Higher Technical Institute
MECHANICAL ENGINEERING DEPARTMENT

DIPLOMA PROJECT

CONSTRUCTION OF A WATER PUMP TEST RIG

BY
HADJIANDONIS KYRIAKOS
M/846

JUNE 1999

HIGHER TECHNICAL INSTITUTE

MECHANICAL ENGINEERING

DIPLOMA PROJECT

CONSTRUCTION OF A WATER PUMP TEST RIG

(M/846)

BY

HADJIANDONIS KYRIAKOS

JUNE 1999

ACKNOWLEDGEMENT

I would like to express my thanks and appreciation for guidance and given by Mr. Paraskeva Demetriou and Mr. Charambos Kalogerou for the fulfillment of this project.

Finally I express my thanks to all those who helped to bring this project.

SUMMARY

The objectives of this project are to study and construct a test rig for testing centrifugal pumps and find their characteristic curve. For the achievement of this project the follows steps where followed through the entire work.

- Description of the different types of pumps principles of operation and performance characteristics.
- Selection of a particular testing method.
- Description of the main features for the tests based on ISO standards for the various types of pumps.
- Selection of a particular a testing arrangement and detail design of the rig.
- Construction of the test rig

Hadjiantonis Kyriakos

CONSTRUCTION OF A WATER PUMP TEST RIG

INTRODUCTION

Pumps show up from the earliest years of civilization and are variously known, depending up on which culture recorded their description, as Persian wheels, water wheels, norias, Archimedean screw e.t.a. Perhaps the most interesting is that since the ancient years technology has met a vast development but still pumps remain one of the most used machines. Its function, to move any liquid from one place to an other against differences in elevations and against any resistance to flow made it popular over the centuries. Now days pumps are highly efficient, reliable and flexible as there is one for any application and for any liquid, from highly volatile ether to thick sludge.

Pumps can move a certain quantity of any liquid at a given time (flowrate) to a certain distance and elevation (total head). The flowrate and total head and how efficient is a pump is given by a characteristic curve.

So our purpose is to construct a test rig to find the features to construct those characteristic curve.