



## 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

All brand and/or product names are trademarks of their respective owners. Specifications and external appearance are subject to change without notice. The colour of the actual product may vary from the colour shown in the brochure.

Copyright © 2018 P.A. Hilton Limited. All rights reserved. This technical leaflet, its contents and/or layout may not be modified and/or adapted, copied in part or in whole and/or incorporated into other works without the prior written permission of P. A. Hilton Limited. Hi-Tech Education is a registered trade mark of P. A. Hilton Limited.

COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS