameter
- Micrometer head fitted with a ratchet for constant gauging pressure
- Supplied in robust fitted case
- Extensions available above 6mm for deep hole measurement
- Available as individual instruments or boxed sets
- Setting ring included

Ring gauges manufactured to BS4064: 1966

Individual Micrometers

Model	Range	Accuracy	Depth
BM-1	2 - 2.5mm	0.004mm	9mm
BM-2	2.5 - 3mm	0.004mm	9mm
BM-3	3 - 4mm	0.004mm	12mm
BM-4	4 - 5mm	0.004mm	18mm
BM-5	5 - 6mm	0.004mm	18mm
BM-6	6 - 8mm	0.004mm	58mm
BM-7	8 - 10mm	0.004mm	58mm
BM-8	10 - 12.5mm	0.004mm	58mm
BM-9	12.5 - 16mm	0.004mm	62mm
BM-10	16 - 20mm	0.004mm	62mm
BM-11	20 - 25mm	0.004mm	66mm
BM-12	25 - 35mm	0.004mm	66mm
BM-13	35 - 50mm	0.004mm	80mm
BM-14	50 - 65mm	0.005mm	80mm
BM-15	65 - 80mm	0.005mm	80mm
BM-16	80 - 100mm	0.005mm	100mm
BM-17	100 - 125mm	0.006mm	115mm
BM-18	125 - 150mm	0.006mm	115mm
BM-19	150 - 175mm	0.007mm	115mm
BM-20	175 - 200mm	0.007mm	115mm
BM-21	200 - 225mm	0.008mm	118mm
BM-22	225 - 250mm	0.008mm	118mm
BM-23	250 - 275mm	0.009mm	118mm
BM-24	275 - 300mm	0.009mm	118mm



TRIGAMASTER BORE GAUGING

3 Point Bore Gauges

Features

Standard: DIN 863 - Part 4

- Measurement range from 6 - 100mm
- Ergonomically designed pistol grip body
- LCD display unit with rotating display for easy reading at any angle
- Functions include 2 pre-set memories, tolerance indicator lights and mm / inch conversion
- RS232 data output facility
- Self centring measuring heads with tungsten carbide contact points
- Setting rings provided with each instrument complete with UKAS certification
- Blind bore measurement on all instruments above 12.5mm
- Available as individual instruments or boxed sets
- Diameter above 100mm available on request
- Setting rings included

Note: Digital Indicator with direct mm/inch conversion



Individual Bore Gauges

Model	Range	Maximum Bore Depth	Accuracy
TM-1	6 - 8mm	58mm	0.004mm
TM-2	8 - 10mm	58mm	0.004mm
TM-3	10 - 12.5mm	62mm	0.004mm
TM-4	12.5 - 16mm	62mm	0.004mm
TM-5	16 - 20mm	62mm	0.004mm
TM-6	20 - 25mm	66mm	0.004mm
TM-7	25 - 35mm	66mm	0.004mm
TM-8	35 - 50mm	66mm	0.004mm
TM-9	50 - 65mm	82mm	0.005mm
TM-10	65 - 80mm	82mm	0.005mm
TM-11	80 - 100mm	82mm	0.005mm

Bore Gauge Sets supplied with required setting rings and UKAS certificate

Model	Measuring Range mm	Max Bore Depth mm	Accuracy mm
TMSET6-10	6 - 10	58	0.004
TMSET10-20	10 - 20	62	0.004
TMSET20-50	20 - 50	66	0.004
TMSET50-100	50 - 100	82	0.005
TMSET6-20	6 - 20	58 - 62	0.004
TMSET20-100	20 - 100	66 - 82	0.005

