Abstract

To achieve competitive edge in manufacturing in this era of stiff competition, most manufacturing companies are focusing on selection of shaping a component by considering various technical and economical factors like type of material, shape, process, process parameters and cost of processing. Companies are using Techno-Economic analysis to estimate optimal technology and economic processes to carry out their tasks in economical and efficient way. Product miniaturization has opened up a whole new vista of possibilities in the manufacturing industry. Various micromachining processes like CNC, EDM, LBM, and ECM are being used to produce micro grooves/holes; each process having its relative merits and
demerits in terms of metal removal rate, wear rate, rejection, cost of process and wastage of
material as stated by different researchers. The present work has been carried out to identify
various Techno-Economic aspects in micromachining of H11 Hot Die Steel Mould using EDM in
small scale industry. The experimental work has been carried out by using Taguchi Design
L-18 Orthogonal Array and verified by ANOVA. The optimized EDM process parameters for
MRR and ROC to cut micro grooves/holes have been worked out. It is estimated that with the
induction of this micromachining process with optimized process parameters, the company has
enhanced its productivity and profitability compared to previous processing by CNC machines.


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Index Terms

Computer Science

Applied Science

Keywords
Edm  Mrr  Radial Over Cut  Machining Of H11 Hot Die Steel  Mould And Die.