



ASTR6 Torsion of Circular Sections

圓截面的扭轉撓度



Features:

- For study of torque and deflection in different materials with circular section
- High-quality structures teaching module for students of mechanical, civil and structural engineering
- Allows safe and practical experiments into torsion of circular sections
- Realistic and verifiable experiment results
- Optional All Structures Software package for extra 'virtual' experiments that simulate and confirm the results from your hardware and allow extended experiments
- Optional ASTR2000 unit with All Structures Software package for automatic data acquisition and virtual experiments
- One of many interchangeable experiment modules from All modern, flexible and cost-effective structures teaching system
- Ideal for classroom demonstrations, or students working in pairs or small groups

Description:

The experiments hardware fits onto a Structures Test Frame (ASTR1, available separately). It examines the behaviour in the elastic region of solid and tubular-section specimens.

Two chucks on a backboard hold a test specimen. A mechanism on one chuck applies torque manually to the specimen. A protractor scale on this chuck measures angular movement. A load cell on the other chuck measures torque. The equipment includes a lead to connect the load cell to a Digital Force Display (ASTR1a, available separately). To vary the test length of a specimen, one chuck can traverse the backboard. Included is an electronic angular transducer for use with the optional Automatic Data Acquisition Unit (ASTR2000).

The lecturer guide provides details of the equipment including sample experiment results. The student guide describes how to use the equipment and gives experiment procedures.

For extra 'virtual' experiments, All can supply the optional All Structures Software (ASTRS), for use on a suitable computer. The virtual experiments simulate the tests you can perform with the hardware. They also extend the choice of tests beyond that available using only the hardware, for example: higher loads, uniform loads or different test specimens. This extends the student's learning experience.

For automatic data acquisition of your experiment results, All can supply the optional Automatic Data Acquisition Unit (ASTR2000). Supplied as standard with the ASTR2000 is All Structures Software which displays and logs your experiment results and gives the extra virtual experiments.



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Specification:

- Standard Features
 - Supplied with lecturer guide and student guide
 - Two-year warranty
 - Made in accordance with the latest European Union directives
- Experiments
 - Study of:
 - the relationship between specimen length, torque and angular deflection;
 - the behaviour of specimens of different material and sections;
 - general torsion theory;
 - shear modulus;
 - polar moment of inertia.
- Essential Ancillaries
 - Structures Test Frame (ASTR1)
 - Digital Force Display (ASTR1a)
- Recommended Ancillaries
 - Structures Software (ASTRS) for virtual experiments **or**
 - Automatic Data Acquisition Unit (ASTR2000) for automatic data acquisition and virtual experiments
- Operating Conditions
 - Operating environment: Laboratory environment
 - Storage temperature range:
 - 25°C to +55°C (when packed for transport)
 - Operating temperature range: +5°C to +40°C
 - Operating relative humidity range:
 - 80% at temperatures < 31 °C decreasing linearly to 50% at 40°C
- Specifications
 - Nett dimensions and weight:
 - 920 x 150 x 190 mm, 6.5 kg
 - Packed dimensions and weight:
 - Approximately 0.060 m³, 8 kg
 - Specimens:
 - 1 x solid steel
 - 1 x solid brass
 - 1 x tubular brass
 - Accessories: Rule and vernier