Product name:	Product code:
Jib Crane Apparatus	APE-0016



Description

Jib Crane Apparatus

Technical specification

[3] Integrated spring balances in the bars
[4] Max. load on crane jib 50N
[5] Loading with weights set, up to 50N
[6] Steel weights, surfaces galvanized
[7] Stainless steel retaining bar
[8] Sturdy metal frame
[9] Handles to aid transportation
[10] Box to house the components

Technical Data
Spring balance for tensile forces
- tensile force: 0...50N, graduations 0.5N
Spring balance for compressive forces
- pressure force: 0...50N, graduations 1N
Weight set
- 1x 1N (hanger)
- 4x 1N
- 1x 5N
- 4x 10N

This unit is designed to study forces in jib crane elements. Jib crane has two elements which are attached to a vertical rod. The lower element is called jib and the upper element is termed as tie. Load is applied at the junction of jib and tie to produce tension and compression in tie and jib respectively.
The unit consists of a metallic rod which provides the support locations for jib and tie. Load is applied via a hanger on the junction of jib and tie. To measure the deformation in jib and tie, dial gauges are connected to both elements.
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.
Learning Objectives / Experiments
- Graphical breakdown of forces by force parallelogram
- Determination of the bar forces on various jib forms
- Comparison of: measurement result - calculation - graphical method

Specification
[1] Tensile and compressive forces in a planar central force system based on the example of a crane jib
[2] Various jib forms possible

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