

Erawin Thavorn 2011: Parameter Setting for Rod Push Production Process on Multiple Responses: A Case Study in Motorcycle Parts Factory. Master of Engineering (Industrial Engineering), Major Field: Industrial Engineering, Department of Industrial Engineering. Thesis Advisor: Associate Professor Prapaisri Sudasna-na-Ayudhya, Ph.D. 87 pages.

The objective of this research was to study appropriate setting of parameters in the production process of Rod Push - which impacts on quality characteristics such as diameter and surface roughness. Besides, the cycle time was also considered. At a study plant, the values of the Process performance capability of two quality characteristics were less than the manufacturer's targets of 1.33. Central Composite Design was employed to examine Rod Push produced by CNC with 5 controllable process factors including Spindle speed of rough-cutting, Feed rate of rough-cutting, Depth of cut of rough-cutting, Spindle speed of finish-cutting, and Feed rate of finish-cutting. The nuisance factor of CNC was tool wear. The results indicate that, the average diameter and the average surface roughness are closer to the targets and Process performance capability higher than manufactures' targets. Moreover, the cycle time is reduced (17.78% reduction).

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Thesis Advisor's signature