

# **Radial Rubber Shear Apparatus (SMT-MM-14)**

This apparatus is designed to study the shear strain in a rubber block due to the shear stress applied on it. Rubber in shear force are often used on engine and in equipment mounting to isolate vibrations. They do this by absorbing shock energy by deforming. This deformation leads to a decrease in cross-section as the block rotates.

A rubber cylinder is bonded to two metal alloy plates. One plate is screwed to a wall with HDF, whilst the other has a shear load applied by a loaded weight via round plate with pointer and degree printed on it. This round plate gives the angle of rotation upon applying torque on rubber cylindrical block.

# TECHNICAL SPECIFICATIONS

### Specifications:

- Measures the shear stress and shear strain.
- Cylindrical rubber block.
- An Instruction manual for student and lecturer provided.
- Set of weights.

## **Technical Data:**

- Rubber Block:
  - Back Rubber
  - Dia= 75mm, Length= 100mm
- Degree Gauge:
  - For indicating shearing displacement
  - 0 to 360° with pointer.
  - Precision: 1 Degree
- Weights:
  - 1x 10N (hanger).
  - 2x 5N, 2x 10N
- LxWxH: 350x150x200mm Weight: approx. 30kg

### **Experimental Data:**

- Examination of Shear Stress and Shear Strain in a Rubber solid Cylinder.
- Demonstrate relationship between shear load and shear deformation.
- Determination of the Modulus of Rigidity for the Rubber.
- Determination of the variation of deflection with load applied.

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