



## EQUILIBRIUM of RIGID BODY HST23B



Year 1  
study

### Features

- HST23 Optional experiment
- Real life application
- Visual experiment
- Simulated 'ladder' with movable mass
- Horizontal and Vertical reactions measured
- 'Ladder' angle adjustable
- Quick and easy movement of movable mass
- Rollers at each end of 'ladder'
- Restraint provided to avoid collapse of 'ladder'

### 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 are required. A simulated 'ladder' can be leant against the inside members of the HST1 or HST100 frames. At each end of the ladder are bearing rollers. The vertical roller is supported in a wall plate whilst the horizontal roller is supported in a ground plate. To prevent collapse of the ladder it is loosely restrained within the vertical wall plate. The vertical and horizontal reactions are provided by cords tensioned using a combination of calibrated weights. Equilibrium is monitored by visually observing the roller positions when the ladder is loaded. A sliding weight can be easily clamped at selected positions on the ladder while equilibrium is established. The weights and hangers provided with the HST23 are used for the HST23B.

**Related Laws/Applications**

- Equilibrium of Forces
- Vertical and Horizontal Reactions
- Reactions
- Tangential Friction
- Moments
- Inclination Angle

**Learning capabilities**

- Determine ground and wall reactions as a body moves up a ladder
- Experimental verification of calculations using the three conditions of equilibrium

**Technical Specification**

- Ladder length: 560mm (approx.)
- Increments on ladder: every 70mm
- Movable weight secured with knurled thumbscrew
- 'Ladder' angle from 10° to 45° during experiments
- Sliding mass: 0.5kg (approx.)

**Essential Ancillaries**

- HST23

**What's in the Box?**

- 1 x Ladder
- 1 x Movable mass
- 1 x Top track plate
- 1 x Bottom track plate
- 1 x Cord assembly

**Weights & Dimensions**

- Weight: 7 kg
- Length: 630mm
- Width: 80mm
- Height: 80mm

**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:  
HST23B

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS