REACTION of BEAMS APPARATUS

HFC1

Year 1
study

Features

- Bench top apparatus
- Single test beam for reactions and cantilever
- Simple force measuring and recording
- Adjustable span
- Full set of weights and hangers supplied

Description

A horizontal length of material with a vertical load system is called a beam. It is one of the most basic engineering ways of supporting a load. External forces such as the applied loads and the beam support reactions have to be in equilibrium. Given a loading system, the support reactions can be calculated from force and moment equations. This apparatus is designed for simple experiments and demonstrations on simply supported beams. A bench mounted base supports two vertical pillars at either end, and a high top section used for suspending components. A ‘U’ channel beam is suspended by means of load stirrups and two spring balances. The spring balances act as supports and enable reactions to be read directly during testing. Further stirrups are mounted on the beam which suspends the Load hangers. These Load hangers and stirrups can be moved into numerous positions along the beam giving high variation for the end user. The beam has an integral linear scale to obtain accurate positioning of itself and the hanger. Attached to the base of the apparatus are three clevis fasteners. These allow the spring balances to be suspended underneath the beam to allow cantilevers and levers to be arranged.

Related Laws/Applications

- Reactions
- Force
- Equilibrium
- Moments
- Levers
- Cantilevers
- Spring Balance
- Simply Supported Beams
- Point Loading

Learning capabilities

- Experimental determination of the reaction forces in the supports of a simply supported beam under various loadings
- Measurement of loads and moments on a lever
- Comparison with calculated results and validation of the principle of equilibrium

Technical Specification

- Base: 1000(L) x 120(W) x 40(H) mm
- ‘U’ channel beam: 1041mm in length
- Integral linear scale: 1000mm; 1mm resolution
- 2 x Spring balances: 10kgf range; 0.25kgf resolution
- Hanger stirrups: 5 off
- Load hangers: 1N x 3 off

What’s in the Box?

- 1 x HFC1
- 1 x Beam assembly
- 2 x Spring balance assembly
- 5 x Stirrup ring
- 3 x Load hanger
- 1 x Tape measure
- 4 x 1N; 1 x 2N; 3 x 5N; 3 x 10N; 1 x 20N
- Instruction manual
- Packing list
- Test sheet

You might also like

- HFC1a
- HSM1
- HSM1c
- HSM1cD

Weights & Dimensions

- Weight: 8 kg
- Length: 1070mm
- Width: 175mm
- Height: 560mm

Essential Services

- Sturdy Bench Top

Ordering information

To order this product, please call PA Hilton quoting the following code: HFC1