

UNIVERSITI TEKNOLOGI MARA

**DESIGN AND FABRICATION OF
MOTORIZED CAR JACK**

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ABSTRACT

Car users nowadays are so busy with their lives that they neglect car care. Many assume that the car does not need to be inspected as long as it can still move and the chances of having a breakdown are likely high. For example, car users who rarely check the tires will cause the car tires to wear. It will be the factor in the occurrence of flat or broken tires even worse which will cause serious accidents. When the situation occurs, they need to change it by using the car jack tool. This is when the real crisis begins because almost 60% of car users don't even know how to change their tires using the car jack, especially women and elderly people because it requires strength. The purpose of this project is to make a motorized jack that will save time, be low cost from the market and easier to operate, require less human energy and additional work to operate, and most importantly, is safe, reliable, and able to raise and lower the level using a remote. This product focus is for almost every common car that we can see on our roads and the product will be able to jack cars up to 1.5 Ton.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

A car jack is a mechanical device used to easily lift heavy load cars, gain easy access to sections underneath vehicles, or simply just change a wheel. The most important fact of a jack is that it gives the user a mechanical advantage by changing rotational force into linear, allowing the user to lift heavy structures up that would be impossible to do without this tool. The most common form of a car jack is scissors jack, bottle jack, garage jack, floor jack which lifts vehicles to perform maintenance [1]. The general purpose of the project is to minimize human effort while operating the jack.

A new design of the car jack makes completing basic maintenance anywhere a simple matter. A modern way of creating complex mechanical structures is described in this paper, therefore of the whole design, the parameterized car jack model was developed. This project is called Motorized Car Jack. The product is aimed at people that intend the car jack to operate easier and have a lower price from the market. This project is an alternative way to lessen the burden on car users. This Motorized Car Jack is easy to use and require no skills needed to operate it. Most important it can be plug and play where it can be used in all type of scissor car jack and screw car jack. It only requires less than 1 minute for it to prepare and can be operated by using only our finger. So, the user will not need to worry to operate it.

1.2 Problem Statement

Even though modern cars nowadays are compulsorily equipped with the scissors jack. But changing a flat tire is not a very pleasant. Even though a variety of car jacks have been developed for lifting an automobile from a ground surface. Available car jacks, however, are typically manually operated and