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Analyzing and Modeling the Influence of Workpiece Thickness on Geometry of Slot Machining Wire EDMs (Conference Paper)

Khan, A.A., Hazza, M.H.F.A., Daud, M.R.H.C., Ali, M.Y., Jamingan, H.

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Abstract

Wire erosion discharge machining is one of the non-traditional machining processes which use heat energy of spark to remove material from work piece. Process parameters have given the major influence of the cutting performance on wire EDM. Parameters such as pulse on time, peak current, wire diameter and discharge current are well known for their effect surface roughness and recast layer. The present work aimed to investigate the influence of thickness, current and wire speed on the machining surface. The surface roughness and hardness have been analyzed and assessed. It was concluded that surface roughness increases with the increase of thickness and current, and decreases when wire speed increases. Meanwhile, as workpiece thickness increases, the surface hardness increases but it decreases when current and wire speed increase. © 2015 IEEE.

Author keywords

hardness; surface roughness; Wire EDM

Indexed keywords

Engineering controlled terms: Hardness; Machining; Wire

Cutting performance; Discharge currents; Machining surfaces; Non-traditional machining; Process parameters; Speed increase; Surface hardness; Wire-EDM

Engineering main heading: Surface roughness

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