1.3.31-00 Moment of inertia and torsional vibrations

**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.

**Tasks:**
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.

**What you can learn about:**
- 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

**What you need:**
- Rotation axle
- Sphere
- Disk
- Hollow cylinder
- Solid cylinder
- Rod with movable masses
- Precision spring balances, 2.5 N
- Light barrier with counter
- Power supply 5 V DC/2.4 A with 4 mm plugs
- Tripod base - PASS-
- Barrel base - PASS-

**Complete Equipment Set, Manual on CD-ROM included**

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**Diagram:**
Moment of inertia of two equal masses, of 0.214 kg each, as a function of the distance between them.