



## Application Story

### Gauging of Bearings

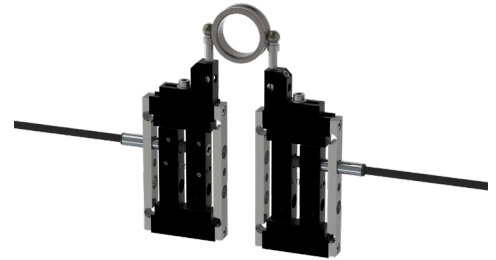
#### The Challenge

The manufacturing of Ball and Pin Bearings require processes to extreme tolerances, with quality checks that must be quick, repeatable, and precise. Linear Encoders or Non-Contact sensors might not be viable, because of repeatability or measurement rate issues.

#### The Solution

Solartron Metrology, a world leader in Precise Linear Measurement, provides multiple solutions for the gauging of Bearings.

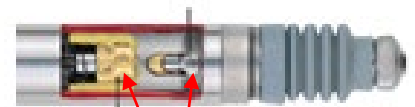
- **Ultra High Resolution and Repeatability:** Solartron sensors have resolution as high as **0.01  $\mu\text{m}$**  and repeatability as high as **0.05 $\mu\text{m}$** , even under a sideload.
- **Robust Design:** Solartron has probe designs for better repeatability, including a sideload pin and an additional sleeve around the bearings.
- **Endurance:** Solartron sensors have been tested to 13 million cycles under a harsh “cam” test. In the field, they have lasted for hundreds of millions of cycles without no loss of repeatability.
- **IP 68 Option:** For environments where grease and oil are present, probes can be fully sealed to IP 68. Special gaters and materials are available for harsher oils and liquids
- **Quick Readings:** Gauging with Solartron means multiple, quick reliable measurements of any free form shape using a custom gauge or stand. All readings can instantaneously be output to a PC or PLC.
  - Digital Orbit® products with Min/Max outputs
  - Specialized sensors for tougher measurements
- **Lower costs:** The quick cycle times and repeatable measurements means cost savings in labor as well as higher quality standards



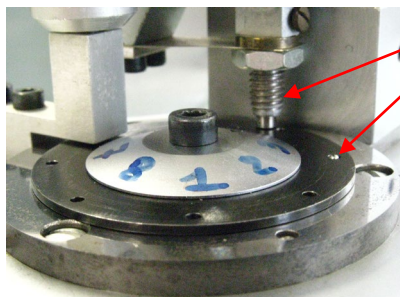
*Flexures may also be used for diameter checks in tougher environments. Tips are easier to replace.*



*Solartron probes endure a rugged “stepped cam” test that can simulate roller bearings actuating a probe.*



*Tight tolerance carbon ball bearings and an anti rotation device lead to excellent repeatability and endurance*



*Solartron probe checking a high tolerance bearing diameter. Bearing is loaded into rotating shuttle.*



