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7. On the Stribeck curve

M. M. Khonsari¹ and E. R. Booser²

¹ *Dow Chemical Endowed Chair in Rotating Machinery, Louisiana State University, Department of Mechanical Engineering, Baton Rouge, LA 70803;*

² *Engineering Consultant, Vero Beach, FL 32966, USA*

Abstract

Different regimes of lubrication in sliding at low surface speeds are often characterized by use of the so-called Stribeck curve. This chapter covers the changes in frictional processes encountered in passing from boundary lubrication at the start of motion, to mixed film lubrication at the lowest surface speeds, and finally to lift off with development of a complete separating fluid film. Particular attention is given to analysis of asperity involvement in load support and friction in the mixed lubrication regime. In the final transition to complete lift-off, definition is also given to contributions by hydrodynamic fluid-film factors. Based on a historical perspective, related wear, wear-in, stick-slip, and lubricant additive effects are also reviewed.