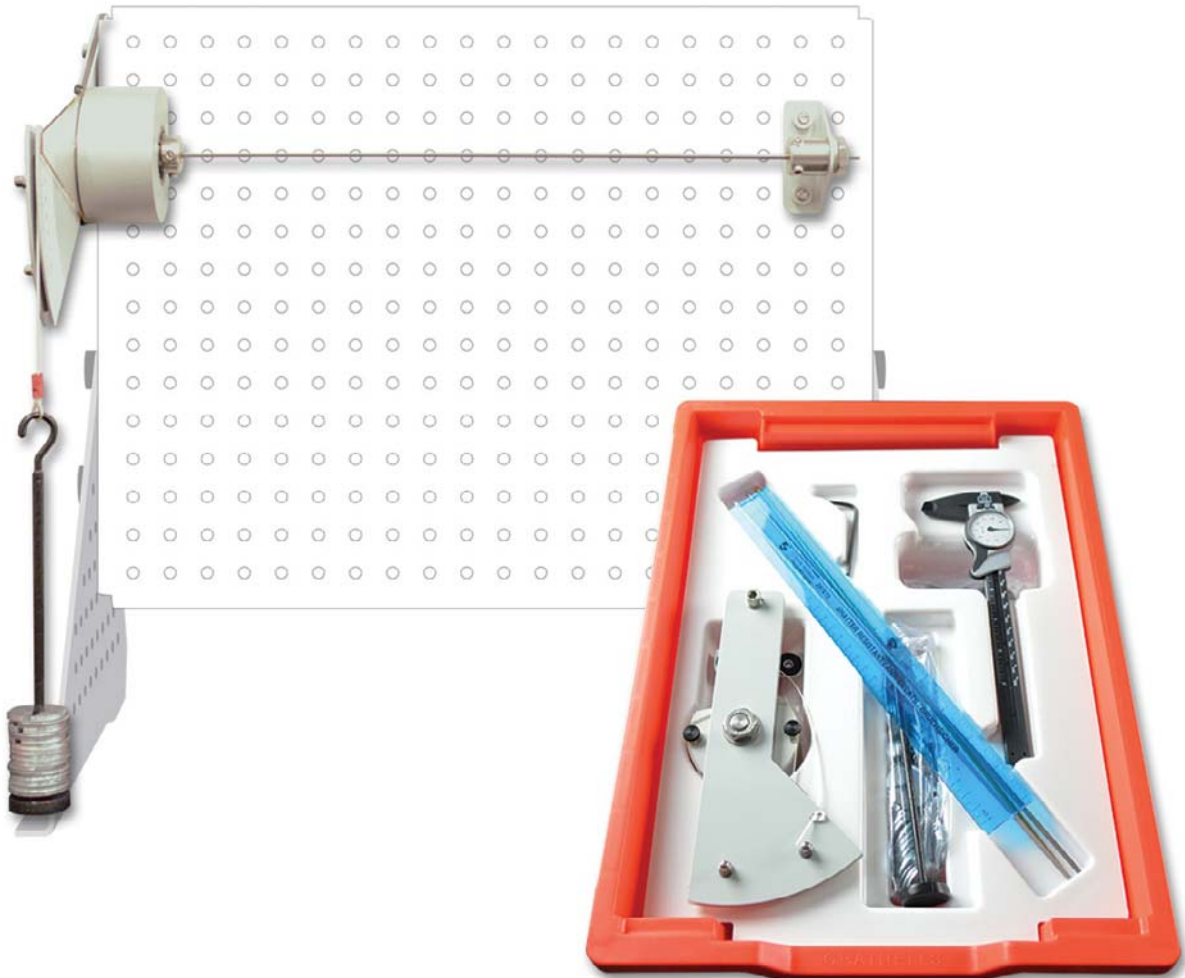




## ≡ TORSION OF CIRCULAR SECTIONS KIT

ES5

Demonstrations the torsion in circular section specimens of different materials and lengths.



### KEY FEATURES

- One of a series of 18 kits for experiments in fundamental engineering science topics
- For use on any engineering course from foundation to postgraduate
- Flexible and modular with sensible size parts, each kit fits onto the work panel (ES1) for experiments and simple classroom demonstrations
- Supplied in a hard-wearing storage tray with moulded insert to hold parts securely and a graphical list to help check the kit contents
- Rugged and durable parts for safe 'hands-on' experiments, allowing better understanding
- Contains all parts needed for experiments showing the torsion in circular section specimens of different material and length



# ≡ TORSION OF CIRCULAR SECTIONS KIT

ES5

## DESCRIPTION

This versatile kit is part of a series that allows many experiments using different arrangements of their parts. Students, teachers or lecturers fit the parts of the kit to the work panel (ES1) (supplied separately) to study or show an engineering science topic.

This kit includes different circular section specimens and adjustable chucks for experiments in torsion. Students fix the specimens in the chucks and apply weights to a lever arm. The arm applies a moment (torque) to one end of the specimen. A scale on the arm shows the angle of twist.



Standard tests show the relationship between torsion and 'J' (polar second moment of area) value. Students use this to predict the twist angle for any given specimen.

The choice of different specimens allows comparisons of different specimen material and how it affects torsion, introducing the modulus of rigidity.

Students also move the chuck positions for easy experiments showing the relationship between specimen length and angle of twist.

TecEquipment supplies a CD-ROM with the work panel (ES1). It includes all the worksheets, guidance notes and lecturer notes (with answers) needed for typical experiments with each kit. The selection of parts in the kits and the choice of fixing points on the work panel means that teachers or lecturers may extend the experiments to an even greater range.

**NOTE:** The kit is for use with the ES1 work panel (supplied separately).

## STANDARD FEATURES

- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer

## LEARNING OUTCOMES

- Specimen length and angle of twist
- Specimen material and angle of twist (modulus of rigidity)
- Specimen 'J' value and angle of twist

## OPERATING CONDITIONS

### FOR USE IN:

Well lit classroom or 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

## ESSENTIAL SERVICES

A level bench or desktop of at least 500 mm wide x 500 mm front to back.

## ESSENTIAL BASE UNIT

Work Panel (ES1)

## SPECIFICATIONS

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

### STORAGE TRAY (WITH CLIP-ON LID):

450 mm x 320 mm x 85 mm

### NETT WEIGHT:

2.5 kg

### PACKED VOLUME AND WEIGHT:

Approximately 0.015 m<sup>3</sup> and 3 kg

### MAIN PARTS:

- Choice of specimens
- Rotating and fixed chucks
- Dial caliper
- Rule
- Weight hangers and weights
- Hexagon tool