

**FINAL YEAR PROJECT REPORT
DIPLOMA IN MECHANICAL ENGINEERING
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WHITWORTH QUICK-RETURN MECHANISM ANALYSIS

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ABSTRACT

This report describes an interactive computer program which is an analysis to Whitworth Quick-Return Mechanism. This program describes how the mechanism really works when certain speed were given to the link and then computer calculate the displacement, velocity and acceleration of the slider.

This program can tell you what happen to the ratio of the Whitworth Quick-Return Mechanism when certain link is expend. This program used CHAIN files to chain one and another to solve memory problems. The coding of this program was done in POWER BASIC.

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1.0 INTRODUCTION

This project is an analysis on Whitworth Quick-Return Mechanism. This mechanism is normally found in shaper machine, pumps and mechanism that needs slow feed and a fast return. It is constrained only to the kinematic analysis. From our analysis we find that there are many variables, so a computational approach will eliminate the tedious and time consuming manual method calculation. Therefore this project concentrate on creating a computer programming to solve problems regarding the mechanism.

Given the physical parameters of the mechanism are known to the user. This program will compute the displacement, velocity and acceleration of the mechanism.

Such computation requires the conversion of equation on mechanism parameters into algorithms readily understood by the computer.

This program has been created a such that the user will be prompted for input, and approached will aloud the design to create a number of possible options before he finalises his choise. This can be done refering to the graph that is generated for every program. Moreover he will be able to answer the "What if....." question.

The second objective of this project or the minor objective of this project is to produce a lab sheet for this apparatus at the Dynamics Lab.