

PROTOTYPE DESIGN COLLECTION

SERIES 2



Prototype Design Collection

Series 2



AHMAD NAJMIE RUSLI

**UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
KAMPUS PASIR GUDANG**

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CHIEF EDITOR:

Ahmad Najmie Rusli

CONTENT EDITORS:

Ahmad Faidzal Khodori

Hazriel Faizal Pahroraji

Norhisyam Jenal

Nurrul Amilin Zainal Abidin

Nurulnatisya Ahmad

Radzi Abdul Rasih

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Tel: +60 7-381 8493

FOREWORD

This digital book on Prototype Design Collection Series 2 (PDC Series 2) is published as a reference design for mechanical engineering students. The designs presented experience a few phases of analysis before fabrication of prototype. Each project summarises the project description, prototype, figures, and design parameter. The design products vary in tools or equipment for household, workshop, entrepreneur, etc. Suggested material and detail of prototype dimension are also mentioned in this book.

It is hoped that this book will assist the students to have more ideas on innovation design products in the future.

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Fatin Nabila Mohd Zaki ¹, Nur Kamarliah Kamardin ^{2*} and Ahmad Idzwan Yusuf ³

^{1,2}Mechanical Engineering Studies, ³Civil Engineering Studies,
College of Engineering, Universiti Teknologi MARA
Johor Branch, Pasir Gudang Campus, 81750 Masai, Bandar Seri Alam, Johor Darul Ta'zim.
*Corresponding author (e-mail): nurkamarliah@uitm.edu.my

PROJECT DESCRIPTION

The objective of this project was to design and fabricate an automated mini forklift that would be capable of lifting loads from one place to a higher one without requiring human power. The mini forklift employs a linear actuator and motor to lift weights, and its lifting mechanism is attached to a 4-wheel drive frame chassis, which is powerful enough to serve as a counterweight and support for the frame. The automated mini forklift can be advantageous for industries where lifting heavy loads is a common task, as it can reduce the need for human labour, thus saving time and money. The device's automatic operation ensures that it can perform tasks consistently, accurately, and quickly. Furthermore, it can help reduce accidents caused by human error or fatigue. By using our automated mini forklift, industries can enhance their productivity, safety, and overall efficiency, making it a valuable investment.

Keywords: *Mini forklift, Lifting machine*

PROTOTYPE



DESIGN PARAMETER

