

Statics Fundamentals

Statics Fundamentals Work Panel
Statics Fundamentals Experiments

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“ For a number of years we have procured laboratory-based teaching resources from TecEquipment. Operation of this equipment, coupled with the robust build quality, provides our students with a clear understanding of the intrinsic features behind thermo-fluids and mechanical principles. This instils confidence for a safe, hands-on experience demonstrating these principles in practice. Furthermore, the build quality of TecEquipment products also gives assurance that the investment made satisfies our ongoing teaching needs well in to the future. ”

Graham Preece, Faculty of Computing, Engineering and Sciences, Staffordshire University

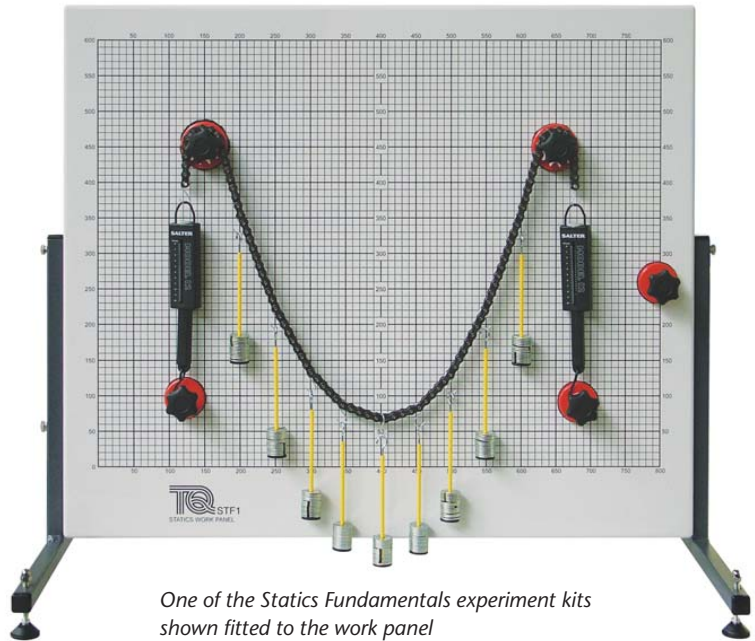
Statics Fundamentals

Flexible, modular and expandable

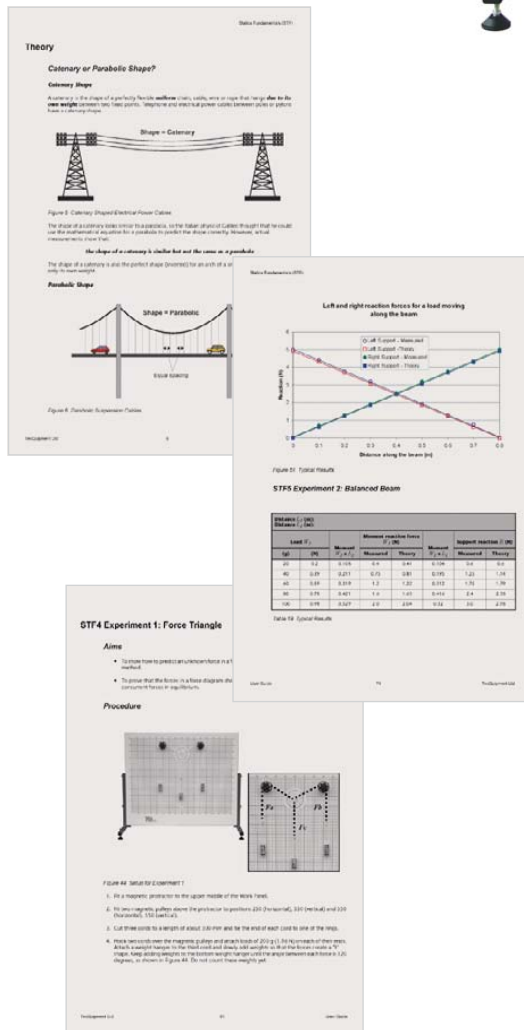
Each experiment kit fits onto a common work panel. This allows you to choose whether to have just one work panel shared between all four kits or a work panel for each kit.

