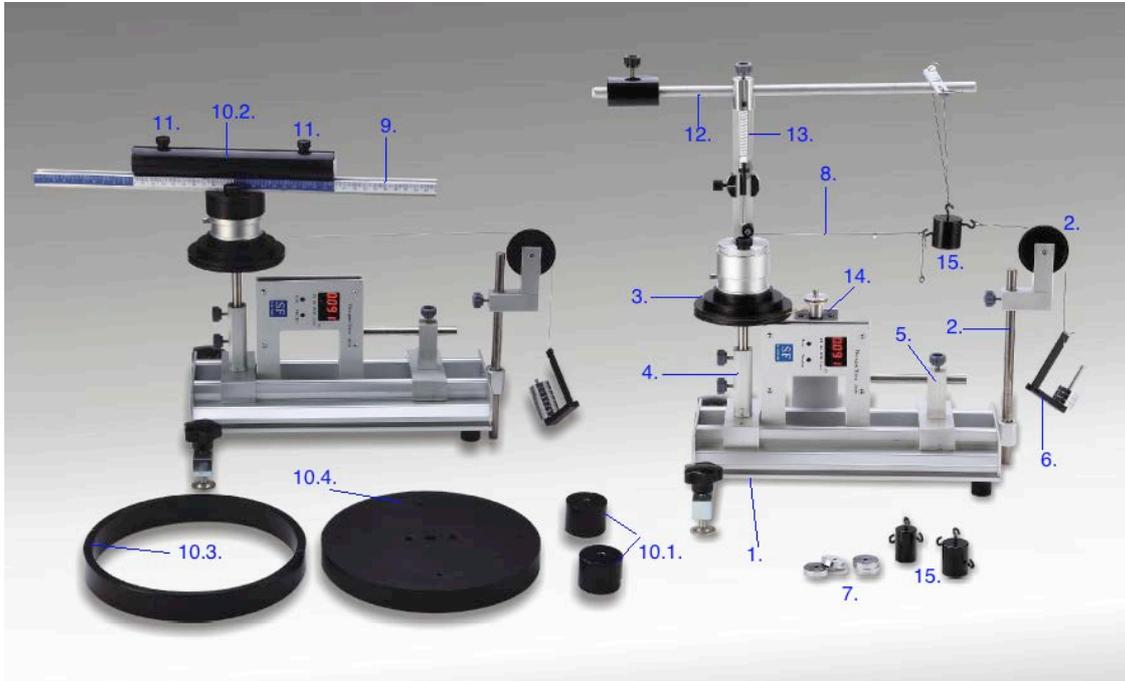


## F11 Centripetal Force and Rotational Inertia



## F11 Centripetal Force and Rotational Inertia

### **Experiments:**

1. Centripetal force induced by various mass in different radius.
2. Angular acceleration and moments of inertia of different bodies.
3. Steiner's theorem (parallel-axis theorem).

### **Specification:**

1. Aluminum experimental platform x1

Aluminum alloy, a 3 D biconvex guide track ,on the top surface, is fastened by U-shaped clips at below and both sides, one of which is adhered to an meter of inclination of 45-degree. And the type of three-point level-supporter of the size 30 x12x4.5cm, at both ends, is subjected.

2. Roller pulley x1

A roller-bearing pulley of diameter 50mm, PE material, mounted on the L-shaped aluminum frame is located near table edge in which the altitude might be regulated using rotary stainless steel bars of length 20cm.

3. Dual Rotator x1

The upper end of the aluminum containing two precision bearings, pulleys lower end of the shaft concentric three-layer PE-containing material, the diameter 10/8 / 6cm each attached to a lanyard jumper beneath sheets and affixed to light absorption by the elongated timer with reflective strips, including a 9cm long stainless steel rod with adjustable height rotation

4. Aluminum rotator holder x1

5. Aluminum timer holder x1

6. U-shaped shelf of metal weight x1

7. Copper weight x5, 20g

8. The fishing line x1, 0.4mmx100cm

9. Testing rail x1

Light aluminum rail, sticky with the length 40cm of meter, can be mounted on different rigid body at different locations, which is used to test the moment of inertia. Here PE sleeve below could be fixed on the dual-rotator

10. The rigid -body samples stationary on fixed rail:

10-1. Drilled hole-Type ,weight of 250g x2

10-2. Rod- Type, diameter 3cm / length 20cm / weighs about 1000g x1

10-3. Ring- type3, outside diameter of 20cm / inner diameter of 18.5cm / weighs about 1000g x1

10-4. Disc -type, diameter 20cm / weighs about 1000g x1

11. Long screw x2 fix the rigid body

12. The hanger of centripetal-force experimental device x1

The length of stainless steel rod 45cm, a V-type sling and an balance of adjustable position, weighs about 250g, is subjected to both sides individually.

13. The indicator of centripetal force x1

A light spring lifting up the weight is hanged on a load cell in which the scale indication will be according to the stretched displacement of spring.

14. DC motor driver x1

A aluminum drive-pulley, 20mm of diameter, could be stationary on the test platform

15. Testing object for centripetal-force experiment x3

The weight of three iron-objects is amounted to 160/115 / 78g respectively and each contains a hook.