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DIPLOMA PROJECT

EVALUATION OF GEAR MANUFACTURE BY GENERATION METHODS

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EVALUATION OF GEAR MANUFACTURE BY GENERATION METHODS

by

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SUMMARY

This project has been divided into five chapters.

Chapter one deals with an introduction on gears. It describes the four basic types of gears i.e. spur, helical, bevel and worm gears. It also deals with the three groups that gears are classified and also the involute shape of tooth. Then the various design parameters that are used in the gears are explained.

Chapter two, is referring about the two important generating methods i.e. shaping and hobbin g process. Each method is described seperately and in each method is described the principles of operations, advantages and disadvantages, and the various types of machines.

Chapter three, deals with the various manufacturing method of gears i.e. milling, broaching, planning,hobbing and shaping, various finishing processes i.e. burnishing, shaving, grinding, lapping and honning, and the various heat treatments. It also reffering the various materials which are used for manufacturing of gears.

Chapter four, is about the manufacturing of gears on the two machines (shaping and hobbing) and the accuracy test on the two manufactured gears. Those tests were carried out at H.T.I Metrology Laboratory.

At last, chapter five is reffering for two experiments.

One for manufacturing a spur gear on the shaping machine OHO20 and the other for the manufacturing a helical gear on the hobbing machine 5K324A.

CONTENTS

CHAPTER 3

MANUFACTURING PROCESS

CHAPTER 4

GEAR CUTTING AND ACCURACY TESTS

CHAPTER 5

EXPERIMENTS ON GEAR CUTTING