

Abstract Submitted
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Investigation of dynamic dry friction between stainless steel and aluminium alloy PETER KEIGHTLEY, RON WINTER, STEWART STIRK, AWE, Aldermaston, UK — Previous workers studied dynamic friction by using an impacting copper plate to drive a tapered aluminium alloy plug into a matching hole in a stainless steel outer sheath. The velocity of the back surface of the plug was measured using velocity interferometry. We have performed experiments on a version of this basic configuration that has been enlarged so that the sliding surfaces remain in contact for a longer time than with the original configuration. By comparing our results with computer simulations we conclude that the frictional forces between the inner cone and the steel outer are initially high but decrease significantly as the sliding proceeds. This effect is assumed to result from thermal softening of the material at the sliding interface. The study is supported by metallography of the recovered components.

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