

Chatchawan Rojanaprateep 2012: A Dynamics Response Predicting of Two Axis Rotary Table using Finite Element Method. Master of Engineering (Mechanical Engineering), Major Field: Mechanical Engineering, Department of Mechanical Engineering. Thesis Advisor: Assistant Professor Supasit Rodkwan, Ph.D 81 pages.

The two axis rotary tables are main component of five axis milling machine which are installed to normal three axis milling machine. During machine operate, two axis rotary tables will be moved follow with NC command and cutting force will acted two rotary table structure. The importance behavior of two axis rotary table is dynamics response, which are required for structural design. The objective of this research is two axis rotary table dynamic response, deform distance, velocity and acceleration, predictions by non-linear finite element with Houbolt method model. The proposed model is used to explain the dynamic behavior response of the structure of two axis rotary table. The model verification is applied hammer and accelerometer sensor. The maximum acceleration comparative result between finite element model and hammer test error is 8.021% which is satisfied for prediction the dynamics response of two axis rotary table.

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Thesis Advisor's signature