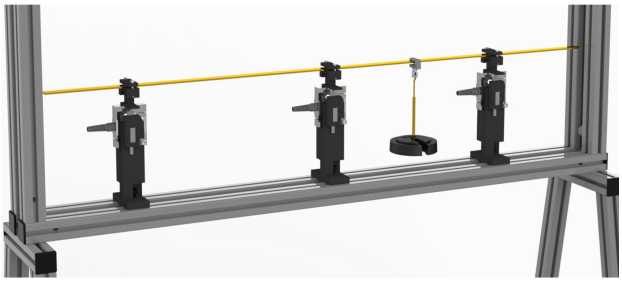
CONTINUOUS and INDETERMINATE BEAMS

HST11



Year 3
study

Features

- Most comprehensive Beam apparatus available.
- Three movable reaction piers for all experiments
- All reactions piers vary height
- Two digital dial gauges for beam deflection
- Symmetric/Asymmetric loading.
- Customer designed beam can be installed.
- Circular Bending.
- Point load and Uniformly Distributed loads (UDL).
- Dedicated e-book supplied

Description

Three piers measure vertical reaction forces with their integral load cell which connect directly to the HDA200 Interface (sold separately). Each pier caters for simply supported, or continuous beams and their beam attachments allow for rotation but no vertical movement during testing. Sinking supports can be studied due to each piers height adjustment system and integral dial gauge attached. A fourth pier clamps a cantilever or the fixed end of a beam. A double pulley assembly provides vertical loading of the beam. Point loads and uniformly distributed loads (UDL) can be applied to the beams using the set of calibrated weights and hangers supplied. Three test beams in steel, aluminium and brass are supplied and their deflections are monitored using dial gauges on moveable stands.

Related Laws/Applications

- General Theory of Bending
- Moment Distribution
- Influence lines for reactions
- Slope deflection
- Reactions
- Deflection
- Circular Bending
- Cantilevers
- Offset loading
- Uniformly Distributed Load
- Two Span continuous Beams
- Indeterminate Beams

Learning capabilities

- Study of the general formula for beam deflections in bending in the form y= c. WL3 / EI
- Verification of the effect of changing the length of the beams
- Study the way the 'constant' c is affected by the type and position of the load
- The principle of superposition
- Indeterminate Beams
- Cantilevers and Propped Cantilever
- Single Point Loading and Uniformly Distributed Loads (UDL)
- Continuous Beams
- To compare the measured and theoretical values
- Sinking Supports
- Upwards loading

Technical Specification

- Steel Beam: 25 x 5 x 1200mm long
- Aluminium Beam: 25.4 x 3.2 x 1200mm long
- Brass Beam: 19 x 3.2 x 1200mm long
- Digital Dial Gauge: 12.7mm travel; 0.01mm resolution
- Sinking support digital indicators: 0…10mm; 0.01mm resolution
- Weights set: 5 x 1N, 10 x 2N, 10 x 5N, 5 x 10N, 1 x 20N

Essential Ancillaries

- HST1 (or HST100)
- HDA200

What's in the Box?

- 3 x Reaction Pier
- 5 x 1N, 10 x 2N, 10x 5N, 5 x 10N, 1 x 20N weights
- 2 x Digital Dial Gauge and data cable
- 2 x Dial Gauge Stand
- 4 x Load hanger
- 1 x Movable Bracket
- 1 x 25 x 5mm steel beam
- 1 x 25.4 x 3.2mm Aluminium beam
- 1 x 19.05 x 3.2mm Brass Beam
- 1 x Tape measure
- Accessories container
- Hex wrench
- Instruction manual
- E-book
- Packing list
- Test sheet

You might also like

- HST13
- HSM1cD

Weights & Dimensions

- Weight: 20 kg
- Length: 280mm
- Width: 90mm
- Height: 70mm

Essential Services

- 110/120V, 60Hz or 220/240V, 50Hz, single phase, live neutral and earth for optional HDA200

Operational Conditions

- Storage temperature: -10°C to +70°C
- Operating temperature range: +10°C to +50°C
- Operating relative humidity range: 0 to 95%, non condensing

Ordering information

To order this product, please call PA Hilton quoting the following code: HST11

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