

Product Name :
Beam On Two Supports: Shear Force & Bending Moment Diagrams

Product Code :
TN711



Description :

Beam On Two Supports: Shear Force & Bending Moment Diagrams

Technical Specification :

Beam On Two Supports: Shear Force & Bending Moment Diagrams
The unit is perform the following experiments and investigations:

Learning Objectives / Experiments:

- Calculation of the reactions arising from the static conditions of equilibrium
- Application of the method of sections to calculate the internal forces and moments
- Under a point load
- Under multiple point loads
- Calculation of the shear force diagram
- Calculation of the bending moment diagram
- Comparison of calculated and measured values for shear force and bending moment

Specifications:

- [1] determination of shear force and bending moment on beam mounted on 2 supports
- [2] measurement of shear force and bending moment in beam by low-friction hinge with 2 degrees of freedom
- [3] position of hinge at 1/3 span
- [4] 2 bearing supports
- [5] loading of beam by 1 to 3 point loads
- [6] force gauges to indicate shear force and determine bending moment
- [7] bending moment determined by force measurement and lever arm

- [8] adjuster nuts for horizontal alignment of beam
- [9] steel rule to determine positions of point loads
- [10] storage system to house the components

Technical Data:

Beam

Total length: 1000mm

Span: 800mm

Weights

3x 1N (hanger)

12x 1N

9x 5N

Weight per hanger: 20N

Measuring ranges

Bending moment via force gauge and lever arm

Lever arm: 100mm

Force gauge: $\pm 100\text{n}$

Bending moment: $\pm 10\text{nm}$

Shear force: $\pm 50\text{n}$

Steel rule: 1000mm, graduation: 1mm

Dimensions and Weight

Length x Width x Height: 1400x320x600mm

Weight: 35kg

Length x Width x Height: 1170x480x178mm (storage system)

Weight: 12kg (storage system)

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