UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF POWER HACKSAW PROJECT

JOSHUA AJI ANAK STEPHEN

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ABSTRACT

Power hacksaws play an important part in industry nowadays, with the help of external power such as electric motor and hydraulic power source. In this project, the problem statement is that the manual hacksaw requires a lot of effort and causes fatigue toward the operator. Also, the existing power hacksaw is too expensive in the market. Other than that, the objective of this project is to design a power hacksaw which will lessen the effort to be use and not too expensive but can still function as power hacksaw. Last but not least, the expected result is that it will be less expensive, easy to use and can handle heavy-duty materials because it uses external power such as electric motor. With the result of this design, it can reduce the effort needed to cut things, especially thick metals.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

A power hacksaw is a mechanical device used for cutting metal or other hard materials. Power hacksaw is typically used in workshops, manufacturing plants and metalworking industries for the purpose of efficiently and accurately cutting through various metal.

There are several issues of the hacksaw causing the idea of developing power hacksaw. One of the issues is that manpower is needed to run the hacksaw to cut materials. Due to this, the efficiency of cutting material in a high volume is low and time taken to finish cutting will take time. Other than that, accuracy of cutting is also a problem when using a normal hacksaw causing the cutting line to not be precise. After that, normal hacksaw is not efficient in heavy duty cutting such as cutting a thick metal. These will burden people more to cut things efficiently without using a lot of physical effort.

To avoid those issues, a power hacksaw has been introduced to reduce the burden on workers. This is because the hacksaw is powered by a motor that can reduce physical effort needed to cut things. Power hacksaw offers several advantages compared to manual hacksaw in the aspect of cutting speed, physical effort, cutting precision. So, the mechanism allows people to perform tasks with less wastage of energy and time.

Hence, the idea of designing and fabricating a power hacksaw that can help reduce the disadvantage of manual hacksaw is needed. The aim of this project is to reduce the issues as much as possible. It also should be easy to use and cost effective compared to the modern power hacksaw that is already produced. The power hacksaw will be designed in Solidwork and the prototype will be fabricated by the end of the Final Year Project 2.