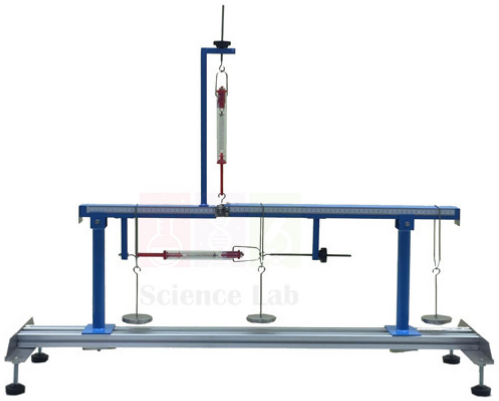
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Product Name :

Bending Moment Apparatus

Product Code :

SLE/MCE/23



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Description :

Bending Moment Apparatus (Product Code: SLE/MCE/23) is a hinged-beam test rig used to measure the shear force and bending moment at a beam section under different loads in strength of materials and structures laboratories. Its 1 m span teak wood beam is made of long and short sections joined by a hinge, and spring balances with adjusting screws measure the internal forces while a spirit level returns the beam to its original position. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM manufacturer, at its own factory in Ambala, India.

Key Details

Parameter	Detail
Beam	Teak wood; long and short sections connected by a hinge
Span	1 m, with supports
Loading	Weight set with loading hangers
Bending moment measurement	Spring balance with adjusting screw, mounted at a fixed distance
Shear force measurement	Spring balance with adjustable screw, at the hinge section
Levelling	Spirit level to restore the loaded beam to its original position
Range of experiments	Shear force and bending moment for different loading conditions; influence line diagrams for bending moment and shear force
Documentation	Technical manual accompanies the unit
Product code	SLE/MCE/23
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Bending Moment Apparatus Used For?

Shear force and bending moment diagrams are central to beam design, yet students rarely see those internal forces measured. Here the beam is divided at a section and bridged by a hinge, so the forces at that section have to be carried by the spring balance arrangements. After hanging loads at chosen positions, students turn the adjusting screw until the spirit level shows the beam back in its original position, read the spring balance and use the fixed lever distance to work out the bending moment; a similar reading at the hinge gives the shear force.

Comparing these measured values with hand calculations from statics confirms the theory for loads at different positions. Moving a single load step by step across the span and plotting the reading at the section builds the influence line diagram, a topic civil and mechanical students often find abstract on paper. With the technical manual guiding each experiment, it is practical engineering lab equipment for colleges and polytechnics in India.

OEM

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