

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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