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# MOTORCYCLE DOLLY MOVER VERSION 2 (MDM2)

Suhaimi Nayan<sup>1</sup>, Surina Nayan<sup>2</sup>, Amir Shauqee Abdul Rahman<sup>3</sup>, Nurul Izzati Mohamad Fazli<sup>4</sup>, Abdul Qayyum Ahmad Fuad<sup>5</sup> and Muhammad Firhan Mohd Tamizi<sup>6</sup>

<sup>1,3,4,5,6</sup>UniKL MSI, <sup>2</sup>UiTM Cawangan Perlis

*surinana@uitm.edu.my*

## ABSTRACT

The Motorcycle Dolly Mover project (MDM2) is an improvement project from an existing product which is available in the market. "Dolly" means a small platform on wheels which is used to carry heavy objects. Motorcycle dolly is one of the most often used support equipment to move motorcycles. This project (MDM 2) is devoted to every motorcycle enthusiast who wants to work around his/her bike, especially in confined spaces. Thus, a decent dolly is needed to help him/her to easily move his/her motorcycle. The main objective of the project is to improve the current project and overcome its weaknesses. The current available dolly mover in the market is bulky and heavy. Thus, making it difficult for the user to carry it anywhere he/she goes especially women. In addition, its design and size are not suitable for people with weak hand muscles, as it requires a lot of energy to lift the motorcycle onto the dolly. In addition, the current dolly is not equipped with a security system in case of theft. As a result, MDM2 is introduced to improve the current available dolly in the market. The new dolly, MDM2 is more user friendly and comfortable as it is light and not bulky. As a result, it is suitable for people with weak hand muscles and women. For theft prevention, it has a security function that can alert the owner when someone tries to move the motorcycle. Finally, it is also capable of withstanding any motorcycle loads of up to 400kg.

**Key Words:** Dolly, Motorcycle Dolly, Prevent Theft, Motorcycle Loads, Dolly Mover

## 1. INTRODUCTION

A dolly is "A dolly is a cart with wheels and a long handle used for moving heavy objects," (<https://www.vocabulary.com/dictionary/dolly>). There are different types of dollies available in the market. For example, utility dolly, appliance dolly, hand truck dolly and furniture dolly (<https://www.commander.ca/what-is-the-difference-between-a-hand-truck-and-a-dolly/>). The type of dolly purchased depends on consumers' need to help ease their work. As for this project, the aim is to help motorcycles enthusiasts to move their motorcycles regardless of their sizes easily especially in confined spaces. In general, many riders have difficulties moving their motorcycles with the old dolly mover that is bulky and heavy and this requires lots of energy. Thus, it poses challenges especially women riders to use it. In addition, A lot of time must be spent adjusting and enhancing motorcycles, which is common among motorcycle enthusiasts. By using the bike's own stand, which has historically been done by amateurs, this can be risky due to the stand's instability (Foley, Sigurðsson, Guðmundur & Ólafsson, Ólafur (2017). Thus, by introducing MDM2 is it hoped that women riders and other riders with weak hand muscles can easily move their motorcycles in any parking spaces that is narrow as MDM2 requires less energy to be operated. MDM2 is light, not bulky and can easily be operated.

## 2. PROJECT SCOPE

The project scope is to study the weaknesses of old dolly products in order to improve the product in the future so that it will be easier for users to use it. The improvement made to the current available dolly is by redesigning the product to be more effective.

## 3. OBJECTIVES

The objectives of the innovation are:

- i. To improve the current dolly mover
- ii. To facilitate dolly users in handling their motorcycles
- iii. To produce a simple and light weight dolly
- iv. To enhance its security function

## 4. FLOW CHART OF DESIGN PROCESS

The following pictures depict the processes involved in designing MDM 2



Figure 1. Measuring, marking and cutting process

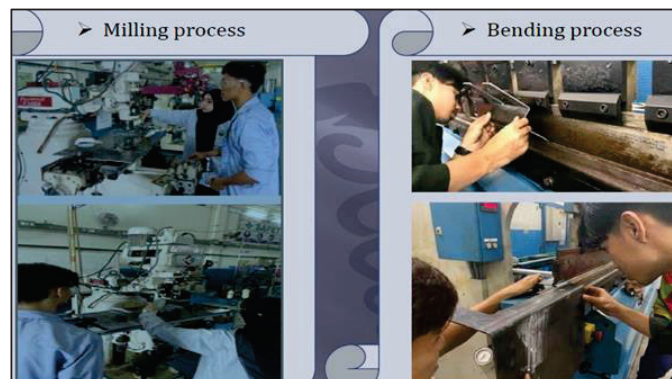


Figure 2. Fabrication process.

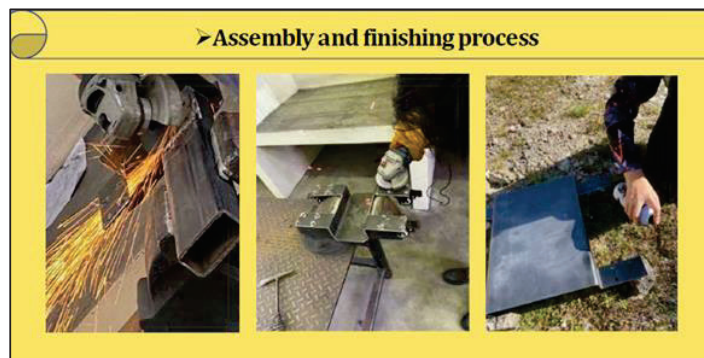


Figure 3. Assembly and finishing process.

## 6. FINDINGS

Figure 6.2 below depicts the result of improving an old product to a more effective product in terms of usability and user comfort. The results of our research found that the function of the 'motorcycle dolly mover' is for the back tire of motorcycle because it cannot go left or right. By that, we have created a simpler and user-friendly design. In addition, we have added a security system by using a vibrationally triggered alarm sensor to detect if there is an attempted theft.

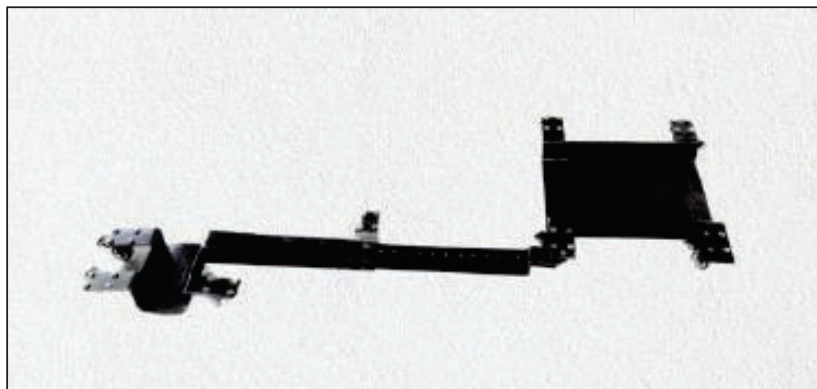


Figure 4. Current dolly MDM2

## 7. CONCLUSION

Motorcycle dolly mover is described as highly effective, adjustable, and easy to use. In addition, it is hoped that it can be sold to those who have difficulty transforming and parking large motorcycles. This dolly motorcycle has more advantages than ever before. An easy-to-carry design and lighter than before, it is capable of withstanding motorcycle loads of up to 400kg. This dolly motorcycle can also improve motorcycle safety with the availability of security alarms. This dolly motorcycle also provides many advantages in terms of low manpower consumption. Dolly cannot be used on all types of motorcycles, but this Dolly Mover motorcycle can be used by all types of motorcycles.

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