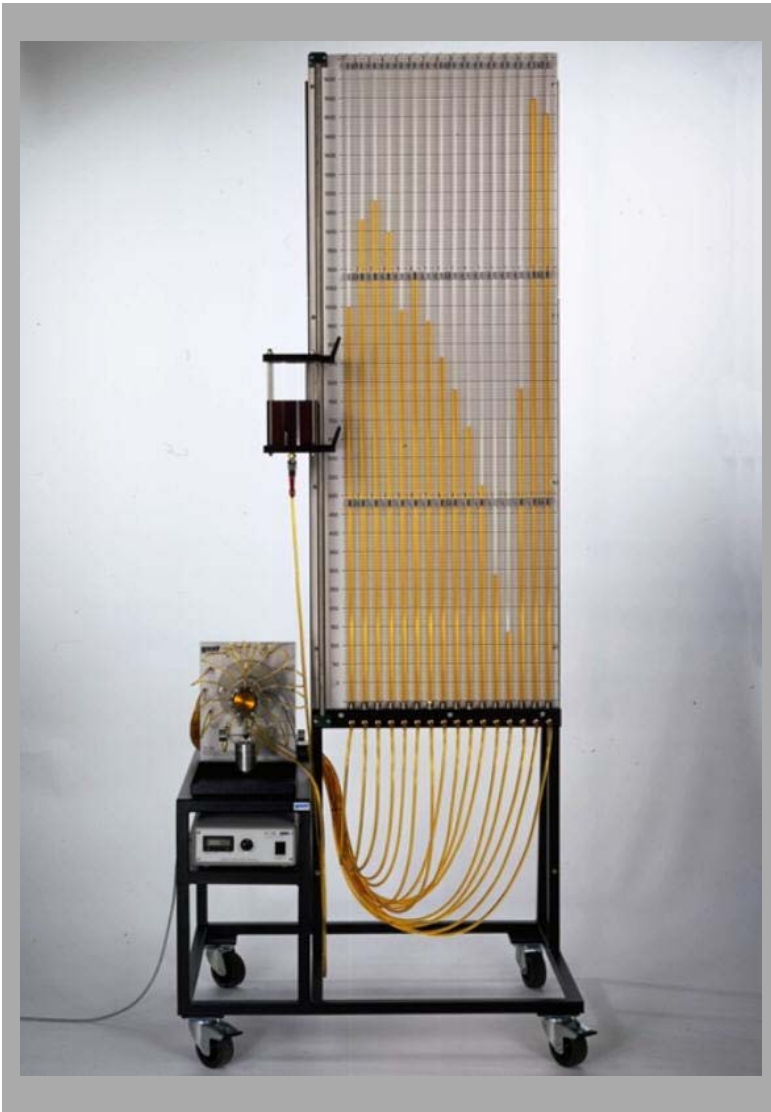


TM 280

Journal Bearing Apparatus



Technical Description

The journal bearing apparatus for investigating the distribution of pressure in slide bearings TM 280 illustrates the principle of hydrodynamic lubrication. The distribution of pressure and the carrying capacity can be determined on a sliding bearing model at different bearing loads and speeds. The sliding bearing consists of a bearing journal driven by an electrical motor and the freely moving bearing housing. The bearing is loaded with different, interchangeable weights. In order to view the shifting of the bearing journal in operation as clearly as possible, the model has a large gap and a transparent housing. Both the radial and axial distribution of pressure can be recorded in the bearing gap at 12 measuring points around its perimeter and four along the length. The measurements are shown by means of 16 tube manometers mounted on a board. The system is mounted on a rolling support and is well suited for demonstration as well as for use in laboratory experiments.

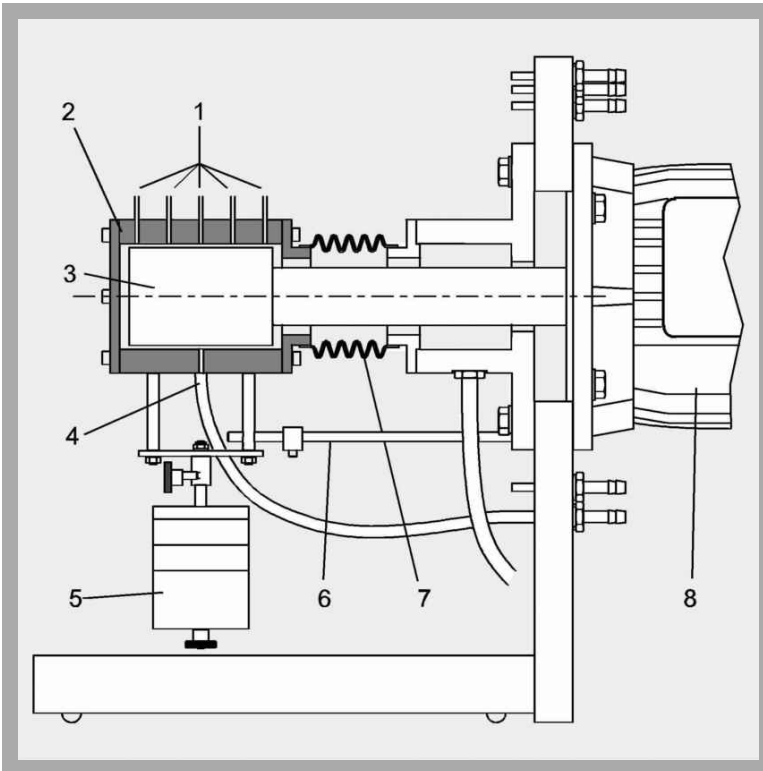
Learning Objectives / Experiments

- Relocation of the shaft journals in relation to speed
- Pressure distribution in the bearing with constant load and at various speeds
- Critical speed in relation to load
- Critical speed and viscosity in relation to oil temperature

- * **Function visible through transparent bearing housing**
- * **Clear illustration of the radial and axial pressure distribution in a slide bearing**
- * **Instability with slide bearings**

TM 280

Journal Bearing Apparatus



1 measuring points for axial pressure levels (4 pcs.), 2 transparent bearing housing, 3 bearing journal, 4 measuring point for radial pressure levels (12 pcs.), 5 load, 6 lock, 7 bellows, 8 drive motor

Specification

- [1] Demonstration and experimental apparatus for examining pressure distribution in sliding bearings
- [2] Bearing housing, completely transparent and movable on rotating bearing journals
- [3] Bearing diameter 51mm, gap 4mm
- [4] Bearing load up to 16N
- [5] Display of radial and axial pressure distribution with 16 plastic tube manometers, display panel, detachable for transport
- [6] Oil viscosity class ISO VG 100
- [7] Speed smoothly adjustable, electronically controlled, digital display
- [8] Experiment mounted on rolling support
- [9] l x w x h 1000x750x2650mm

Technical Data

- Sliding bearing
- nom. bearing diameter: D=51mm
 - bearing gap: 4mm
 - bearing width: 75mm
 - bearing load: 6.7 ... 16.7N
- Motor
- power output: 0.37kW
 - max. speed: 3000rpm
- Length of manometer tubes: 1770mm
Oil viscosity class: ISO VG 100
Total oil volume: 3.5L
Set of weights: up to 10N

Dimensions and Weight

- l x w x h : 1000 x 750 x 2650 mm
Weight : approx. 62 kg

Connections

230V, ~50Hz

Scope of Delivery

- 1 experimental unit with bearing housing on mobile support
- 1 display panel with 16 plastic tubes and oil tank
- 1 speed control unit
- 1 experiment instructions

Order Details

040.28000 TM 280 Journal Bearing Apparatus