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
- 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

<table>
<thead>
<tr>
<th>Code No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGUDEMO</td>
<td>Universal Gauge Full Set</td>
</tr>
</tbody>
</table>

Tel: 08708 50 90 50  Fax: 08708 50 90 60  Partners in Precision
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

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

SET CONTENTS - STANDARD VERSION

<table>
<thead>
<tr>
<th>Code No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGUDEMO2</td>
<td>Set with box</td>
</tr>
<tr>
<td>TGU1000</td>
<td>Universal Gauge - supplied boxed</td>
</tr>
<tr>
<td></td>
<td>Compatible with Extensions</td>
</tr>
<tr>
<td>TGU001</td>
<td>Digital indicator with cowl</td>
</tr>
<tr>
<td>TGU003</td>
<td>Clamping inserts (each)</td>
</tr>
<tr>
<td>TGU005</td>
<td>Spherical contacts (each)</td>
</tr>
<tr>
<td>TGU006</td>
<td>Measuring arms 50mm (pair)</td>
</tr>
<tr>
<td>TGU010</td>
<td>Depth-stops (pair)</td>
</tr>
</tbody>
</table>

SET CONTENTS - SLIDE GUIDEWAY VERSION

<table>
<thead>
<tr>
<th>Code No</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGU001</td>
<td>Digital indicator with cowl</td>
</tr>
<tr>
<td>TGU003</td>
<td>Clamping inserts (each)</td>
</tr>
<tr>
<td>TGU005</td>
<td>Spherical contacts (each)</td>
</tr>
<tr>
<td>TGU006</td>
<td>Measuring arms 50mm (pair)</td>
</tr>
<tr>
<td>TGU010</td>
<td>Depth-stops (pair)</td>
</tr>
</tbody>
</table>

For more information visit www.bowers.co.uk
Universal Gauge and Accessories

Standard Gauge

<table>
<thead>
<tr>
<th>Code No</th>
<th>Measuring Range Internal:</th>
<th>Measuring Range External:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGU 1000</td>
<td>30-250mm (1.20-10.030&quot;)</td>
<td>0-215mm (0-8.50&quot;)</td>
</tr>
</tbody>
</table>

Slide guideway version

<table>
<thead>
<tr>
<th>Code No</th>
<th>Measuring Range Internal:</th>
<th>Measuring Range External:</th>
</tr>
</thead>
<tbody>
<tr>
<td>TGU 1000G</td>
<td>30-335mm (1.20-13.20&quot;)</td>
<td>0-300mm (0-11.80&quot;)</td>
</tr>
</tbody>
</table>

EXTENSIONS (for standard gauge only)

<table>
<thead>
<tr>
<th>Range Internal</th>
<th>Range External</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-400mm</td>
<td>0-365mm</td>
</tr>
<tr>
<td>30-750mm</td>
<td>0-715mm</td>
</tr>
</tbody>
</table>

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

Digital Indicator and Protective Shroud

Code No TGU A01

Protective Shroud for Dial/Digital Indicator

Code No TGU A02

Measuring Arms (reversible for inside/outside diameters)

<table>
<thead>
<tr>
<th>Size</th>
<th>Code No</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>TGU A06</td>
</tr>
<tr>
<td>75</td>
<td>TGU A07</td>
</tr>
<tr>
<td>100</td>
<td>TGU A08</td>
</tr>
</tbody>
</table>

Clamping Insert

Code No TGU A03

Adjustable Depth Stops For Measuring Arms

Code No TGU A010

Spherical Tips

Code No TGU A05

Flat Tips

Code No TGU A04

Tel: 08708 50 90 50 Fax: 08708 50 90 60 Partners in Precision
Universal Gauge
Vee Support For Length Measurement

Mounting Attachments For Use With The Following Anvils

Shoulder Anvils Flat Outside Spigot Diameter

Semi-Cylindrical Anvils For Inside Register Diameters

Cone Anvils For Measuring Hole Centre Distance

For more information visit www.bowers.co.uk
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 customer supplied component drawing.

CONTACTS FOR USE WITH MEASURING ARMS

Flat for Outside Diameter/Length

Spherical for Inside Diameters

DISC Anvils for measuring Groove Diameter

Contact Information:
Tel: 08708 50 90 50  Fax: 08708 50 90 60
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.

For more information visit www.bowers.co.uk
Checkmaster Comparator

Available in two sizes, 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.

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

Checkmaster Dimensions

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, set of Allen keys and a wooden storage box.

Tel: 08708 50 90 50  Fax: 08708 50 90 60  Partners in Precision
Checkmaster Comparator

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.

For more information visit www.bowers.co.uk
Checkmaster Tooling Applications

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

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.

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

<table>
<thead>
<tr>
<th>Code No</th>
<th>Measuring Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTEX01</td>
<td>200-400mm</td>
</tr>
<tr>
<td>INTEX02</td>
<td>400-600mm</td>
</tr>
<tr>
<td>INTEX03</td>
<td>600-800mm</td>
</tr>
<tr>
<td>INTEX04</td>
<td>800-1000mm</td>
</tr>
</tbody>
</table>

INTEX shown with standard contacts fitted (available as extras)

INTEXA01 - standard contacts

For more information visit www.bowers.co.uk
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

Set Contents
- Pair gauge legs
- Fixed leg tube
- Moving leg tube
- 250mm CF ext. tube
- 500mm CF ext. tube
- 1000mm CF ext. tube
- Tooling to suit Trimos setting machine
- Storage/travel case

Tel: 08708 50 90 50  Fax: 08708 50 90 60