*Solartron Mini Probes can be used to check the ID of roller bearings*

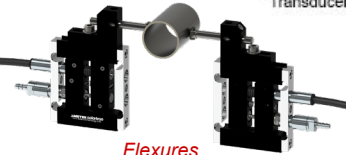
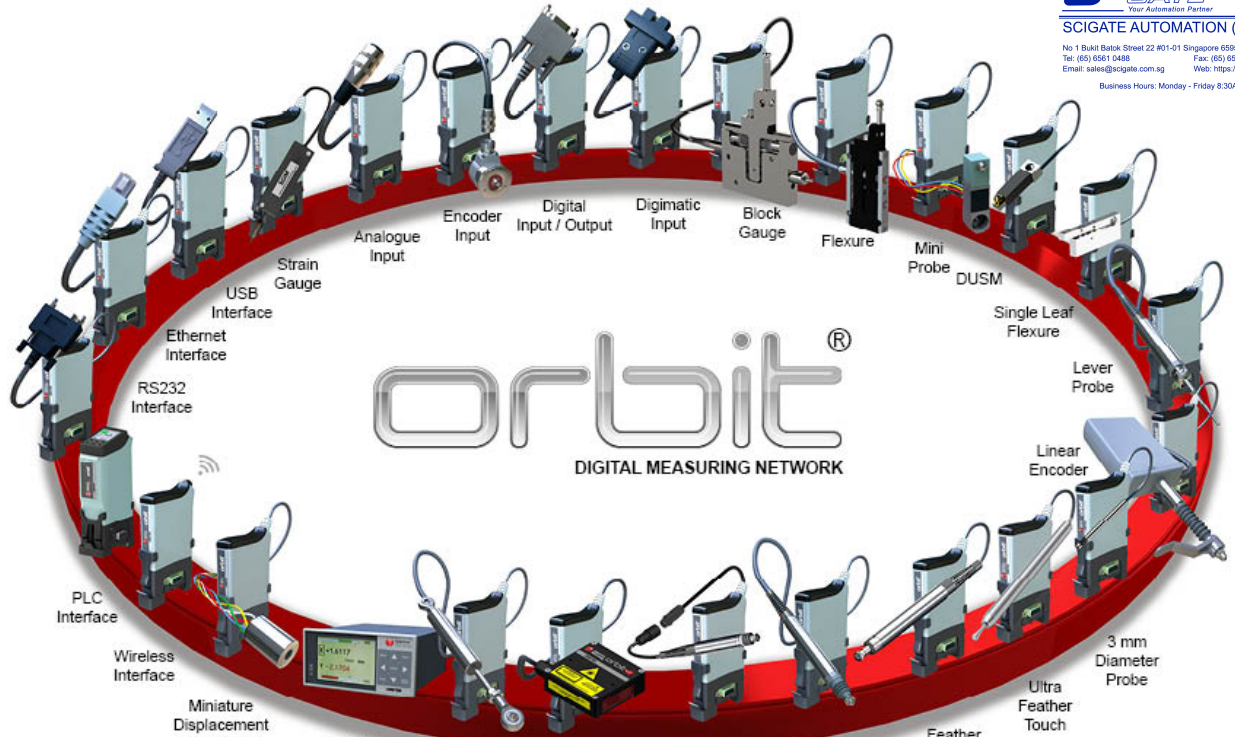


*Gauging probes with SI 200 system performing a simple diameter check*

## Orbit® – The Total Measurement System from Solartron Metrology

The Solartron Orbit® Digital Measurement System, provides a limitless set of measuring system solutions, with numerous different interfaces to computers and PLC's.

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*Flexures*



*Block Gauges*



*Displacement*

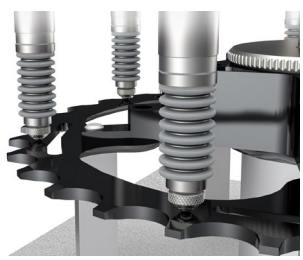


*Multi Channel Wireless Gauge*



*Bore Gauging*

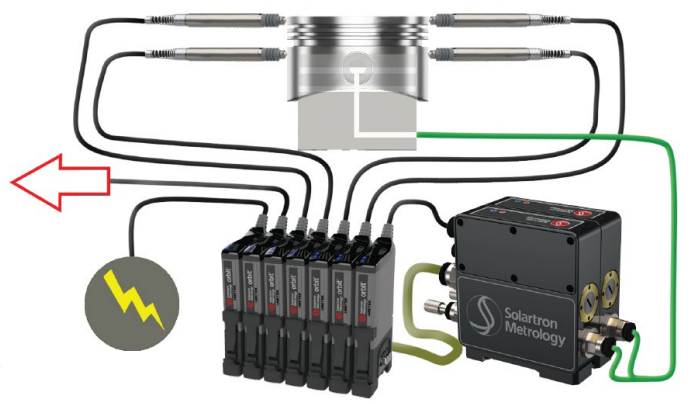
*G-Type (With signal conditioning mounted at the end)*



*Gauging Flatness of a Bicycle Gear*



*Orbit GCS Software*



*Measurement of Piston with Air Gauging checking ID, and connected to Orbit with the Air Gauge Module. OD Checked with Digital Probes.*