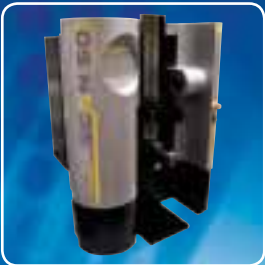




BOWERS GROUP

THE ESSENTIAL METROLOGY CATALOGUE **16/17**



Partners in Precision

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ISO 9001:2015 – Quality Guaranteed

In 2016 Bowers achieved the latest **ISO 9001:2015** Quality Management Systems Standard at its Bradford manufacturing facility. This prestigious certification is a true testament to Bowers' dedication to the highest levels of quality management and customer satisfaction. ISO 9001:2015 is the newest update to the quality management system standard, which provides an integrated approach to quality management and continual improvement. This, in conjunction with Bowers' existing UKAS accreditation to ISO/IEC 17025:2005, ensures its customers can have complete confidence that the Bowers range of products is designed and manufactured to the highest standard.





BOWERS GROUP

Bowers Group

As a leading supplier of quality metrology instruments to organisations throughout the world, Bowers Group has developed into a respected global leader in the field of measurement. Our first-class reputation has been built on the continuing Group ethos of striving for excellence in both the comprehensive range of products that we supply and the many quality services that we provide to our customers. The Group's aim is to build on its hard-won reputation and continue to exceed customers' expectations.

Reflecting the all-inclusive nature of our products and services, Bowers UK provides British industry with the widest choice of cost effective, quality measuring instruments currently available. Supplementing Bowers' own famous range of gauges, our enviable 'sole UK agent' status means that we can offer superior products from many pre-eminent metrology companies, such as Trimos, Sylvac, Gagemaker, Innovatest, ACCRETECH and Wyler. Bowers' diverse range of quality measuring instruments allows us to offer cost effective solutions to UK industries' measuring challenges. Helping in the decision making process, our network of skilled Sales Engineers is happy to give on-site demonstrations of our full product range.



Baty International

Baty International is one of the world's leading manufacturers of Optical Profile Projectors, Co-ordinate Measuring Systems and Gauging Products. Baty's product range includes two dimensional (profile measuring) equipment and full 3 dimensional (coordinate measuring) systems. Baty also services and calibrates contact and non contact dimensional measuring equipment. Baty products are for industrial, manufacturing and professional use, on the shop-floor, in tool rooms, and in other areas where precision measurement is critical.



Moore & Wright

Founded in 1906 by innovative young engineer Frank Moore, Moore & Wright has been designing, manufacturing and supplying precision measuring equipment to global industry for over 100 years. With roots fixed firmly in Sheffield, the company began by manufacturing a range of calipers, screwdrivers, punches and other engineer's tools.

Now part of Bowers Group, Moore & Wright continues its commitment to supplying industry with high quality, affordable products. Its ongoing pledge to research and development ensures that Moore & Wright remains at the forefront of global innovation.



CV Instruments

With the largest selection of portable and bench hardness testers currently available within the UK, the CV arm of Bowers Group has evolved into an all-inclusive material testing quality instrument supplier, with cost effective solutions to coating thickness, surface finish and many other disciplines now available.

Bowers is also exclusive UK reseller for the following leading metrology brands:



EUROPE





Universal Gauge

The Bowers Universal Gauge's ingenious modular format enables it to be quickly configured to suit almost any measuring challenge. Whether measuring internally or externally, the Universal's clever constant pressure device ensures accuracy and consistency of reading. The gauge's findings are displayed on its built in clear digital readout.

The unique modular construction of the Bowers Universal Gauge facilitates the fitting of a large variety of measuring contacts and adaptors, 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, whilst special adaptations for more unusual applications can be quoted on request.



Features

- Internal and external measurement
- Large measuring range possible 0-3000mm (0-118")
- Constant measuring force
- Supplied with digital readout
- 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

Code No	Description
TGUDEMO	Universal Gauge Full Set
TGUDEMO-BT	Universal Gauge Full Set (with Bluetooth)
TGU1000	Universal Gauge - supplied boxed. Compatible with extensions
TGUA001	Digital indicator with cowl
TGUA001-BT	Digital indicator with cowl (with Bluetooth)
TGUA006	Measuring arms 50mm (pair)
TGUA007	75mm Measuring Arms
TGUA008	100mm Measuring Arms
TGUA013	20mm Disc Anvils for measuring grooves
TGUA014	12mm Disc Anvils Int/Ext for measuring grooves
TGUA011	Shoulder anvils flat outside spigot diameter
TGUA012	Semi-cylindrical anvils for inside register diameters
TGUA010	Depth-stops (pair)
TGUA003	Clamping inserts (each)
TGUA004	Flat Measuring Anvil
TGUA005	Spherical contacts (each)
TGUA009	Mounting Attachment



TGUDEMO

Note: BT denotes Bluetooth

Universal Gauge Sets

Universal Gauge (extension compatible version) standard features:

