

Hip prosthesis dimensional check

Objective

Rapidly and accurately to check the geometry of the components making up a prosthesis

Main components

- Solex pneumatic micrometers
- Dedicated jet buffer

Advantages

The Solex pneumatic micrometer, fitted with a dedicated and adapted jet buffer takes an accurate reading of the angle of a part.

Application

The total hip prosthesis (Figure 1) is made up of two implants:

- The femoral part is made up of a head piece embedded in the femoral shank. The head diameter is the same as that of the internal diameter of the acetabular cup. It ensures the congruence and stability of the artificial articulation.
- The inserted acetabular cup takes the place of the natural hip cotyl. It is made up of a hemispherical cup that provides the sliding surface for the articulation movement.

The geometry of the mechanical parts is a determining element in a return to normal limb assembly function, and an improvement in patient quality of life.

The contactless method used in Solex micro-measurers uses air blowing at constant pressure through jet buffer orifices. If the distance between one of the jet buffer orifices and the surface of the part being checked varies, the air flow varies and this causes changes in pressure that are detected by a manometer.

The angle and plane readings for the cup, femoral head and shank are measured using the measuring principle shown in figs 2 and 3.

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Options & Developments

SOLEX micro-measurers are now available in a NEW electronic version that can record, save and statistically process the measurement data, for advanced analysis of the manufacturing output.

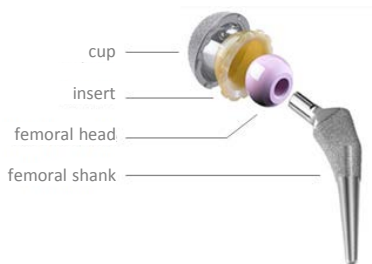


Figure 1 - Complete hip prosthesis

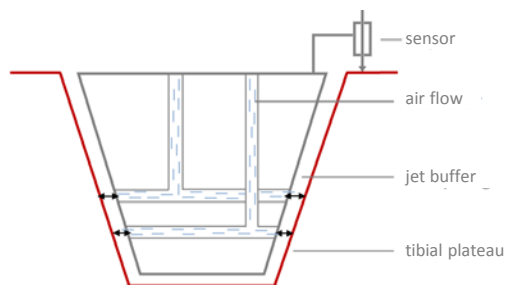


Figure 2 – Measuring principle



Figure 3 – Jet for measuring plane readings for a femoral shank