Visual and hands-on

The Statics Fundamentals products continue TecQuipment's core value of creating 'hands-on' equipment. Students or teachers assemble and adjust the parts for highly visual and tactile experiments.



One of the Statics Fundamentals experiment kits shown fitted to the work panel



KEY FEATURES AND BENEFITS:

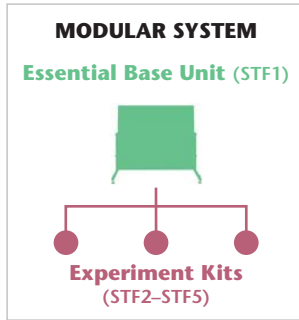
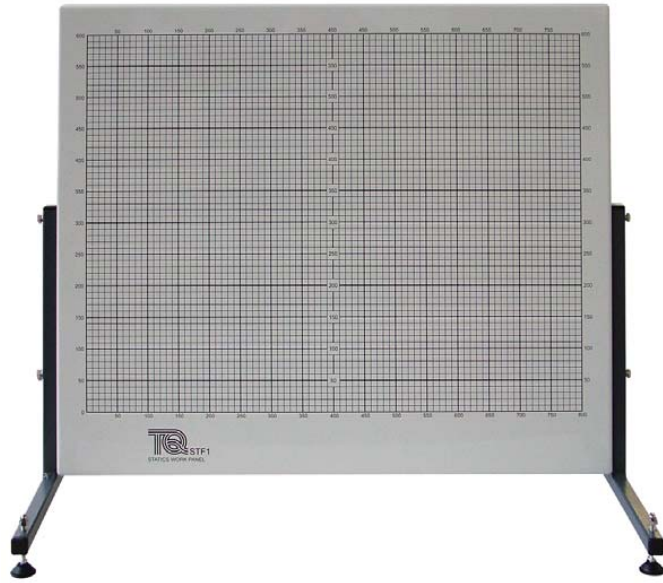
- **Flexibility:** share one work panel between experiments kits, or one work panel for each kit.
- **Hands-on:** large tactile parts for students to fit and adjust.
- **Highly visual:** for classroom demonstrations or groups of students.



Each kit is supplied with a fully illustrated user guide containing theory, experiments and typical results.

Statics Work Panel (STF1)

Work panel for use with TecEquipment's Statics Fundamentals (STF) range

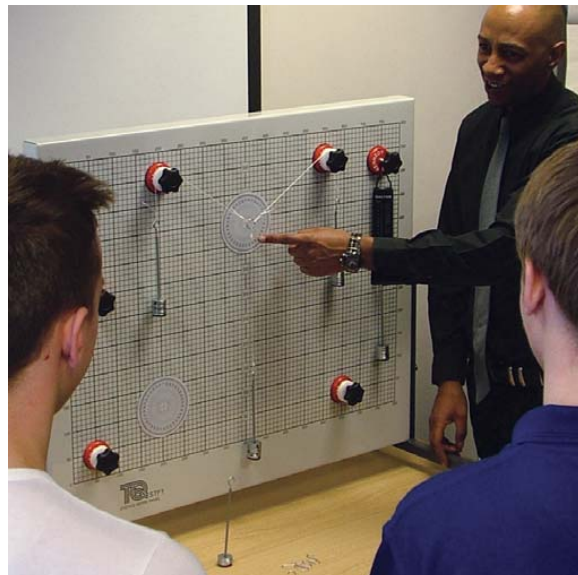


FEATURES:	BENEFITS:
Easy-to-assemble work panel that holds TecEquipment's interchangeable Statics Fundamentals (STF) experiment kits	➔ Modular approach reduces total laboratory costs
Large size – ideal for classroom demonstrations	➔ Highly visual, ensures student understanding even with large class sizes
Clear metric grid allows repeatable positioning of experiment parts	➔ Ensures reading consistency and repeatability between groups of students and achieve accurate results
Robust panel made of steel to work with the magnetic parts of the kits	➔ Students can quickly set up, remove or change experiments to maximise laboratory time – more students get to do practical experiments

For use with TecEquipment's Statics Fundamentals range, the work panel fits on most desk or bench tops.

