Order Code : 25269632.1.1
STRESS AND STRAIN ANALYSIS IN THICK-WALLED CYLINDER

DESCRIPTION :

The experimental unit is used to investigate direct stresses and strains occurring on a thick-walled cylinder subjected to internal pressure. The oil-filled cylinder is made up of two halves, and is sealed on both sides. Internal pressure is generated inside the vessel with a hydraulic pump.

A pressure gauge indicates the internal pressure. An eccentric groove is cut between the two halves of the cylinder, in which the strain gauges are mounted at various radial points. Additional strain gauges are mounted on the inner and outer surfaces of the cylinder. Radial, hoop and axial strains are measured, enabling the strain state to be fully recorded.

TECHNICAL DETAILS :

- Aluminium cylinder length: 300mm
- diameter: Ø=140mm
- wall thickness: 50mm
- internal pressure: max. 7N/mm^2 (70bar)
- Strain gauge application
- 11 strain gauges: half-bridges, 350 Ohm
- gauge factor: 2,00 ±1%
- supply voltage: 10V
- Pressure gauge :0…100bar.

EXPERIMENTATION :

- measurement of elongations by strain gauges
- determination of the distribution of direct stress in radial,
- tangential and axial direction investigation of correlations between elongation, pressure and stress

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.