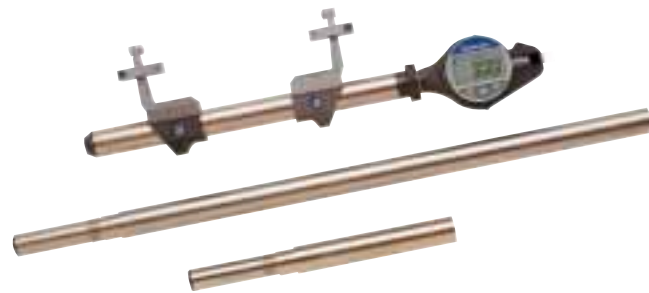
- Range 30-250mm internal / 0-215mm external 15mm anvil travel
- Constant measuring pressure
- Digital or mechanical readout
- 150mm and 500mm extensions available. Can be screwed together in multiples (up to maximum 3m recommended)
- Measuring table and supports available for conversion to bench gauge for the measurement of small components
- Covers approx 90% of all applications



SET CONTENTS - STANDARD VERSION

Code No	Description
TGUDEMO2	Set with box
TGUDEMO2-BT	Set with box (with Bluetooth)
TGU1000	Universal Gauge - supplied boxed. Compatible with extensions
TGUA001	Digital indicator with cowl
TGUA001-BT	Digital indicator with cowl (with Bluetooth)
TGUA003	Clamping inserts (each)
TGUA005	Spherical contacts (each)
TGUA006	Measuring arms 50mm (pair)
TGUA010	Depth-stops (pair)

TGUDEMO2



Universal Gauge (slide guideway version) standard features:

- Range 30-335mm internal / 0-300mm external 15mm anvil travel
- Slide guideway for rapid measuring contact alignment
- Constant measuring pressure
- Digital or mechanical readout
- Measuring table and supports available for conversion to bench gauge for the measurement of small components
- Covers approx 90% of all applications

TGUGSET01



SET CONTENTS - SLIDE GUIDEWAY VERSION

Code No	Description
TGUGSET01	Slide Guideway version-Set
TGUGSET01-BT	Slide Guideway version-Set (with Bluetooth)
TGU1000G	Universal Gauge - supplied boxed. Not Compatible with Extensions
TGUA001	Digital indicator with cowl
TGUA001-BT	Digital indicator with cowl (with Bluetooth)
TGUA003	Clamping inserts (each)
TGUA005	Spherical contacts (each)
TGUA006	Measuring arms 50mm (pair)
TGUA010	Depth-stops (pair)

Slide Guideway



Note: BT denotes Bluetooth



Universal Gauge and Accessories

Standard Gauge

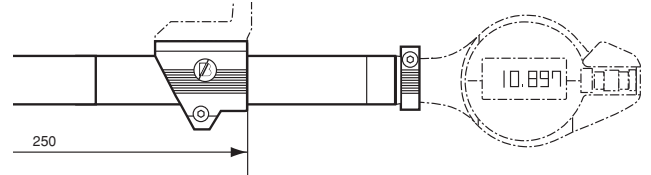
Code No	Range - Internal (mm)	Range - Internal (inch)	Range - External (mm)	Range - External (inch)
TGU1000	30-250	1.2-10.030	0-215	0.8-50

Slide Guideway Version

Code No	Range - Internal (mm)	Range - Internal (inch)	Range - External (mm)	Range - External (inch)
TGU1000G	30-335	1.2-13.20	0-300	0-11.80

EXTENSIONS: (for standard gauge only)

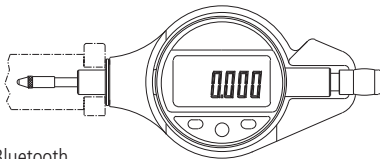
Dimn - A	Code No	Range - Internal (mm)	Range - Internal (inch)	Range - External (mm)	Range - External (inch)
150	TGUA033	30-400	1.2-15.00	0-365	0-14
500	TGUA032	30-750	1.2-29.00	0-715	0-28.0



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

Digital Indicator and Protective Shroud

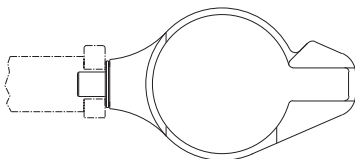
Code No
TGUA001
TGUA001-BT



Note: BT denotes Bluetooth

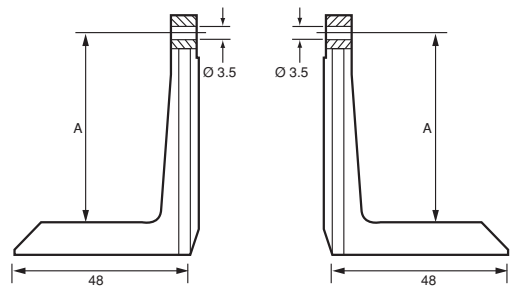
Protective Shroud for Dial/Digital Indicator

