UNIVERSITI TEKNOLOGI MARA

DESIGN, ANALYSIS AND FABRICATION OF PORTABLE MOTORCYCLE JACK

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ABSTRACT

"Design, Fabrication and Analyses of portable motorcycle jack" is the title of the proposed project. The reason of it because to lift a motorcycle, they need to use a stand but it will only occur to the lower CC motorcycle. The high CC motorcycle doesn't have astand or a lifter, so they need to go the workshop to get done with their business. Theproject is to make a portable motorcycle jack as the people who uses a higher CC motorcycle can buy it with an affordable than paddock or another jack. Thus, this project is portable so it can easily carry around and easy to use. Steel is the primary material used to construct the project. Aside from that, the rubber base is used to increase the safety of the product and to be a user friendly product. The objective in this project is also achieved which is to design, fabricate and analyses the portable motorcycle jack

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1.0 INTRODUCTION

1.1 Background of the Study

Previously, a motorcycle had its their own stands to lift the bike. There are many uses of the stand especially for the foreman and mechanic to lift the bike for the fixedjob. But, the stand does not lift quite high and it is difficult for some workshop to spendsome serious amount of money just to buy a weight lifter to lift the vehicles. Therefore,we try to develop and innovate the motorcycle jack that can be used to lift more highthe motorcycle and bring it everywhere. The project only focuses on the to make themotorcycle jack portable and to easily lift up more efficient.

Motorcycle enthusiasts often need to spend significant amounts of time tuning and improving their bikes. Traditionally this is done by hobbyists by using the bike's own stand which can be dangerous due to its instability. For those with a little more money, a dedicated free-standing bike stand is the fixture of choice. Unfortunately, many of the bike stands are too expensive, too big, or have very weak ergonomics. In this paper, we present a motorcycle lift designed using Axiomatic Design that has a small footprint, is adjustable for a large range of different bikes and users, and can be mounted without the user lifting the bike. Though this prototype design is more expensive than the simple bike stands, we believe its functionality makes it well worththe extra cost.