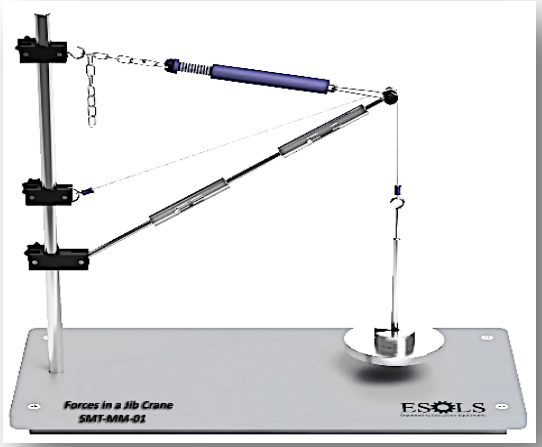
Forces in a Jib Crane Apparatus (SMT-MM-01)

This Apparatus represents a planar central force system in which multiple forces act on a single point of application. Based on the example of a crane jib, forces are determined graphically and experimentally: resultant cable force, tensile force, compressive force. The directions and magnitudes of the forces are determined graphically by way of a force parallelogram. A bar of adjustable length and a chain make up the crane jib, which is attached by adjustable clamp elements to a retaining bar. A variety of jib forms can be created. Loads are applied to the crane jib. The occurring bar forces are indicated by integrated spring balances.

TECHNICAL SPECIFICATIONS

Specifications:

- Tensile and compressive forces in a planar central force system based on the example of a crane jib.
- Integrated spring balances in the bars
- Stainless steel retaining bar
- Handles to aid transportation



Technical Data:

- Spring balance for tensile forces:
  - Tensile force: 0 to 50N, graduations 0.5N.
- Spring balance for compressive forces: Pressure force: 0 to 50N, graduations 1N.
- Weight set:
  - 1x 1N (hanger):
  - 4x 1N.
  - 1x 5N.
  - 4x 10N.
- LxWxH: 600x200x650mm
  Weight: approx. 12kg

Experimental Data:

- Graphical breakdown of forces by force parallelogram
- Determination of the bar forces on various jib forms
- Comparison of: measuring result – calculation – graphical method

Web: http:// www.esolsengineering.com, Email: esolsengineering@gmail.com