



SPRING CONSTANT APPARATUS FOR SERIES & PARALLEL

COMBINATION OF SPRINGS

Description

The Spring Constant Apparatus is designed to study the behavior of springs connected in series and parallel combinations and to determine their effective spring constants. The experiment is based on Hooke's Law, which states that within the elastic limit of a spring, the extension produced is directly proportional to the applied force. The apparatus enables students to investigate the relationship between force and extension and compare the equivalent spring constants obtained in series and parallel arrangements.

Technical Specifications

- Heavy-duty metal stand with stable base
- Base fitted with graduated scale on both sides for accurate measurement
- Arrangement for conducting spring constant experiments in series and parallel combinations
- Two helical springs for experimental studies
- Slotted weight set included:
 - 5 × 50 g slotted weights (2 Sets)
 - Total weight supplied: 500 g

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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- Mass hanger included
- Apparatus dimensions: 29 × 15 × 83 cm
- Packing: Cardboard box

Experiments Performed

- Verification of Hooke's Law.
- Determination of spring constant of an individual spring.
- Determination of equivalent spring constant for springs connected in series.
- Determination of equivalent spring constant for springs connected in parallel.
- Study of force-extension characteristics of spring systems.

Principle

The apparatus demonstrates Hooke's Law:

$$F = kx$$

Where:

- F = Applied force
- k = Spring constant
- x = Extension produced

For springs in series:

$$1/K_s = 1/k_1 + 1/k_2$$

For springs in parallel:

$$K_p = k_1 + k_2$$

Applications

Suitable for Physics laboratories of schools, colleges, universities, and engineering institutions for practical studies of elasticity, spring systems, and Hooke's Law.

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