

## Journal Bearing Test Rig

### Base System

Parameters	Units	Specification range	Remarks
Radial Load	kN	upto 10	automated loading
Speed	rpm	300 to 3000	
Friction Torque	Nm	upto 10	
Shaft diameter	mm	100	Fixed
Bearing inner diameter	mm	100.2	100 microns radial clearance, Material: Brass
Oil inlet pressure	kPa	Up to 500	indicated by Bourdon gauge
Oil tank capacity	liter	20	
Oil viscosity	cSt	20 to 100	viscosity at 40° C

**Optional sensors** with additional channels for data acquisition system for future integration

Oil film pressure sensor	upto 40 bar	upto 6	User defined locations in a bearing
Temperature sensor	upto 200 °C	upto 6	User defined locations in a bearing
Displacement sensors for X-Y for eccentricity measurement		upto 2	In X and Y direction

**Note:** One reference bearing of circular profile SHOULD be included with the tester. Test results of this bearing are included for reference. Nominal specifications of the reference bearing are given below:

1. Nominal diameter –  $100.05 \pm 0.01$  mm
2. L/D ratio – 1
3. Surface roughness ( $R_a$ ) <  $0.5 \mu\text{m}$

4. Oil pressure/temperature sensor locations – 30° apart
5. Material – Brass grade HTB1 or similar

**Other terms**

- 1 year comprehensive warranty with service and spare parts must be provided
- Installation and training must be done on site
- Equipment must have been supplied to at least 3 educational/research institutions and installation certificates must be provided