Effect of Cutting Edge Geometry on Cutting Forces when Drilling Inconel 718

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This work deals with the problematics of cutting forces when drilling holes in Inconel 718. Drills with different geometries of cutting edge were used. The cutting forces and torques were measured during the experiment. The feed cutting force had the greatest influence of all the cutting forces, therefore only the cutting force feed was evaluated. The torque was monitored. This material is known for its unique properties of high strength at high temperatures, corrosion resistance, high hardness, work hardening and low thermal conductivity. Part of the paper is focused on the experiment where the effects of the geometry of the cutting edge on cutting forces are evaluated. This paper is limited only to carbide tools. The results of the experiment are compared with results from other research institute.

Keywords: Drilling; Inconel 718, Cutting forces

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