

## عنوان مقاله:

Experimental Study of the Cutting Parameters Effect on Hole Making Processes in Hardened Steel

## محل انتشار:

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## خلاصه مقاله:

Hardened steels are commonly used in wide areas of technologies and industries. In respect of poor machinability of these steels and requirement of expensive cutting tools, study of machining economy is a matter of importance. Thus the present study deals with the economic considerations of various hole making processes. For this purpose, the hard steel samples were machined by conventional drilling and modern helical milling with and without predrilling. The experiments were performed on AISI D2 steel workpieces with a hardness of 52 HRC. The tool wear, surface roughness, cutting forces and machining time were measured. Results revealed that despite general knowledge, applying predrilling step is not a suitable strategy in hole making on hardened steels. Furthermore, helical milling enhances the efficiency of process by improvement of tool life and surface roughness and reducing the cutting forces. The aforementioned results make helical milling a more economical process than conventional drilling.

## کلمات کلیدی:

Hardened Steel, Helical Milling, Drilling, Tool Life, Hole Quality, Machining Economic

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