

PROTOTYPE DESIGN COLLECTION

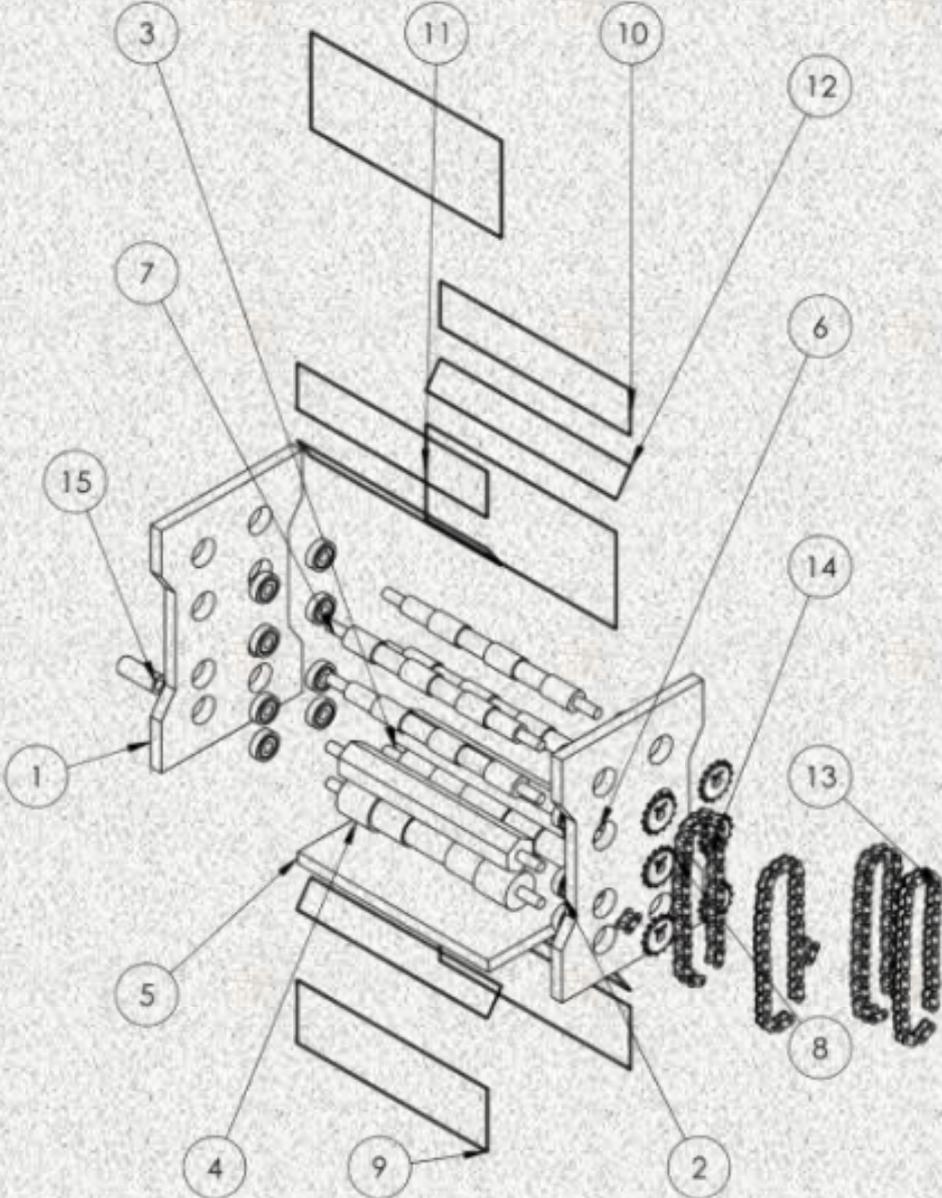
SERIES 4



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 14

Portable Hydraulic Bending Machine with Various Types of Shape

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PROJECT DESCRIPTION

Sheet metal hydraulic bending machine is used to bend the sheet metal to get the required shape. For example, V-shape, and U-shape. The standard of existing bending machine for sheet metal is commonly placed at a single location which is fixed and there will be a limit for user to use the machine due to the machine location. So, to improve the existing design, the objective of this project is to create a portable hydraulic sheet metal bending machine which is very affordable and reasonable for the user. This project will show how detail the process to make the machine, such as final comprehensive design, cost-efficiency of material, product specifications and how to fabricate a new design of improvement for portable hydraulic sheet metal bending machine that will make the user become easier to complete the production. The expected result from this planning is the bender will function very well to withstand the forces which are applied to bend the sheet metal. The most important component for this project is the hydraulic jack because it is the main item that must function to bend the workpiece. In conclusion, this affordable and reasonable project will give a lot of benefit to the user because it is very easy to handle it, especially to those who have the bending task, such as college student and vocational also technical school.

Keywords: *Sheet metal bender, Hydraulic jacks, Various shape*

PROTOTYPE



DESIGN PARAMETER

