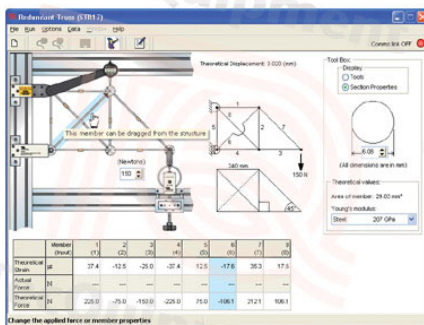


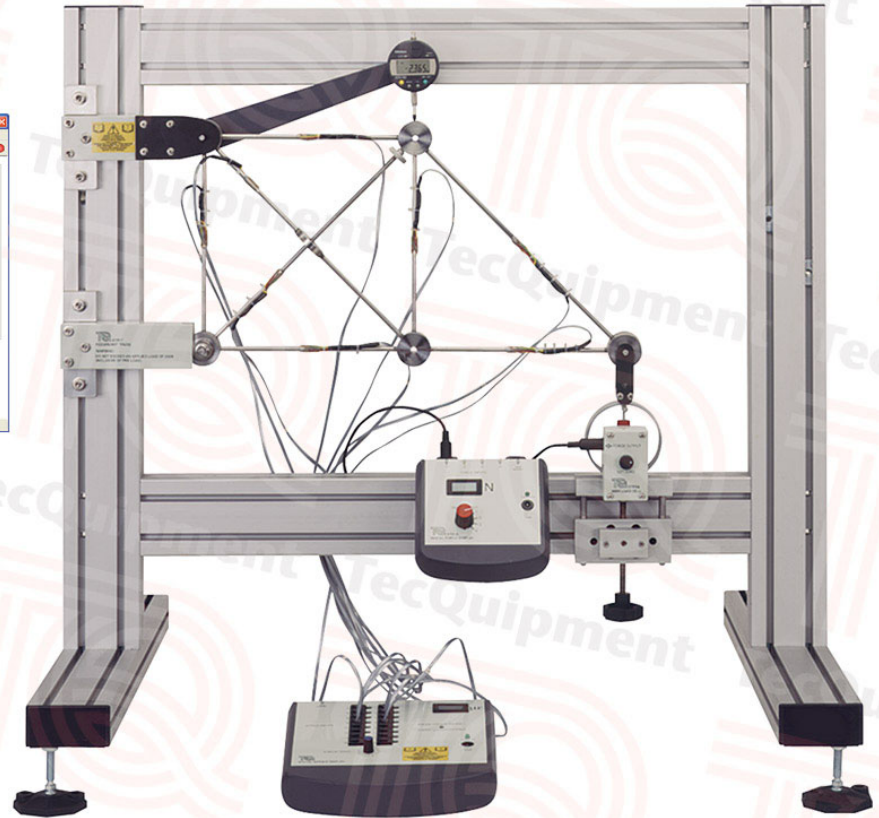
## STR17

## Redundant Truss

**For studying determinate and indeterminate structures**



A screenshot of the optional TecEquipment Structures Software



Shown fitted to the Structures Test Frame and connected to a Digital Force Display (both supplied separately)

- High-quality structures teaching module for students of mechanical, civil and structural engineering
- Allows safe and practical experiments into determinate and indeterminate structures
- 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
- Ideal for classroom demonstrations, or students working in pairs or small groups

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- An ISO 9001 certified company

## STR17

## Redundant Truss

**Description**

The experiment hardware fits onto a Structures Test Frame (STR1, available separately). Two supports hold the top and base of one side of a structure. The top support allows pivoting, the base support allows pivoting and rolling. Initially, one of the members is missing from the structure, making it determinate. To make the structure indeterminate, students refit the missing member.

Students manually apply a load to one end of the determinate framework using a screw-thread and electronic load cell. The load cell connects to a Digital Force Display (STR1a, available separately) which shows the applied load.

Each member of the structure has strain gauges attached. These each connect to a digital strain bridge which shows the member strains. Students use the strains to help them calculate the forces in the structure. A digital deflection indicator measures displacement in the structure.

Students note applied load, strains and deflection in a determinate framework. They then repeat the experiment with the frame made indeterminate, and analyse and compare their results.

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 that displays and logs your experiment results and gives the extra virtual experiments.

**Standard Features**

- Supplied with lecturer guide and student guide
- Two-year warranty
- Made in accordance with the latest European Union directives

**Experiments**

Study of strains, stresses, forces and deflections in:

- a statically determinate structure
- a statically indeterminate structure

**Essential Ancillaries**

- Structures Test Frame (STR1)
- Digital Force Display (STR1a)

**Recommended Ancillaries**

- Structures Software (STRS) for virtual experiments

**OR**

- Automatic Data Acquisition Unit (STR2000) 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:*

680 x 450 x 100 mm and 6.5 kg

*Packed dimensions and weight:*

Approximately 0.12 m<sup>3</sup> and 8.5 kg

*Load application:*

500 N electronic Load Cell

*Strain measurement:*

16-way Digital Strain Bridge

*Deflection measurement:*

Digital Deflection Indicator

*Accessories:*

Cable to connect to a Digital Force Display