Mechanical conservation of energy / Maxwell's wheel   P2131800
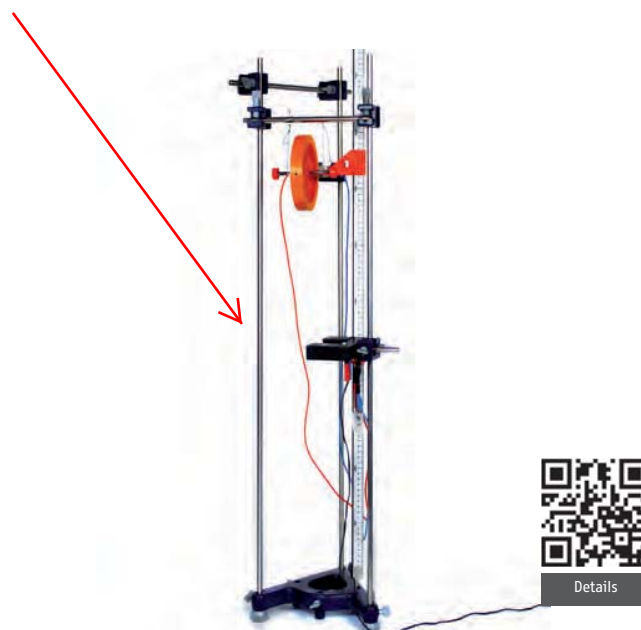
What you can learn about
- Maxwell disc
- Energy of translation and rotation
- Potential energy
- Moment of inertia
- Angular velocity and acceleration
- Instantaneous velocity
Gyroscope

Benefits
- High and sturdy set-up
- Expressive demonstration of energy conversion
- Convert potential energy in energy of rotation, energy of translation, and vice versa

Principle
A wheel, which can unroll with its axis on two cords, moves in the gravitational field. Potential energy, energy of translation and energy of rotation are converted into one another and are determined as a function of time.

Tasks
The moment of inertia of the Maxwell disc is determined. Using the Maxwell disc,

1. the potential energy,
2. the energy of translation,
3. the energy of rotation,

are determined as a function of time.

Mechanical conservation of energy / Maxwell's wheel with measure Dynamics   P2131880

What you can learn about
- Maxwell disc
- Energy of translation and rotation
- Potential energy
- Moment of inertia
- Angular velocity and acceleration
- Instantaneous velocity
- Gyroscope

Benefits
- High and sturdy set-up
- Expressive demonstration of energy conversion
- Convert potential energy in energy of rotation, energy of translation, and vice versa
- Easy measurement and evaluation via movement tracking software

Principle
A wheel, which can unroll around its axis on two cords, moves a gravitational field. This process is filmed with a video camera. The potential energy, kinetic energy, and rotational energy are converted into one another and determined as a function of time with the aid of the "measure Dynamics" software.

Tasks
1. Determination of the moment of inertia of the Maxwell wheel by way of the distance-time relationship.
2. Determination of the moment of inertia of the Maxwell wheel by way of the velocity-time relationship.
3. Graphical representation of the potential energy, kinetic energy, and rotational energy as a function of time.