Digital Gauging Probes

Application Story

Flatness

Feather Touch

The Challenge

In Electronics and Automotive components, the flatness of a part may be a critical feature. Everything from Cell Phone glass to a Brake Disc may carry sub-micron tolerances for flatness, so they may properly fit inside a larger assembly.

For this, several points over a small surface area must be checked, with high accuracy being a key feature. Non Contact 3D or Imaging solutions can be used, but with a high cost and possible loss in accuracy.

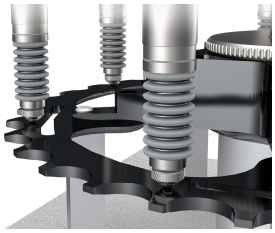
Flatness check of glass in a cell phone casing with Ultra Feather Touch probes

The Solution

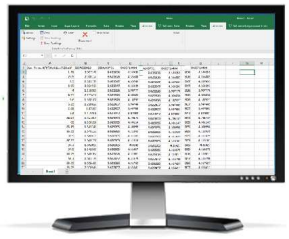
Solartron Digital Gauging Probes provide excellent performance for Flatness applications due to the following features:

- **Class leading resolution of down to 0.01 µm**. This means even the slightest variability between points will be measured.
- **Repeatability of up to 0.015 µm**. Measurements will be consistent from part to part.
- **Low Tip Forces**: Solartron offers low tip forces of 0.30N with its Feather Touch probes and 0.03 to 0.05N with it's Ultra Feather Touch probes, meaning the surfaces being checked won't be scratched or damaged. In addition, the low forces mean a part won't be "lifted" or shifted during measurement.
- **Measure Multiple points easily**: With the Solartron Orbit® network, up to 200 points can be allocated instantaneously and output to a PC or PLC. Flatness or "Max – Min" can then be calculated using Orbit GCS, Excel Add-In, or other software.
- **Lower Cost:** A Solartron Gauging Probe provides significantly lower cost per point compared to a costly imaging system or 3D scanner, with higher repeatability and easier set up.

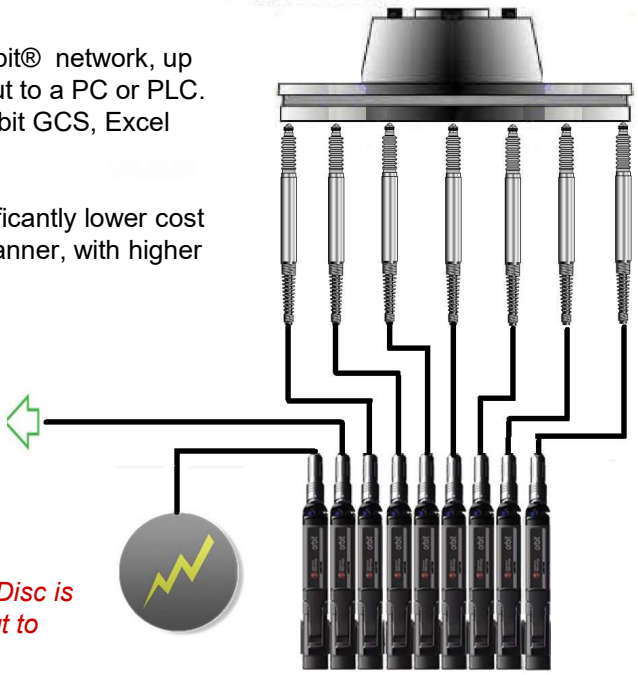
6mm and 3mm Diameter Probes mean several points can be checked for flatness in tighter areas



Gauging Flatness of a Bicycle Gear



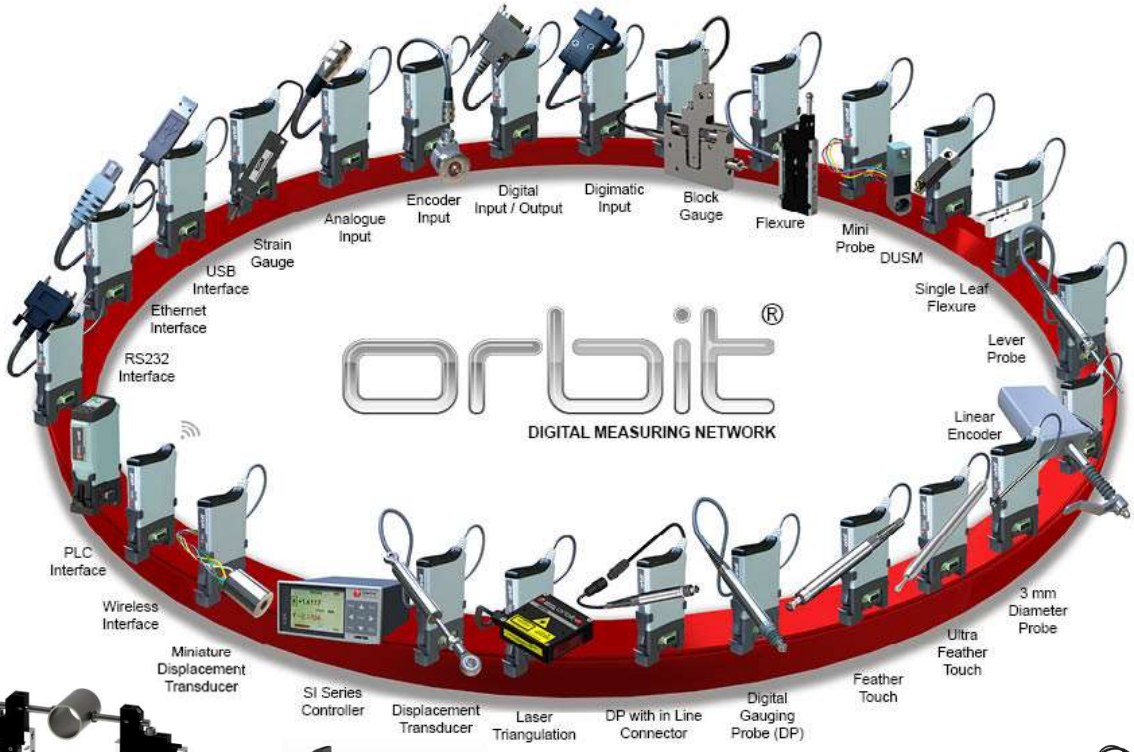
Flatness of a Brake Disc is measured and output to Excel



Digital Probes & The Orbit® Network

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.



Flexures

Block Gauges

Displacement

Multi Channel Wireless Gauge

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

Bore Gauging

DP Mini Probes

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.