

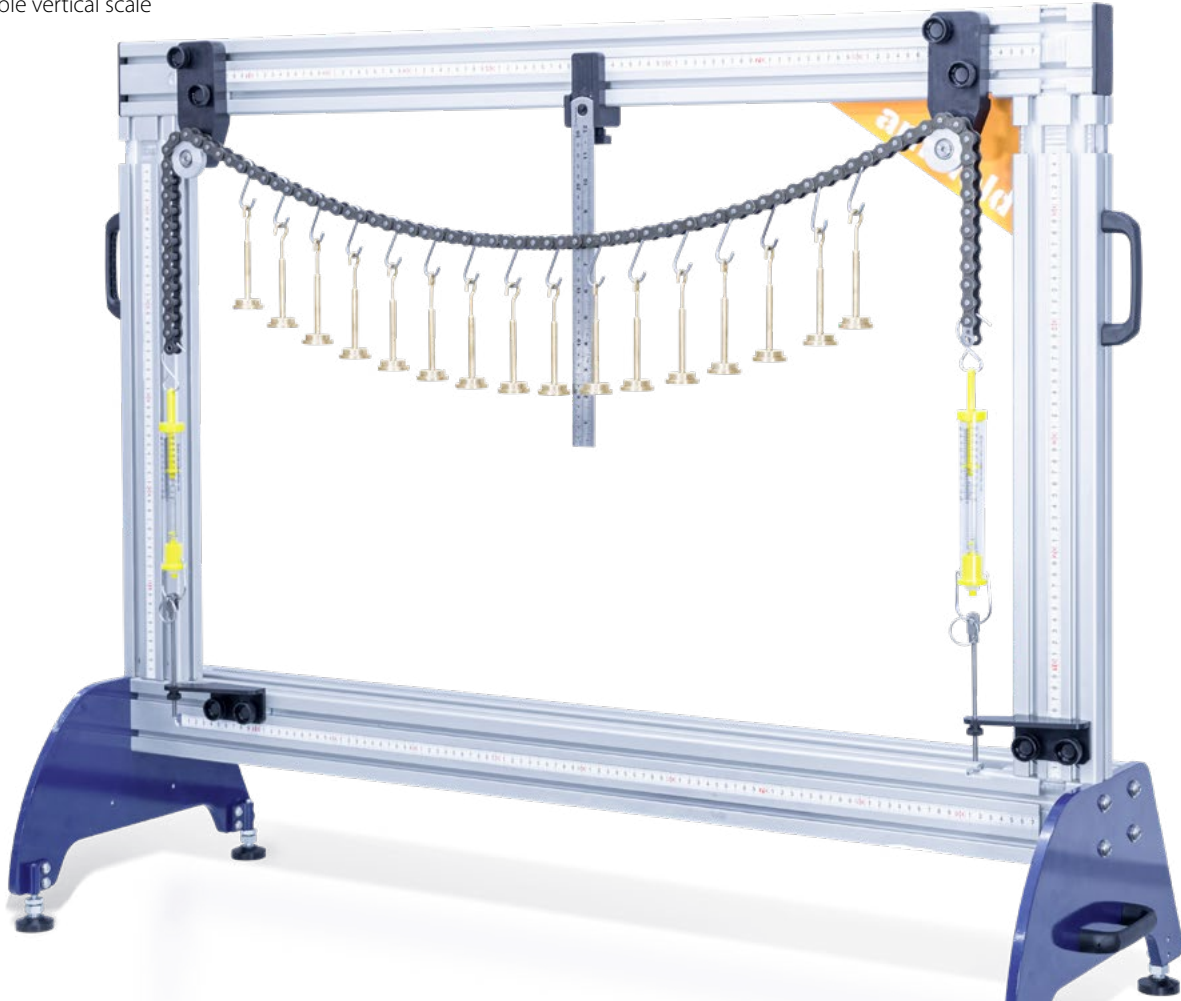
The experiment suspension cable allows the experimental investigation of a cable free-hanging between two supports under its own dead-weight.

This experiment has the following properties:

- ▶ Roller chain to simulate flexible cable
- ▶ Up to 4kg of additional weight to simulate increased dead-weight of chain
- ▶ Adjustable roller supports
- ▶ Moveable vertical scale

ALLOWS THE EXPERIMENTAL INVESTIGATION OF A CABLE FREE HANGING BETWEEN TWO SUPPORTS UNDER ITS OWN DEAD WEIGHT
SOFTWARE SUPPLIED AS STANDARD

SV100 Bench mounted frame
(sold separately)



armBUS software



Chain running over roller support



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Issue: 1

URL: <http://www.armfield.co.uk/structures>

Applications

ME CE IP

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Description

A roller chain is used to simulate a flexible cable suspended between two roller supports. The chain is restrained by a spring balance at each end with tensioners allowing the tension in the cable from its own dead-weight to be adjusted and measured.

