gunt HAMBURG

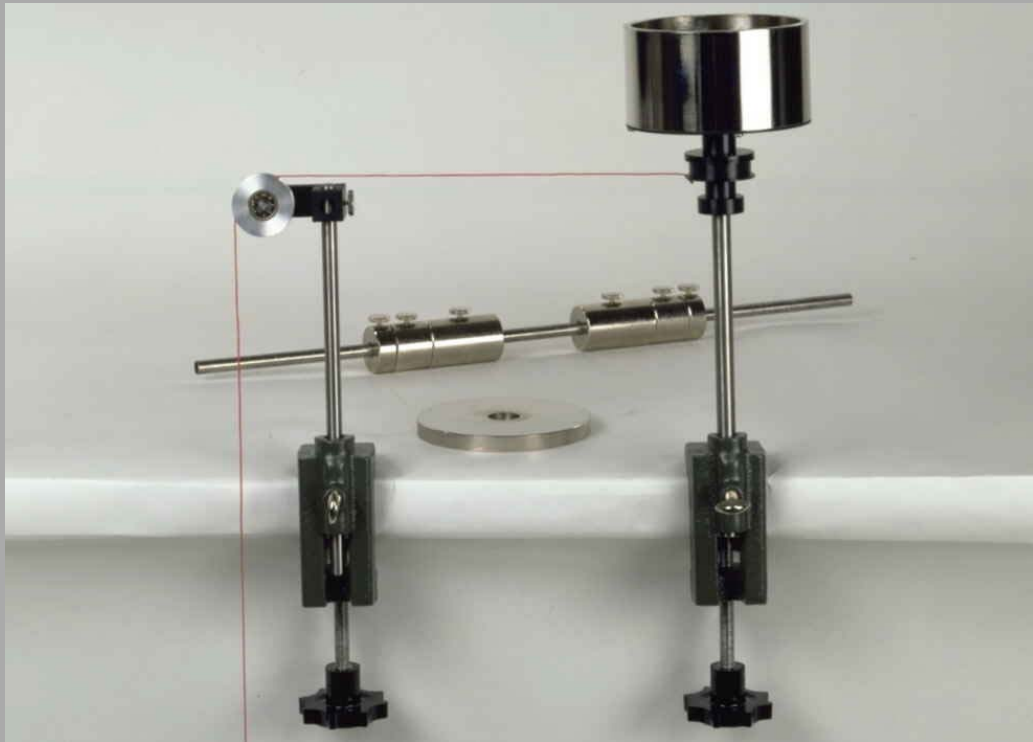## TM 610   *Inertia in Rotational Motion Apparatus*

* Comparison of the moments of inertia of different mass arrangements and bodies

Technical Description

This apparatus enables experiments to be performed on rotational motion in general. Weights can be fitted to a rotating rod at marked distances from the centre. A dumbbell-shaped arrangement is thus created; the inertia properties of this arrangement can be changed easily and recalculated. The arrangement is fitted to a low friction ball bearing mounted rotating drum. The system is accelerated by a metal weight attached to a cord wrapped around the drum. The time taken for the weight to fall is measured using a stopwatch, the moment of inertia of the object can then be determined. The experiment is set up quickly using table clamps and stands; it is ideally suited to group work for 2-3 persons.

Learning Objectives / Experiments

- Explanation of the term "moment of inertia"
- Determination of the moment of inertia of various bodies
- Influence of the rotating mass on the moment of inertia
- Influence of the radius of rotation on the moment of inertia
- Comparison of the moments of inertia of solid and hollow cylinders of the same weight and outside diameter

Scope of Delivery

1 complete apparatus
1 instruction manual

Specification

[1] Student experiments on moments of inertia, comparison of the inertia of rotation of various bodies
[2] Metal rotating bar, weights with knurled bolts for quick fastening
[3] Solid and hollow test cylinders
[4] Ball bearing mounted rotating drum, anodised aluminium
[5] Acceleration of system by weight attached to the drum

Technical Data

Rotating rod: 550mm long, D=10mm
Weights: 100g, 200g, 400g
Solid cylinder
- diameter: D=120mm
- mass: 900g
Hollow cylinder
- outer diameter: D=120mm
- inner diameter: d=110mm
- mass: 0.9kg
Weight for the drive: 1N

Dimensions and Weight

l x w x h : approx. 600 x 200 x 400 mm (set-up)
Weight : approx. 9 kg

Order Details

040.61000 TM 610 Inertia in Rotational Motion Apparatus