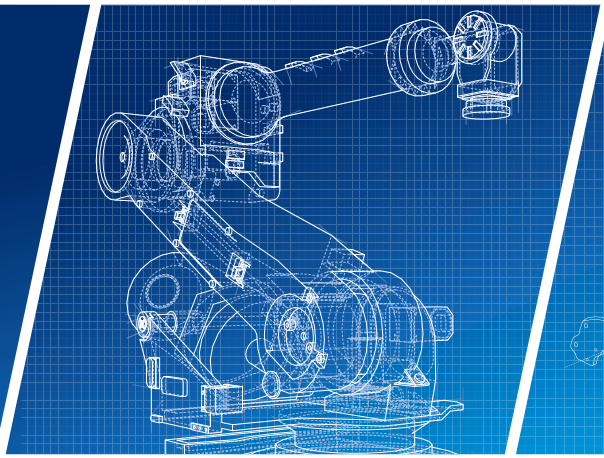
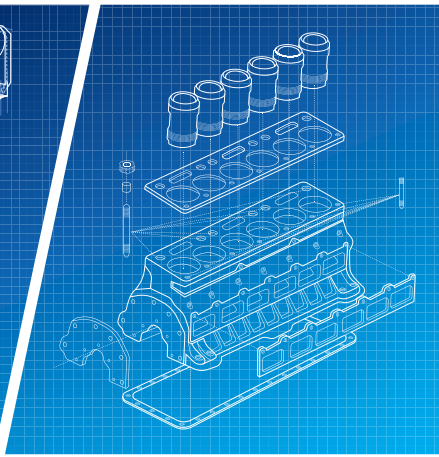
BOWERS GROUP

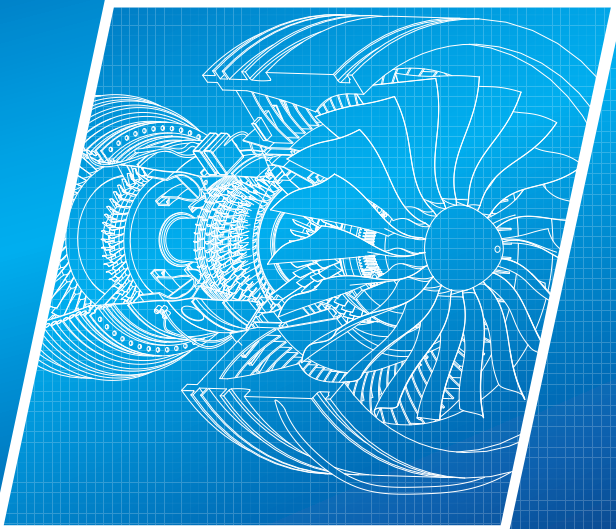
PARTNERS IN PRECISION

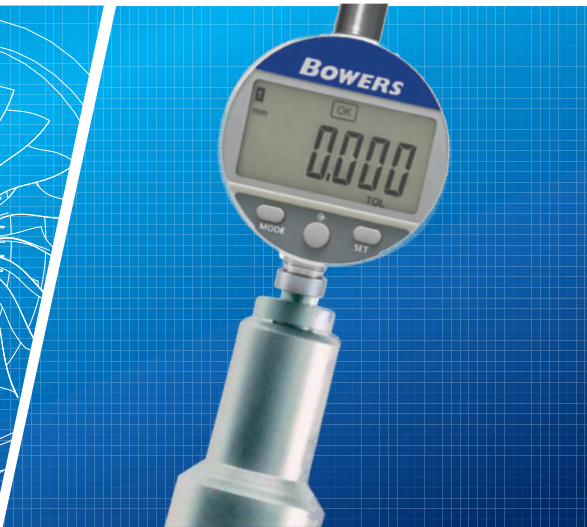
NYLI
METROLOGY





AEROSPACE MEASUREMENT SOLUTIONS





Measurement of Dovetail Slots & Turbine Blade Grooves

Bowers was approached by a well-known industrial turbine manufacturer to develop a method of measuring dovetail slot width and position in a circular component. The datum for the measurements was taken from the shoulder of the slot replicating the final 'In Service' blade datums.

