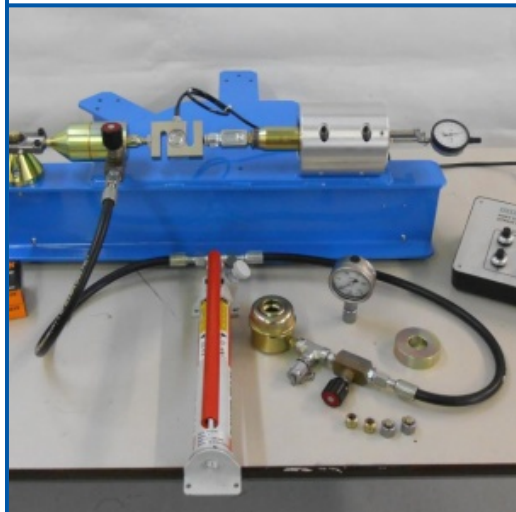


STUDY OF BEARINGS ROTATION GUIDANCE

REFERENCE : EX900



Non contractual photo

SERVICE :

DIMENSIONS : 700 X 420 X 300 MM

WEIGHT : 40KG

The aim of this static test bench is the multiaxial study of the rotation guide of a shaft by different pairs of bearings - radial or angular contact ball bearings, tapered roller bearings -. The study is conducted under various modes of stress (axial, radial) with or without precharge of the assembly.

A specific simulation software is used in parallel to make the link between real and model.

Educational Objectives :

Axial study with the basic version :

- Measurement of the axial deflection of a bearing.
- Experimental determination of the axial constitutive law of a bearing.
- Experimental determination of the axial stiffness of a pivot connection made with two bearings.
- Evaluation of the influence of the preload on the axial stiffness of the guide.
- Influence of axial play of radial contact bearings on guide accuracy.

Multiaxial study with an optional instrumented shaft :

- Taking into account and measuring the deformation of the tree.
- Characterization of tapered roller bearings, measurement of anti-spill torque associated with this type of bearing, comparison with angular contact ball bearings
- Discussion around calculation models.

Technical specifications :

The test bench consists of a shaft and a pair of bearings assembled inside a rigid sleeve. A variable preload is applied to the guidance by a hydraulic precharge jack mounted on the shaft. Measuring the hydraulic pressure in this cylinder gives the value of the applied preload. A hydraulic load cylinder exerts a force on the shaft. A force sensor measures this load. These cylinders are powered by a manual hydraulic pump. A micrometer comparator measures the axial displacement of the shaft. The use of the instrumented shaft (strain gauges) allows the measurement of the preload of the assembly and the deformation of the shaft under axial and / or radial loading. An extensometric bridge is necessary for the operation of this test bench.

The standard equipment EX900 :

- A test bench for the study of rotating bearings.

- Four pairs of bearings.
- Specific tools for assembly and disassembly.
- Simulation software for AGUIR rotation guidance and results analysis.

OPTIONS :

An instrumented strain strainer tree for studies under multiaxial loading. Extelometric results analysis software under EXCEL. Extensometry bridge (EI 616).