



Cam Analysis Apparatus (SMT-TM-38)

Cam Analysis Apparatus is designed to study the motion characteristics of various cam mechanisms and their interaction with followers. It enables students to observe how different cam profiles, spring stiffness, and preload affect the movement and speed of the cam plunger. The unit includes a motor-driven shaft with variable speed, interchangeable cams, and a flywheel for smooth operation, all enclosed within a transparent safety cover. By analysing motion curves and comparing them with theoretical values, users can understand the principles governing cam dynamics and mechanical motion conversion.

TECHNICAL SPECIFICATIONS

Specifications:

- Transparent protective enclosure for safety
- Variable speed of Cam
- Digital display and control of cam speed
- Graph plotter for profile analysis

Technical Data:

- Cams:
 - Concave: Qty 1.
 - Convex: 2 with different shapes.
 - Tangent: Qty 1
- Followers:
 - Roller: Qty 1.
 - Flat Face: Qty 1.
- Masses:
 - Loads: 250g (50g each)
 - Plunger: 500g.
 - Flat Receiver: 90g
 - Roller Receiver: 20g
- Springs:
 - Hard
 - Medium
 - Soft
- Dimensions and Mass:
 - L x W x H: 750 x 500 x 500mm (Approx.)
 - 65kg (Approx.)



Experiments:

- Effect of Load on the motion of cam member.
- Experiment with springs of different stiffness and pre-load conditions and their effect on motion of cam plunger.
- Elevation curves in non-matching and sprung engaging member.
- Regulate the limit speed and compare with theory.
- Comparison among elevation curves of different cam shapes and to compare the results with theoretical results.
- Comparing theoretical and experimental results of displacement, acceleration and velocity for different types of followers.