



EQUILIBRIUM of FORCES

HST23



Year 1
study

Features

- Unique to HST Structures Range.
- Very visual experiment.
- Model Warren and 'N' truss options available
- Simulated Ladder option available
- Up to six (6) Concurrent & Non-Concurrent Forces.
- Immediate results plotted on removable sheets of paper.

Description

A large vertical force board is clamped into the working area of either the HST1 or HST100 frame. The force board contains graduations around its perimeter for accurate position of cords. At the centre of the force board is a fastening to hold the key components before experimental release. Single and double pulleys sets can be fixed round the perimeter of the HST1 or HST100 to produce an infinite variety of multi-directional forces in a vertical plane. By using a single cord ring (concurrent forces), up to six cords can be attached and the cords tensioned with Load hangers and weights to obtain equilibrium. An assembly for non-concurrent forces is supplied. The lines of action of the cords are transferred onto a sheet of paper (not supplied) clipped to the force board using the board clips provided. A set of weights and hangers are supplied. Two options are available that expand the experiments available, and which use the standard supplied items from the HST23.

Related Laws/Applications

- Equilibrium of Set of Forces acting in Vertical Plane.
- Link Polygon.
- Graphical Solutions.
- Polygon of Forces.
- Co-planar vertical Forces.
- Couples.
- Equal and Opposite Forces.
- Ground and Wall Reactions.
- Three conditions of Equilibrium.

Learning capabilities

- Equilibrium of a set of forces acting in a vertical plane
- Equilibrium of up to six concurrent forces
- Equilibrium of up to six non-concurrent forces
- Experimental verification of the three conditions of equilibrium, i.e. $\sum F_x = 0$; $\sum F_y = 0$; $\sum M_x = 0$ (where F = forces and M = moments)
- Graphical solution of a triangle of forces (three forces) or closed polygon for more than three forces
- Link polygon
- Construction of polygon of forces

Technical Specification

- Force Board: 900(L) x 750(H) mm
- Graduated scales: 50mm intervals
- 6 x Load hanger
- 2 x Double Pulley assembly
- 5 x Single pulley assembly
- 4 x clips
- Weights Set: 6 x 2N, 2 x 5N, 4 x 10N, 2 x 20N

Essential Ancillaries

- HST1 (or HST100)

Recommended Ancillaries

- HST23A
- HST23B

What's in the Box?

- 1 x Force Board
- 6 x Load hangers
- 2 x Double Pulley
- 5 x Single Pulley
- 4 x Drawing Board Clips
- 6 x 2N, 2 x 5N, 4 x 10N, 2 x 20N weights
- 6 x cord assemblies
- Accessories container
- 2 x Hex wrench
- Instruction manual
- Packing list
- Test sheet

You might also like

- HFC2
- HFC3

Weights & Dimensions

- Weight: 12 kg
- Length: 900mm
- Width: 100mm
- Height: 1050mm

Essential Services

- HST1 or HST100

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: HST23

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