

Design and fabrication of a mini CNC machine model

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Abstract: In the context of the growing development of digital technology in manufacturing, this topic focuses on the design and fabrication of a mini CNC machine model. The objective of the research is to address issues of labor efficiency and product quality through the automation of the laser cutting process by building a control system based on a compact CNC machine. The research methodology includes analyzing technical requirements, designing a 3D model, PLC programming, and experimental fabrication. The expected result is to provide a flexible and efficient solution for application in small and medium-sized workshops, contributing to the advancement of the automation manufacturing industry in Vietnam.

Keywords: mini CNC machine, automation, PLC control system