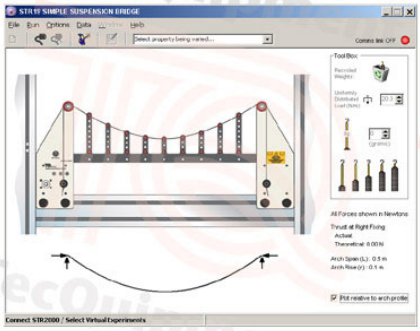
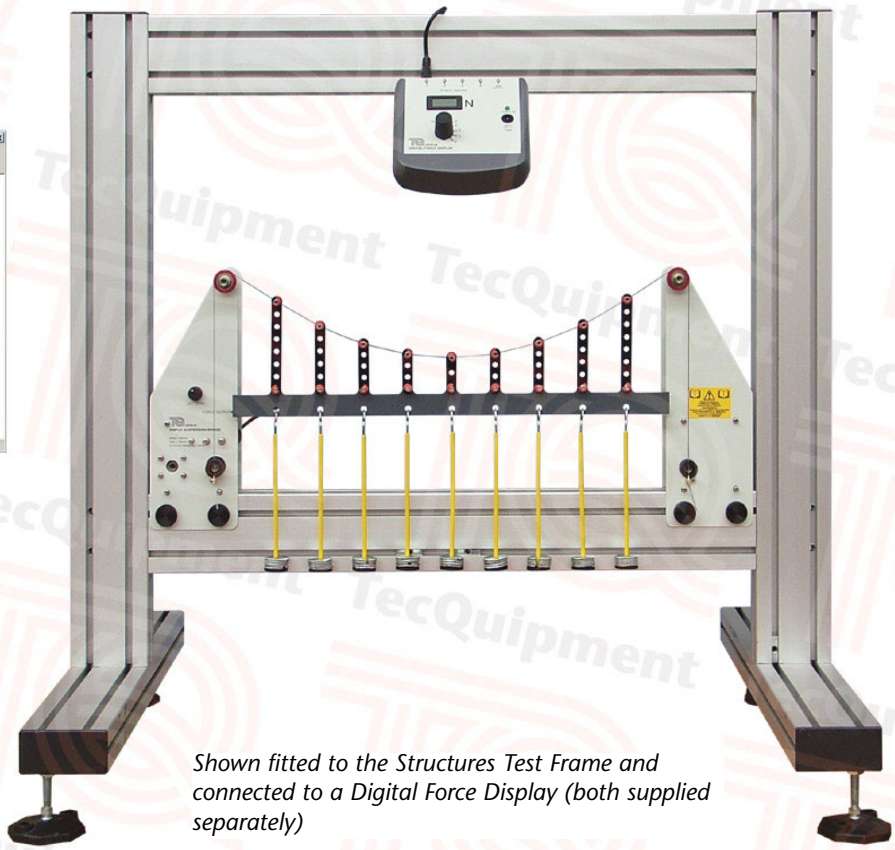
STR19 Simple Suspension Bridge

For studying characteristics of a simple suspension bridge



A screenshot of the optional TecQuipment 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 a simple suspension bridge structure
- 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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TecQuipment

STR19 Simple Suspension Bridge

Description

The experiment hardware fits onto the Structures Test Frame (STR1, available separately). Students use masses on weight hangers to apply various loads to a rigid deck, joined to a parabolic cable via hangers.

The suspension cable passes over pulleys at each end. One end is rigidly fixed. The other end connects to a mechanism bearing on a load cell. When connected to a Digital Force Display (STR1a, available separately), the load cell measures the cable tension. The equipment includes a signal cable to connect the load cell to a Digital Force Display (STR1a).

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

- Demonstration of the characteristics of a simple suspension bridge
- Examination of the relationship between applied loads and the suspension cable tension
- Observation of the stability of the structure
- Comparison of behaviour to simplified cable theory

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:
700 x 310 x 70 mm and 4.5 kg

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

Loads:
9 weight hangers and 150 x 10 g masses

Cable:
100 mm sag, 500 mm span

Accessories:
Rule

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