Bowers' Special Applications Team developed a special 2 Point head solution based on the popular Bowers XT system. The system incorporates tungsten carbide ball contacts for high accuracy. The Bowers XT digital readout offers the capability to send data for SPC and part traceability.

The Bowers dovetail variable gauge is able to output the actual size and position as opposed to competitors' attribute (Go / No Go) gauging. The gauge has a long working life and doesn't wear like attribute gauging.

In addition to the dovetail gauges, Bowers Specials department can also offer another forms of turbine measurement.

Fir-Tree

The roots of a turbine blade are subject to high forces and high temperature, as a result, the roots are formed with fir tree geometry.

Bowers can offer a hand held gauge with a unique setting master to offer a quick and easy measuring solution. Bowers' Special Applications Team have developed a special 2-Point head solution. The system incorporates tungsten carbide ball contacts for high accuracy.

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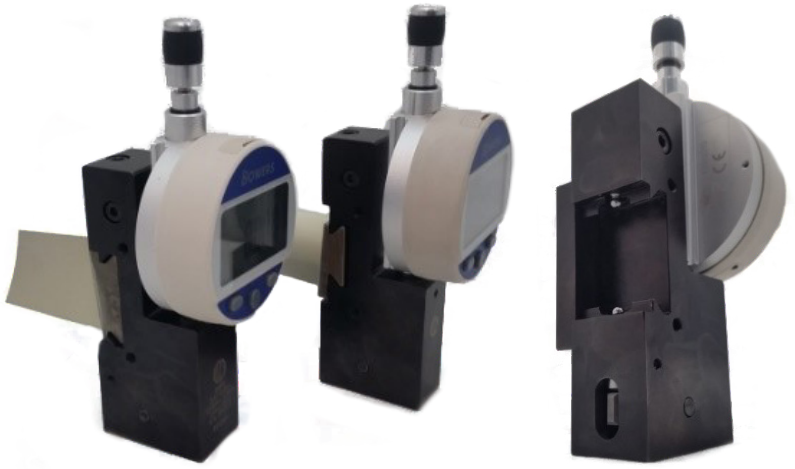


Digital Countersink Gauge

The Bowers Countersink Gauge can be used to check the major diameters of countersinks in the aircraft outer skin, prior to the application of rivets. The gauge can also be used for countersink measurement in general applications within the aerospace, automotive and other related industries.

- Standard range diameter 6-16mm / 1/4-5/8"
- Switchable resolution - inch/metric true conversion
- Preset facility
- Tolerance mode
- RS-232 data output
- Robust construction, hardened plunger, induction hardened body
- Standard plungers available to cover 100º and 130º
- Other angles available on request
- Setting master supplied as standard
- Bluetooth option available

Measurement of a countersink inside a bore

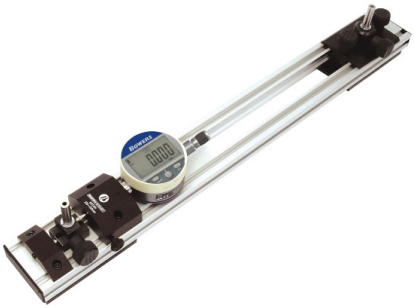
Microgauge countersink style unit for 1-6mm

Intex Beam Gauge

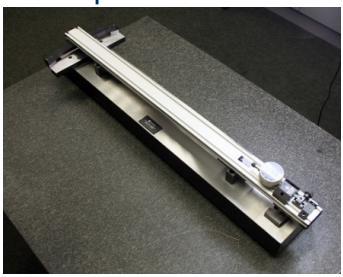
Bowers can adapt the standard Intex & Universal gauging for a multitude of requirements.

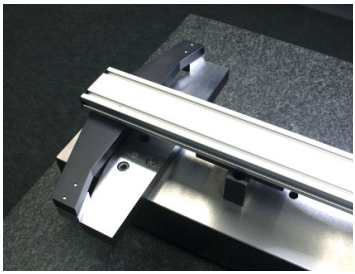
Developed to measure both internal and external diameters and lengths, the Intex gauge's aluminium extrusion beam gives it a rigid yet lightweight quality, making it ideal for shop-floor environments.

- 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



3-point External Measurement of Fan Blades





Internal/External Annular Grooves