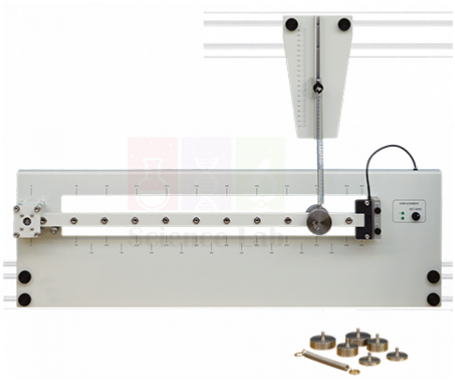
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Product Name :

Free Vibration Of Beam Spring

Product Code :

SLE/ETM/05



Description :

Free Vibration Of Beam Spring (Product Code: SLE/ETM/05) is a one-degree-of-freedom vibration experiment used to study how a rigid beam, pivoted at one end and hung from a coiled spring at the other, oscillates in theory of machines laboratories. It mounts on the Free Vibrations Test Frame through a back panel carrying self-aligning pivot bearings and a non-contacting displacement sensor, so oscillations are measured with negligible damping. It is manufactured by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, an OEM vocational training lab equipment manufacturer in India, at its own factory in Ambala.

Key Details

Parameter	Detail
System	Simple one-degree-of-freedom free vibration system
Beam	Rigid beam pivoted at its left-hand end; right-hand end suspended by a coiled spring
Pivot	High-quality self-aligning bearings allowing the beam to rotate through a small angle
Sensor	Non-contacting displacement sensor measuring oscillations at the right-hand end with negligible damping, while helping to guide the movement
Back panel	Fixes to the Test Frame; holds the pivot and the sensor
Topics	Moment of inertia; oscillation damping; spring constant and Hooke’s Law; simple harmonic motion and frequency of oscillation; phase difference between displacement and its derivatives
Real-world link	The beam-and-spring system appears in machines and vehicle suspensions
Product code	SLE/ETM/05
Manufacturer	Jain Scientific Equipments Pvt Ltd (ScienceLab) — OEM
Country of origin	India (made in Ambala, Haryana)

What Is the Beam Spring Vibration Experiment Used For?

The beam, pivot and spring form the same arrangement found in many machines and in vehicle suspensions, reduced to a single degree of freedom that students can analyse by hand. They can determine the spring constant by static loading to confirm Hooke’s Law, work out the beam’s moment of inertia about the pivot and predict its natural frequency. Displacing the free end and releasing it lets the non-contacting sensor record the oscillation, so the measured frequency can be checked against the prediction.

Because the sensor does not touch the beam, inherent damping is negligible, which makes any added damping easy to see; fitting the separate Damper Kit beneath the beam extends the study to damped motion. The recorded trace also shows the phase difference between displacement and it n theor cours

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