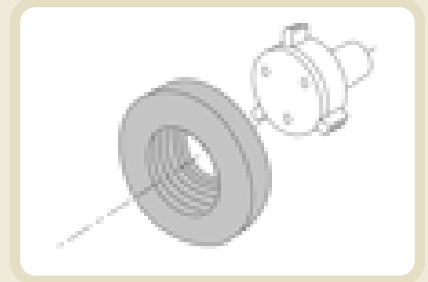


Extensions

Model	Length mm	Inch	To Fit Heads mm	Inch
TME-1	63	2.5	6 - 10	1/4 - 3/8
TME-2	76	3.0	10 - 12.5	3/8 - 1/2
TME-3	100	4.0	12.5 - 20	1/2 - 3/4
TME-4	150	6.0	20 - 50	3/4 - 2

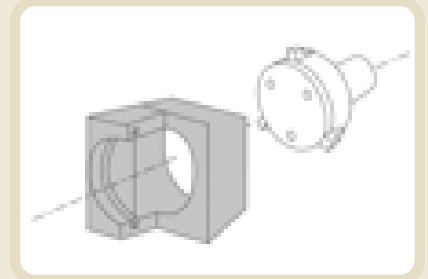
Screw Threads

To measure effective (functional) diameter, pitch diameter, major diameter, between M4-300mm / No 8 UN-12" diameter.



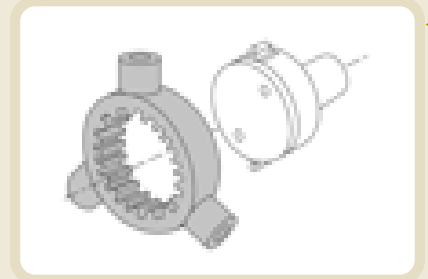
Grooves

For sizes from 2mm - 300mm diameter.



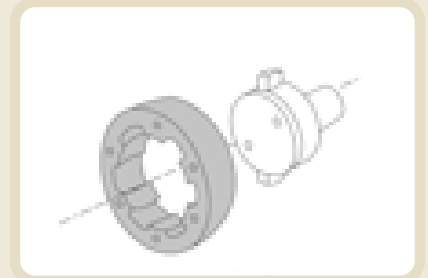
2-Point Spline

2 and 3 point heads available. Anvils manufactured from tool steel. Between pin, major and minor diameter heads available. Diameters from 12 - 300mm diameter (1/2" - 12").



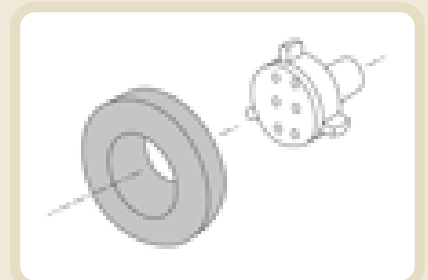
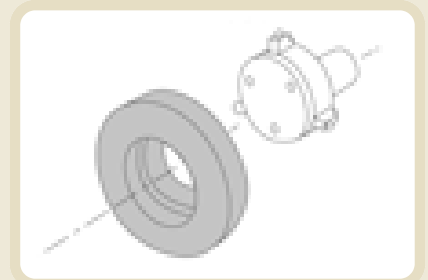
2-Point Spherical

2 point available from 3 - 150mm. 3 point from 6 - 300mm diameter.



Ball Screw Threads

From \varnothing M10



2 POINT BORE COMPARATOR SETS

Baty Dial Indicating Bore Gauges allow rapid and accurate checking of bores for size, ovality, taper, wear, etc. in the workshop or inspection room.

All models operate on the proven principle of two diametrically opposed measuring points, one fixed and one moving, plus a spring-loaded centralising shoe.

To check the actual size of bore, the gauge must be set to size with a ring gauge or micrometer and inserted into the bore. It is then necessary to 'rock' the gauge slowly to locate its measuring axis to the bore, shown by the point of reversal of the indicator hand or analogue display. The reading at that point is the deviation from set or normal size.

For larger bores, a range of interchangeable extension rods allow a single instrument to cover a wide range of bore sizes.

All bore gauges come supplied in a wooden case.



