

**Cam and Follower Apparatus – SD-1.54**

A vertical pillar contains the main spindle for each cam to be rotated, whilst a dial gauge has its anvil resting on the top edge of the cam.

Each cam is mounted on a central shaft and is free to rotate about this shaft. The cams are rotated by hand. The rise and fall displacement of the cam, as it rotates through 360°, is measured using the dial gauge.

The angular position of the cam is shown on a protractor and a pointer. Cams and followers are easily changed and graphs for the variety of cams can be created to compare the linear change with the rise and fall of the follower.

A set of cams are supplied as standard along with a set of followers which run on the perimeter of each cam. Each cam can be easily changed and the angular and dial gauge readings are clear.

**EXPERIMENTS TO ASSESS THE EFFECT OF DIFFERENT CAMS AND FOLLOWERS**

**Experimental content**

- ▶ To determine a graph of follower displacement against angular rotation of the cam
- ▶ To assess the effect of different cams and followers
- ▶ To derive the velocity and acceleration diagrams, and determine the maximum acceleration of the follower
- ▶ To compare experimental and calculated results

**Related laws**

- ▶ Mechanisms
- ▶ Cams
- ▶ Followers
- ▶ Constant speed
- ▶ Velocity diagram
- ▶ Acceleration diagram
- ▶ Linear displacement against rotation
- ▶ Simple harmonic motion
- ▶ Dwell
- ▶ Internal combustion engine
- ▶ Automatic handling machinery

**Features / benefits**

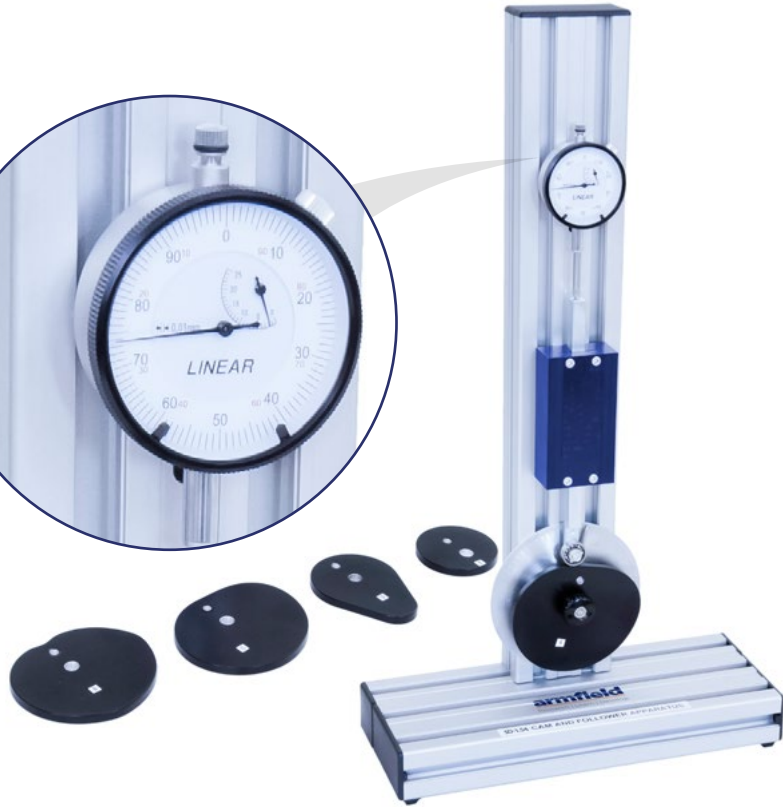
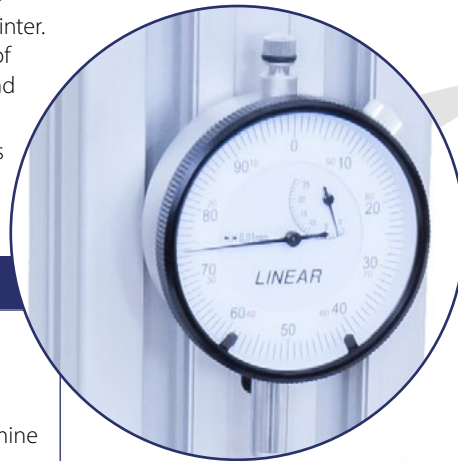
- ▶ Self-contained bench top unit
- ▶ Set of five cams supplied
- ▶ Set of two followers supplied
- ▶ Angular and linear displacement recorded
- ▶ Derive velocity and acceleration diagrams

**Overall dimensions**

Length	0.25m
Width	0.15m
Height	0.54m

**Packed and crated shipping specifications**

Volume	0.14m <sup>3</sup>
Gross weight	18kg



**Ordering specification**

- ▶ 1 x SD-1.54 Assembly
- ▶ 1 x Simple harmonic motion cam
- ▶ 1 x Uniform motion cam
- ▶ 1 x Constant acceleration cam
- ▶ 1 x Tangent cam
- ▶ 1 x Eccentric cam
- ▶ 1 x Dial gauge
- ▶ Instruction manual
- ▶ Packing list
- ▶ Test sheet

**Technical specification**

- ▶ Simple harmonic motion cam: Rise/Fall 24mm
- ▶ Tangent cam: Large radius 32mm; small radius 15mm
- ▶ Eccentric cam: 10mm eccentricity
- ▶ Roller follower: Ø19mm
- ▶ Dial gauge: 25mm range, 0.01mm resolution
- ▶ Angular protractor scale with 360° range and 1° resolution

**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**

- ▶ **SD-1.54** Cam and Follower Apparatus