ES7 Simple Harmonic Motion Kit

Shows simple harmonic motion (oscillation) in springs and pendulums, and its usefulness

- One of a series of 18 kits for experiments in fundamental engineering science topics
- For use on any engineering course from foundation to postgraduate
- Flexible and modular with sensible size parts – each kit fits onto the Work Panel (ES1) for experiments and simple classroom demonstrations
- Supplied in a hard-wearing storage tray with moulded insert to hold parts securely and a graphical list to help check the kit contents
- Rugged and durable parts for safe 'hands-on' experiments – allowing better understanding
- Contains all parts needed for experiments in simple harmonic motion

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TecQuipment

ES7 Simple Harmonic Motion Kit

Description

This versatile kit is part of a series that allows many experiments using different arrangements of their parts. Students, teachers or lecturers fit the parts of the kit to the Work Panel (ES1) (supplied separately) to study or show an engineering science topic.

This kit includes different pendulums and a spring to show students the principles and uses of simple harmonic motion.

Students test different pendulums and a spring to see how different factors, such as mass or pendulum length affect simple harmonic motion and the period of oscillation. The theory shows how to predict the period of oscillation for a given pendulum or spring for comparison with actual results. The kit includes an experiment with the Kater's pendulum that shows the relationship between simple harmonic motion and gravity, for prediction of gravity to a reasonable accuracy.

The kit also has introduces students to a simple 'spring rate' test, and key scientific terms such as

- moments of inertia
- parallel axis theorem.

TecQuipment supplies a CD-ROM with the Work Panel (ES1). It includes all the worksheets, guidance notes and lecturer notes (with answers) needed for typical experiments with each kit. The selection of parts in the kits and the choice of fixing points on the Work Panel means that teachers or lecturers may extend the experiments to an even greater range.

Note: The kit is for use with the ES1 Work Panel (supplied separately).

Standard Features

- Five-year warranty
- Manufactured in accordance with the latest European Union directives

Experiments

- Simple harmonic motion of simple, bifilar and trifilar pendulums of different lengths and masses
- Simple harmonic motion of a spring with different masses, and a simple spring rate test
- Simple harmonic motion of a compound pendulum
- Simple harmonic motion and gravity using a Kater's pendulum

Operating Conditions

For use in:
Well lit classroom or 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

Essential Services

A level bench or desktop of at least
500 mm wide x 500 mm front to back.

Essential Base Unit

Work Panel (ES1)

Specifications

Storage tray (with clip-on lid):
450 mm x 320 mm x 85 mm

Nett weight:
3.7 kg

Packed volume and weight:
Approximately 0.015 m^3 and 4.2 kg

Main parts:

- Top plate (supports the pendulums)
- Kater/compound pendulum
- 2 x simple pendulums (aluminium and brass)
- Bifilar suspension bar
- Trifilar plate
- Spring
- Weight hanger and weights
- Stopwatch

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