

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
HYDRAULIC CRANE FOR
PRESCHOOL EDUCATION**

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ABSTRACT

Hydraulic system is a simple system yet useful in our daily life. Hydraulic is commonly used in construction and automotive industry. However, lack of exposure and study about hydraulic make some people did not realize the advantage and benefit using this system. Therefore, this project conducted to make a hydraulic crane machine that suitable to use in preschool education level. Several methods are used to fabricate this product. For example, cutting, grinding, and drilling. This project is going to use wood or cardboard because this is the suitable material for children to operate. The product will be able to provide a comfortable environment to study about heavy machine. Expecting this will increase the awareness about advantages of using hydraulic and add a new knowledge to kindergarten kids from a young age without bringing them to an uncomfortable environment to study about heavy machine. In conclusion this study is to design and fabricated a functional mini machine which can be used as learning material.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

At preschool age, kids start taking interest and urge to know something they interested in. Some of the questions require more than a theory and storytelling. Kids' interests are abroad and unmeasurable. Sometimes they want to know something too complicated that requires observation and experience their self. For example, in the robotic and machining field. The project's main idea is to build a product that can show them the same concept used to operate the real machine. In this project, a Hydraulic crane will be a model to create a product for education purpose that suitable for kindergarten kids.

Hydraulic crane is a heavy-duty machine which commonly found at construction field. It used an interesting system applied which in its own name the hydraulic system. However, due to dangerous environment not much could be shown to kids as a learning material.

1.2 Problem Statement

Nowadays, there are many machines used hydraulic system to operate. Hydraulic system is fun to use for children to play and learn. However, the problem is machine that applied hydraulic system are pretty danger to use. Most of the applications are applied on heavy machine. For example, crane and hydraulic lift. This application makes it hard to teach kids about hydraulic by experiencing it themselves and parents will not let their kids exposed to danger. Also, heavy machines with mechanism of hydraulic are usually used in construction site which the environment are not suitable for kids to learn. Lastly due to unproveable method of teaching, teachers will find it hard to teach kids by only relying on video and explanation.