DETERMINISTIC MODEL FOR PRODUCTION CYCLE TIME IN MECHANICAL PRESS WORKING

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Abstract

The objective of the present investigation is to develop a deterministic model using dimensional analysis for the press working operation. Simulation model does not take into account the human factors, workplace parameters and environmental conditions. To investigate the effect of these variables on cycle time the dimensional analysis is used. The independent variables are identified and are grouped together. The groups formed are anthropometric data of the operator, personnel factors of the operator, machine specifications, workplace parameters, specifications of the product and environmental conditions in press working shop. The parameters which were constant during the experiment were recorded first. The experiment was planned to record the cycle time. The deterministic model is developed to express the cycle time as a function of identified inputs. The results obtained have a correlation of 88% with experimental cycle time. The model is a strong estimator to simulate the process.