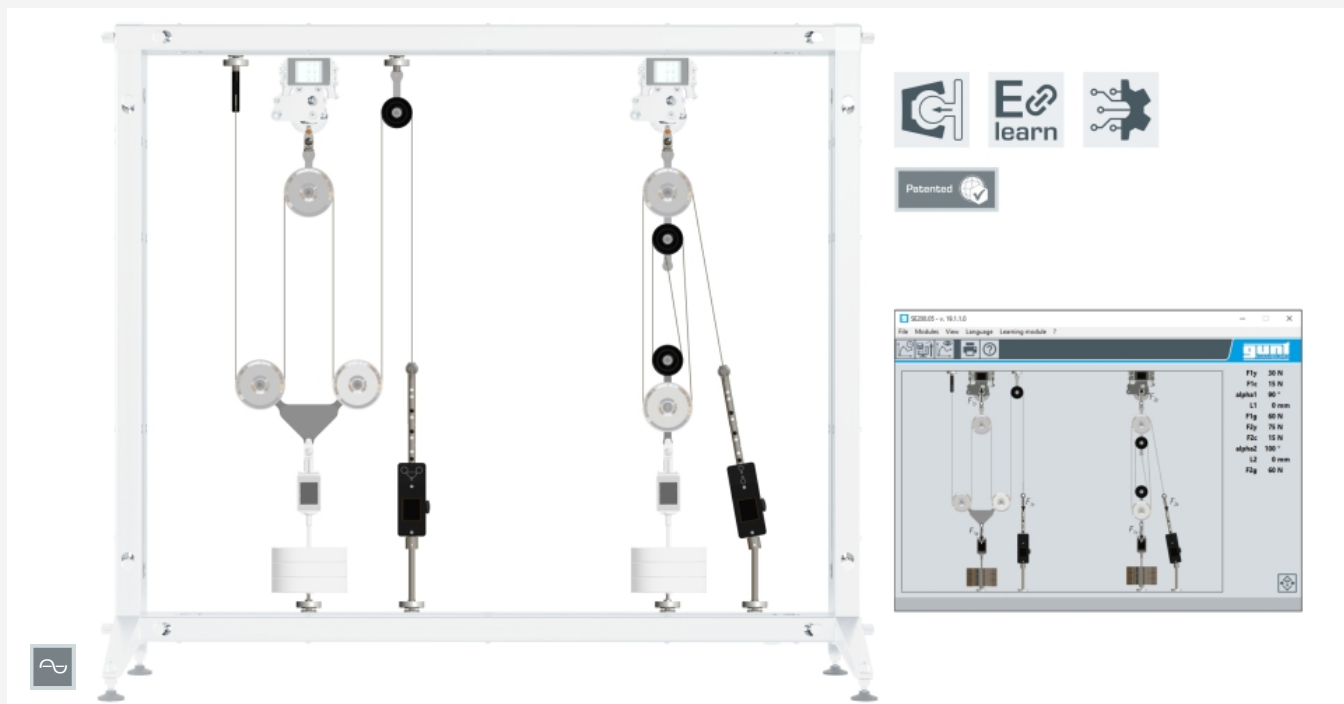


SE 200.05

MEC - Cable forces and pulley blocks



Description

- **wireless setup of pulley blocks together with smart, communication-enabled suspension cables and accessories**
- **investigate 2 different pulley blocks at the same time**
- **2 setup variants possible for each pulley block**
- **click system for easy setup and reconfiguration**
- **automatic identification in the GUNT software and assignment of the pulley blocks and accessories**

Pulley blocks make it possible to lift heavy loads and are used, for example, with cranes. SE 200.05, in combination with other accessories of the MEC Line, enables the smart, digitally supported experimental setup of pulley blocks. The experiment contains two pulley blocks of different designs with smart, communication-enabled suspension cables, equipped with electronic modules for data acquisition and measured value display. The experimental arrangement is set up in the SE 200 mounting frame. The stainless steel mounting frame provides direct and wireless data transmission and power supply for the smart components.

The pulley blocks have the same transmission ratio and can be investigated simultaneously. The transmission ratio is determined by the number of cable strands and pulleys used. It is possible to configure two setup variants with each pulley block. The force, angle and displacement measurement on the suspension cable has five snap-in points for setting different heights. The click system ensures the components easily snap into place.

Accessories such as supports and vertical loads are available for the setup. Loading is applied to each of the pulley blocks by means of a vertical load on the lower pulley. In experiments, the forces, angles and displacement on the suspension cables are measured and displayed as a measured value both directly on the smart components and in the GUNT software. The GUNT software identifies and shows the position and location of the installed suspension cables as well as the support reactions. The lifting heights and the vertical loads used are also shown. The GUNT software reacts dynamically to changes. The visualisation in the software always corresponds to the actual pulley blocks fitted. The measured values are analysed in real time. All components are clearly laid out and well protected in a storage system.

