Features

- High-quality structures teaching module for students of mechanical, civil and structural engineering
- Allows safe and practical experiments into deflections of beams and cantilevers
- Realistic and verifiable experiment results
- Optional Structures Software package for extra 'virtual' experiments that simulate and confirm the results from your hardware and allow extended experiments
- Optional MOS Software package for automatic data acquisition and virtual experiments

Experiment investigating with Tesca Unsymmetrical Bending and Shear Centre Apparatus with different sectioned beams when the loading is not in the plane of a principal axis. A 'U' section, 'L' section and rectangular beam cantilever is horizontally supported within a rotating clamp which fits in a substantial frame attached to the Frame and Stand. The rotating clamp enables the loading and deflection planes to be set relative to the cross section axes. A protractor scale is fitted to the substantial block and a pointer on the specimen references against this scale.

At the other end of the cantilever specimens is a boss onto which two dial gauges rest and through which the vertical loading is applied. The flat anvils of the dial gauges ensure a consistant flat surface during cantilever deflection. The dial gauges are mounted at right angles to each other and have full positional adjustment available. For shear centre work, additional loading bars are supplied that attach into the free end of the specimens, onto which the dial gauges can be referenced. Loading is applied to the specimens using a load hanger and calibrated weights set.

A comprehensive instruction manual for lecturer and student, giving full details on apparatus assembly and operation as well as example results. All necessary assembly and operational tools are provided.

Specifications

- Cantilevered specimens: 'U'; 'L' and rectangular
- Angle of principle axes can be varied
- Cantilever test length 600mm
- Dial gauges to accurately measure the deflection of the free end of the test specimen during loading
- Protractor attached
- Shear Centre analysis for 'U' specimen only.
- Specimen loading transmitted through hanger and calibrated test weights
- Must be used with universal Frame and Stand

Experiments

- Study of the horizontal and vertical deflection of asymmetrical cantilevers when the plane of loading does not coincide with a principle axis of the section|
- 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 only

Operating Conditions

- Operating environment:
  * Laboratory
- Storage temperature range:
  * –25oC to +55oC (when packed for transport)
- Operating temperature range:
  * +5oC to +40oC
- Operating relative humidity range:
  * 80% at temperatures < 31oC decreasing linearly to 50% at 40oC

Note: Specifications are subject to change.

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