REDUNDANT TRUSS
HST16



Year 3
study

Features

- True pin jointed structure.
- Load can be applied at three joints
- No disassembly required.
- Redundant member easily adjusted for length.
- All truss members strain gauged.
- Movable Deflection indicator to all joints.
- In line deflection measurement of redundant member.
- Dedicated e-book supplied

Description

The 45° two bay truss consists of seven members with pinned joints, cantilevered from the vertical member of the HST1 Universal Frame and Stand (sold separately) using an upper springing and supported by a roller bearing on a vertical track at the lower springing. An extra diagonal member with its length adjustable by a simple mechanism is provided to make the first bay of the truss redundant. Each truss member incorporates a strain gauge bridge arrangement for direct measurement of strain. Load is applied to the truss by a screw jack mechanism with integral load cell. The strain and force signals are fed directly into the HDA200 Interface (sold separately). A dial gauge measures the deflection of the joints and can be located around the truss from the HST1 Universal Frame and Stand (sold separately).

Related Laws/Applications

- Castiglianos' Theorem.
- Determinate and Indeterminate Structure.
- Strain.
- Stress.
- Area.
- Modulus of Elasticity.
- Reactions.
- Unit Load.
- Compression.
- Tension.

Learning capabilities

- Comparison of experimental forces with theoretical values
- View and record the effect of lack of fit of the redundant member into the truss
- Study of deflection of a truss with and without redundancy
- Study of strains, forces and deflections in a determinate and indeterminate framework

Technical Specification

- Vertical and Horizontal Members: 400mm centres
- Acrylic Truss Members: 25(H) x 10(W) mm
- Loading Mechanism: 0...500N
- Digital Dial Gauge: 12.7mm travel; 0.01mm resolution
- Half Bridge Strain Gauging
- Ø10mm Flat Anvil

Essential Ancillaries

- HST1 (or HST100)
- HDA200

What’s in the Box?

- 1 x Assembled Truss
- 1 x Loading Mechanism
- 1 x Digital Dial Gauge and Data Cable
- 1 x Dial Gauge sub-frame
- 1 x Flat Anvil
- Hex wrench
- Accessories container
- Instruction manual
- E-book
- Packing list
- Test sheet

You might also like

- HST17
- HST19

Weights & Dimensions

- Weight: 8 kg
- Length: 900mm
- Width: 200mm
- Height: 500mm

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: HST16

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