

Development of a mathematical model of the hydroerosive wear of the piston couple in hydraulic machines: Part 1

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Abstract

© 2014, Allerton Press, Inc. The paper presents a definition of hydroerosive wear, which occurs in hydraulic machines due to water/air presence in fluid, obtained from a mathematical model. The model includes fatigue processes related to the influence of hydraulic water droplets inside of air bubbles in the surface layer of metal, as well as a sharp increase in temperature caused by adiabatic compression in the piston chamber of a hydraulic machine.

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Keywords

air, fluids, hydraulic machines, hydroerosive wear, math model, piston couple, water