2104



210 Series

215 Series

235 Series

**Available in lengths
up to 96" (2.4m)**

price on application

Model	Capacity Metric (mm)	Capacity Imperial (inch)	Standard Bore Depth	Indicator Reading
2101	22.5 - 50	7/8" - 2"	150mm (6")	0.0005"
2103	22.5 - 50	7/8" - 2"	150mm (6")	0.0001"
2102	22.5 - 50	7/8" - 2"	150mm (6")	0.01 mm
2104	22.5 - 50	7/8" - 2"	150mm (6")	0.002 mm
2151	50 - 150	2" - 6"	300mm (12")	0.0005"
2153	50 - 150	2" - 6"	300mm (12")	0.0001"
2152	50 - 150	2" - 6"	300mm (12")	0.01 mm
2154	50 - 150	2" - 6"	300mm (12")	0.002 mm
2351	150 - 600	6" - 24"	450mm (18")	0.0005"
2353	150 - 600	6" - 24"	450mm (18")	0.0001"
2352	150 - 600	6" - 24"	450mm (18")	0.01 mm
2354	150 - 600	6" - 24"	450mm (18")	0.002 mm

WORKSHOP BORE COMPARATOR SETS



Features

- With interchangeable contact points
- Set of carbide tipped contact points included
- Unique self centring device
- Supplied with dial indicator, resolution 0.01mm / 0.0001" / 0.0005"
- Packed as set with all necessary accessories to measure the complete range as shown

Model	Range	Resolution
BC-1-A	6 - 10mm	0.01mm
BC-2-A	10 - 18mm	0.01mm
BC-3-A	18 - 35mm	0.01mm
BC-4-A	35 - 50mm	0.01mm
BC-5-A	50 - 160mm	0.01mm
BC-6-A	100 - 250mm	0.01mm

DIGITAL BORE COMPARATOR SETS



Features

- With interchangeable contact points
- Set of carbide tipped contact points included
- Unique self centring device
- Supplied with digital indicator with bar graph and numerical display
- Packed as set with all necessary accessories to measure the complete range as shown

Model	Range	Resolution
BC-1-D	6 - 10mm	0.001mm / 0.00005"
BC-2-D	10 - 18mm	0.001mm / 0.00005"
BC-3-D	18 - 35mm	0.001mm / 0.00005"
BC-4-D	35 - 50mm	0.001mm / 0.00005"
BC-5-D	50 - 160mm	0.001mm / 0.00005"
BC-6-D	100 - 250mm	0.001mm / 0.00005"

TELESCOPIC GAUGE SET

Features

- For quick inside measurement and determination of inside diameters
- Spring loaded plunger that expands in the bore or groove
- Satin chromed body
- With auto extension and direct locking
- Measuring faces are hardened and micro-lapped

Range

8 - 150mm



Metric / Imperial Telescopic Gauge Set

Model	Range	Quantity
Telescopic-G-S	8 - 150mm	6 pieces



The robust, easy to use Electronic Plug Gauge range is designed to give the operator greater speed of use, unmatched measuring accuracy and superb repeatability, especially in harsh shop-floor environments. Advanced hand held ergonomics allied to an ingenious mechanical / electronic system render EPG the easiest to operate Baty bore gauging system to date.

The flexible nature of Baty EPG range means that they can be supplied fitted with easy to read electronic indicators (ideal for automatic data collection), conventional analogue indicators, or transducer probes linked to remote digital readout units.

