

The Correlation between Surface Finish in Milling Process Involving Solid Lubricant

Abstract

Nowadays solid lubricant assisted machining had now become a new tendency, it seems to play its potential implementation to replace previously applied conventional coolant fluid assisted machining. However, the application of solid lubricant had been called into questions as whether it can perform better compared to conventional wet and dry machining, and which material serves the best candidate to be used as the lubricant. Hence, this project investigates the role of solid lubricant assisted machining with graphite powder extra pure on surface quality while machining AISI 1045 mild steel. There are four conditions of lubricants will be analyzed for this experiment. The conditions are fully ordinary coolant (MJS semi-synthetic coolant), and the mixture between ordinary coolant with 50 grams, 100 grams and 150 grams of graphite powder extra pure. The performance of solid lubricant assisted machining will be analyzed in measuring the surface roughness quality and compared with wet machining.

Keywords; Milling; Solid lubricant; Graphite; Surface finish