

“PARAMETRIC ANALYSIS OF SUPER FINISHING PROCESS”, AN EXPERIMENTAL INVESTIGATION (MICRO-FINISHING)

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Abstract

The objective of the present work is to evaluate the parametric study of super finishing process. An experimental investigation to study the performance of a super finishing process by using various abrasive stones is reported. Experiments have been conducted to cover different machining parameters influencing the process. The effects of these parameters on surface finish of work-piece have been investigated. Observations revealed that with increase in contact pressure surface finish improves whereas surface speed of work-piece, amplitude of vibration of stone and viscosity of the cutting fluid are the limiting factors for this process. It was confirmed that super finished surface reaches a surface roughness value of $R_a=0.04\mu\text{m}$ under suitable conditions in 3.5 minutes when initial surface roughness R_a was about $3.50\mu\text{m}$.

Keywords: Contact Pressure, Amplitude of Vibration, Surface Finish, Super finishing, Abrasive stones, Honing.