

# Dimensional monitoring of mechanical parts: shape faults

## Objective

Following part manufacture or wear, to detect any shape faults, using a quick and reliable method that is easy to use.

## Main components

- Solex pneumatic micro-measurers
- Dedicated jet buffer

## Advantages

Solex pneumatic micro-measurers that use a jet buffer that is specific to the part needing to be checked, provides an instant reading of great accuracy.

The method is independent of the operator and can be initiated by a non-qualified operator.

## Application

There are a large number of applications, since a large number of faults that need monitoring are possible. These include in particular:

- Straightness by measuring lateral deflection. The type of buffer used is illustrated in figure 1. This system of measurement is for example applicable to monitor the straightness of the tubes for hydraulic cylinders, car shock absorbers, etc.
- The perpendicularity of a bore to a face using a buffer with 4 measuring points, as shown in figure 2. This type of inspection can be used on prosthetic parts, or gear box gearing systems for the automobile sector - as examples.

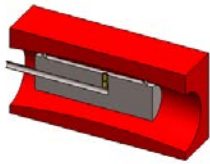
However, other inspection procedures are possible using suitable systems, for particular cases such as parallelism, twisting, and depths of grooves.

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## Options & Developments

SOLEX micro-measurers also are available in NEW electronic versions. This allows the recording and storage of the measurement data, along with their statistical processing. This gives an advanced analysis of manufacturing performance

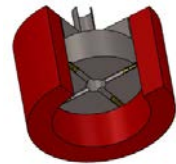
The pneumatic contactless measurement method can also be coupled up with contact measurement systems using sensors, when the material of the part to be inspected allows it. In this way checks on flatness can be carried out on disk brakes, for example. Robots can be used to simplify and automate the handling of a part.



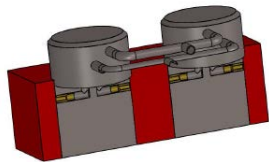
1. Checking for bore straightness



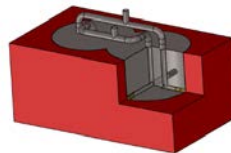
2. Checking for bore perpendicularity with a face



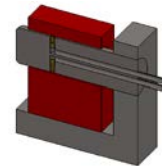
3. Measuring mean diameter



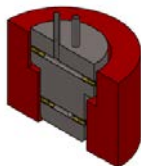
4. Measuring the centre line distance between two non-secant bores



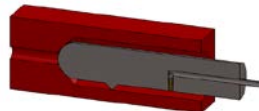
5. Measuring the centre-line distance between two secant bores



6. Measuring the distance of a bore from a face



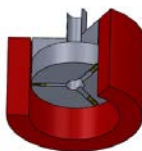
7. Simultaneous measurement of two bores



8. Check the coaxiality of a conic seat and a bore



9. Check the coaxiality of a conic seat and a bore



10. Checking triangulation



11. Checking the parallelism of two bores