

Dimensional control of knee prosthesis

Objective

Quickly and accurately to check the geometry of the pieces making up the prosthesis

Main components

- Solex pneumatic micro-measuring systems
- Dedicated air gauge

Advantage

With a suitable air gauge the Solex flowmeter takes a rapid and accurate angle measurement of a part.

Application

The complete knee prosthesis is made up of three parts:

- The femoral part is a metal articular surface fixed to the femur.
- The polyethylene femur-tibia interface slides and stabilises the articulation between femur and tibia.
- The tibia base is a metal part fixed into the tibia on which the articulated joint rests.

The geometry of the mechanical parts is the determining element in enabling the patient's knee prosthesis to provide a normal function and improve quality of life.

The micro-measuring principle is based on taking a direct reading of the fall or rise in pressure following any variation in a flow of air through an orifice.

An air gauge specific to this application is shown in figure 2. The tibia base angle along with the inserted depth of the femur-tibia interface are measured, using the measurement principle shown in figure 3.

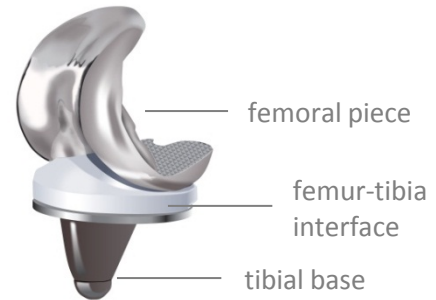


Figure 1 - Complete knee prosthesis

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Options and Developments

SOLEX micro-measurement systems are now also available in the NEW electronic versions that can record and store the data from the measurements and allow for statistical processing, for an advanced analysis of the manufacturing performance.



Figure 2 – Plug gauge

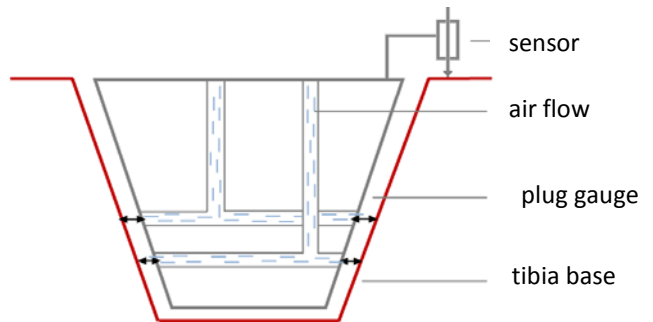


Figure 3 – Measuring principle