Code No
TGUA002



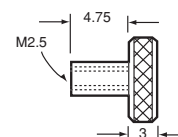
Measuring Arms

Dimn - A	Code No
50	TGUA006
75	TGUA007
100	TGUA008

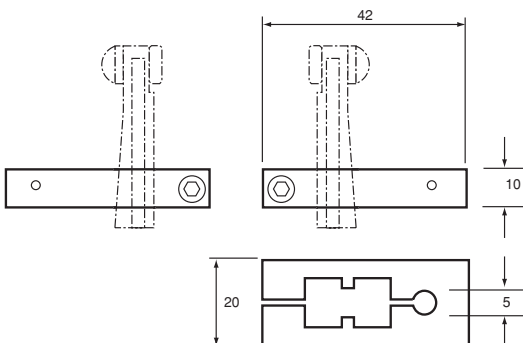


Clamping Insert

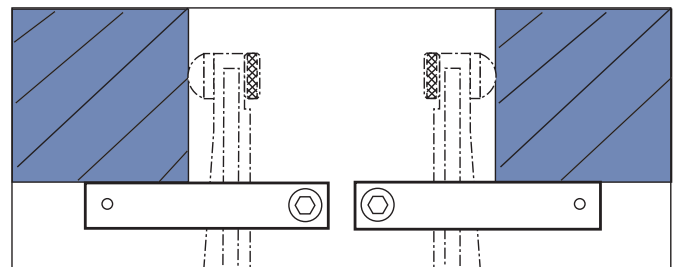
Code No
TGUA003



Adjustable Depth Stops for Measuring Arms



Code No
TGUA010



Spherical Tips

Code No
TGUA005

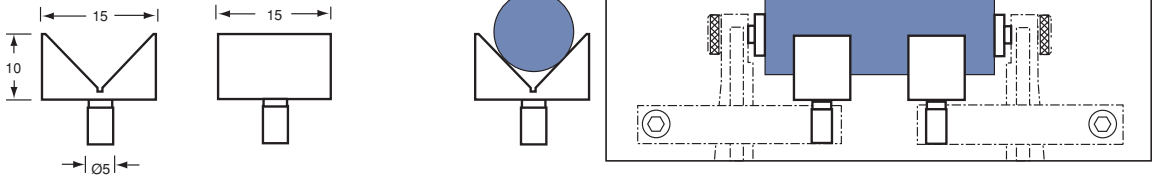
Flat Tips

Code No
TGUA004

Universal Gauge

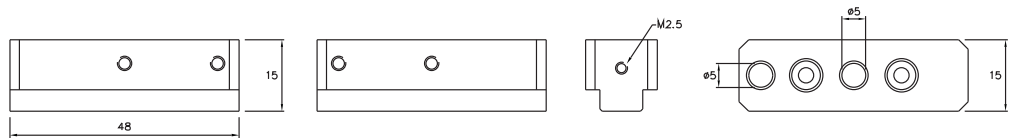
Vee Support for Length Measurement

Code No
TGUA022



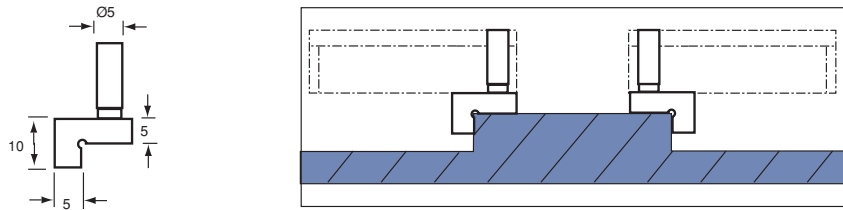
Mounting Attachments for use with the following Anvils

Code No
TGUA009



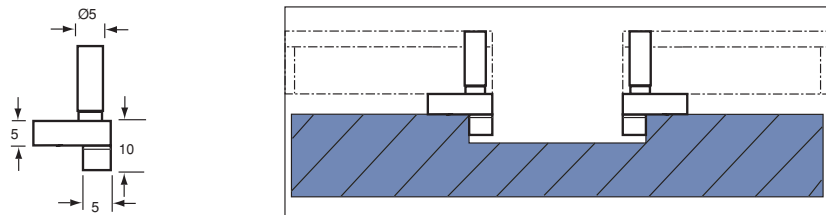
Shoulder Anvils Flat Outside Spigot Diameter

Code No
TGUA011



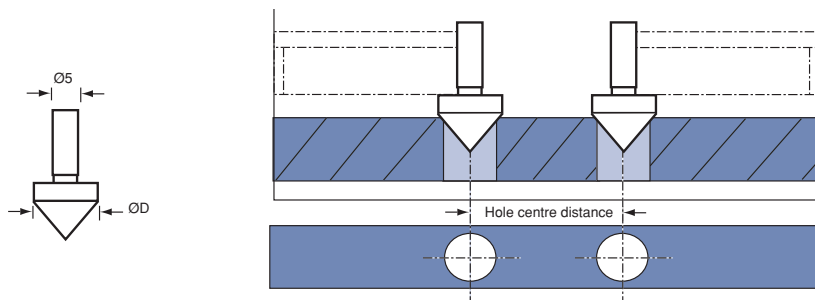
Semi-Cylindrical Anvils for Inside Register Diameters

