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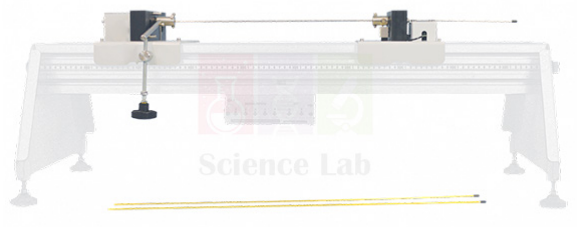
Product Name :

Torsion of Circular Sections

Product Code :

SLE/EG/15



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Description :

Torsion of Circular Sections (Product Code: SLE/EG/15) twists circular rods and a tube held between two chucks, so students can relate applied torque to angle of twist. One chuck, fittedwith a precision potentiometer, applies and measures the angular deflection; the other isconnected to a load cell that measures the resulting torque. Manufactured by **Jain Scientific Equipments Pvt Ltd (ScienceLab)** of Ambala, it serves mechanical and civil engineeringlaboratories studying shafts and torsional stiffness.

Key Details

Parameter	Detail
Type	Torsion experiment for solid rods and a hollow tube
Twisting chuck	Applies angular deflection to the specimen; includes a precision potentiometer to measure it
Reaction chuck	Connected to a load cell that measures the resulting torque
Specimens	A set of rods of different metals and a tube
Comparisons	Elastic properties, dimensions and polar second moment of area (‘J’ value)
Effective length	Can be varied to show its effect on deflection for a given torque
Data connection	Potentiometer and load cell connect to the USB interface hub of the Structures Platform for computer display and data acquisition

Typical Use

Students clamp a rod, turn the potentiometer chuck through a series of angles and record the torque at each step, building a torque-against-twist graph whose slope gives the torsional stiffness of that specimen. Using the rod dimensions and the textbook torsion equation, they predict the same relationship and compare the calculated line with the measured one, then work out the shear modulus of each metal.

Changing the effective length shows that, for the same torque, a longer rod twists further. Comparing a solid rod with the tube shows how the polar second moment of area, not simply the amount of material, controls stiffness — the reason many drive shafts are hollow. With both sensors logged through the Structures Platform, the torque-twist line builds up on screen as the test runs, which makes this module useful mechanics lab equipment for lectures on shaft design.

Manufacturer

The apparatus comes from Jain Scientific Equipments Private Limited, which trades as ScienceLab and is based in Ambala, Haryana. The company is incorporated under CIN U29309HR2020PTC087597 and manufactures at its licensed factory at 449, HSIIDC Industrial Area, Saha, Ambala (Factory Licence AMB-ONLINE-CHD-J-414). More about us is in the comp

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