



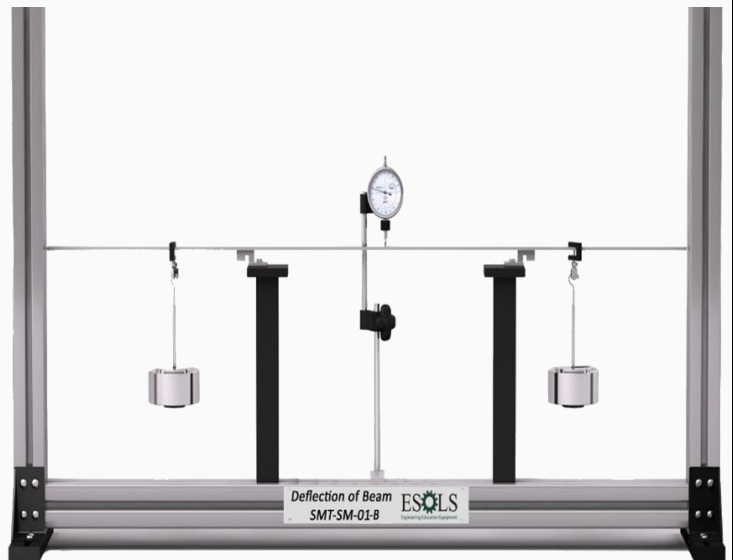
Deflection of Beams (SMT-SM-01-B)

It consists of a beam mounted on two supports which is subjected to point loads. The beam is cut at one point. At that point there is a low-friction hinge with one degree of freedom. The force gauge indicates the internal reaction (shear force) at this point on the beam. An adjuster nut on the force gauge is used to align the beam horizontally and balance out any deflection. The reactions are determined from the static conditions of equilibrium. To investigate the effect of the point loads in the beam, it is notionally split into two segments. Applying the method of sections, the internal forces and moments are plotted onto the two segments and calculated by way of conditions of equilibrium.

TECHNICAL SPECIFICATIONS

Specifications:

- Investigation of shear force on beam mounted on 2 supports.
- Measurement of shear force in beam by low-friction hinge with 1 degree of freedom.
- Position of hinge at 1/3 span.
- 2 bearing supports.
- Loading of beam by 1 to 3 point loads.
- Force gauge to indicate shear force.
- Adjuster nut for horizontal alignment of beam.
- Storage system to house the components.



Technical Data:

- Beam:
 - Total length: 1000mm.
 - Span: 800mm.
- Shear force measuring range: $\pm 50\text{N}$.
- Weights:
 - 3x 1N (hanger), 12x 1N, 9x 5N.
 - Max. weight per hanger: 20N.
- LxWxH: 1400x320x600mm.
- Weight: approx. 35kg.
- LxWxH: 1170x480x178mm (storage system).
- Weight: approx. 12kg (storage system).