

PROTOTYPE DESIGN COLLECTION

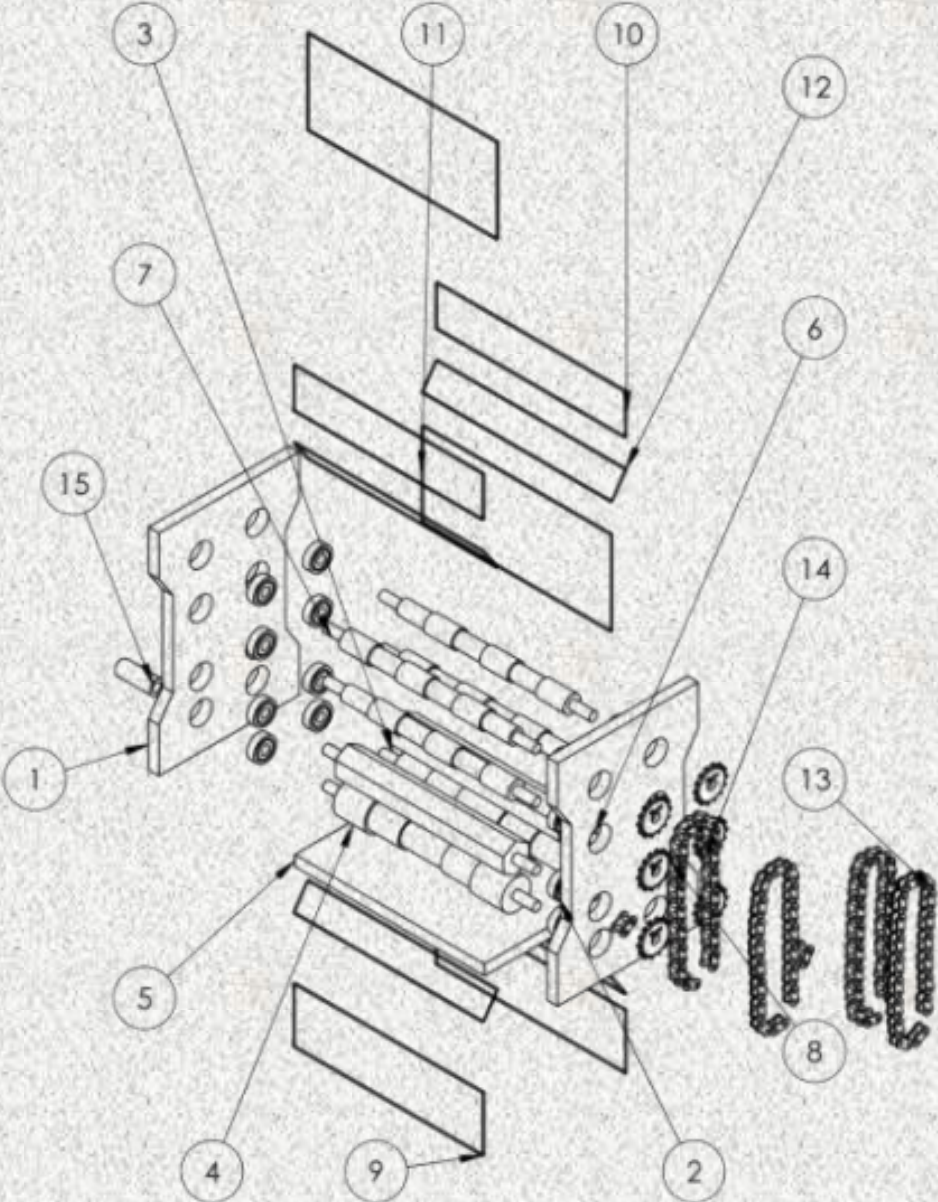
SERIES 4



Universiti Teknologi MARA
Pasir Gudang Campus

Prototype Design Collection

Series 4



Ahmad Najmie Rusli

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FOREWORD

This digital book on Prototype Design Collection Series 4 (PDC Series 4) 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.

Table of Contents

CHAPTER 1	1
Design and Fabrication of a Multipurpose Baby Cot	1
Nabil Qayyum Bin Roslan ¹ and Miqdad Bin Khairulmaini ^{2*}	1
CHAPTER 2	3
Design and Fabrication of a Weather Sensing Cloth Drying Rack	3
Mustaqim Syah Bin Kamarul Zaman ¹ and Miqdad Bin Khairulmaini ^{2*}	3
CHAPTER 3	5
Design and Fabrication of a Patient Transfer Aid for Seamless Bed to Wheelchair Mobility ..	5
Fateen Aqela Binti Azzaidi ¹ and Miqdad Bin Khairulmaini ^{2*}	5
CHAPTER 4	7
Prototype of a Donut Topping Machine	7
Nurul Athirah Binti Ramizan Nassir ¹ and Ahmad Najmie Rusli ^{2*}	7
CHAPTER 5	9
Prototype of a PLA Filament Extruder	9
Abdul Harith Hazim Bin Abd Rashid ¹ and Ahmad Najmie Rusli ^{2*}	9
CHAPTER 6	11
Prototype of a Candy Sorting Machine	11
Hairul Ikhwan Bin Hazizan ¹ and Ahmad Najmie Rusli ^{2*}	11
CHAPTER 7	13
Prototype of a 3D Printing Scrap Recycling Machine	13
Raziq Amir Bin Rosdi ¹ and Ahmad Najmie Rusli ^{2*}	13
CHAPTER 8	15
Manual Compaction Machine for Casting	15
Muhammad Hazim Md Azli ¹ , Najibah Ab Latif ^{2*} and Ainaa Maya Munira Ismail ³	15
CHAPTER 9	17
Convertible Cart-Ladder	17
Mohamad Aimi Zuhairi Fikri Mohd Aimi Zamani ¹ , Najibah Ab Latif ^{2*} and Ainaa Maya Munira Ismail ³	17
CHAPTER 10	19
Design and Fabrication of Mini Firefighting Device	19
Adam Faris Bin Ahmad Zaidy ¹ and Muhamad Faris Syafiq Bin Khalid ^{2*}	19
CHAPTER 11	21
Design and Fabrication of Shuttlecock Launcher Machine	21

CHAPTER 48

Design and Fabricate A Go – Kart Back Suspension System

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PROJECT DESCRIPTION

This project aims to develop a go-kart rear suspension system that enhances safety, handling, and ride comfort. The main challenge is selecting the optimal suspension type, such as independent or solid axle suspension, while balancing weight, adjustability, and chassis compatibility. The goal is to improve grip and stability, especially on uneven tracks and at high speeds. The approach involves analyzing existing suspension designs, focusing on key factors like balance and weight distribution, and developing a system that is lightweight, easily adjustable, and seamlessly integrates with the go-kart frame. Prototypes will undergo real-world testing, while computer simulations will predict performance. Advanced technologies, including lightweight materials and electronic controls for real-time adjustments, will be explored to optimize efficiency. Safety remains a priority, ensuring robust components and fail-safe mechanisms are in place.

Keywords: *Design and fabrication, Back Suspension*

PROTOTYPE



DESIGN PARAMETER

No of Part :	Description
1	Back Suspension Bracket
2	Back Suspension Bracket
3	Backframe

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