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**Product Name :**

Thin Cylinder

**Product Code :**

SLE/ETP/14



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## Description :

**Thin Cylinder** (Product Code: SLE/ETP/14) is a bench-mounting pressure vessel apparatusused to investigate and analyse the stresses and strains in a pressurised thin-walled cylinder, in mechanical and civil engineering laboratories. Its thin-walled aluminium cylinder sits in a robust frame that leaves it free to move along its axis, while surface strain gauges and an electronic pressure sensor record its response. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM and TVET lab equipment manufacturer in India, at its own factory in Ambala.

### Specifications

| Parameter | Detail |
|---|---|
| Type | Bench-mounting apparatus for stress and strain analysis of a pressurised thin-walled cylinder |
| Cylinder | Thin-walled aluminium cylinder |
| Frame | Robust frame that holds the cylinder so it is free to move along its axis |
| Pressure medium | Oil inside the cylinder |
| Pressurisation | Hydraulic hand pump operated by the students |
| Strain measurement | Strain gauges on the cylinder surface |
| Pressure measurement | A gauge and an electronic sensor measure the hydraulic pressure |
| Product code | SLE/ETP/14 |
| Manufacturer | Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM |
| Country of origin | India (made in Ambala, Haryana) |

### What Is the Thin Cylinder Apparatus Used For?

Boilers, gas bottles, water mains and aircraft fuselages are all treated as thin cylinders, where the wall is thin enough for stress to be taken as uniform through it. Simple theory then gives a hoop stress twice the longitudinal stress, and this apparatus lets students check that relationship with real measurements rather than accept it on trust.

Students pump the oil up in steps, record pressure from the gauge and electronic sensor, and read the surface strain gauges at each step. From the strain-pressure graphs they can work out hoop and longitudinal stresses and estimate the elastic constants of the aluminium, a core exercise for engineering lab equipment in India used on diploma and degree courses. Because the frame leaves the cylinder free to move along its axis, the frame itself does not add axial load. Pump slowly, let each reading settle, and release pressure fully after the test.

### OEM Manufacturer

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