

Abstract

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Effects of Wire-EDM Variables on Surface Roughness, Micro Hardness, Kerf Thickness and Rate of Metal Removal

The aim of the present research is to study the controllable variables affecting the surface produced by electric discharge machining which is changed in array of experiments to see its effects, they include: the wire feed speed, the machine table speed, the dielectric flow rate that include the upper and lower flushing, the kerf gap, the spark on duration, and the spark off duration. The effects on the produced surface are evaluated either measured calculated. They include: average surface roughness, peak to valley height, surface microhardness, gab thickness, material removal rate, voltage difference and machining current. Emprical equations interpreting the relationship between the controllable variables and its effects on the surface produced have been deduced.