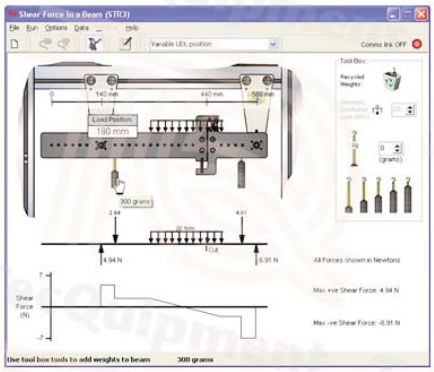
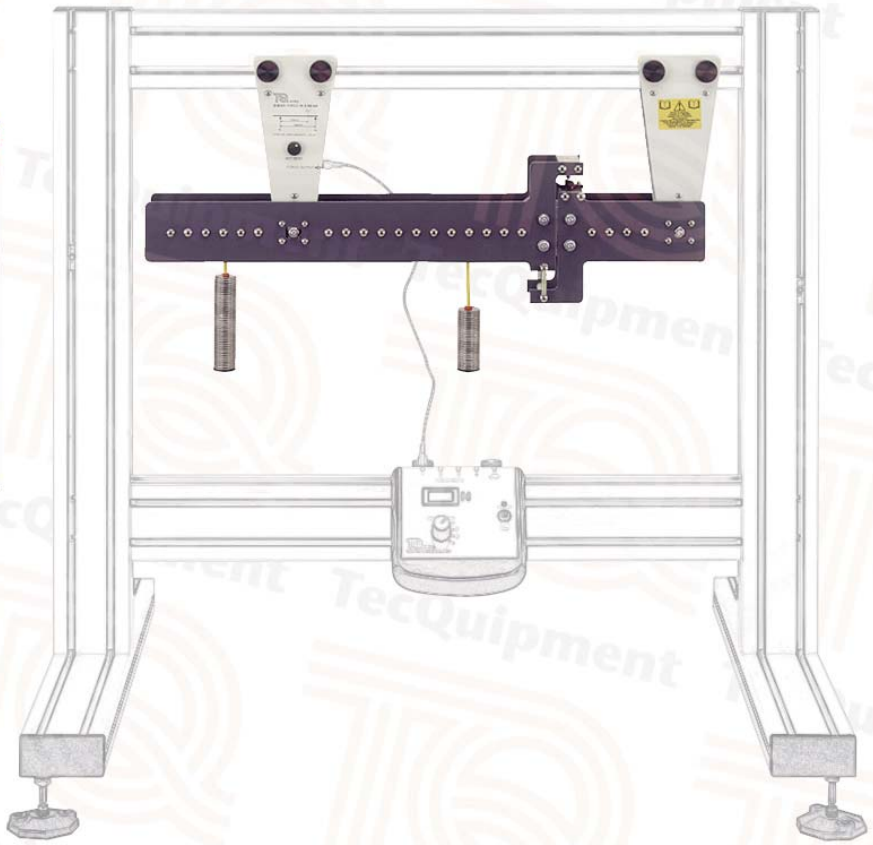
STR3 Shear Force in a Beam

Shows and proves the basic theory of shear force in a beam



Screenshot of the optional Structures Software



- High-quality structures teaching module for students of mechanical, civil and structural engineering
- Allows safe and practical experiments into shear force in a beam
- Realistic and verifiable experiment results
- Optional TecQuipment'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 TecQuipment's Structures Software package for automatic data acquisition **and** virtual experiments
- One of many interchangeable experiment modules from TecQuipment'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

TecQuipment

STR3 Shear Force in a Beam

Description

The experiment hardware is a simply supported beam with a 'cut'. The beam fits onto a Structures Test Frame (STR1, available separately).

A mechanism bridges the cut, which stops the beam collapsing and allows movement in the shear direction only. An electronic load cell measures the force, and connects to a Digital Force Display (STR1a, available separately). Students apply loads at set positions using hangers holding various masses.

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 and student guides
- Five-year warranty
- Made in accordance with the latest European Union directives

Experiments

- Shear force variation with an increasing point load
- Variation of shear force for various loading conditions
- Examination of various other loading cases and their effect on shear force, including loads traversing the beam

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

Specification

Nett dimensions and weight:
660 x 250 x 90 mm, 4.5 kg

Packed dimensions and weight:
Approximately 0.078 m^3, 6 kg

Loads:
Five weight hangers and 150 x 10 g masses

Hanger supports:
23 loading positions along the beam, 20 mm apart

Force measurement:
Electronic load cell

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