Code No
TGUA012



Cone Anvils for Measuring Hole Centre Distance

Code No	Dimn - D
TGUA019	13
TGUA020	25
TGUA021	50



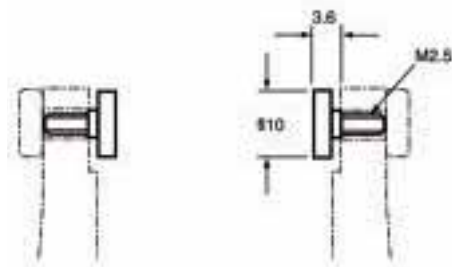


Universal Gauge

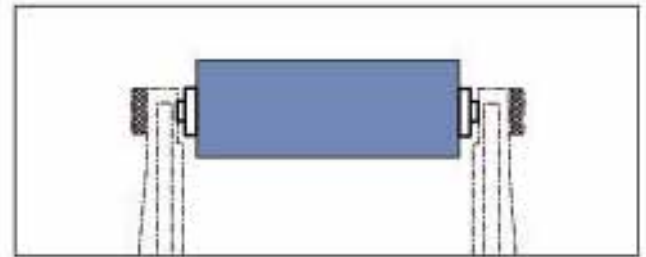
Various accessories for the Bowers Universal Gauge

CONTACTS FOR USE WITH MEASURING ARMS

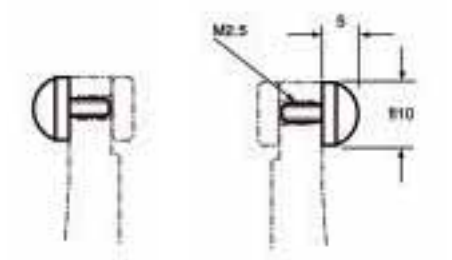
Flat Tips



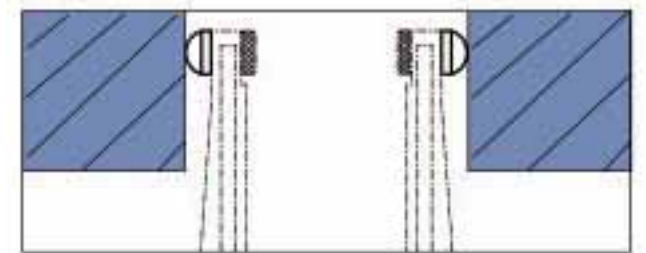
Code No
TGUA004



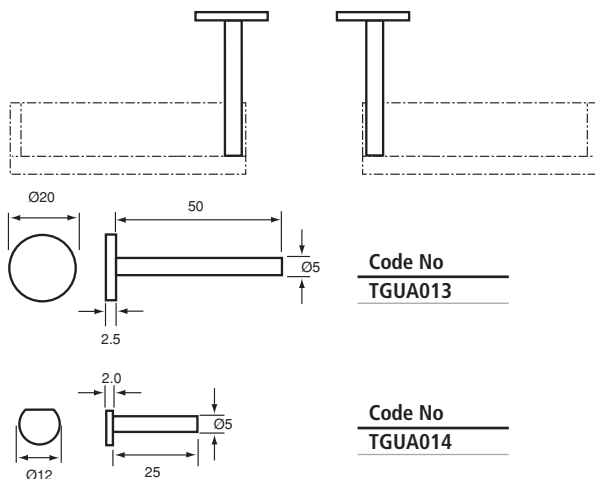
Spherical Tips



Code No
TGUA005

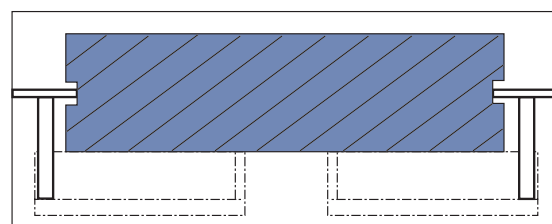
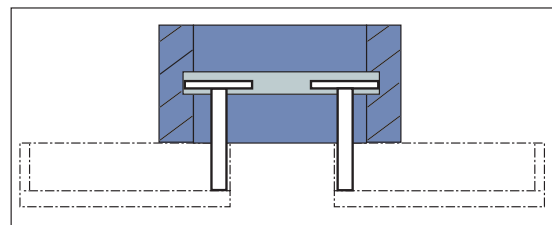


