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PANTOGRAPH ROBOT

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ABSTRACT

The main objective of this project is to prepare a analysis of the pantograph mechanism motion. This mechanism have been selected because of it easy to perform a rectangular motion at the end effector of robot.

The analysis is carried out using graphical method to investigate the relationship between the input and output point of pantograph mechanism. The graphical method is used because is easier and the ability of Autocad drafting software that gave the great accuracy in measurement.

From this analysis we can proceed with designing the complete structure of pantograph robot and the control system of the robot. In this analysis is carried out to determine the mechanism that is capable to move in 1 m^2 .

As we know robot is a combination of discipline such as mechanical, electrical, computer science and other to design a robot. From this analysis and others explanation, I hope it can help other parties to proceed with this design.

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TABLE OF CONTENTS

ABSTRACT.....	(iii)
ACKNOWLEDGEMENT.....	(iv)
TABLE OF CONTENTS.....	(v)

CHAPTER 1

1.0 INTRODUCTION.....	1
1.10 Robot Power.....	4

CHAPTER 2

2.0 OVERVIEW.....	6
2.10 Component and Subsystem.....	10

CHAPTER 3

3.0 MECHANISM.....	12
3.20 Mechanism Analysis.....	12
3.20 Mechanical Structure.....	13
3.21 Basic Spatial Pantograph.....	13
3.30 Movement Analysis.....	15
3.40 Complete Structure.....	18

1.0 INTRODUCTION

The publicity extolling importance of the robot in industry has sometimes exceeded the robot's capabilities. but their influence has grown steadily and they represent a key element in the trend toward greater automation.

Inertial robots were accepted chiefly for "stand alone" tasks where a man could moved out and a robot moved in with minimal disruption of the workplace. Those jobs were usually hazardous or boring such as stacking pallets or handling hot casings.

Although this type of job still represents an unsaturated robot market, most contemporary applications stress greater integration into manufacturing operation. Often the price of robot is 25% or less of the total installation cost. Upstream or downstream production equipment and controls must be modified to accommodate the robots. In addition designs must frequently be adapted to the robot's capabilities.

Robot generally have a single arm that has from 2 to 6 axis of motion. Robot arm move in one of four positioning system: rectangular, cylindrical, spherical or a modification of one of this configurations.