

LEMI-18 Apparatus of Rotational Moment of Inertia

- *Optical rail for simplified adjustment*
- *High measurement accuracy*
- *Affordable*



Moment of inertia is a physical quantity for the representation of the inertial amount of a rotational object. It is dependent on the mass distribution and the shaft position of the rigid body.

This apparatus uses the three-string pendulum method to determine the moment of inertia of a rigid body. A photoelectric sensor combined with a time counting device is used to measure the torsional oscillation period of a hanging plate. Through the experiments, students can understand the physical principle of the moment of inertia and learn the measurement method with factors related to the amount of moment of inertia.

Experimental Contents

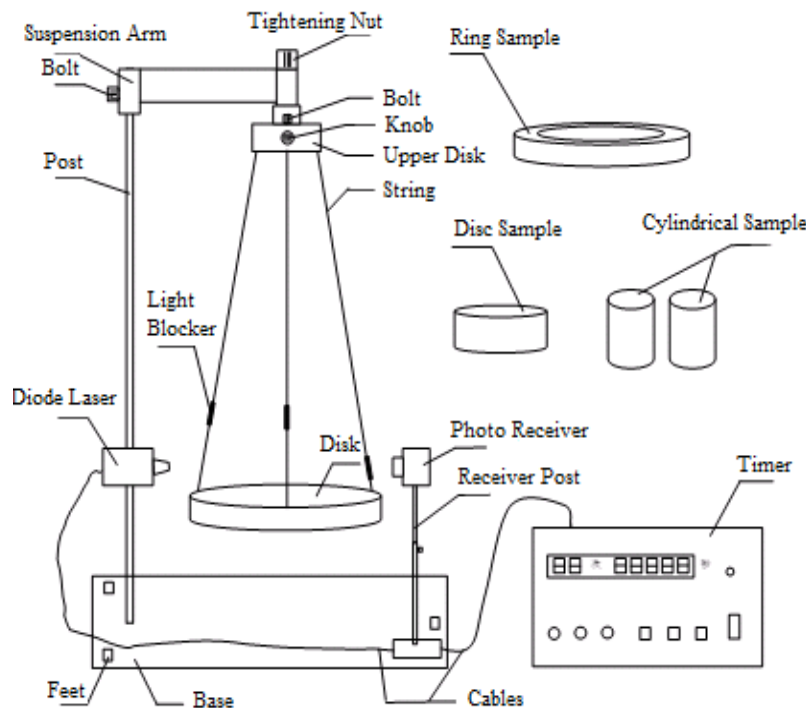
1. Measure moment of inertia using three-string pendulum method
2. Measure the moment of inertia of two objects of same mass but with different mass distribution
3. Verify the parallel axis theorem of moment of inertia

Specifications

Description	Specifications
String Length of the Pendulum	> 500 mm
Timing Resolution	1 ms
Preset Count Number	< 66
Specimen	small cylinder (2), circular disc (1), circular ring (1)

Part List

Apparatus	1	Including base, support post, slider, hanging arm, upper disk, lower disk, & strings
Laser Diode	1	
Photo Receiver	1	
Timer	1	
Connection Wire	2	One for laser diode, and the other for photo receiver
Level Bulb	1	
Samples	4	Ring (1), Circular Disk (1), Cylinder (2)



Schematic of system