DISC Anvils for measuring Groove Diameter



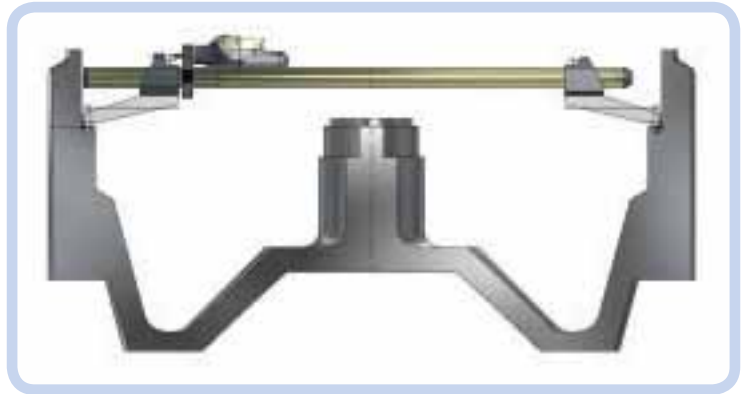
Code No
TGUA013

Code No
TGUA014

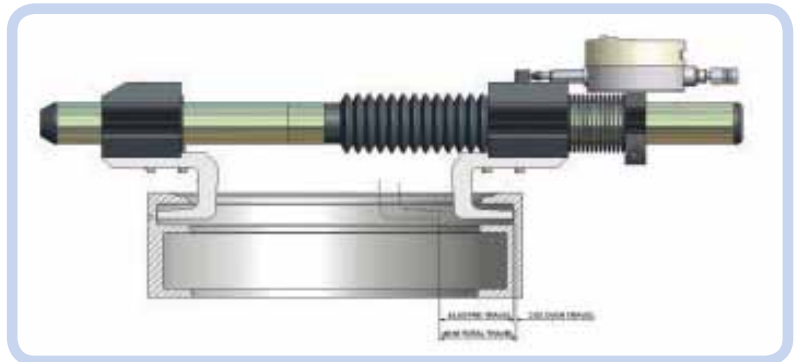
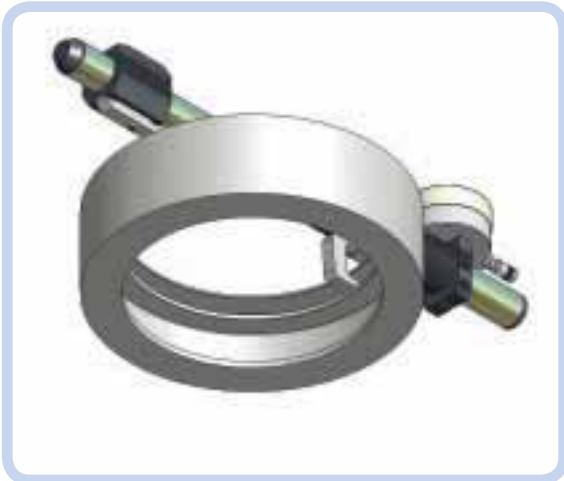


Bowers Universal Gauge Specials

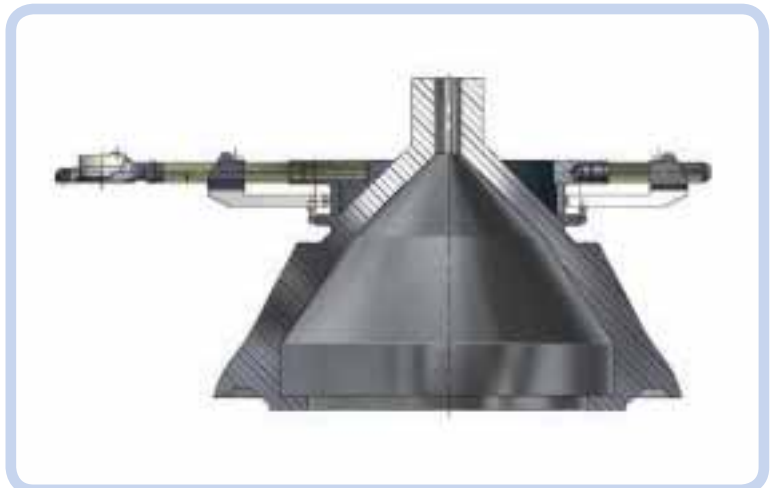
Universal Gauge incorporating on-board indicator and extra reach contact points.



Extended Travel Special Application Universal Gauge.



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





UNICAL 2 Universal Digital Caliper

Available in four standard sizes covering most large caliper applications, these revolutionary NEW digital gauges have lightweight reinforced main beams, giving them both incredible strength and lightness, aiding both accuracy and ease of use. All gauges have integrated Bluetooth transmission and IP67 protection. A range of flexible accessories further improves the usability of these advanced gauges.



