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Product Name :

Diaphragm

Product Code :

SLE/ETP/13



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Description :

Diaphragm (Product Code: SLE/ETP/13) is a self-contained, bench-mounting apparatus used to investigate how pressure changes the surface profile of a clamped diaphragm and how circumferential and radial strains are distributed across it, in engineering stress-analysis laboratories. Eight strain gauges at different radii and a traversing digital dial gauge let students map strain and deflection on the same plate. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM engineering lab equipment manufacturer, at its own factory in Ambala, India.

Specifications

Parameter	Detail
Type	Self-contained, bench-mounting experimental apparatus
Edge condition	Two heavy flanges clamp the edge of the diaphragm to provide built-in edge conditions
Pressure medium	Oil in the area directly under the diaphragm
Strain gauges	Eight, cemented to the upper surface of the diaphragm in various positions and at different radii
Gauge circuits	Each strain gauge circuit is a full bridge with high-stability resistors
Strain readout	Signals from each strain gauge shown on a digital display
Profile measurement	Digital dial gauge fitted to a digital position indicator, traversed across the diaphragm to measure its surface profile
Product code	SLE/ETP/13
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Diaphragm Apparatus Used For?

Flat circular plates under pressure appear in pressure transducers, pump and valve diaphragms, tank ends and inspection covers. Plate theory for a diaphragm with a clamped, built-in edge predicts a dished deflection profile and a radial strain that changes sign between the centre and the edge, while circumferential strain behaves differently. This apparatus lets students see both effects on a real plate.

With pressure acting through the oil beneath the diaphragm, students traverse the digital dial gauge across the surface, noting deflection against position, and read the eight gauges on the digital display. Plotting deflection and each strain component against radius, then overlaying the theoretical curves, makes a strong final-year or diploma practical. Zero the dial gauge and strain readings before applying pressure, and traverse in the same direction each time to avoid backlash.

OEM

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