

Evaluation of Tribological Properties by Using Different Process Fluid by Test Ball on Disc

Roman Licek

Faculty of Mechanical Engineering, Department of Machining and Assembly, Technical University of Liberec, Student-ska 2, 461 17 Liberec 1, Czech Republic. E-mail: roman.licek@tul.cz.

Manufacture of new parts of machineries, devices, etc., especially in engineering and metallurgy requires machining of the feedstock in a mechanical way. During machining occurs immediate contact between the tested specimen and the tool and in their mutual relative movement of friction and wear. One of the possible variants how to eliminate this fact is the application of process fluids during machining.

Currently, we are trying to simulate long-term testing by laboratory testing called tribology. The experiment presents friction between two materials that are under real sliding contact. This article examines the tribological characteristics between two materials (tool - ball and workpiece material - disc). The paper contains findings when examining process fluids by tribological test Ball – on - disc, this test is currently used in practice, very widespread, this test can imitate various operations of cutting machining. This paper deals with the evaluation of tribological properties (the coefficient of friction, wear of disc and wear of ball) between the ball from ceramic material Si_3N_4 and the test material (stainless steel X5CrNi18-10, EN 10088-3 and steel commonly used in engineering 16MnCr5, EN 10084-94) by using two kinds of process fluids.

Keywords: Tribology, steel, wear, coefficient of friction, lubricant

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