

INCLINED PLANE - NEWTONMETER

MED 02.10a



Material:

Item-no.	Qty.	Description
DS101-1G	1	Support base, large, L=500 mm
DS093-04	2	Sliding saddle "Sepp", H=40 mm
DS300-50	2	Support rod, squared, L=500 mm, 12x12 mm
P7240-1C	1	Support rod, round, L=250 mm, D=10 mm
DS400-3K	2	Bosshead cross-pattern, Demo, green
DS130-1S	1	Inclined plane, simple (02)
DM650-1R	1	Roller, 500 g
DS103-1G	1	Rail support "parallel", H=150 mm
DS103-3G	1	Sliding saddle, H=34 mm
DM725-ND	1	Newtonmeter "inno" 20 N / 2000 g
P3120-5B	1	S-shaped assembly platform

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Purpose

A precise measurement of the downhill force depending on the inclination of the plane.

Aufbau:

Place the two „sepp“ sliding saddles on the support base as shown on the image. Insert the two squared support rods into these sliding saddles; afterwards mount a bosshead at a height of 40 cm on the left support rod.

Mount the 34 mm sliding saddle on the rail support and place the sliding saddle at the end of the inclined plane.

Mount another bosshead at a height of 30 cm on the right support rod and insert the 25 cm support rod horizontally in it.

The complete Inclined plane is mounted on the bosshead as shown on the image.



Place the Newtonmeter on the S-shaped assembly platform for better visibility; the weighing bar is mounted on the 34 mm sliding saddle.

Hang the 500 g roller into the hook of the weighing bar. Adjust the sliding saddle so that the hook of the weighing bar is at the same axis height like the roller.

Now bring the Inclined plane into horizontal position by moving the bosshead of the right support rod. Make sure that the roller does not roll off the inclined plane.

As soon as the roller does not exert any tensile force anymore turn the Newtonmeter on and tare (set to 0).

Experiment 1

The inclined plane is now slowly swiveled from 0 - 90 °. Angles from 0 ° to 90 ° are read in 15 ° steps.

We set the desired angle in each case.

Before reading the force, the rolling element is removed and the Newton meter tared. The measured force is noted for the respective inclinations.

Experiment 2

Determine the weight of the roller and then compare it with the downhill force for the respective inclinations.

