



## Panel machine components, gears and pulleys

EQ032JPB2

### Function

Intended for experimental study, physics laboratory and carrying out physics experiments on: Kinematics. Assembling a transmission system with belt and pulleys. The transmission ratio between the coupled pulleys. The pitch diameter of a pulley. The reducer with pulleys. The driving pulley and the driven pulley, in a reducer. The speeds of the driving pulley and the driven pulley. The ratio between the angular velocities and the radii of the pulleys of a reducer. The frequencies at the pulleys of the pulley reducer. The torque gain in a reducer with belt-coupled pulleys. Determining the relationship between the frequencies of the pulleys in a reducer. Calculating the angular speed of one pulley knowing the frequency of the other, in a reducer. Calculating the torque of one pulley knowing the torque of the other, in a reducer. The amplifier with pulleys. Determining the relationship between the frequencies of an amplifiers pulleys. Calculating the angular velocity of one pulley knowing the frequency of the other, in an amplifier. Calculating the torque of one pulley knowing the torque of the other, in an amplifier. Assembling a transmission system with gears. The pitch diameter of a gear. The reducer with gears. The driving gear and the driven gear in a reducer. The speeds of the driving gear and the driven gear. The ratio of angular velocities to the radii of pitch diameters of gears in a reducer. The frequencies in the gears of a reducer. The torque gain in a geared reduction system. The Reducer uses the coupling of a gear with another larger gear. The amplifier with gears. Assembling a transmission system with belt, pulleys and gears. The proportion between the angular velocities and the radii of the primitive diameters of the pulleys. The relationship between the frequencies of the pulleys. The pitch

diameter of a gear. The amplifier. The driving gear and the driven gear in an amplifier. The speeds of the driving gear and the driven gear. The frequencies and angular velocities in the gears of an amplifier. The torque gain in a geared reduction system. Operating the amplifier. Coupling between different gears. Gear trains. Intermediate gears. Sorting the gear train. Classifying the gears that make up the gear train as driving, driven or intermediate. Identifying the direction of rotation of each gear that makes up the gear train. Identifying the transmission ratio and frequency ratio between different gears in the gear train. Assembling a transmission system between gear and rack. The pitch diameter of a cylindrical spur gear. The scalar speeds of the gear and driven rack, etc.

## **Knowledge areas**

Physics

## **Key Experiments**

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