SV SERIES

Torsion and Buckling

Unsymmetrical Bending and Shear – SV601

This experiment allows the experimental investigation of the deflection observed when a load is applied to unsymmetrical beams or bars as well as being able to assess the location of the shear centre of these beams.

ALLOWS THE STUDY OF THE DEFLECTION OF UNSYMMETRICAL BEAMS AND LOCATION OF SHEAR CENTRE

The experiment has the following properties:

- Three different bar section specimens
- Up to 1000g of weight hangers to apply load to the specimens
- Two digital indicators to measure total horizontal deflection

SV100 Bench Mounted Frame (sold separately)

armBUS software

Supplied specimens can be compared and evaluated

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USA office - email: info@armfield.inc tel: +1 (609) 208-2800 (USA only)

Issue: 1
URL: http://www.armfield.co.uk/structures
Applications
ME CE IP

Description

One of a range of Experiment Modules that fit onto the SV100 Structures Bench Mounted Frame. The product helps students understand symmetrical and non-symmetrical bending of three different beam profiles, including an equal angle section, 'U' section and 'T' section.

Three different beam specimens can be supported individually using a clamping mounting block. A horizontal load is applied to the ends of the specimens using the weight hanger applying load via the cord, routed around the pulleys.

The specimens use the same material, wall thickness and are of the same outside envelope dimension (12.7mm). As a result, the deflection of these different specimens can be compared and evaluated. The centre of rotation of the beam samples is located through the centroid of area of the cross section of each sample.

The kit is supplied with twin DTI mounts that allow two digital indicators to be positioned perpendicular to each other on the horizontal plane. This allows the total deflection components of the specimens under loading to be easily measured.

Results can be manually added to the supplied software for further analysis.

Requirements

Electrical supply: 110/120V, 60Hz **or** 220/240V, 50Hz

- SV100: Bench Mounted Frame
- PC with a USB port, running Windows 7 or above

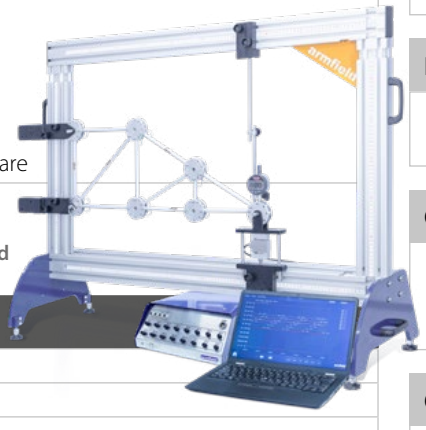
Scale

Technical specification

Portal Specimens

- 1 x U Channel Specimen
- 1 x T Beam Specimen
- 1 x Equal Angle Beam (90° L Beam)
- 1 x Specimen Mounting Block
- 1 x Specimen Clamping Block
- 1 x Specimen Loading Post Assembly
- 1 x Protractor
- 1 x 1000g Weight Hanger
- 2 x DTIs
- 1 x Twin DTI Mounting Kit
- 1 x Cord
- 2 x Pulley Brackets
- Fixings and Hardware
- Frame Mounting Kit Hardware

The Armfield SV series is supplied with structures software as standard



Overall dimensions

Length	1.176m
Width	0.392m
Height	0.922m
Packed and crated shipping specifications	
Volume	0.1m³
Gross weight	25 kg

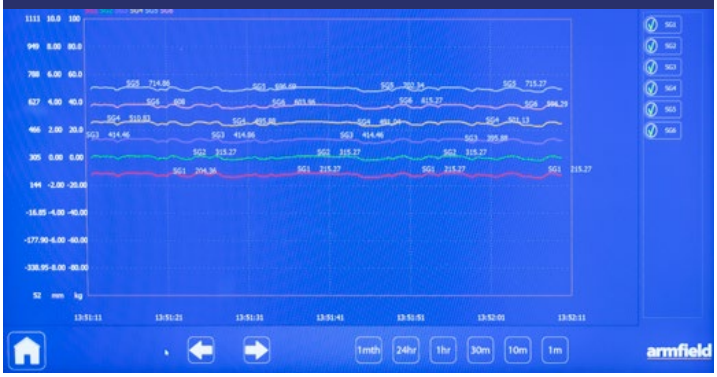
Experimental content

- Study of the horizontal deflection of asymmetrical cantilevers under various loadings
- Verification of the theory of unsymmetrical bending
- Determination of the neutral axis in an angle section
- Determination of the Shear Centre in U channel section

Features / benefits

- Includes specimen beams of three different cross-sectional shapes for increased experiment range
- High resolution indicators for accurate displacement measurements
- 360° rotation adjustment
- Supplied with Armfield structures software as standard

Graphing detail



Essential accessories/equipment

- **SV100:** Bench Mounted Frame

Related laws

- Principle Axis
- Shear Centre
- Unsymmetrical Bending
- Cantilever
- Neutral Axis

Related products

- **SV600:** Buckling of Struts
- **SV602:** Torsion of Rods and Tubes

Operational conditions

- **Storage temperature:** -10°C to +70°C
- **Operating temperature range:** +10°C to +50°C
- **Operating relative humidity range:** 0 to 95%, non-condensing

Ordering codes

- **SV601:** Unsymmetrical Bending and Shear
- **SV100:** Bench Mounted Frame **(Sold separately)**

Armfield standard warranty applies with this product