

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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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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CHAPTER 90

Design and Fabrication of Automatic Thermoforming Plastic Machine

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PROJECT DESCRIPTION

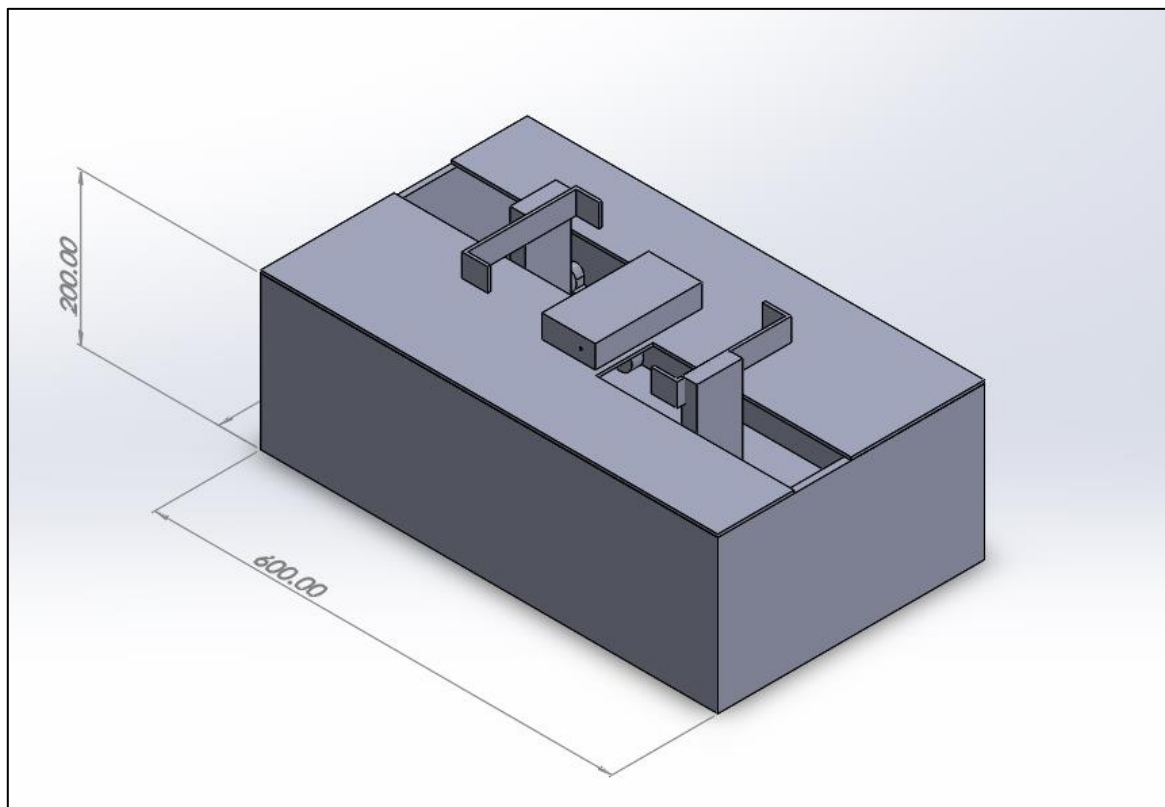
An electric utensil is now considered as one of the most important things one can have in the house. It is because right now almost all utensils use electrical power. As an example, there is an air fryer, refrigerator, water dispenser and many more. An electric utensil mainly consists of the body, the wiring inside the body and the plug. Plug is the important part of the electric utensils as it becomes the connector for the electric current to flow through to the electric utensils for the utensils to work. Currently, the plug is being mass produced all over the world at multiple factories across the country of the world. It is produced by using the bigger thermoforming plastic machine so that the plug can produce many more to be used and sold. The machine works by heating the plastic into the mold that was made. There are 2 types of mold that are known which are inside and outside mold. The inside mold works by blowing the heat into the mold and pushing it into the mold and the outside mold works by heating the plastic and folding it onto the mold. The research that is being worked on is to try and produce the same machine but in a much smaller scale as it can help for self work engineers or maybe someone who wants to make a wire plug connection to sell or maybe to be used in the small machine. That being said, the process of making the plug is time consuming and it's hard to make one without any help from a machine.

Keywords: *Thermoforming, Electric, Innovation*

PROTOTYPE



DESIGN PARAMETER



Sheet1

Technical drawing showing various views of the assembly. The drawing includes a side view (left), a top view (right), and a perspective view (bottom right). The drawing is framed by a grid with labels 1, 2, 3, 4 and A, B. A title block is located in the bottom right corner.

REV	DATE	BY	CHKD

TITLE: Assem1
 SCALE: 1:2
 SHEET: 1 OF 1
 DWG. NO.: B
 PROJ. NO.:
 DESIGNED BY:
 CHECKED BY:
 DATE: