STUDY OF FRICTION IN A HELICAL PAIR

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Abstract: In order to optimize mechanical systems, is extremely important to understand the friction phenomena from different mechanical pairs. For the case of screw-nut pairs, sliding frictional forces are distributed over the thread surfaces in a complex manner. A test rig was constructed to study the friction from a screw–nut pair, with both elements made of steel, is shown in Fig. 1. After calibrating the driving-measuring system, Fig. 2, sets of test were run and an average value of the friction coefficient was computed. It was noticed a small tendency of decreasing for friction coefficient with increasing loading force and this was attributed to a better behaviour under lubrication, as seen in plots from Fig. 3.

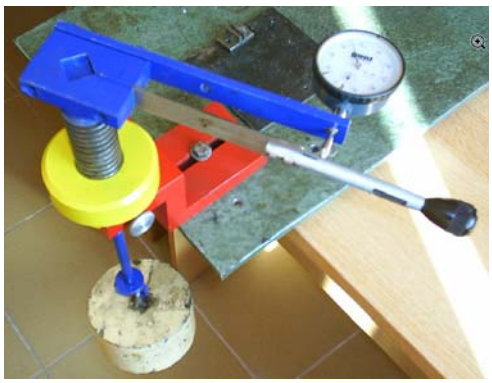

Fig. 1. Test rig

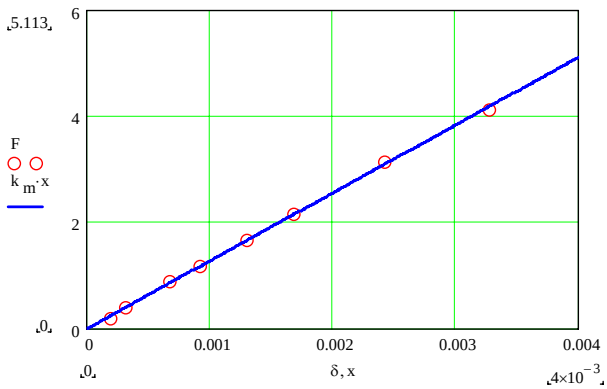

Fig. 2. Calibration results

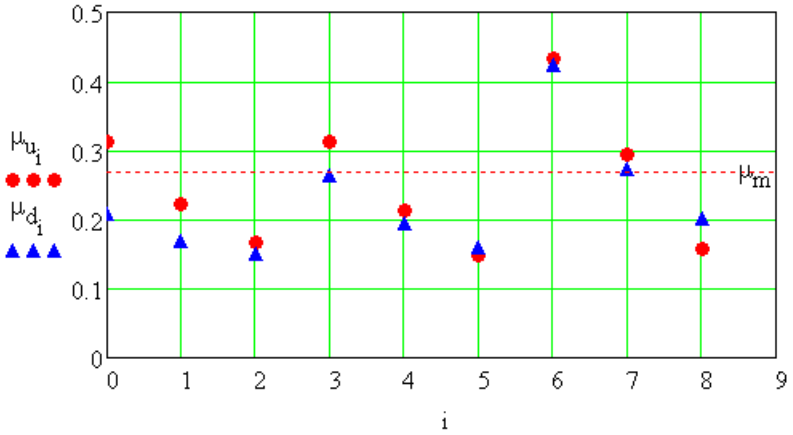

Fig.3. Experimental results

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