Features

- Integrated Bluetooth Smart Low Energy data transmission
- Maximum speed of displacement: 2 m/sec
- Internal and external measurement
- System ensures smooth carriage movement and protects the beam against shocks
- Displays upper and lower tolerances
- Extremely light instrument
- IP67 protection
- 2 references
- Min/Max function
- Tolerance limit indicators
- Supplied complete with adapters for Bowers Universal accessories



UNICAL2-400 with accessories

UNICAL 2 UNIVERSAL DIGITAL CALIPER

Code No	Range (mm)	Maximum Error (µm)	Repeatability (µm)	Force	Output	Weight
UNICAL2-400	0-400	30	20	5-10N	Bluetooth / RS232 / USB	1.5kg
UNICAL2-600	0-600	40	20	5-10N	Bluetooth / RS232 / USB	1.6kg
UNICAL2-1000	0-1000	50	20	5-10N	Bluetooth / RS232 / USB	1.9kg
UNICAL2-1500	0-1500	90	20	5-10N	Bluetooth / RS232 / USB	2.3kg

Checkmaster Comparator

Checkmaster is the flexible gauging solution for short production runs. Simply setup your Universal Tooling set to suit your application (see opposite), fit your preferred indicator and zero against a master for fast accurate and incredibly repeatable results. Gauging force can be adjusted for softer materials and biased for either internal or external dimensions by a simple lever selection. This enables multi-dimension setups to be easily catered for.

Need absolute results?

Using Bowers' standard digital indicator, the master size can be pre-set. Now the results are displayed as Absolute dimensions. Tolerances can be entered and an out of tolerance symbol will flash for even quicker reference.

Tooling:

The Universal Tooling Set includes 2 x universal tooling blocks, combination blade / radius anvil, Mushroom anvils and mounting bars to allow a variety of internal and external features to be measured.

Checkmasters can be supplied with or without indicators. If ordered 'Less Indicator' the Checkmaster will be supplied with a set of split bushes to suit any 8mm or 3/8" stem mount gauge with a suitable reach.

Features

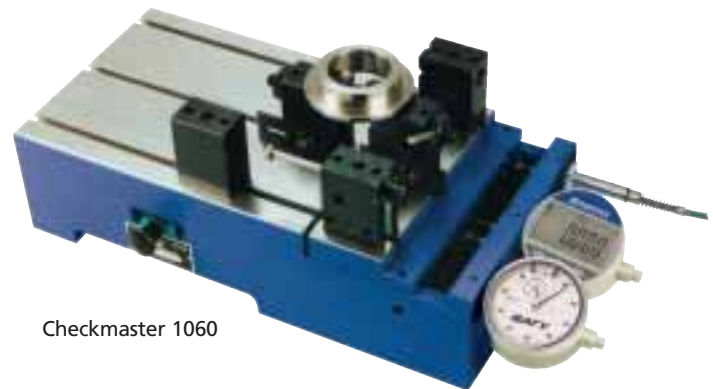
- Unique 3 gauge station and readout capability
- Remarkable versatility and repeatability
- Accepts most dial indicators, digital indicators (12.7mm travel) and Gauging Probes
- Excellent gauge repeatability and reproducibility (G.R. & R.) capability
- Exceptionally tough for shopfloor on-line inspection
- Measuring force, with adjustable setting
- Multi functional
- Ideal for SPC and 100% inspection
- Left or right hand operation

Need SPC, printed reports data storage?

Replacing the conventional indicator with a transducer linked to our Sylvac D300S digital readout will allow you to setup and store multiple parts each with pre-toleranced dimensions. Just setup the correct tooling situation, select the part / job number required from the D300S memory and you are ready to go.

SPC Data from previous measurements of the same part type can be viewed on the large colour screen and even printed direct from the D300S or transferred to a PC.

Full maths functionality included: take dynamic measurements such as roundness / concentricity or solve more complex applications by using multiple transducers.



Checkmaster 1060



1060-UTS

CHECKMASTER COMPARATOR

Code No	Description
1060-UTS	Universal Tooling Set for 1060 Checkmaster

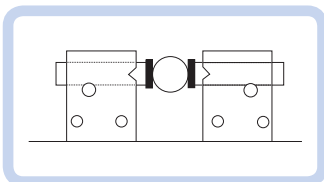
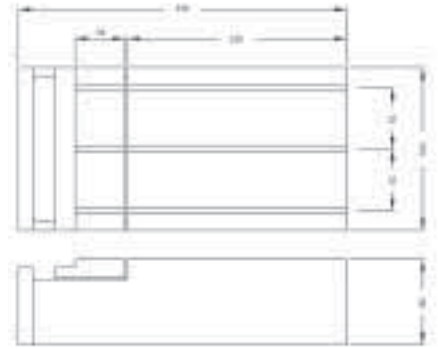


Checkmaster Tooling Applications and Dimensions

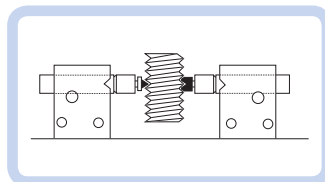
Features

- Diameters, internal and external
- Undercuts, O ring grooves, ball tracks internal and external
- Gear and spline pitch diameter internal and external
- Rolling gear test, gear to gear or gear to master
- Gear pitch diameter to shaft bore run out
- Holes centre to centre
- Concentricity bore to O.D.
- Step height, lengths, depths

