

EXPERIMENTAL MODEL OF AN ANGLE JACK

MED 03.06



Material:

Item-no.	Qty.	Description
DS101-1G	1	Support base, large, L=500 mm
DS093-04	1	Sliding saddle "Sepp", H=40 mm
DS201-75	1	Support rod, round, L=750 mm, D=12 mm
DS400-3K	1	Boshead cross-pattern, Demo, green
DM210-2K	1	Pulley on rod, ball bearing, D=100 mm
DG220-1K	1	Bead chain 50 cm, for tubes
C1000-1C	2	Beaker glass, 150 ml, low form, Borosilicate
C7235-2B	1	Lab-jack small, 150x150 mm

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Purpose

It can be easily understood that the different lengths of the liquid pillars result in a difference in force (and thus a difference in pressure). This exists as long as the lengths are different.

Preparation

Place the sliding saddle in the centre of the large support base and insert the support rod into the sliding saddle; afterwards mount the bosshead at the top of the support rod. Fix the pulley on rod at this bosshead.

Place one of the two beaker glasses on the lab-jack; the other beaker glass is held at the same height level as the other one. Place the bead chain centrally over the pulley and put the ends of the in each of the beakers.

Experiment

We slowly lower the right beaker. What is happening?

If the chain (the liquid pillar) reaches a greater length on the right than on the left, it moves completely into the right beaker without further action.

However if you lift the right beaker over the left one the chain (the liquid) moves completely back into the left glass.

Note

In the case of liquids, the complete overflow can be stopped by briefly lifting the hose - air instead of liquid comes in. This cannot be shown in this model experiment (it is just a model).