Features

- Range 6 - 280mm
- Tough, robust construction
- Easy-to-use
- Long life
- High accuracy dedicated plug-gauges
- Flexible, modular
- Hand-held measurement
- Can be incorporated into automated measuring systems (in-series)
- Cost-effective
- Short delivery times
- High visibility display
- Protective indicator shroud (with some indicators)
- All setting rings supplied as standard with UKAS calibration certificates
- Coverplates as standard on all EPGs
- Specials (e.g. blind bore) on request
- Repeatability $\leq 1\mu\text{m}$
- Setting by means of a setting ring
- Quick and reliable measurement
- 2 - point measurement as standard
- Blind bore available on request
- Depth-stops available
- Extensions available for deeper bores
- Guide chamfer for easy entry into bore
- High durability, long-life plugs and contacts
- Easy to clean
- Plug body coatings: Hard-chrome (standard), T.i.N., Plain steel
- Measuring contacts: Tungsten carbide, (standard), hard-chrome, ruby, ceramic

ELECTRONIC PLUG GAUGES



DI-1



Transducer Probe

HOLDERS



EPG001M
M6 Holder



EPG002M
M6 Holder



EPG003
M6
100mm
Extension



EPG028
M6-M10 Adapter



EPG004
M6 Probe
Holder



EPG008
M10 Probe
Holder



EPG007
M10-100mm
Extension



EPG006M
M10 Holder



EPG005M
M10 Holder



EPG500-09
Depth Stop

EPG Heads

M6 Thread Range 6-20mm
Please state size to be measured



M10 Thread Range 15-280mm
Please state size to be measured



Contact Options: Tungsten Carbide (standard), Hard Chrome, Ruby, Ceramic
Plug Body Options: Hard Chrome Plated (standard), Titanium Nitride, Plain Steel

ELECTRONIC PLUG GAUGES

EPG Standard	Bore Diameters	Connecting Thread
EPG010	>6 - 20mm / 0.236" - 0.787"	M6 x 0.75
EPG012	>15 - 25mm / 0.590" - 0.984"	M10 x 1
EPG014	>25 - 35mm / 0.984" - 1.378"	M10 x 1
EPG016	>35 - 45mm / 1.378" - 1.772"	M10 x 1
EPG018	>45 - 60mm / 1.772" - 2.362"	M10 x 1
EPG020	>60 - 80mm / 2.362" - 3.150"	M10 x 1
EPG022	>80 - 100mm / 3.150" - 3.937"	M10 x 1
EPG024	>100 - 125mm / 3.937" - 4.921"	M10 x 1
EPG026	>125 - 150mm / 4.921" - 5.906"	M10 x 1
EPG028	>150 - 175mm / 5.906" - 6.890"	M10 x 1
EPG030	>175 - 200mm / 6.890" - 7.874"	M10 x 1
EPG032	>200 - 225mm / 7.874" - 8.858"	M10 x 1
EPG034	>225 - 250mm / 8.858" - 9.843"	M10 x 1
EPG036	>250 - 280mm / 9.843" - 11.025"	M10 x 1

EPG Blind-Bore	Bore Diameters	Connecting Thread
EPG010BB	>6 - 20mm / 0.236" - 0.787"	M6 x 0.75
EPG012BB	>15 - 25mm / 0.590" - 0.984"	M10 x 1
EPG014BB	>25 - 35mm / 0.984" - 1.378"	M10 x 1
EPG016BB	>35 - 45mm / 1.378" - 1.772"	M10 x 1
EPG018BB	>45 - 60mm / 1.772" - 2.362"	M10 x 1
EPG020BB	>60 - 80mm / 2.362" - 3.150"	M10 x 1
EPG022BB	>80 - 100mm / 3.150" - 3.937"	M10 x 1
EPG024BB	>100 - 125mm / 3.937" - 4.921"	M10 x 1
EPG026BB	>125 - 150mm / 4.921" - 5.906"	M10 x 1

