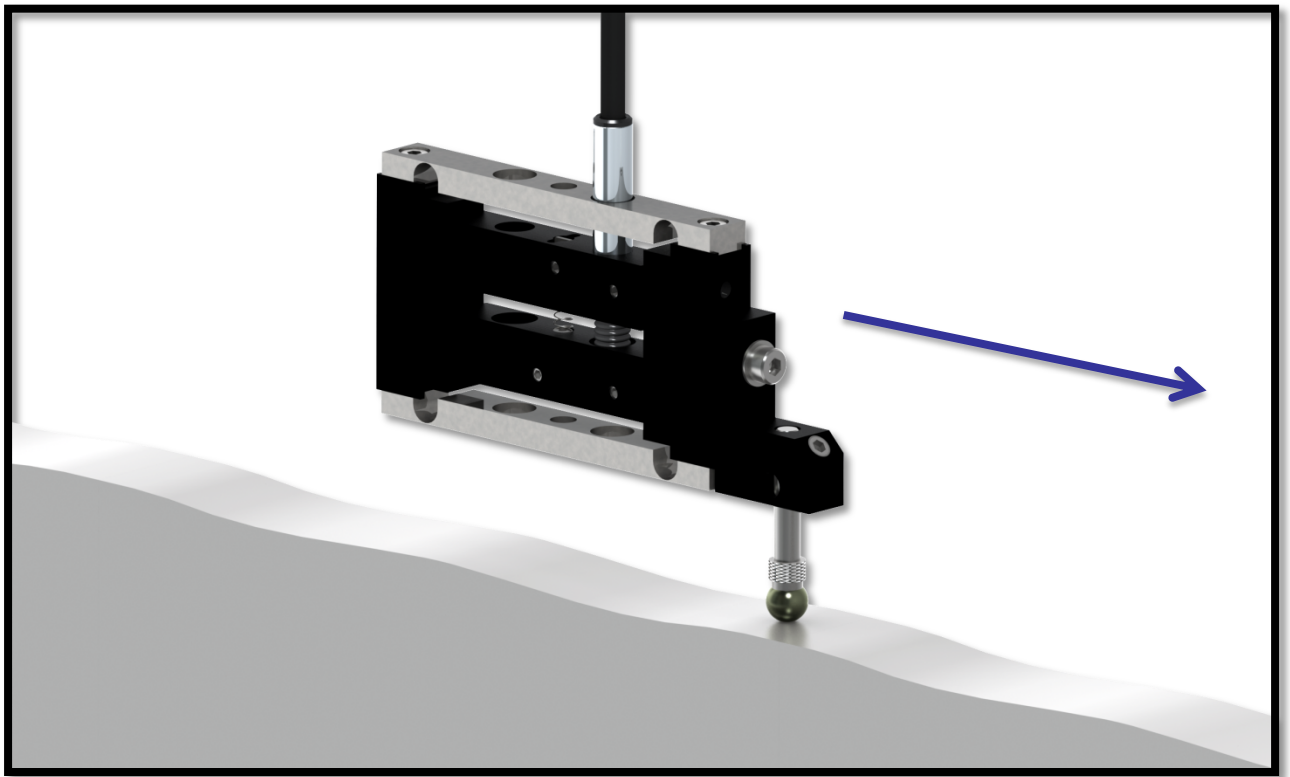


## Application Story

*Dynamic*

# Measuring moving materials using Digital Probes and Flexures



Precision. Quality. Reliability

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## The Products

The Spring Push Gauging Probe has justifiably become the work horse of the gauging industry, with very high resolution, excellent linearity and high data speed. Long life precision bearings and an IP65 rating ensure that probes maintain their performance for millions of cycles.

Solartron's Digital Flexures are ideal for very high volume and high precision applications such as component gauging. They are often the best solution for measuring moving material, using the Orbit® 3 Network for fast data transmission.

## The Challenge

Non Contact measuring systems, such as Laser, are commonly used for measuring moving material and they are often effective. However, they are not always practical, cost effective or even possible to use in certain applications so contact methods may need to be considered.

As with non contact systems, contact systems need careful consideration before choosing the best product for the job. The speed of the material moving below the tip and surface finish have a significant effect on the life of the transducer.

## The Solution

Resting a ball tip on moving material may work well for short distances but it is not really suitable for continual use. Side loads may attempt to rotate the bearing, affecting accuracy and shorten the life of the probe.

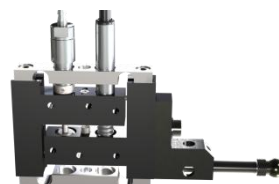
To correct this, wheel tips are commonly used in measuring moving material. They are suitable for medium accuracy applications ( $\pm 1.0 \mu\text{m}$ ). The roundness of the wheel and wear on the wheel bearing affect accuracy and these errors should be added to the accuracy of the transducer.

Flexures probably have the best overall performance for contact measurement of moving material.

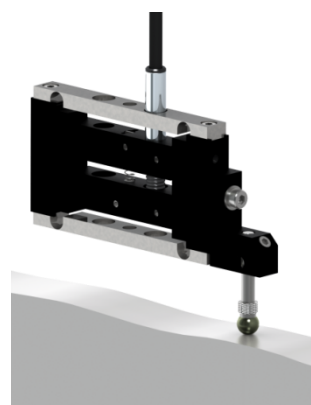
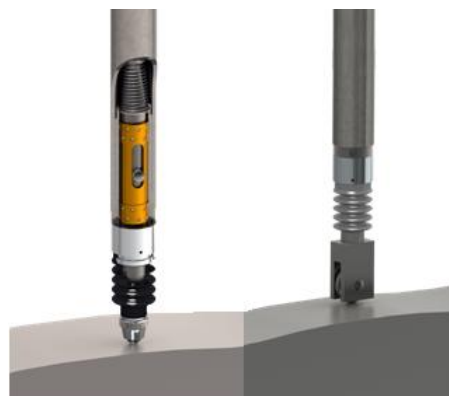
Linear forces through the flexure and no sliding components within the flexure help to ensure excellent performance and a very long life.



Range:	From 2 to 20 mm
Accuracy:	Up to 0.05% of reading
Resolution:	Up to $0.01 \mu\text{m}$
Repeatability:	Up to $0.15 \mu\text{m}$



Range:	1 or 2 mm
Accuracy:	Up to 0.1% of reading
Resolution:	Up to $0.1 \mu\text{m}$
Repeatability:	Up to $0.01 \mu\text{m}$



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