

**Product Name :**  
Fundamentals of Statics

**Product Code :**  
TN884



#### Description :

Fundamentals of Statics

#### Technical Specification :

Fundamentals of Statics

The unit is perform the following experiments and investigations:

Learning Objectives / Experiments:

Accumulation and resolution of forces with force parallelogram

Equilibrium of forces

Law of levers, determination of moments and equilibrium of moments

Combined lever systems

Forces in bearings

Deflection and resolution of force by fixed and free pulleys

Included together with sets;

Inclined plane; friction

Pulley blocks

Gear wheels

Specifications:

Experimental setup to demonstrate simple, planar force systems

Panel with rails around the edges for easy mounting of various experimental components

Panel with imprinted 50mm line grid and facility to write on using erasable marker

Lever rods with 50mm grid

Wide range of mountings: cables, rods, pulleys, torque disks, pivot bearings and the like  
Force gauges for tensile and compressive forces, with large-format display  
Transparent dial on force gauge rotatable  
Storage system to house all parts.

Technical Data:

Panel

Width x Height: 600x700mm, 13kg

Line grid: 50mm

Force gauges for tensile and compressive force

Measuring range:  $\pm 50\text{N}$

Display diameter:  $\approx 110\text{mm}$

Protected against overloading

Weights

2x 5N (hanger)

6x 5N

Dimensions and Weight

Width x Height: 600x700mm (panel)

Length x Width x Height: 604x404x132mm (storage system)

Weight: 30kg

Inclined Plane and Friction Set

Elastic deflection of a helical spring (Hooke's law)

Dynamic friction as a function of the normal force, contact area and surface properties of the friction body

Determination of the friction coefficient

Rolling friction

Forces on the inclined plane.

Specification:

Supplementary set for experimental unit Fundamentals of statics

Experiments relating to Hooke's law: friction and inclined plane

Friction body which can be set up to give 3 different surface options

Rail forming the inclined plane

Steel helical spring

Storage system to house all parts.

Technical Data:

Helical spring

Spring constant: 0,95N/cm

Max. Load: 25N

Aluminium friction body

Length x Width x Height: 110x40x40mm

Dead-load: 5N

2 sides with different sized areas

2 sides with different surface roughness

Aluminium rail, anodized

Length x Width x Height: 800x50x10mm

Dimensions and Weight

Length x Width x Height: 160x103x75mm (storage system)

Weight: 5kg

2. Pulley Blocks Set

Setup and principle of pulley blocks with 4 pulleys and with 6 pulleys; differential pulley block

Principle of "simple machines": force transmission, lifting work and potential energy

Specifications:

- [1] supplementary set for experimental unit Fundamentals of statics
- [2] pulley layout and cable routing clearly visible
- [3] pulley blocks: with 4 or 6 pulleys; differential block with roller chain
- [4] cable pulleys made of anodized aluminium ball bearing-mounted
- [5] chain wheels to DIN 8191
- [6] pullers: nylon cord, roller chain
- [7] materials stainless steel or steel, galvanized
- [8] storage system for the components

Technical Data:

Pullers

Nylon cord:  $\tilde{A}=2\text{mm}$

Roller chain: 6,0x2,8mm to DIN 8187

Chain wheels

Number of teeth:  $z=18, 28, 38$

Cable pulleys

Made of anodized aluminium ball bearing-mounted

Dimensions and Weight

Length x Width x Height: 604x404x132mm (storage system)

Weight: 12kg

### 3. Gear Wheels Set

Transmission ratio of speed and moment on a single-stage gear

Influence of intermediate wheels on the direction of rotation

Transmission ratio on a two-stage gear

Conversion of rotation into linear motion and vice versa

Specification:

- [1] supplementary set for experimental unit Fundamentals of statics
- [2] experiments with single-stage and multistage gears
- [3] aluminium spur wheels with ball bearing mounts
- [4] quick assembly of the elements
- [5] deflection roller, mounting rail and gear wheels made of anodised aluminium
- [6] storage system for the components

Technical Data:

Aluminium spur gears

Modulus:  $m=2\text{mm}$

Number of teeth:  $z=20, 25, 30, 40, 50, 60$

Ball bearing gear wheel mounts, secured by thrust pads to grooved pins

Rack

Modulus:  $m=2\text{mm}$

Length:  $l=300\text{mm}$

Mounting rail anodized aluminium

Length x Width x Height: 760x30x30mm

Dimensions and Weight

Length x Width x Height: 604x404x132mm (storage system)

Weight: 12kg.

## Naugralabequipments

**Website:** [www.naugralabequipments.com](http://www.naugralabequipments.com), **Email:** [sales@naugralabequipments.com](mailto:sales@naugralabequipments.com)

**Address:** 6148/6, Guru Nanak Marg, Ambala Cantt, Haryana, India. **Phone:** +91-9896600003