EQUILIBRIUM of PARALLEL FORCES

HST23A

Year 1
study

Features

- HST23 Optional experiment
- Co-planar vertical forces
- Special Case experiment
- Model Bridge frames (Truss) supplied
- Warren Truss can be used either way up

Description

This option is available to enhance the experiments of the HST23. It uses a majority of the standard items supplied with the HST23, so no additional large costs required. Two plastic models engraved to simulate a Warren and an 'N' truss are used for the application of vertical loads and reactions. A circular disc with twelve attachment points is used for the couples. To simplify the results each model has a counterbalancing weight to render each one 'weightless'. The lines of action of the cords can be transferred onto a sheet of paper clipped to the HST23 force board. The forces are produced with cords tensioned by weights on hangers and double pulleys being used to turn the upward forces downward, all of which are supplied with the HST23.

Related Laws/Applications

- Equilibrium of Parallel Forces
- Parallel, equal but opposite forces on 'weightless' body
- Reactions
- Moments
- Couples
- Inclined Force

Learning capabilities

- Verify the conditions of equilibrium when sets of parallel forces act in one plane on a rigid body
- "Sum" Fv = 0 (where F = forces and V = vertical)
- Special case where equal and opposite parallel forces produce a couple acting on a body
- Equilibrium of opposing couples
- Experimental verification of the use of a link polygon and is a test of "Sum"M = 0 (where M = moments)

Technical Specification

- 1 x ‘Warren’ Truss: 300(L) x 3(W) x 100(H)mm, engraved with truss outline
- 1 x ‘N’ Truss: 412(L) x 3(W) x 112(H)mm, engraved with truss outline
- 1 x Reaction Disc: Ø210 x 3mm, with 12 equi-spaced holes
- 1 x hook set
- Counterbalance weight set
- Weights set: 4 x 0.1N, 8 x 0.2N

Essential Ancillaries

- HST23

What’s in the Box?

- 1 x ‘Warren’ Truss
- 1 x ‘N’ Truss
- 1 x Reaction Disc
- 1 x hook set
- Counterbalance weight set
- Weights set: 4 x 0.1N, 8 x 0.2N

You might also like

- HFC2
- HFC3

Weights & Dimensions

- Weight: 5 kg
- Length: 450mm
- Width: 100mm
- Height: 150mm

Essential Services

- HST23

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:
HST23A

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