

HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

DESIGN OF AN INJECTION MOLT

FOR A PLASTIC INDUSTRY

M / 780

BY: KARAOLIDES THEOHARRIS

JUNE 1997

DESIGN OF AN INJECTION MOLD
FOR A PLASTIC INDUSTRY

Project Report Submitted by
KARAOUIDIS THEOHARRIS

**TO MY FAMILY
AND FRIENDS**

In part of satisfaction of
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



**DESIGN OF AN INJECTION MOLD
FOR A PLASTIC INDUSTRY**

Project Number: H.T.I.

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

Objectives:

1. To design an injection moulding machine.
2. To present detailed drawings of the machine.
3. To work out design calculations.
4. To draw an assembly of the cooling system.

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KARAOLIDES THEOHARRIS**

5. Describe the sequence of operations of the machine.
6. To present a list of materials and detailed specifications for all components.
7. To specify suitable material properties and heat treatment requirements.
8. To carry out an economic analysis.

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

9. To construct the model.

Project Supervisor: Mr. D. Roushas

Terms and Conditions:

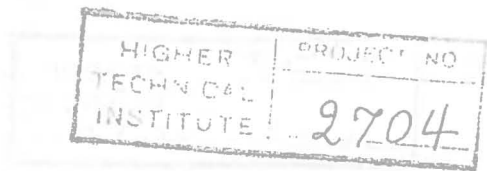
**Lecturer
in Mech. Eng., H.T.I.**

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

Type of project: Individual

Supervisor: Dimitrios Roushas

June 1997



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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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.