

PROTOTYPE DESIGN COLLECTION

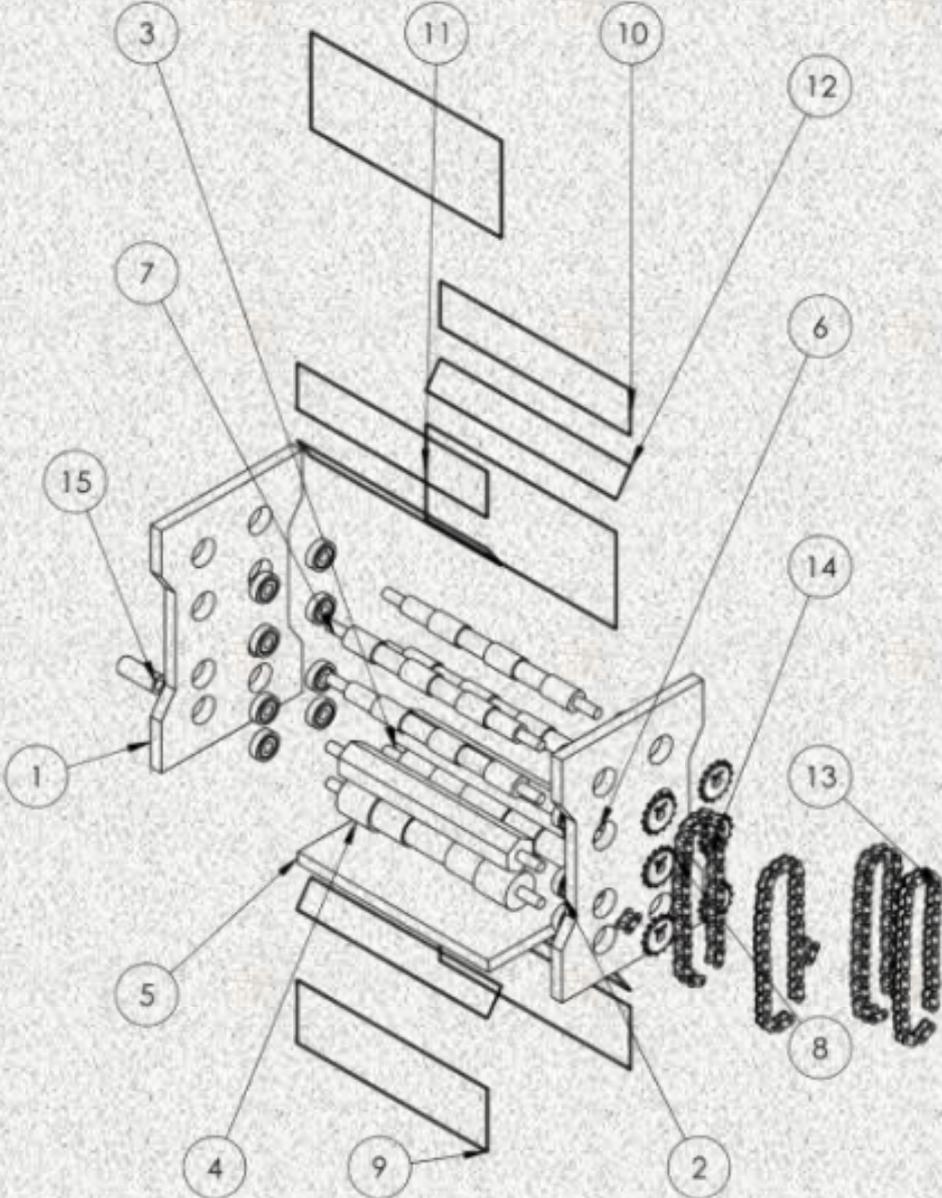
SERIES 4



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.

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CHAPTER 15

Design Concept of Semi-Automatic Barbeque Grill

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PROJECT DESCRIPTION

The semi-automatic barbeque grill is a project targeted at designing and fabricating a novel barbeque grilling solution that will involve convenience as well as modern technological advancement. Major objectives of this paper include the design a semi-automatic barbeque grill using SolidWorks, produce as a proof of its concept, enhance creativity and productivity using mechanical systems. Issues in traditional grilling addressed here are uneven heat distribution, potential health risks from environmental dust and waste or inefficiency in energy application. This semi-automatic barbeque grill achieves consistent results with minimal supervision and easy to disassemble and reassemble. In addition, saving energy remains one of the features with which the grill design is concerned, hence environmentally friendly. The outcome anticipated is a hassle-free, time-saving and reliable grilling experience while upholding the high quality of food preparation standards. It will also serve as a learning resource for Do-It-Yourself (DIY) electronics and mechanical design skills due to the fact that it will give out new skills and knowledge. The semi- automatic barbeque grill will bring revolution in this outdoor cooking by making the grilling solution practical, enjoyable and technologically advanced.

Keywords: *Barbeque, Design, Semi-automatic*

PROTOTYPE



DESIGN PARAMETER

NAME : MUHAMMAD AFIQ NAJMI BIIN SHARUDIN
STUDENT ID : 2022853998
GROUP : J4CEEM1105C
DRAWING TITLE : ASSEMBLY DRAWING
SCALE: 1:6 SHEET 1 OF 1

ITEM NO.	PART NUMBER	QTY.
1	Aluminium Profile 3030 700mm	4
2	Aluminium Profile 3030 300 mm	8
3	Aluminium Profile 3030 400mm	6
4	30-30 ANGLE BRACKET	28
5	Aluminium Profile 3Sides Connector	4
6	B18.2.3.2M - Formed hex screw, M6 x 1.0 x 40 --18CS	36
7	B18.2.3.2M - Formed hex screw, M5 x 0.8 x 30 --16CS	3
8	Stainless Steel Plain Plate	1
9	B18.3.1M - 6 x 1.0 x 20 Hex SHCS -- 20SHX	56
10	FilterDIY	1
11	(Top Cover) Stainless Steel Plain Plate 340 x 240 .smg	1
12	Stainless Steel 700 x 440 with holes	1
13	RockerSwitchDownload	1
14	(Back) Stainless Steel 700 x 440 - Copy	1
15	Aluminium 440 x 300 Holes	1
16	POWER WINDOW LH	1
17	Pole4PowerWindow	1
18	B18.2.2.4M - Hex flange nut, M5 x 0.8 --S	3
19	Aluminium 440 x 340 Holes	1
20	Grill Mesh	1
21	Door Holes	1

NAME : MUHAMMAD AFIQ NAJMI BIIN SHARUDIN
STUDENT ID : 2022853998
GROUP : J4CEEM1105C
DRAWING TITLE : EXPLODED DRAWING
SCALE: 1:10 SHEET 1 OF 1