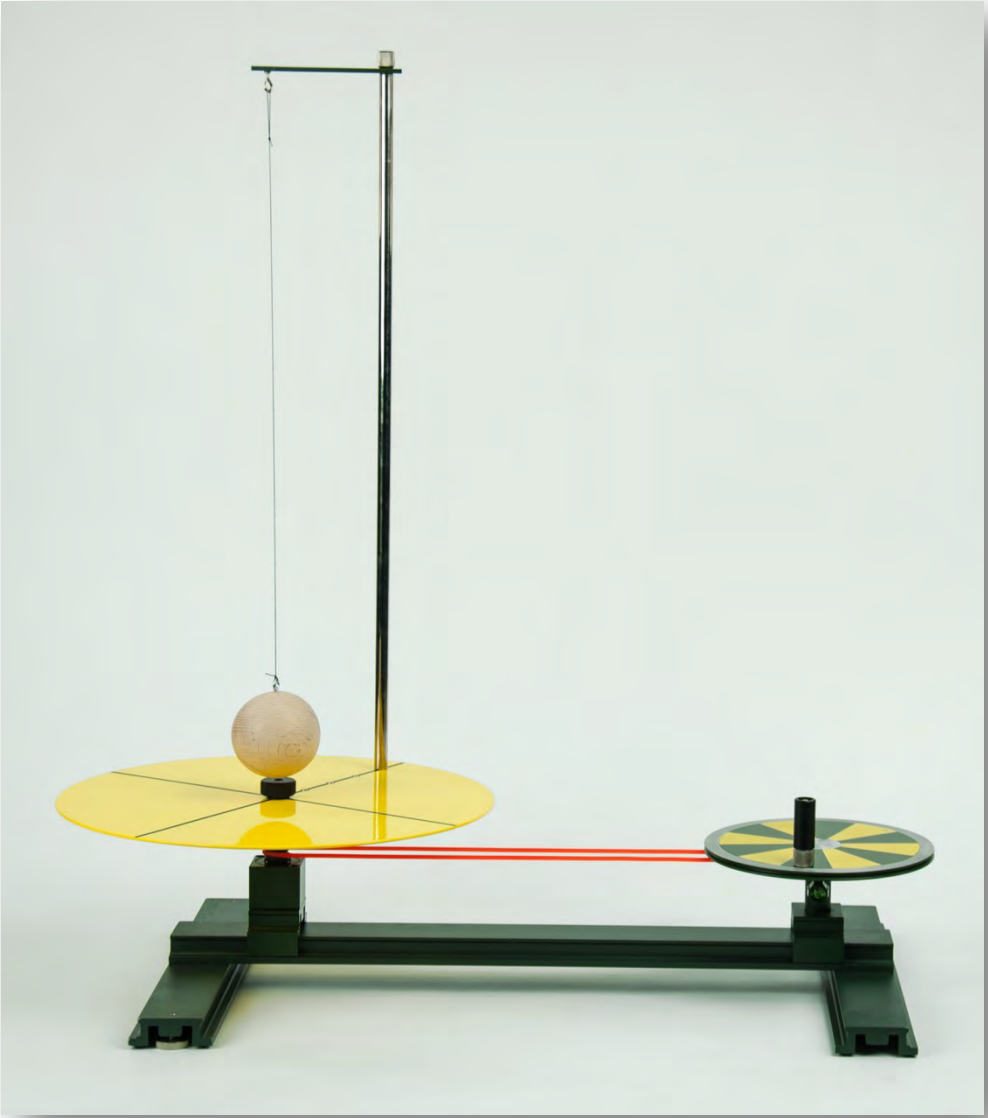
ROTATING PENDULUM (FOUCAULT PENDULUM)

MED 09.11



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
DM357-3K	1	Rotating disc, "demo"
DM357-3H	1	Support rod for rotating disk demo
DM357-3S	1	Gibbet for suspending pendulum bob
DM386-1H	1	Pendulum ball with hook, wooden, D=60 mm
P7100-1A	1	Cord, roll, high tensile strength

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Purpose
To demonstrate the conservation of the plane of oscillation.

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 and insert the drive pulley into the sliding saddle.

Screw the gibbet (for suspending the pendulum bob) into the outer hole of the rotating disk; afterwards hang the pendulum ball with the help of a thin cord to the gibbet.

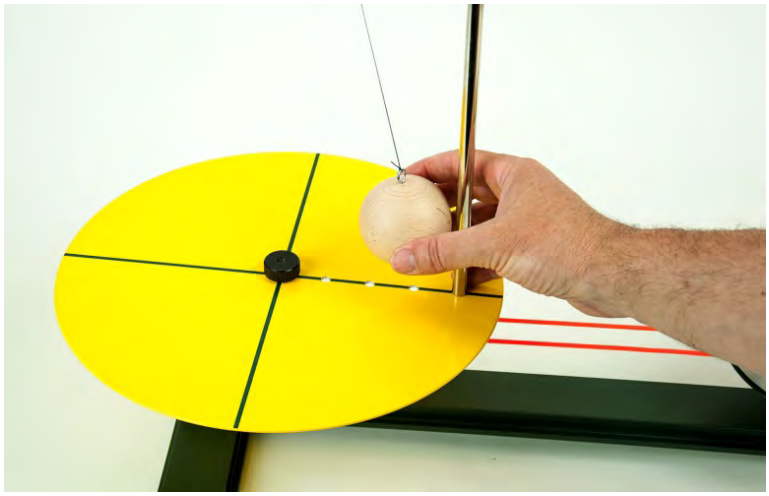
The length of the cord should be long enough to make sure that the pendulum ball hangs freely above the rotating disk as shown on the image.

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

Experiment
Set the pendulum ball in gentle vibration as shown on the image to the right.

The rotating disk with the attached pendulum is slowly turned by turning the drive pulley, one or two rotations are sufficient.

Observe the plane of oscillation of the ball.



Conclusion
The plane of oscillation remains constant –the rotating disc has turned away due to the vibration.

Note
The driving component of gravity is always normal to the thread.
The plane of oscillation passes through the thread in the resting position.
Since there are no lateral forces in relation to the system the plane of oscillation is retained.

Compare: Foucault's pendulum experiment