HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF AN INJECTION MOLT FOR A PLASTIC INDUSTRY

M / 780

BY: KARAOLIDES THEOHARRIS

JUNE 1997

TO MY FAMILY

AND FRIENDS

DESIGN OF AN INJECTION MOLD FOR A PLASTIC INDUSTRY

Project Report Submitted by
KARAOLIDES THEOHARRIS

in part of satisfaction of the award
of Diploma of Technician Engineer
in Mechanical Engineering of the
Higher Technical Institute, Cyprus.

Project Supervisor: Mr. D. Roushas
Lecturer
in Mech. Eng., H.T.I.

Type of project: Individual

June 1997

HIGHER TECHNICAL INSTITUTE
NICOSIA - CYPRUS
MECHANICAL ENGINEERING DEPARTMENT
Diploma Project 1996/97

Project Number: M/780

Title: "Design of an Injection Mould for a Plastic Industry"

Objectives:

1. To design an injection mould for a given component.
2. To present detail manufacturing drawings.
3. To work out design calculations.
4. To draw an assembly of the tooling system.
5. Describe the sequence of operations for the construction of all parts.
6. To present selection procedures and detailed specifications for all chosen components.
7. To specify material specification and give mechanical properties and heat treatment requirements.
8. To carry out an economic appraisal.
9. To construct the mould.

Terms and Conditions:

1. The component to be manufactured is available.
2. A light, compact, and foolproof construction is required.
3. All dimensions and tolerances must be according to standards.

Student : Theocharis Karaolides (3ME1)

Supervisor : Damianos Roushas

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ACKNOWLEDGMENTS

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Special thanks to Elysee irrigation company for the training offered to me, during the time I worked their for the construction of the mold.

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Last, but not the least, I would like to thank my ancle Mr. Kyriacos Karaolides, who had arranged the typing and copying of this project.

Thank you all,

Theoharris Karaolides

ABSTRACT

This project deals with the design of a specific injection mold for producing a specific component.

Some knowledge about plastics and their processing is necessary for better understanding of injection molding which is one plastic processing method, so chapter 1 and chapter 2 deal with the above topics.

Chapter 3 deals with injection molds in general and covers all practical aspects involved like material selection, fabricating cavities and cores, runner systems, cooling, demolding, venting and alignment of injection molds.

Chapter 4 proceeds with the design procedure of a specific injection mold for an irrigation industry.

Chapter 5 describe the manufacturing process for the production of the mold.

The design continues with the mechanical design of the mold, and also with a procedure for estimating mold cost. Those topics are included on chapter 6 and chapter 7.

The design also includes detailed manufacturing drawings of all parts of the mold, and also assembly drawings.