Hooke's Law Apparatus (SMT-SM-17)

Hooke's law describes the elastic behaviour of components where deformation is proportional to the load acting upon them. This behaviour is typical for metals under light loads. SMT-SM-17 demonstrates the application of Hooke's law and shows the deformation of tension springs under load. For this purpose, a spring is suspended from a stand and loaded. The elongation is read-off directly from a scale. As a linear relationship is shown between the active force and the elongation of the spring, Hooke's law can be applied.

TECHNICAL SPECIFICATIONS

Specifications:

- Experiment relating to friction on the inclined plane.
- Inclined plane with plastic coating, drag link with angle scale and ball bearing-mounted deflection roller.
- Angle of plane adjustable.
    - 2 samples.
- Graduated weight set.

Technical Data:

- Friction body:
    - LxWxH: each 80x60x44mm.
    - Dead-weight force: each 10N.
    - 1x steel / polypropylene.
    - 1x aluminium / brass.
- Inclined plane:
    - Length: 1000mm.
    - Adjustable angle range: ±45°.
- Weights:
    - 1x 1N (hanger), 4x 0.1N, 1x 0.5N, 4x 1N, 1x 5N.
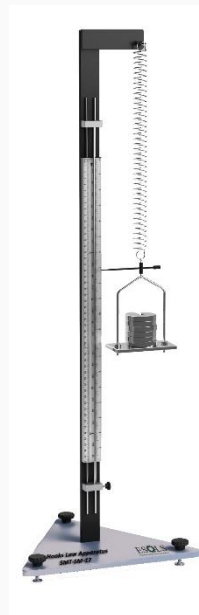
Experiments:

- Determination of the friction coefficients of various material pairings.
- Transition from static to dynamic.
- Static equilibrium of forces on the inclined plane.
- Determination of the angle of inclination as from which sliding occurs (calculation and verification by experiment).