



≡ CENTRIFUGAL FORCE KIT

ES16

Demonstrates the relationship between centrifugal force, radius and velocity of rotating masses.



KEY FEATURES

- 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, each kit fits onto the work panel (ES1) for experiments and 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 a manually-rotated frame that shows the relationship between centripetal force, radius and velocity of different rotating masses



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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 a manually rotated frame with a low-friction cantilever linkage. The frame has mounting positions for adjustable masses and a spring that applies a fixed frictional force value to a rotating drum. The range of mounting positions and masses allows many variations of the experiment to help students understand the relationships between the variables of speed, mass and radial position.



Students fit the chosen masses to one side of the frame and an equal counterbalance to the opposite side of the frame. They rotate the assembly which will overcome the spring frictional force at a given speed, working as centrifugal clutch that regulates its own speed. The frame has a durable 'clicking' tab that students use with a stopwatch (supplied) to measure the speed. They use their measurements to calculate the forces due to the rotating masses and compare them with the opposing force from the spring.

The kit introduces students to key engineering terms such as centrifugal and centripetal force, while explaining the fictitious term 'centrifugal' force and its accepted use. It also shows the use of 'radians' in rotational velocity measurement.

TecEquipment 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
- ISO9001 certified manufacturer

LEARNING OUTCOMES

- Relationship between centrifugal force, radius and velocity of different rotating masses

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

TecEquipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

STORAGE TRAY (WITH CLIP-ON LID):

450 mm x 320 mm x 85 mm

NETT WEIGHT:

2.7 kg

PACKED VOLUME AND WEIGHT:

Approximately 0.015 m³ and 3.2 kg

MAIN PARTS:

- Rotating frame
- Weight hanger and masses
- Stopwatch