

Application Story

Checking a groove inside a bore

The Challenge

Manufacturing a piston or an engine component often involves awkward geometric features, such as groves inside a bore or cavity.

Because they are part of a high tolerance system, the inner groove must still be gauged with a precise instrument. But non-contact sensors or pencil probes are impractical and space is limited.

The Solution

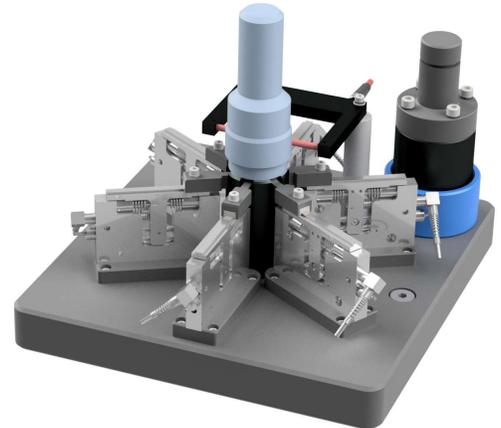
Solartron specialty sensors such as Block Gauges provide the ability to check awkward dimensions accurately and repeatably, and with a lower cost than non contact offerings.

Block Gauges have the probe mounted on the side of the base, and is connected to a sliding top piece with robust, precision linear bearings. A top tool, tip holder, and tip can then be used to measure up inside a bore. Custom tools can also be created. (Right) With the optional pneumatic cylinder, the tip can then shuffle into a groove, and a measurement is taken.

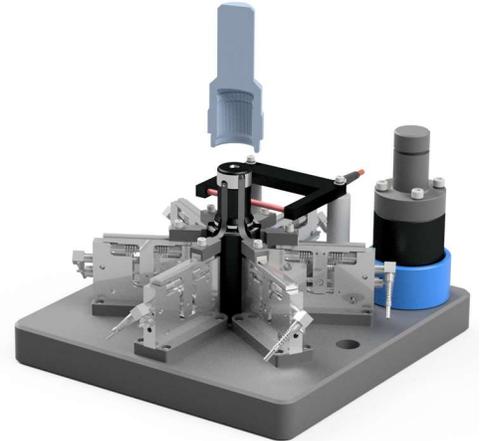
- 2, 5, and 10mm ranges
- Up to 0.05% of reading accuracy, 0.25 micron repeatability
- Tip Holders with 20mm to 50mm length



Actual Arnold Gauge on Factory Floor

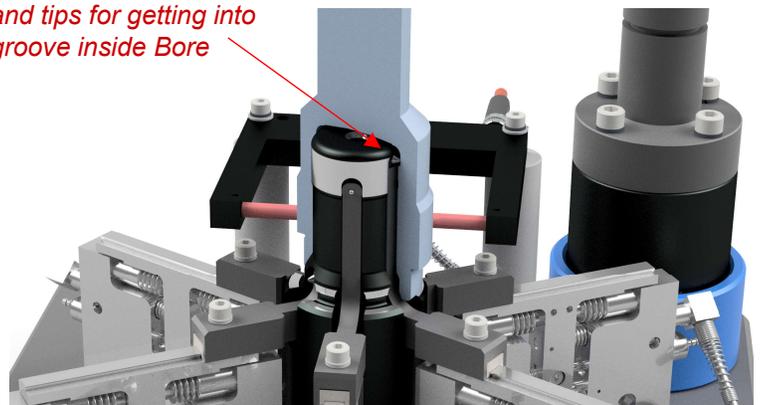


Gauge for Transmission component. Pictures courtesy of Arnold Gauge in West Chester Township, Ohio, USA. www.arnoldgauge.com



Custom Tool Holders and tips for getting into groove inside Bore

Gauge with cutaway of part



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