



## Clutch Plate Friction Apparatus (SMT-MM-29)

The wall mounted apparatus comprises a lower stationary plate attached to a sturdy wall mounting bracket. On top of this stationary disc sits an upper aluminium alloy plate whose shaft rotates in ball bearings but which is in direct contact with the stationary plate. Sandwiched between the lower and upper plate are friction discs, of 3 different sizes. Each disc is positioned in turn. The minimum force on the friction disc is the self-weight of the upper plate, but the contact pressure can be increased by adding weights to the upper plate. Pure torque is applied to the upper plate through two loaded cords and pulleys. The cords wrap around a groove in the upper plate. Three interchangeable friction discs are supplied of different diameters. Each one sits onto location pins in the lower plate. A set of calibrated weights is supplied which enable the loading force to be varied and applied torque to be adjusted also.

### TECHNICAL SPECIFICATIONS

#### Specifications:

- Self-contained, wall mounted.
- To enable determination of coefficient of friction and minimum torque to maintain rotation.
- Interchangeable brake lining friction material.
- 3 diameters of friction plate to be supplied.
- Torque application to be applied using cord and hangers.
- Variable plate pressure using calibrated weights supplied.

#### Technical Data:

- Friction disc, full: 250mm, steel, galvanised
- Friction disc, ring: od 250mm, id 150mm
- Friction disc with clutch lining: 250mm
- Loose friction disc: 250mm, 29N
- Additional weights: Weights: 2x 30N
- Weights: 6x 5N  
4x 2,5N  
4x 1N  
2x 0,5N  
2x 2,5N (Hangers)



#### Experimental Data:

- To determine the coefficient of friction of the plate material
- To show that the minimum torque to maintain rotation is proportional to the axial load and diameter of the friction disc