SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

Phone: +91 7015865225 **Email:** info@scienticoindia.com **Web:** scienticoindia.com **Address:** #71, Industrial Area, Ambala Cantt, Haryana, India

Hooke's Law Apparatus | FortiTestX 05

Category: Strength of Materials · **Order Code:** FORTITESTX 05 · **Country of Origin:** India

Product Overview

The Hooke's Law Apparatus is a freestanding experimental unit designed to investigate the elastic behaviour of tension springs and the dynamics of spring-mass systems. Made by Scientico India, ISO 9001:2015 certified, and supplied with a calibration certificate and operation manual.

View this product online: https://scienticoindia.com/product/hookes-law-apparatus-fortitestx-05/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Parameter	Details
Model	FortiTestX 05
Unit Type	Freestanding metal stand with integral scale
Scale Length	1000 mm
Scale Graduations	1 mm
Helical Tension Springs, Small	Outer diameter 15 mm; 6 different wire diameters
Helical Tension Springs, Large	Outer diameter 20 mm; 6 different wire diameters
Total Springs Supplied	12
Calibrated Weights Supplied	1 x 1 N hanger, 1 x 20 N, 4 x 10 N, 4 x 5 N, 5 x 1 N, 5 x 0.5 N
Scope of Delivery	1 experimental module, 1 set of springs, 1 set of weights, 1 instruction manual

Key Features

Key Features

- Freestanding metal stand with 1000 mm integral scale for direct extension measurement
- Scale graduated at 1 mm intervals for precise load-extension readings
- Pointer and hanger assembly on the free end of the spring provides immediate scale readings without secondary instruments
- Supplied with 12 tension springs across two outer diameter groups and six wire diameters each

- Supports single spring, series spring configuration, and spring-mass oscillation experiments within the same unit
- Comprehensive calibrated weight set covers a wide load range from 0.5 N to 20 N increments
- Suitable for both static Hooke's Law verification and dynamic simple harmonic motion investigation

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Applications

- Verification of the proportional relationship between applied force and spring extension
- Determination of spring constant from load-extension data and graphs
- Study of series spring configuration and calculation of combined system stiffness
- Comparative investigation of the effect of wire diameter on spring constant
- Investigation of the influence of spring stiffness on the natural frequency of a spring-mass oscillation system
- Introduction to simple harmonic motion in the context of mechanical spring systems
- Graphical analysis of load versus extension for elastic components

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Construction and System Design

The apparatus is built around a rigid metal stand that provides a stable vertical mounting surface for the spring and scale assembly. The integral scale runs the full 1000 mm length of the stand and is graduated at 1 mm intervals, providing sufficient resolution for precise extension measurements across the full range of supplied springs and weights. The spring suspension point is fixed at the top of the stand. The hanger and pointer assembly attaches to the free end of the spring and allows interchangeable loading with the supplied weight set. The series configuration is achieved by connecting two springs end to end using the supplied hanger, with the pointer positioned at the lower spring's free end. Springs are interchangeable across all experimental configurations without modification to the stand or scale assembly.

Export and Supply Capability

SCIENTICO manufactures and supplies the FortiTestX 05 Hooke's Law Apparatus to engineering institutions and laboratory equipment distributors internationally. The unit is packaged for safe transit and is suitable for supply to universities, technical colleges, and vocational training institutes across export markets. Customization of the spring set or weight configuration is available upon inquiry.

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

1. What experiments can be performed with the FortiTestX 05 Hooke's Law Apparatus?
The apparatus supports four primary experiments: verification of the proportional relationship between applied force and spring extension, determination of the spring constant, investigation of series spring configuration and combined stiffness, and study of the influence of spring constant on the oscillation frequency of a spring-mass system.

2. How many springs are supplied and what are their dimensions?
Twelve helical tension springs are supplied in two outer diameter groups, 15 mm and 20 mm, each available in six different wire diameters. This range allows systematic comparison of spring stiffness across varying wire diameters within a controlled experimental setup.

3. What is the measurement range and resolution of the integral scale?
The integral scale has a total length of 1000 mm and is graduated at 1 mm intervals, providing sufficient range and resolution for all load-extension measurements within the supplied weight set.

4. How is the series spring configuration set up on the FortiTestX 05?
Two tension springs are connected end to end using the supplied hanger assembly. The pointer is positioned at the free end of the lower spring. Calibrated weights are then applied in the same manner as for a single spring, and the combined extension is read directly from the scale.

5. Can the FortiTestX 05 be used for simple harmonic motion experiments?
Yes. A mass can be suspended from the spring and displaced vertically to initiate oscillation. The frequency of oscillation can be measured and compared against the theoretical prediction based on the spring constant and suspended mass, providing an experimental introduction to simple harmonic motion.

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