

Design of Band and Disc Brakes

Prof. Octavian Bologa
Faculty of Mechanical Engineering, Galati, Romania

ABSTRACT

Brakes are machine elements that absorb energy in order to slow down or stop a moving part. The most common method used for controlling a rotating part's energy is to use frictional work. Brake capacity depends on the pressure developed between the braking surfaces, the coefficient of friction, and the ability of the brake to dissipate the heat generated by the friction work. A band brake is used to control the speed of a flywheel as shown. The coefficients of static friction is μ_s and kinetic friction is μ_k . What magnitude of torque should be applied to the flywheel to keep it rotating at a constant speed for a given value of the applied braking force solved with Mathcad program.

Keywords: THEORETICAL MECHANICS, DYNAMICS OF SYSTEM OF A RIGID BODIES, BRAKES, CLUTCHES

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