

UNSYMMETRICAL BENDING MACHINE

RS 038

Description:

Symmetrical bending of a beam – also known as uniaxial bending – occurs when the load plane coincides with one of the main axes of the beam cross-section. The beam then deflects in the direction of the load and can be described by elastic lines. In unsymmetrical bending of a beam – also known as complex or biaxial bending – the main axes of the cross-section do not coincide with the direction of loading. To prevent torsion, the line of application of the load must pass through the shear centre. If it does not, the beam undergoes combined bending and torsion loading. This Unit is used to perform experiments relating to unsymmetrical bending . The beam under investigation is clamped into place on one end and loaded down at the free end. Two dial gauges record the horizontal and vertical deformation of the beam. If we load a prismatic beam like a downpipe on a plane perpendicular to its longitudinal axis, in addition to bending moment, there will also be torsional moment on the downpipe cross section. However, if the exerted load line coincides with what is called shear center, the beam just bends without experiencing torsion. Using the unsymmetrical bending apparatus, we can investigate unsymmetrical bending relations in beams.

Specifications:

- Device for adjusting the eccentricity of the load application point and flange to mount the load
- Cantilever beam with rectangular profile
- Clamping flange of beam with angle scale
- Dial Gauges
- Load application system with support legs
- Carbon steel structure
- Installation and training video included
- Instructions manual included
- 10-year warranty
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Note: Direct contact with the sales department is required to confirm the last updated technical specifications and pictures.

Applications:

1. Comparing the theoretical values of unsymmetrical beam deflection with experimental ones
2. Calculating displacement in a beam with one free end
3. Experimental calculations of moments of inertia around the principal axes

Required For Operation:

- Desirable Temperature (°C): 10-30
- Relative Humidity: 15% - 80%

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Dimensions (L*W*H) mm: 1200 x 650 x 1400

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