TECHNICAL DATA

Moments of inertia and torsional vibrations

Article no: P2133101

Principle

Various bodies perform torsional vibrations about axes through their centres of gravity. The vibration period is measured and the moment of inertia determined from this.

Benefits

- Selection of materials allows demonstrating all aspects of moments of inertia in one experiment
- Clear and easy set-up

Tasks

The following will be determined:

1. The angular restoring moment of the spiral spring.
2. The moment of inertia a) of a disc, two cylinder, a sphere and a bar, b) of two point masses, as a function of the perpendicular distance to the axis of rotation. The centre of gravity lies in the axis of rotation.

Learning objectives

- Rigid body
- Moment of inertia
- Axis of rotation
- Torsional vibration
- Spring constant
- Angular restoring moment
- Moment of inertia of a sphere
- Moment of inertia of a disc
- Moment of inertia of a cylinder
- Moment of inertia of a long bar
- Moment of inertia of 2 point masses

Scope of delivery

Angular oscillation apparatus	02415-88	1
Spring balance,transparent, 2 N	03065-03	1
Cobra SMARTsense Dual Photogate - Double light barrier 0 ... ∞ s (Bluetooth + USB)	12945-00	1

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Measuring tape, l = 2 m	09936-00	1
Tripod base PHYWE	02002-55	1
Barrel base expert	02004-00	1

Recommended accessories

Portable Balance, OHAUS CX2200	48921-00

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