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EFFECT OF PROCESS PARAMETERS ON MATERIAL REMOVAL RATE OF WEDM FOR AISI D7 TOOL STEEL

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ABSTRACT

Wire electrical discharge machining (WEDM) is used in industry for machining complex profiles with high accuracy in conductive material. In the present work, the parametric optimization method using Taguchi method is proposed for WEDM of steel grade AISI D7 component. Three process parameters are selected for this investigation; Pulse on-time, Pulse off-time and wire feed. The experimentation is conducted by using Taguchi's L_9 orthogonal array. Signal to Noise ratios of the Material removal rate for all experiments are calculated. The results are analyzed using analysis of variance (ANOVA) and response graphs and presented. The results obtained are used for the selection of an optimal combination of WEDM parameters for proper machining of AISI D7 to achieve better material removal rate.

KEYWORDS: WEDM, Pulse on-Time, Pulse off-Time, Wire Feed, Material Removalrate