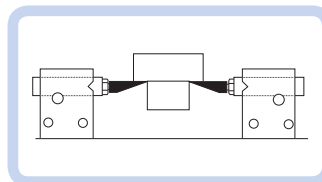
Checkmaster 1060
Code No: 1060



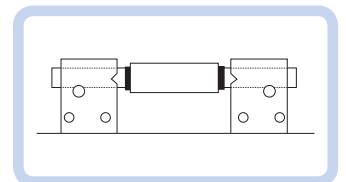
Outside Diameter



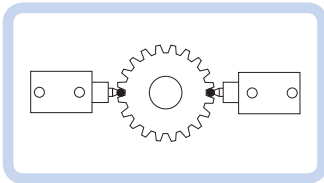
Thread Features



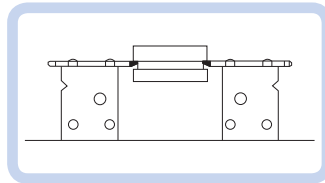
Undercut Depth



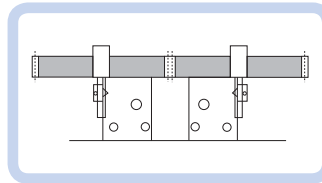
Length



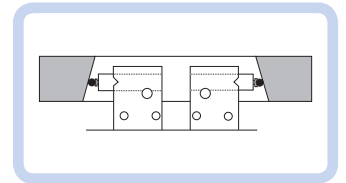
External Spline / Gear PCD



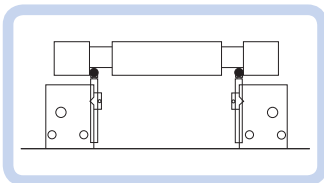
External Diameter



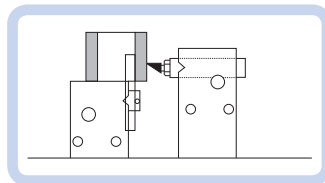
Rolling Gear Test



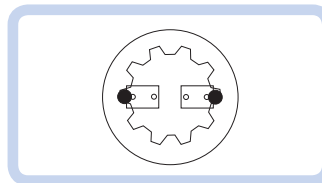
Internal Taper



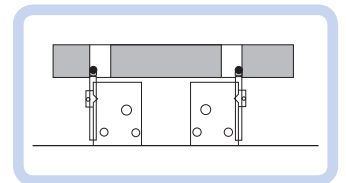
Bearing Face Distance



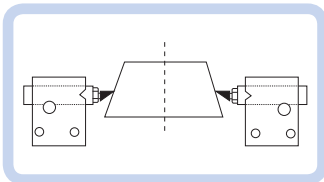
Concentricity / Wall Thickness



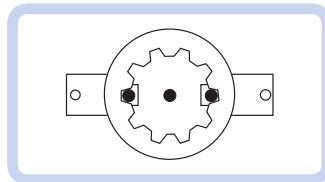
Internal Spline (Large Diameter)



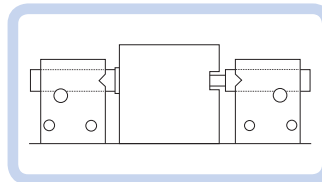
Hole / Slot Position



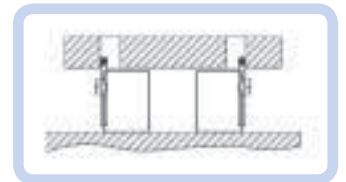
External Taper



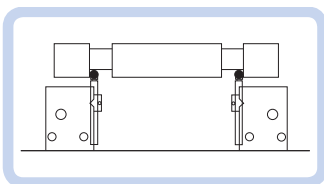
Internal Spline (Small Diameter)



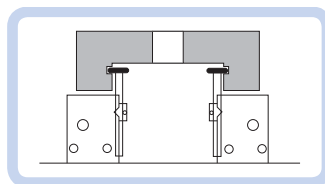
Slot Depth



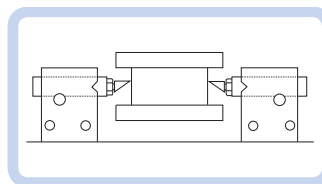
Hole Centres



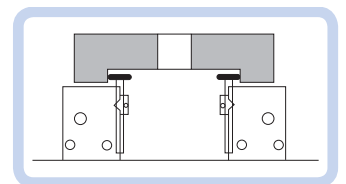
Web Thickness



Internal Recess Diameter



Recess Diameter



Bore Diameter

INTEX Comparator Beam Gauge

Developed to measure both internal and external diameters and lengths, the Intex gauge's aluminium extrusion beam gives it a rigid yet lightweight quality, making it ideal for shop-floor environments. The simple release of a locking thumbscrew enables the gauge's measuring direction to be changed quickly and easily.

