



TOGGLE JOINT APPARATUS HFC19



Year 1
study

Features

- Bench top unit
- Application of Velocity Diagrams
- Direct measurement of Horizontal Reaction
- Variable Toggle angles
- Full set of weights and hanger supplied
- 20° to 50° toggle angles

Description

This apparatus is designed to evaluate forces within a toggle mechanism. Load is applied to the two pairs of links by a hanger suspended from their connecting pivot. One end of the links is pivoted to a base, and the other end is able to move sideways on low friction ball bearing wheels. The moving links are restrained by a horizontal spring balance, which measures the horizontal reaction directly. The angle of the toggle can be varied. Adjustment is provided for returning the geometry of the loaded toggle to its original unloaded state before taking measurements. The supporting blocks are not supplied. There are many ways in which the forces can be determined theoretically. The Instruction manual provided with the apparatus takes the opportunity to introduce the use of velocity diagrams to solve essentially static problems by considering virtual motion. However, other techniques can be used if desired.

Related Laws/Applications

- Toggle joints
- Velocity Diagrams
- Horizontal reaction
- Forces
- Mechanism
- Mechanical Advantage

Learning capabilities

- To determine the experimental horizontal reaction due to loading
- To compare with theoretical predictions, such as the velocity diagram technique
- To assess the effect of the toggle angle

Technical Specification

- Link length: 270mm
- Spring balance: 6kgf range, 0.1kgf resolution
- Weights set: 6 x 5N
- 1 x Load hanger

What's in the Box?

- 1 x HFC19
- 1 x Load hanger
- 1 x Tape measure
- 6 x 5N
- 1 x 4m Spare cord
- Instruction manual
- Packing list
- Test sheet

Weights & Dimensions

- Weight: 3.6 kg
- Length: 520mm
- Width: 100mm
- Height: 180mm

Essential Services

- Sturdy Bench Top

Ordering information

To order this product, please call PA Hilton quoting the following code:
HFC19

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS