



Polygon of Forces Apparatus (SMT-MM-20)

This apparatus has a round disc which is placed horizontally on three legs attached to a foundation. A 360 protractor is set centrally on the plate and pulleys on clamps permit the load hanger cords to run toward a ring dropped over the centre. The lines of action of the forces are recorded by drawing along the weighted cords onto a piece of paper attached to the pulley table. The loads are applied using the hangers and cords provided, with the cords easily connecting to the shapes by the use of the small hooks provided. A range of experiments is possible, investigating concurrent and non-concurrent coplanar forces acting on simple shapes, comparing the experimental values with the relevant polygons of force.

TECHNICAL SPECIFICATIONS

Specification:

- Self-contained, bench mounted.
- Direct measurement of forces.
- Adjustable lines of action of forces.
- Practical verification of triangle of forces, polygon of forces and link polygon.
- Demonstrates equilibrium of forces at a point, applied to various points round a disc or acting on a rectangular lamina.
- Concurrent & Non-concurrent coplanar forces.
- Instruction manual, calibrated weights supplied.

Technical Data:

Circular Disc: Dia=450mm, 360 protractor, adjustable 3 hanger pulleys.

Set of Weights, Experimental Manual.

Experiments:

- To resolve by experiment any suitable system of static coplanar forces which may or may not be concurrent.
- To verify graphically using:
 - a) Triangle of forces for three concurrent coplanar forces.
 - b) Polygon of forces for more than three concurrent coplanar forces.
 - c) Link polygon for three or more non-concurrent coplanar forces.
- To investigate (c) for either a disc or a rectangular shape.
- To compare the accuracy of the experiment by comparing the experimental and graphical results.

