

KI 120

Kinematic model: crank slider



Description

■ representation of a purely harmonic reciprocating motion

The crank slider, unlike a normal crank mechanism, generates a purely harmonic stroke movement.

The KI 120 unit can be used to generate and study purely harmonic stroke movements. The experimental unit comprises a rotating crank disk, connecting rod and fixed cylinder. The connecting rod is connected to the crank disk on one side via a crank. Changing the position of the crank on the crank disk adjusts the crank radius in three positions.

At the other end, the connecting rod is connected to the fixed cylinder. This end models the piston. The angle is adjusted using the crank disk, and an angle scale is integrated into the base plate. A millimetre-precise steel ruler is attached to the cylinder to measure the stroke.

The elements are mounted on a base plate. Two handles make it easy to carry and stack the unit.

Learning objectives/experiments

- conversion of a uniform rotary motion into a purely harmonic reciprocating motion
- influence of crank length and input angle on the output stroke
- recording the transmission function of a crank slider

Specification

- [1] investigation of a crank slider
- [2] generation and investigation of purely harmonic stroke movements
- [3] adjustment of the crank radius at three positions of the connecting rod on the crank disk
- [4] adjustment of the angle by turning the crank disk
- [5] measure the stroke on the cylinder

Technical data

Crank disk

- anodised aluminium
- ball-bearing mounted

Crank radius

- 25mm
- 37,5mm
- 50mm

Connecting rod

- anodised aluminium

Cylinder

- stroke 0...100mm

LxWxH: 380x280x100mm

Weight: approx. 3kg

Scope of delivery

- 1 kinematic model
- 1 set of instructional material

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Slotted link apparatus

Optional accessories

020.30009

WP 300.09

Laboratory trolley