PROTOTYPE DESIGN COLLECTION

SERIES 4

Universiti Teknologi MARA
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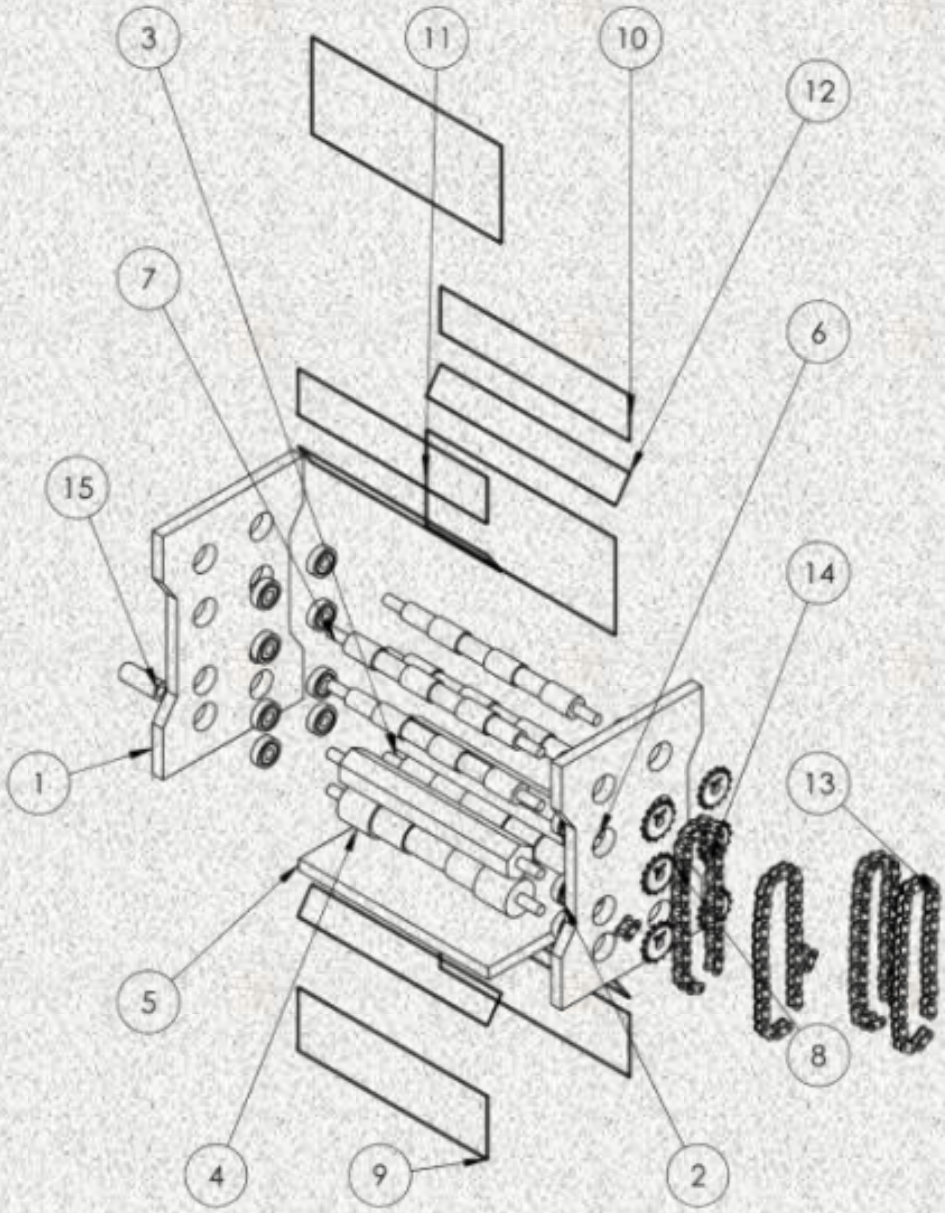
Prototype Design Collection

Series 4



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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 33

Development of an Automated Sand Sieve Machine

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PROJECT DESCRIPTION

The project aims to develop an automatic sand sieve machine to enhance efficiency at construction sites by separating sand from stones more effectively than traditional manual methods. The manual method requires human effort, more time consuming and labour cost. By using this automated sand sieve machines, these issues can be effectively addressed. The design process begins with studying the limitations of existing methods and examining user requirements to develop improved design concepts. Detailed engineering drawings are produced using SolidWorks to direct the fabrication process, which includes component assembly, cutting, welding, and material selection. Improved sand filtering effectiveness as well as a decrease in the effort and cost involved in the sand sieving process are the expected outcomes.

Keywords: *Automated machine, Sand sieve*

PROTOTYPE

DESIGN PARAMETER