Nopporn Bukwan 2007: An Application of Computer Aided Design, Manufacturing and Five Axis Machine for Shoes Rubber Compression Mould Manufacturing. Master of Engineering (Industrial Production Technology), Major Field: Industrial Production Technology, Interdisciplinary Graduate Program. Thesis Advisor: Mr. Chana Raksiri, D.Eng. 109 pages.

Currently, CNC five-axis machine is widely used to manufacture the complicated mould in stead of three-axis machine, which can not perform in single process; the capacity, quality and cost of process are the limitations of three-axis machine. This research is an application of CAD/CAM for a complicated mould manufacturing of shoes rubber to provide good surface roughness, high quality and high precision. The geometric parts of rubber shoes were created for mould and die design, which tool path can be obtained by CAM software and cutting code was then sent to five axis machine.

This research is approached into two studies, which are making a shoe rubber wood model for rubber casting mould and direct making of shoe rubber aluminum mould. The results show that the machining time of the shoe rubber wood model for rubber casting mould is reduced 46.94% by comparing with three-axis machine. In order to make the shoe rubber aluminum mould directly without casting process, Due to it undercut area in the mould that can make difficultly processor for three-axis machine in one step then most of manufacture use wooden for casting in order to get rubber mould. For the above reasons can show that the Five-axis machining able to reduced 56.8 % of processing time by compare traditional mould manufacturing process.

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