



## Designable rotational device with arrows, interface and sensors

EQ002NIN

### Function

Intended for study, physics laboratory, physics experiments on: Kinematics. The relativity of movement according to the reference frame. Movement according to the reference. Pure rotational movement and pure translational movement. The MCU and its characteristics. The transmission speed from uniform circumferential motion. Universal gravitation. Keplers laws of planetary motion. Keplers first law, the law of orbits. The ellipse. The period of the orbital motion of planet Earth. Keplers second law, the law of areas. Keplers third law, the law of periods. Wave. The MHS from the MCU. The movement of the projection of a body in MCU in an xy plane, on the y axis. The tangential velocity of the body in MCU. The angular velocity of the body in MCU. Right-hand rule, Flemings rule, for angular velocity. The MHS is performed by projecting the body onto a screen perpendicular to the plane of the disc. The MHS parameters measured on the bulkhead. The amplitude in an MHS. Elongation in an MHS. Relating the MCU executed by the body, with the MHS executed by its projection. Relating the angular velocity of the body in MCU, with the angular frequency of its projection in MHS. The MHS time function. The tangential velocity of the body in MCU and the velocity of its projection in MHS. Centripetal acceleration in an MCU and linear acceleration in an MHS. The behavior of elongation, speed and acceleration of the projection in y, when the body transits in MCU through different quadrants. The elongation, velocity and acceleration of the projection in MHS, when the body transits in MCU in different quadrants, etc.

### Knowledge areas

## Key Experiments

The relativity of motion according to the reference

The UCM and its characteristics

Gravitation, planets, and Kepler's laws of planetary motion

The simple harmonic motion, from the UCM, using arrows

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