OPTIMIZING THE PROCESS PARAMETERS FOR PRESS TOOL DIE TRIALS TO REALIZE DEFECT FREE PARTS

MR. GANESH B. MADIWAL
P.G. Student, Mechanical Department, A.G.P.I.T, Solapur, Maharashtra, India

ABSTRACT
The sheet metal production process could be streamlined to deliver good quality components through discrete planning for the trials. The process parameters, namely – Raw material for blank, Blank size and/or profile, Radius on the Die-block are identified as the crucial parameters for this work. These parameters shall be manipulated by varying their input values as per the 'Orthogonal Array' in the 'Design-of-Experiments'. The combination of values shall be tried to effect the outcome in the form of realizing a good quality component. Statistical tools shall be used to treat the data generated during the trials while identifying the most significant parameter relevant to the operation. Taguchi method shall help determine the optimum values for setting the operation for the best response. The response shall be the extent of 'thinning' observed over the component. The optimal values determined by the statistical technique shall be validated by performing experiment with the corresponding inputs.

KEYWORDS: Sheet metal, Die development, ANOVA, Taguchi methods, thinning.