

***Allows students to investigate beam deflection behaviour, from relative stiffness to beam formulae and material moduli***



- Ideal for classroom demonstrations and for use by small groups of students
- Fits onto one of the optional TASK Frames and shows beam bending
- Includes a set of different beams
- Colour-coded parts to help students understand what each part does
- Supports all teaching levels up to and including first year university courses
- Hands-on equipment - easy-to-assemble parts allow students to build the experiments for improved understanding of the experiment

- **TecQuipment** products are designed and manufactured by TQ Education and Training Ltd
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- TQ is an ISO 9001 certified company

## Description

A kit including four beams of different shapes and materials.

Students attach a back-plate to a mesh frame (frames available separately). They then set up a beam as either a cantilever (clamped at one end) or as a simply supported beam (across two knife edges). They gradually load the beam using weights on a hanger (weight set available separately). A dial indicator measures deflection.

Students work individually or in groups of up to three. The colour of parts indicates their function. For example, yellow parts are mainly stationary or passive, and white parts are instrumentation. Red parts may move or contain energy.

The kit comes with Assembly Instructions. A Teacher Guide provides experiment methods, information, references and tips. A Student Workbook guides students through experiments.

## Standard Features

- Supplied with comprehensive User Guides (Assembly Instructions, Student Workbook and Teacher Guide)
- Two-year warranty
- Manufactured in accordance with the latest European Union directives

## Essential Ancillaries

- Upright Frame (UF)
- Weight Set (WT)

## Experiments

- Investigating beam deflection and various support combinations
- Concept of second moment of area
- Illustration of the elastic (Young's) modulus of a material
- Comparing theoretical and experimental derivations of elastic modulus and second moment of area
- General beam deflection formulae
- Deflection of a cantilever subjected to a varied point load
- Deflection of cantilevers of various lengths subjected to point loads
- Deflection of a simply supported beam subjected to point loads

## Operating Conditions

*Operating environment:*  
Laboratory environment

*Storage temperature range:*  
-25°C to +55°C (when packed for transport)

*Operating temperature range:*  
+5°C to +40°C

*Operating relative humidity range:*  
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

## Specifications

Packed Dimensions and Weight: 0.011 m<sup>3</sup> and 3.44 kg

### Beams

- I-section plastic beam
- Square section plastic beam
- Aluminium beam
- Steel beam

### Main Parts

- Magnetic dial gauge
- Back plate
- All necessary clamps, rails, brackets, nuts and bolts, spacers, hook plates

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