Sizes above 150mm on request



ELECTRONIC PLUG GAUGE ACCESSORIES

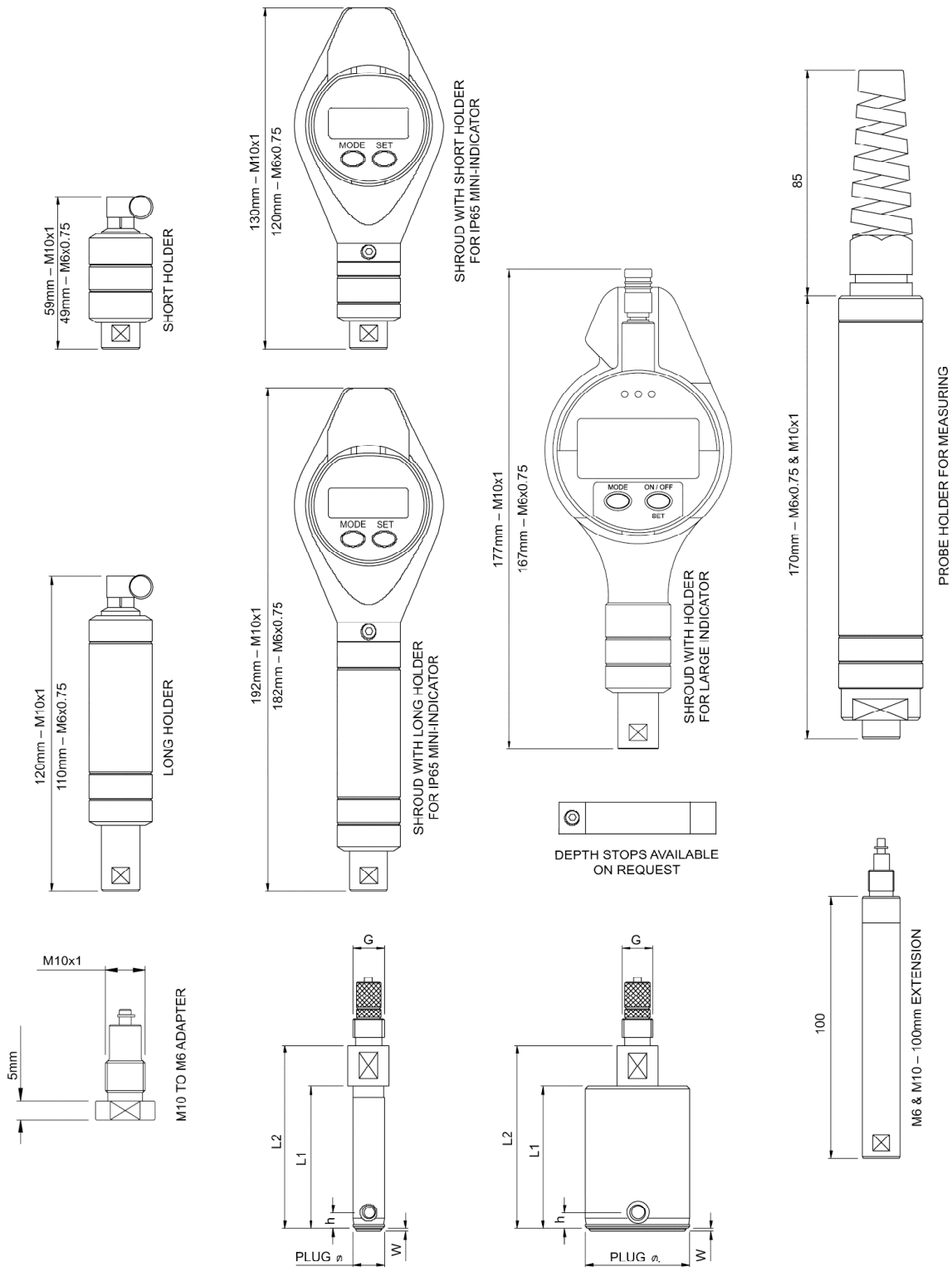
Accessories	M6 Thread
EPG001M	M6 Holder short 8mm stem
EPG002M	M6 Holder long 8mm stem
EPG003	M6 100mm extension
EPG004	M6 Probe holder 8mm stem
EPG6-10A	M6-M10 Adapter (to use M10 holders with M6 plugs)