Students or teachers fit the magnetic parts of their Statics Fundamentals kits to the Work Panel (STF1) to study or demonstrate one of the fundamental topics of static forces.

Available Experiment Kits:	Page
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• Equilibrium of a Rigid Body (STF3)	192
• Equilibrium of Forces (STF4)	193
• Equilibrium of a Beam (STF5)	193



Suspension Cable Demonstration (STF2)

Shows the tensions and shapes in a suspension cable, comparing them with theory

EXPERIMENTS:

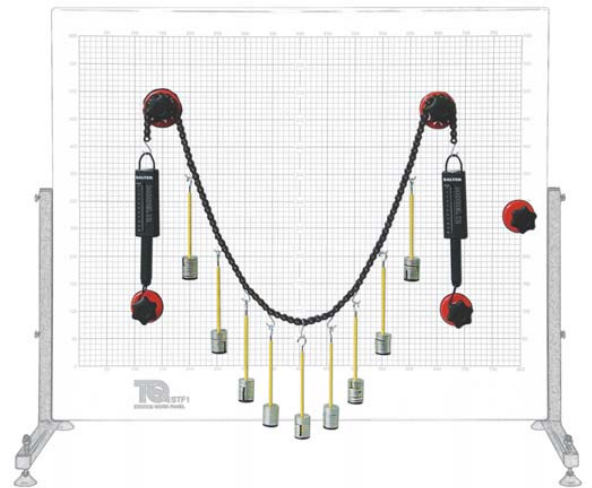
- Analysis using catenary and parabola theory
- Cable weight and tension
- Comparison of a symmetrical suspension cable and catenary
- Unsymmetrical suspension cable
- A point load on a suspension cable

For use with the Work Panel (STF1), the kit allows several experiments with a suspension cable.

Students or teachers fit the magnetic parts of the kit to the work panel to study or demonstrate the shapes and tensions in a suspension cable.

The kit compares a suspension cable with a catenary cable and analyses results using catenary and parabolic theory.

It includes a roller chain (the cable), held by magnetically mounted sprocket pulleys, and a set of weight hangers and weights. Spring balances measure the tension in the cable.



The versatility of the kit means that you can create symmetrical and non-symmetrical cables, with point loads or with evenly-spread loads.

TecEquipment supplies each kit with a fully illustrated user guide containing theory, experiments and typical results.

Essential Base Unit: Page

- Work Panel (STF1) 191

Alternative Product: Page

- Simple Suspension Bridge (STR19) 219

Equilibrium of a Rigid Body (STF3)

Shows the forces around a ladder-type structure

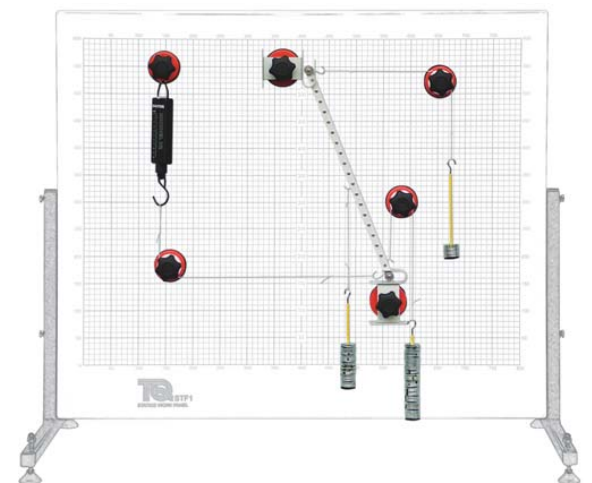
EXPERIMENTS:

- Horizontal and vertical reaction forces on a ladder
- Safe angles for a ladder
- A climbing mass on a ladder
- A ladder at different angles

For use with the Work Panel (STF1), the kit allows several experiments with a rigid body – a ladder structure.

Students or teachers fit the magnetic parts of the kit to the Work Panel (STF1) to study or demonstrate the forces around an inclined ladder-type structure.

The kit holds a model ladder at different angles, with or without a 'climbing mass', and measures the horizontal and vertical forces.



The versatility of the kit means that you can adjust the ladder angle between more than 15 to 45 degrees and try it with or without a climbing mass at any position along its length.