Learning objectives/experiments

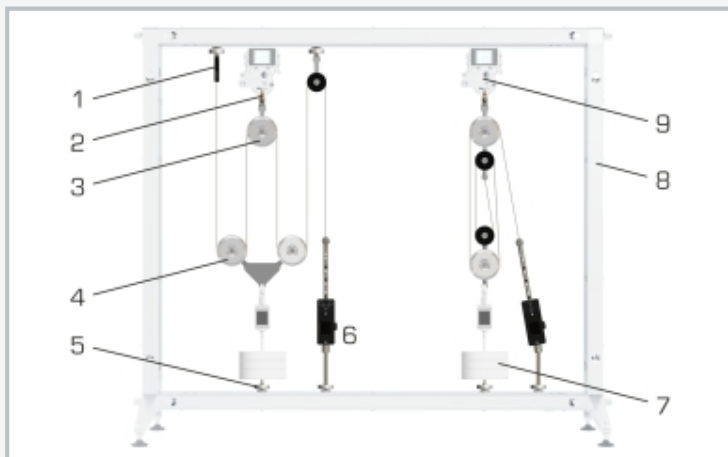
- familiarisation with different pulley blocks
- measurement of
 - cable forces
 - support forces
 - displacement
- angular dependence of forces
- force measurement under different loads
- accessories of the MEC Line can be combined in a modular way for setup and extension of the experiments

GUNT Science Media Center, develop digital skills

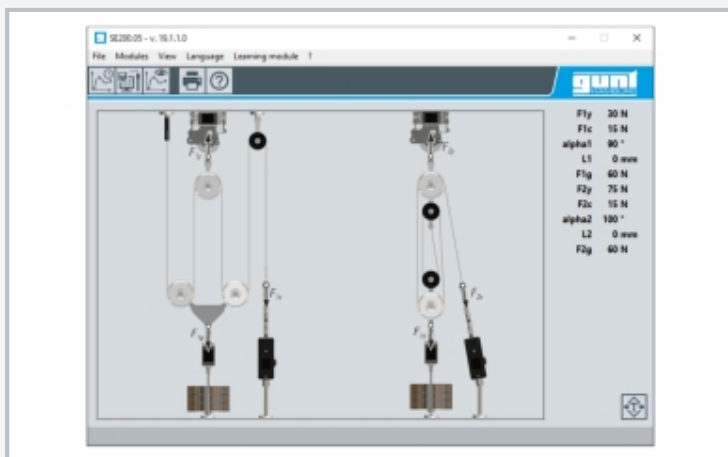
- retrieve information from digital networks
- E-Learning course with fundamental knowledge and detailed presentation of the experiment procedure and engaging animations
- assured learning success through digital worksheets

SE 200.05

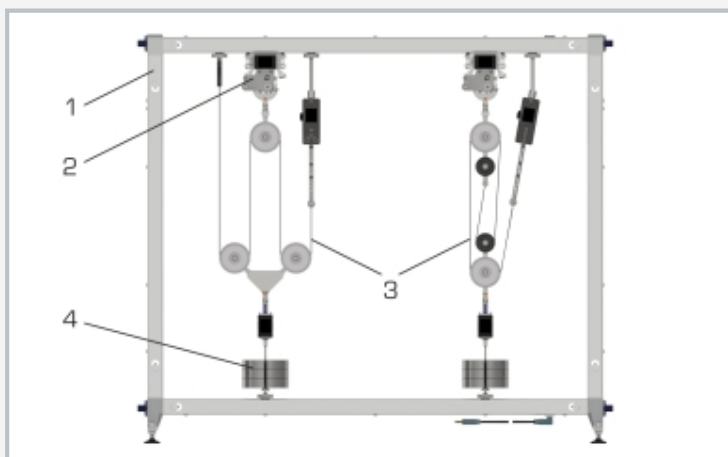
MEC - Cable forces and pulley blocks



1 top mount, 2 connection to support SE 200.21, 3 top pulley, 4 bottom pulley, 5 guide for vertical load SE 200.24, 6 force, angle and displacement measurement; accessories: 7 vertical load SE 200.24, 8 mounting frame SE 200, 9 support SE 200.21



Screenshot of the GUNT software: automatically transmitted experimental setup and display of measured and calculated forces, displacement and angles



Setup variants: 1 mounting frame SE 200, 2 two supports SE 200.21, 3 different pulley blocks, 4 two vertical loads SE 200.24

Specification

- [1] measurement of suspension cable and support forces in different pulley blocks
- [2] 2 pulley blocks with 2 setup variants each
- [3] smart, communication-enabled suspension cables with electronic modules for data acquisition and measured value display
- [4] setup of the entire experiment arrangement in the SE 200 mounting frame
- [5] click system for simple, fast experimental setup without cabling
- [6] supports and vertical loads available as accessories
- [7] automatic identification and assignment of the suspension cables and accessories during setup and experimentation
- [8] force, angle and displacement measurement with 5 snap-in points
- [9] display of measured values and visual representation of the forces in the GUNT software
- [10] GUNT software via USB under Windows 10
- [11] digital multimedia teaching material online in the GUNT Science Media Center: E-Learning course, worksheets

Technical data

Pulley blocks:

- transmission ratio: 1:4
- attachment points for suspension cable: 2
- snap-in points: 5
- spacing of snap-in points: 33mm

Measuring ranges

- 2x force measurement: 0...200N
- 2x angle: 0...360°
- 2x snap-in points: 5

LxWxH: 800x600x200mm (storage system)

Weight: approx. 12kg (total)

Required for operation

Accessories from the GUNT MEC Line series, PC with Windows recommended

Scope of delivery

- 2 pulley blocks
- 1 GUNT software
- 1 set of instructional material and online access to GUNT Science Media Center
- 1 storage system with foam inlay

SE 200.05

MEC - Cable forces and pulley blocks

Required accessories

SE 200 min. 1, max. 2	MEC - Frame digital & smart
SE 200.21 min. 1, max. 2	MEC - Support
SE 200.24	MEC - Vertical load