The roller chain also gives multiple points along its length from which additional weights can be hung from, allowing heavier cables to be simulated.

The roller chain is suspended between two adjustable roller supports. The chain rests on a roller that is free to rotate allowing the chain to freely move as the tension or sag of the chain is adjusted.

The position of the supports on the universal frame can be adjusted allowing the width between the supports as well as a height differential to be investigated.

Requirements

Scale

SV
100

PC

USB



PC with a USB port, running Windows 7 or above

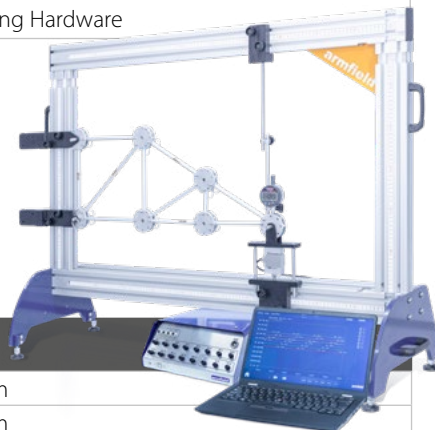
Essential accessories/equipment

- ▶ SV100: Bench Mounted Frame

Technical specification

- ▶ 1 x Roller Chain 1335mm long
- ▶ Suspended chain pitch: 15.875mm
- ▶ Suspended chain weight: 1.02kg/m
- ▶ Chain Standard: ISO 606 10B-1
- ▶ 2 x Roller Support
- ▶ 2 x Reaction Angle Brackets
- ▶ 2 x Suspension Cable Tensioner
- ▶ 1 x Rule Mounting Bracket
- ▶ 16 x 250g Weight Hangers
- ▶ 16 x Chain Weight Hooks
- ▶ 2 x 5kg Spring Balances
- ▶ 1 x 300mm Steel Rule
- ▶ Universal Frame Mounting Hardware

SV series is supplied with Armfield structures software as standard



Overall dimensions

Length	1.176m
Width	0.392m
Height	0.922m

Packed and crated shipping specifications

Volume	0.1m ³
Gross weight	25 kg

Experimental content

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

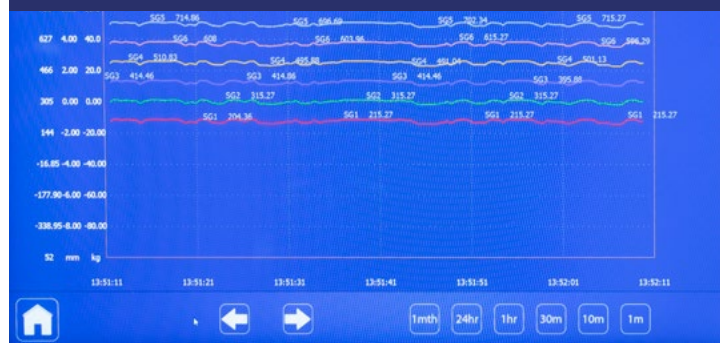
Features / benefits

- ▶ Roller chain to simulate flexible cable
- ▶ Up to 4kg of additional weight to simulate increased dead weight of chain
- ▶ Adjustable roller supports
- ▶ Movable vertical scale
- ▶ Supplied with Armfield structures software as standard

Related laws

- ▶ Symmetrical and unsymmetrical suspended cable
- ▶ Suspension cable with catenary
- ▶ Weight per unit length
- ▶ Parabolic curves

Graphing detail



Related products

Forces & Moments

- ▶ SV300: Combined Shear Force & Bending Moment
- ▶ SV301: Shear Force in a Beam
- ▶ SV302: Bending Moments in a Beam
- ▶ SV303: Deflection of Beams and Cantilevers
- ▶ SV304: Equilibrium of Forces
- ▶ SV306: Bending Stress in a Beam

Operational conditions

- ▶ Storage temperature: -10°C to +70°C
- ▶ Operating temperature range: +10°C to +50°C
- ▶ Operating relative humidity range: 0 to 95%, non-condensing

Ordering codes

- ▶ SV305: Suspension Cable
- ▶ SV100: Bench Mounted Frame (Sold separately)

Armfield standard warranty applies with this product

Knowledge base

- > 28 years expertise in research & development technology
- > 50 years providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



Products CE certified

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