TecEquipment supplies each kit with a fully illustrated user guide containing theory, experiments and typical results.

Essential Base Unit: Page

- Work Panel (STF1) 191



Equilibrium of Forces (STF4)

For experiments with three or more coplanar forces at equilibrium

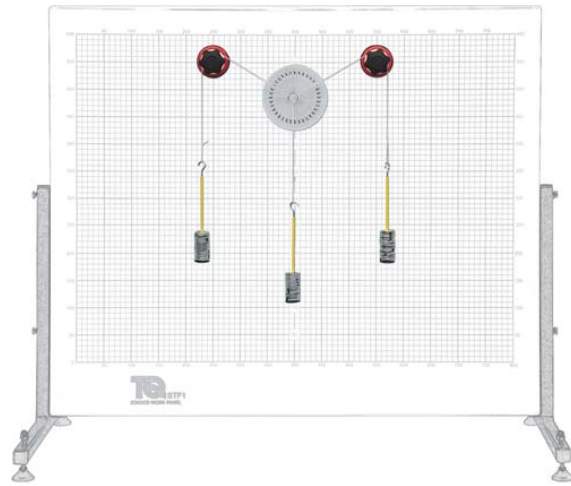
EXPERIMENTS:

- Concurrent and non-concurrent coplanar forces
- An introduction to Bow's Notation and graphical analysis
- Force triangles, polygons and link polygons

For use with the Work Panel (STF1), the kit allows several experiments with forces pulling on one or more points at different angles.

Students or teachers fit the magnetic parts of the kit to the Work Panel (STF1) to study or demonstrate three coplanar concurrent forces (triangle of forces) or more (force polygons).

The kit uses masses, hooks, pulleys and cords to apply forces on a single point (concurrent). Students may also set it to apply forces to two points (non-concurrent). Students measure the forces at equilibrium and compare with theoretical values. The kit introduces Bow's Notation and the drawing method of finding the forces.



The versatility of the kit means that you can set up to five forces at any angles, using its cords, rings, magnetic mounts, magnetic protractors, pulleys, weights and a spring balance.

TecEquipment supplies each kit with a fully illustrated user guide containing theory, experiments and typical results.

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Alternative Product:	Page
• Forces Kit (ES2)	10

Equilibrium of a Beam (STF5)

For experiments with forces, moments and reactions around a beam at equilibrium

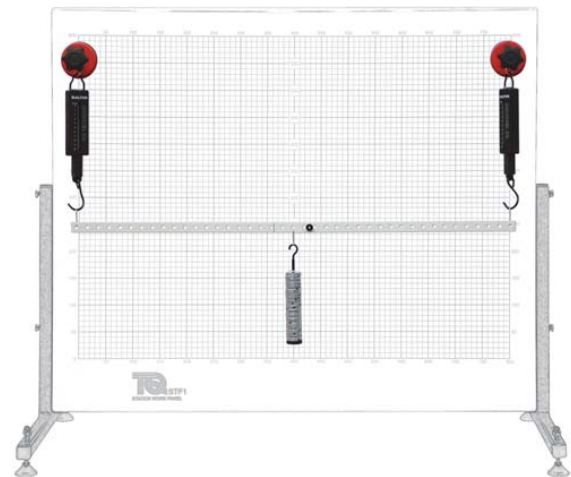
EXPERIMENTS:

- Using moments and the theory of equilibrium to find beam reaction and other unknown forces
- Simply-supported beams
- Balanced beams

For use with the Work Panel (STF1), the kit allows several experiments with a rigid beam.

Students or teachers fit the magnetic parts of the kit to the Work Panel (STF1) to study or demonstrate forces, moments and reaction forces around a rigid beam at equilibrium.

The kit uses masses, magnetic mounts and spring balances to apply forces to a rigid beam. Students measure the forces around the beam at equilibrium and compare with theoretical values found from theory of moments and equilibrium.



The versatility of the kit means that you can set up several different ways of supporting the beam, including simply supported or balanced.

TecEquipment supplies each kit with a fully illustrated user guide containing theory, experiments and typical results.

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• Work Panel (STF1)	191
Alternative Product:	Page
• Moments Kit (ES3)	11