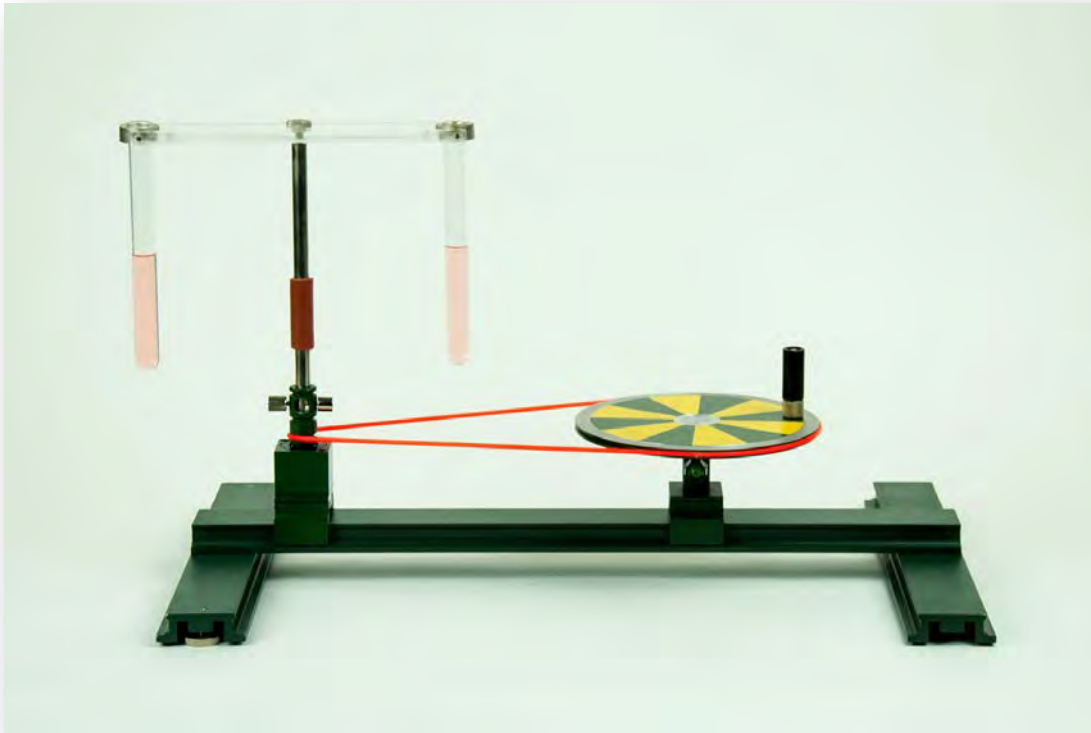


CENTRIFUGAL FORCE – CENTRIFUGE MODEL

MED 09.05



Material

Item-no.	Qty.	Description
DS101-1G	1	Support base, large, L=500 mm
DS103-3G	1	Sliding saddle, H=34 mm
DS402-3B	1	Pivot bearing with transverse hole,
DS402-3S	1	Drive pulley demo, with ball bearing
DS402-2N	1	Crank pin, L=50 mm
DS401-1A	1	Drive belts, set of 2
DM358-1Z	1	Centrifuge demo

CENTRIFUGAL FORCE – CENTRIFUGE MODEL

MED 09.05

Purpose

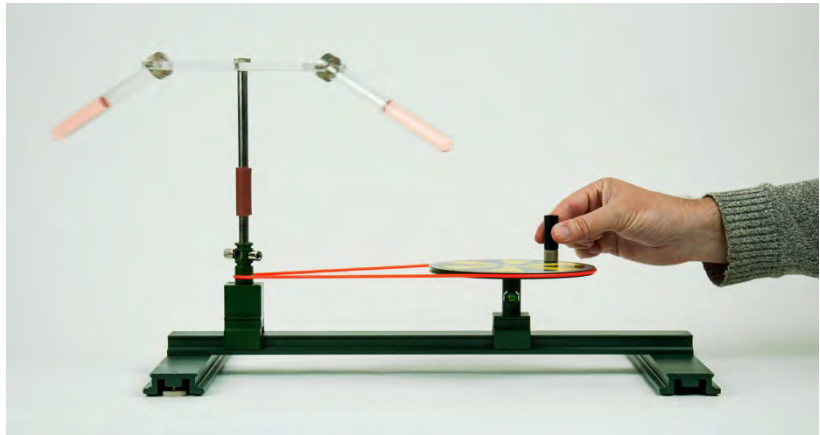
To demonstrate how a centrifuge works.

Preparation

Mount the pivot bearing and the sliding saddle on the support base as shown on the image; afterwards screw the crank pin on the drive pulley.

Insert the drive pulley into the sliding saddle and mount the centrifuge on the pivot bearing.

As shown on the image below taut the long drive belt between the sliding saddle and the pivot bearing.



Experiment

Fill an emulsion of coloured water and oil into the two test tubes and set the centrifuge slowly into motion by turning the crank

The following formula applies for the centrifugal force: $F = m r \omega^2$

A higher centrifugal force acts (if r and ω are the same) on the denser mass particles of the emulsion that results in a rapid separation.

Practical reference

Rise of milk fat under the influence of gravity.

In contrast to "normal" gravity the centrifugal force can be increased very strongly via the speed, therefore the separation process is very quick.