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Product Name :

Air Bearing Apparatus

Product Code :

SLE/ETM/01



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Description :

Air Bearing Apparatus (Product Code: SLE/ETM/01) is a bearing trainer used to show how a pressurised air film forms between a spinning shaft and its bush and supports load, in theory of machines and tribology laboratories. Students set shaft speed through a belt-driven motor drive module, load the bush by hand against a load cell, and read film pressure at tappings spaced evenly around the bush on a multichannel digital display. It is made by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM engineering lab equipment manufacturer, at its own factory in Ambala, India.

Key Details

Parameter	Detail
Drive	Variable-speed motor turning a belt drive to a precision bearing shaft
Shaft	High-quality surface finish; spins inside a vertically loaded bush
Bearing bush	Pressure tappings equally spaced around its circumference
Pressure display	Multichannel digital pressure display unit connected to the tappings
Loading	Hand-operated load control with a bearing bush load cell
Motor Drive Module	Varies bearing speed; displays bearing speed and the load at the load cell (speed sensor and load cell connect to it)
Instrument Frame	Holds the Motor Drive Module and Pressure Display Module, with extra space for an optional frame-mounted data acquisition unit
Product code	SLE/ETM/01
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Air Bearing Apparatus Used For?

The apparatus lets students see the pressure distribution that allows a journal bearing to carry load without metal-to-metal contact. With the shaft running at a chosen speed, they read each tapping on the multichannel display, plot pressure against angular position around the bush, and repeat at other speeds and loads. Comparing the area under the pressure curve with the load cell reading links the measured film pressure to the load the bearing supports.

Typical exercises cover how peak pressure and its position shift as load rises, how speed affects the film's load capacity, and where the film starts to break down at low speed. Bring the shaft up to speed before adding load, increase the hand-operated load in small steps, and let the display settle before recording. This makes it useful engineering educational equipment in India for mechanical engineering, tribology and machine design courses.

What to Specify When Ordering

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