Bluetooth
SMART
Option

WiFi
Option

RS232

Features

- Lightweight and rigid
- Measuring ranges: 200-400mm, 400-600mm, 600-800mm, 800-1000mm
- Sizes over 1000mm available on request
- Internal and external measurement
- 2mm travel on moving contacts
- Adjustable fixed contacts with up to 250mm adjustment range
- Digital or analogue indicator available
- Hardened steel wear pads locate gauge onto component aiding repeatability and prolonging service life
- Setting master required to set the instrument
- Instrument supplied without tooling



INTEXA01

INTEX BEAM GAUGE - Without Indicator

Code No	Range (mm)
INTEX01	200-400
INTEX02	400-600
INTEX03	600-800
INTEX04	800-1000

INTEX BEAM GAUGE - With Indicator

Code No	Range (mm)
INTEX01IND	200-400
INTEX02IND	400-600
INTEX03IND	600-800
INTEX04IND	800-1000

INTEX BEAM GAUGE - With Indicator (Bluetooth)

Code No	Range (mm)
INTEX01IND-BT	200-400
INTEX02IND-BT	400-600
INTEX03IND-BT	600-800
INTEX04IND-BT	800-1000

Code No	Description
INTEXA01	Standard contacts - 10 diameter (pair)

Note: BT denotes Bluetooth



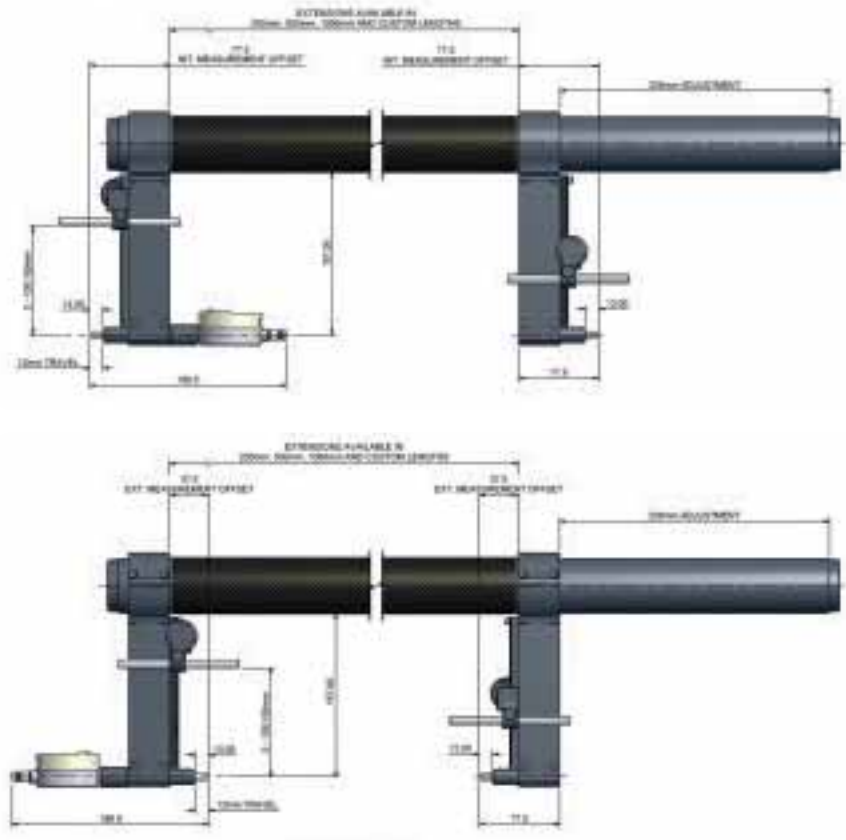
Carbon Fibre Comparator Beam Gauge

Designed to measure both internal and external diameters and lengths, the high modulus carbon fibre beam is stiff, lightweight and has an extremely low co-efficient of thermal expansion (CTE). Suitable for measuring high accuracy diameters and lengths up to 4000mm+.



Features

- Extremely lightweight even at 4m span
- Extremely low co-efficient of thermal expansion
- Measuring capacity of standard set:
External: 0 > 1930mm
Internal: 150 > 2150mm
- Modular design of beam allows infinite level of adjustment within the above ranges
- Additional 1000mm extensions add quickly and cost effectively to the gauge capacity
- Internal and external measurement:
0 > 105 (150)mm measurement depth from component face
- 12mm anvil travel
- Digital or mechanical readout
- Tooling included for presetting gauge on Trimos horizontal machines
- Bluetooth option available



Sets include:

- Pair gauge legs
- Fixed leg tube
- Moving leg tube
- 250mm Carbon Fibre Extension Tube
- 500mm Carbon Fibre Extension Tube
- 1000mm Carbon Fibre Extension Tube
- Tooling to suit Trimos setting machine and storage/travel case



CFBG01 - Carbon Fibre Beam Gauge Set



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