Accessories	M10 Thread
EPG005M	M10 Holder short 8mm
EPG006M	M10 Holder long 8mm stem
EPG007	M10 100mm extension
EPG008	M10 Probe holder 8mm stem
EPG500-09	Depth stop

Indicating Units	
DI-1	Digital Indicator 0.001mm
	Transducer probes – see page 61



ELECTRONIC PLUG GAUGES TECHNICAL DETAILS



Plug Gauge Head Dimensions

Diameter size (mm)	Range	h	L1	L2	W	G
6 - 7.8*	0.15	3	27	35	0.5	M6 x 0.75
7.9 - 20	0.15	3	27	35	0.5	M6 x 0.75
15 - 45	0.2	3.5	28	43.5	1	M10 x 1
45.1 - 70	0.2	4	28	44	1.5	M10 x 1
70.1 - 280	0.2	4	35	44	1.5	M10 x 1

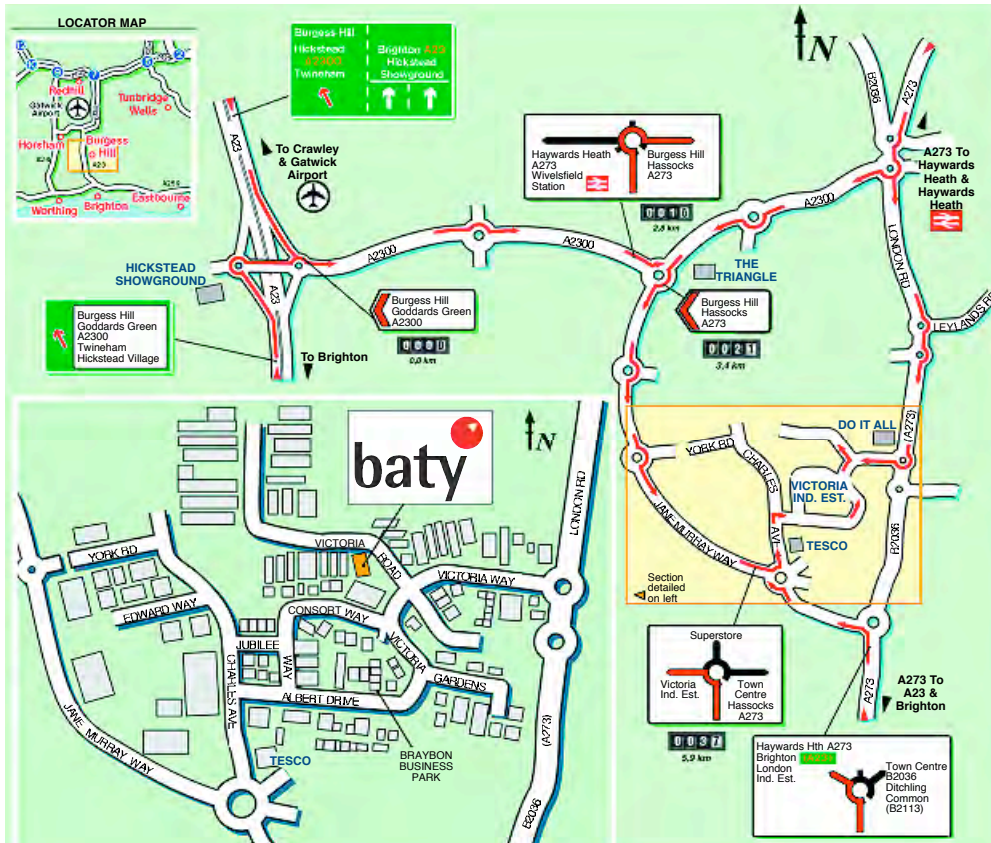
* max measuring depth 27mm between 6 and 7.8mm

ELECTRONIC PLUG GAUGES SETTING RINGS

All rings are supplied with UKAS calibration certificates and can be supplied in nominal grade, grade X and grade XX – in accordance with ANSI / ASME B89.1.6M.



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