



COMPOUND WIRES APPARATUS

HSM6



Year 1
study

Features

- Two experiments in one: Single and Compound wires
- Self-contained, wall mounted apparatus
- Customer wires can be tested
- Excellent and easy to understand results
- Investigate the effective characteristics of two different materials subjected to a common strain
- Equal and balanced loading of wires
- Full set of weights and hanger supplied

Description

Two parallel sets of brackets are secured to a rigid vertical support (not supplied) a distance apart in a vertical line. Two wire specimens of the same length have one end attached to the upper bracket. The other end of each wire is attached to a vernier slide which slides through the lower bracket. Each lower bracket has an extension scale attached, whilst the vernier slides have a vernier scale attached. Both allow extensions of 0.1mm to be measured. The vernier slides are both connected by a common link to ensure equal and balanced loading of each wire. A Load hanger can be moved along the link until strains are equalised in each wire. A level indicator is supplied to aid equalisation of strain. A set of 6 wires is supplied of differing materials and diameters.

Related Laws/Applications

- Hooke's Law
- Modulus of Elasticity
- Strain
- Wire
- Extension

Learning capabilities

- To determine Modulus of Elasticity (E) for the specimen wire
- To verify Hooke's Law
- To evaluate the equivalent Modulus of Elasticity (E) for the combined wire suspension
- To determine the load in the wire under conditions of equal strain in each wire.
- To observe the extension in each wire for unequal (offset) loading
- Draw load versus extension graphs
- To accurately calculate the position of loading for equal strain in both suspended wires
- To compare experimental and theoretical results

Technical Specification

- 2 x upper and 2 x lower wall brackets, set 300mm apart
- 2 x vernier slides
- 6 x wire test specimens provided:
 - - 16swg (Ø1.62mm) Brass wire
 - - 18swg (Ø1.22mm) Brass wire
 - - 20swg (Ø0.91mm) brass wire
 - - 18swg (Ø1.22mm) Aluminium wire
 - - 18swg (Ø1.22mm) Copper wire
 - - 20swg (Ø0.91mm) Steel wire
- Extensions slides calibrated from 0...70mm, with 1mm resolution
- Vernier scales calibrated from 0...1mm, with 0.1mm resolution

Essential Ancillaries

- HST1
- HST100
- HAC14
- HVT12f

What's in the Box?

- 2 x Wall bracket assembly
- 2 x Wall plate assembly
- 2 x Slide assembly
- 1 x Knife edge hanger
- 1 x Cross piece assembly
- 1 x Tape measure
- 3 x 2.5m steel wire
- 3 x 2.5m brass wire
- 1 x Load hanger
- 5 x 5N; 10 x 10N; 3 x 50N
- Instruction manual
- Packing list
- Test sheet

Weights & Dimensions

- Weight: 4.5 kg
- Length: 500mm
- Width: 450mm
- Height: 75mm

Essential Services

- Ideal suspension height of 2 metres above floor level

Ordering information

To order this product, please call PA Hilton quoting the following code: HSM6

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