

HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

**MANUFACTURING OF COMPONENT ON A
CNC LATHE**

by

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MANUFACTURING OF COMPONENT ON A
CNC LATHE

by MINAS IOANNIS

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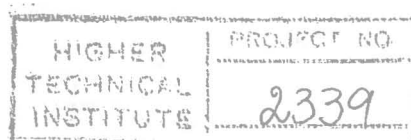
Technician Engineer

in

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**This Project is dedicated to
Graduating Mechanical Engineers**

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I would like to thank Mr Lazari for his help in allowing me to proceed with the completion of this project.

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Abstract

The objective of this project was to manufacture a component on a CNC lathe.

The basic theory was written; which is about the main parts of the machine, the coordinate system and measuring procedures, the NC program and programming, the program input and operation elements of CNC operation, the working data and magnetic tape operation, the thread cutting, the interpolation, and the canned cycles.

The part programming and the detailed drawing were done and the manufacture of the component was finally achieved.

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INTRODUCTION

The high demand for manufacturing methods brought about the development of new and sophisticated technology, this therefore was the beginning of a new era for human intelligence, and thus a new society for manufacturing was cultivated.

In the development of new manufacturing processes, the Second World War played a colossal role in higher technology. It demanded more new and advanced methods of manufacturing. They requested weapons fast, convenient and in bulk, thus marking the turning point of complete industrialization.

An immense role played in complete industrialization was the numerically-controlled machine tool. Mr. John Pearson and the Massachusetts Institute of Technology developed the first numerically - controlled machine tool in 1952 in favor of the US -Air Force in order to produce particularly complicated workpieces.

The control unit of this particular act was at such a gigantic size and the costs of it was immense, the operation and maintenance was obviously complicated as such. Therefore one could hardly imagine that this kind of technology could be used at a high rate anywhere. But beyond the fact that it was large and complicated it was none-the-less the first step towards further development.

Fifteen years ago, due to the above reasons the NC-machines were extremely costly and only very few companies had the nerve and faith to invest in this new technology.

From 1975 onwards the production of NC-machines started growing at a immense speed.