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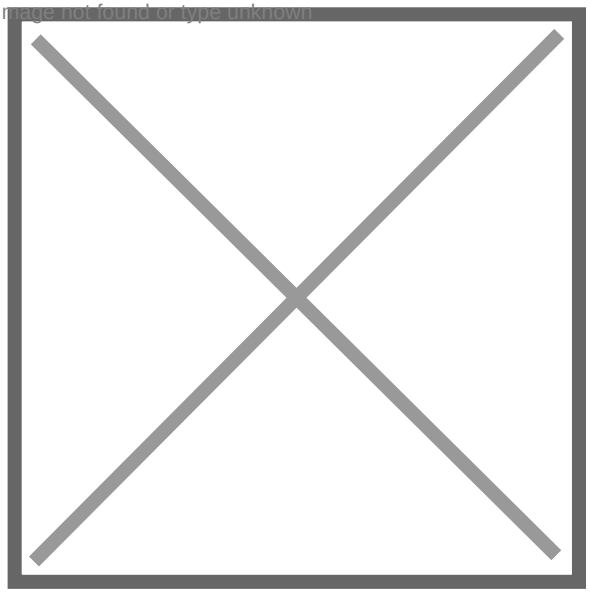
Product Name :

Apparatus Young Modulus Searle's

Product Code :

SLE/PHY/17

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Description :

Apparatus Young Modulus Searle's (Product Code: SLE/PHY/17) is a twin-frame extension apparatus used to determine the Young's modulus of a wire by Searle's method in college and senior-secondary physics labs. Two hinged cast metal frames, a spirit level on a pivoted cross-bar and a micrometer head reading to 0.01 mm let students measure very small extensions;brass and steel wires are included. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM manufacturer, at its own factory in Ambala, India.

Specifications

Parameter	Detail
Measures	Young's modulus (modulus of elasticity) of a wire: for small strains, the ratio of the rate of change of stress with strain
Frames	Two cast metal rectangular frames, hinged together parallel to each other so that only vertical relative motion is possible
Reference indicator	Spirit level fixed on a cross-bar pivoted across the frames
Wire and load fittings	Self-centering chuck at the upper end of each frame for holding the wire; load hook at the lower end of each frame
Scale	Vertical scale 10 – 0 – 10 mm on one frame
Micrometer	Micrometer head along the scale, reading to 0.01 mm, for adjusting the spirit level
Also included	Ceiling bracket carrying a pair of chucks; counterpoise weight; set of two wires, one brass and one steel
Product code	SLE/PHY/17
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Searle's Young Modulus Apparatus Used For?

Young's modulus tells us how stiff a material is, and Searle's method measures it on a long, thin wire. The two wires hang from the chucks of the ceiling bracket and pass into the self-centering chucks of the two frames. One frame carries the counterpoise weight to keep its wire taut as a reference, while load is added to the hook of the other. Because the frames are hinged to move only vertically, any stretch of the loaded wire tilts the spirit level on the cross-bar.

After each load change, the micrometer head is turned until the bubble is level again, and the change in reading gives the extension to 0.01 mm. Plotting load against extension, then using the wire's length and diameter, gives Young's modulus as stress divided by strain. The Searle's method Young's modulus experiment is a standard practical in India's senior-secondary (including CBSE class 11) and undergraduate physics courses. Add and remove load gently, and stay well within the elastic limit so the wire returns to its original length.

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