MT-491

Computer Numerical Control

Computer Integrated Manufacturing (CMM)

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Fall 2019

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Table of Contents

Introduction:

Computer Integrated Manufacturing (CIM) is the process by which manufacturing is done with the use of computer-controlled machinery and the computer codes that control the entire process of fabrication or production. While Computer Numerical Control is the automation of the manufacturing process. The automation of this process increases the speed and accuracy at which parts can be produced. In this project the machine used was a CNC Lathe is controlled by a computer that is the control unit that machines a part based upon typed codes which are uploaded to the machine. However, instead of running the actual machine a virtual one was used to produce the finished part. The name of these software are Predator CNC Editor and Predator Virtual CNC. Predator CNC Editor was used to type the codes that is used to instruct the CNC on the dimensions and features of the part. While, Predator Virtual CNC is a virtual CNC that mimics the actual CNC machine, which in this case was the lathe. The codes used in the editor are called G-codes. These codes along with dimensions are used to instruct the machine to perform a specific task or function.

All the part designed was created by mainly using the G0 and G1 codes. The G0 code tell the machine to go rapid, while the G1 code is used to perform linear motion. Part 1 consisted of only linear features and so it was coded using G1 codes. For Part 2