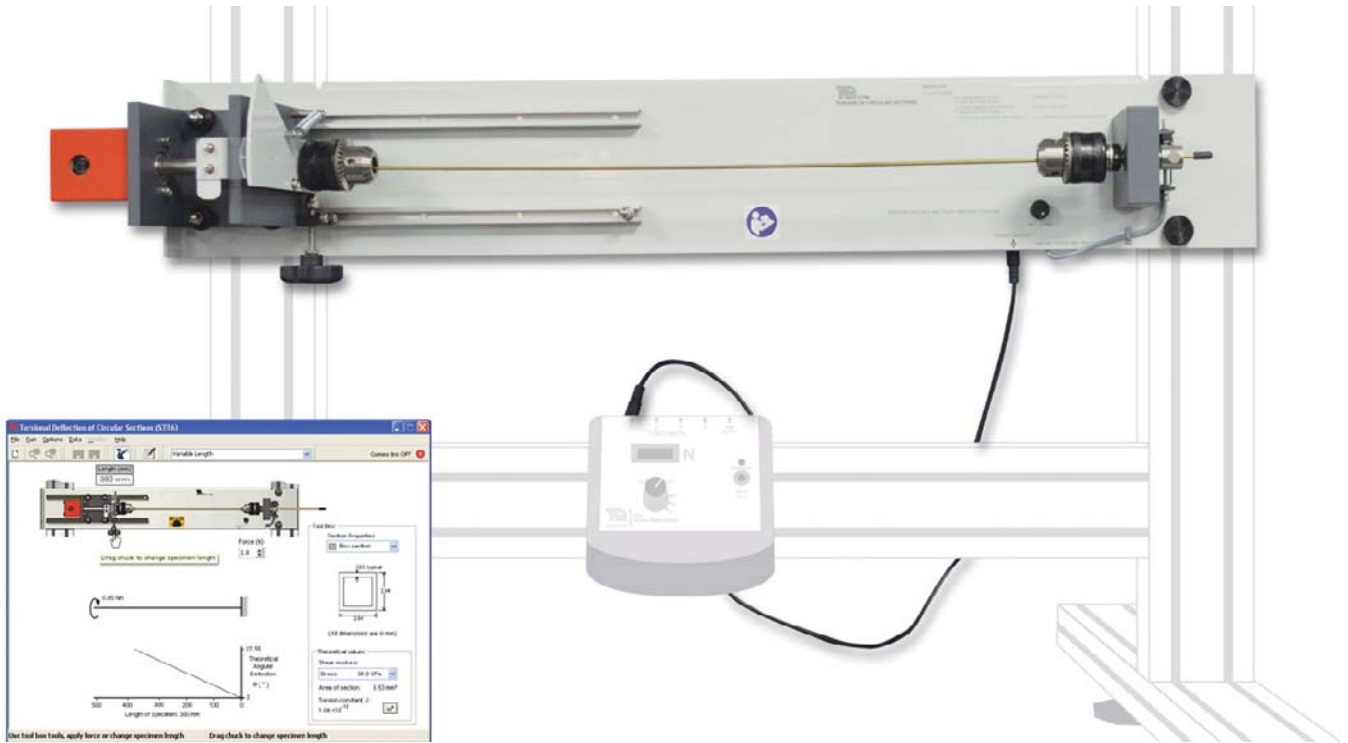


STR6

## TORSION OF CIRCULAR SECTIONS

Experiment for the study of torque and deflection in different materials with circular section. Mounts on the Structures test frame and connects to the Structures automatic data acquisition unit and software.



SCREENSHOT OF THE OPTIONAL STRUCTURES SOFTWARE

### KEY FEATURES

- Allows safe and practical experiments into torsion of circular sections
- Realistic and verifiable experiment results
- Optional TecEquipment's Structures Software package for extra 'virtual' experiments that simulate and confirm the results from your hardware and allow extended experiments
- Optional STR2000 unit with TecEquipment's Structures Software package for automatic data acquisition and virtual experiments
- One of many interchangeable experiment modules from TecEquipment's modern, flexible and cost-effective structures teaching system

### LEARNING OUTCOMES

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

### KEY SPECIFICATIONS

- Includes 3 specimens (1 x solid steel, 1 x solid brass, 1 x tubular brass)
- Includes rule and vernier

# TORSION OF CIRCULAR SECTIONS

## DESCRIPTION

The experiments hardware fits onto a Structures Test Frame (STR1, 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 (STR1a, 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 (STR2000).

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, TecQuipment can supply the optional TecQuipment Structures Software (STRS), 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, TecQuipment can supply the optional Automatic Data Acquisition Unit (STR2000). Supplied as standard with the STR2000 is TecQuipment's Structures Software which displays and logs your experiment results and gives the extra virtual experiments.

## STANDARD FEATURES

- Supplied with lecturer guide and student guide
- Five-year warranty
- Made in accordance with the latest European Union directives
- ISO9001 certified manufacturer

## ESSENTIAL BASE UNIT

- Structures Test Frame (STR1)

## ESSENTIAL ANCILLARY

- Digital Force Display (STR1a)

## RECOMMENDED ANCILLARY

- Automatic Data Acquisition Unit (STR2000) for automatic data acquisition and virtual experiments

## OPERATING CONDITIONS

### OPERATING ENVIRONMENT:

Laboratory

### 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

## DETAILED SPECIFICATIONS

TecQuipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

### NETT DIMENSIONS AND WEIGHT:

920 x 150 x 190 mm, 6.5 kg

### PACKED DIMENSIONS AND WEIGHT:

Approximately 0.060 m<sup>3</sup>, 8 kg

### SPECIMENS:

- 1 x solid steel
- 1 x solid brass
- 1 x tubular brass

### ACCESSORIES:

Rule and vernier

