Pembuatan Writing And Drawing Machine Dengan 2 Axis Stepper Motor Driver Berbasis Computer Numerically Controlled (CNC)

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ABSTRACT

According to ISO standards, CNC (Computer Numerically Controlled) machines are the machine tools controlled by a computer using numerical language (command data with numeric codes, letters and symbols). CNC technology's working system is more synchronous between computers and mechanics than similar machine tools, so CNC machine tools are more accurate, precise, and flexible. The CNC operating system uses a program-controlled directly by a computer. In general, the construction of a CNC machine and its working system is synchronization between the computer and its mechanics. This CNC machine was built to answer the challenges in the modern manufacturing world. With a CNC machine, the accuracy of a product can be guaranteed to be more accurate. In this final project, the researcher designed a simple CNC tool that can be used to engrave or in other terms to automatically draw a pattern in a specific area that can be used for education and society in general mass-produced. The control device used is Eleksmana SE Driver with Motor Driver. The software used is Autocad to design tools and Elekscam to upload GRBL libraries, convert the design to G-code and as interface software for operators running this CNC machine. While the hardware used is in the form of a stepper motor to drive the X and Y axes, a servo motor as a controller for writing tools on the workpiece. The research result is the manufacturing CNC machine that can make a new product by designing an image using Elekscam software, which is quite easy to use by ordinary people. It can support production activities and the tools' cost is affordable and producing excellent mass-produced products.

Keywords: *CNC, Autocad, Elekscam, G-code, Workpieces*