

Bending bench - Torsion Simple or compound

DESCRIPTION

- The SFT 350 bench used to study the flat profiles bending as well as the torsion of round profiles
- The design allows to apply a torsional moment as well as a bending moment pure or induced by a shear force.
- The 3 types of solicitations described above can be applied simultaneously
- Influence of the types of links (embedded or point)
- Teaching manual provided.
- Design, manufacture and industrial material.
- The didactic interest of SFT 350 is directed to the IUT, engineering schools and universities in mechanical sections.



PEDAGOGICAL APPLICATIONS

- Determination of unitary torsion angle
- Determination of total torsion angle
- Study of the flat profiles bending
- Bending depending on the case of bi-embedded links, embedded / point, bi point)
- Comparing theoretical and practical approaches of the deformed
- Measurement of the deformation (in bending and torsion)
- Overlay of the solicitations (torsion / bending pure / simple bending).
- Comparison of the deformed in pure or simple bending

Description of the system:

Structure

- Benchtop anodized aluminum chassis
- 4 adjustable feet
- A measurement instrumentation supported by the system

Simple bending test area

- 2 adjustable spacing supports
- Possibility on these 2 supports to produce a point support or embedded
- 1 position adjustable weight carrier
- 1 mobile comparator support + comparator to 0.01mm for measuring of the deformation

Test Area pure torsion and torsion / flexion composed:

- Allows to realize the pure torsion tests, or of torsion / flexion composed
- 2 chucks for fixation of the ends of the beam
 - o Chuck A fixed in rotation around its axis mounted on a support with 2 axes of freedom
 - o Chuck B, mobile in rotation around its axis, mounted on ball bearings
- Torsional moment created by applying weight on a pulley integral of the chuck A
- Measure of the overall torsional angle on graduated dial
- 2 annexes graduated supports positionable along the beam allowing to highlight the concept of unitary angle of torsion.
- A localized bending moment at the end of the beam can be applied at the chuck B level
- A shear force inducing a bending moment can also be applied at the chuck B level
- The design of the system makes completely independent the loads inducing the moments of torsion, of bending or shear force
- All loads are applied by using specific weight of 100g, 200g, 500g and 1kg
- The deformed measurements are accurate to 0.01 rad closely and 0.01mm

Test tubes :

- 1 lot of test tube of various materials for bending tests (rectangular section) / materials: aluminum, copper, steel / different dimensions
- 1 batch of test tube of varied materials for torsion tests, or sollicitation composed (circular section) / materials: aluminum, copper, steel / tube or round / different lengths / diameters.

Dimensions (L*W*h in mm) / weight (in kg) :

- 1200 x 500 x 600 / 55kg approx