FINAL YEAR PROJECT REPORT
DIPLOMA IN MECHANICAL ENGINEERING
SCHOOL OF ENGINEERING
MARA INSTITUTE OF TECHNOLOGY
SHAH ALAM

COMPUTER AIDED DESIGN OF TWO STAGE SPEED REDUCER

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CONTENTS

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May God Bless You.

ABSTRACT

AUTOCAD is a computer aided drafting program from auto-desk incorporation. It's written in the computer programming language which is machine independent and composed of an intricate set of drawing and editing capabilities.

In Mechanical Engineering Course, AUTOCAD is very important in theirs project making and to invent the new machine or tools in engineering.

Two stage speed reducer is a speed reducer which is one of the part or component in vehicle or machine.

The main objective of this project is to use the application of AutoCAD in designing the two stage speed reducer by using AutoCAD R-13 and Unigraphics; It's consist of:

i) To learn and apply all command in AutoCAD R-13 and Unigraphics

ii) To know all the part of the two stage speed reducer.

iii) Calculation, to know the value of pitch diameter, speed and ball bearing selection.

iv) To know and explore more about AutoCAD R-13 and Unigraphics.

1.0 INTRODUCTION

AutoCAD has been introduced since 30 years ago. Nowadays the application of Computer Aided Design (CAD) is spreading to various sectors of industry. CAD is essentially an effective tool made available to designers in all aspects of design work, be it mechanical (fig. 1a), architectural (fig. 1b) or even in fashion design, casting, electronic, structural tool drafter and survey.

Having accepted the fact that AutoCAD is merely a new tool for designers. Engineers must learn and know about its characteristic, so that they can make the most effective use of this tool. AutoCAD is the most effective use to draw the design of two stage speed reducer. Two stage speed reducer is a gearbox which has two stages in speed reduction from input to output.

There are many stages and types of gearbox, it is:

i) Three-speed sliding-mesh gearbox.

ii) Four-speed sliding-mesh gearbox.

iii) Four-speed constant mesh gearbox.

iv) Synchromesh gearbox.