

# PROTOTYPE DESIGN COLLECTION

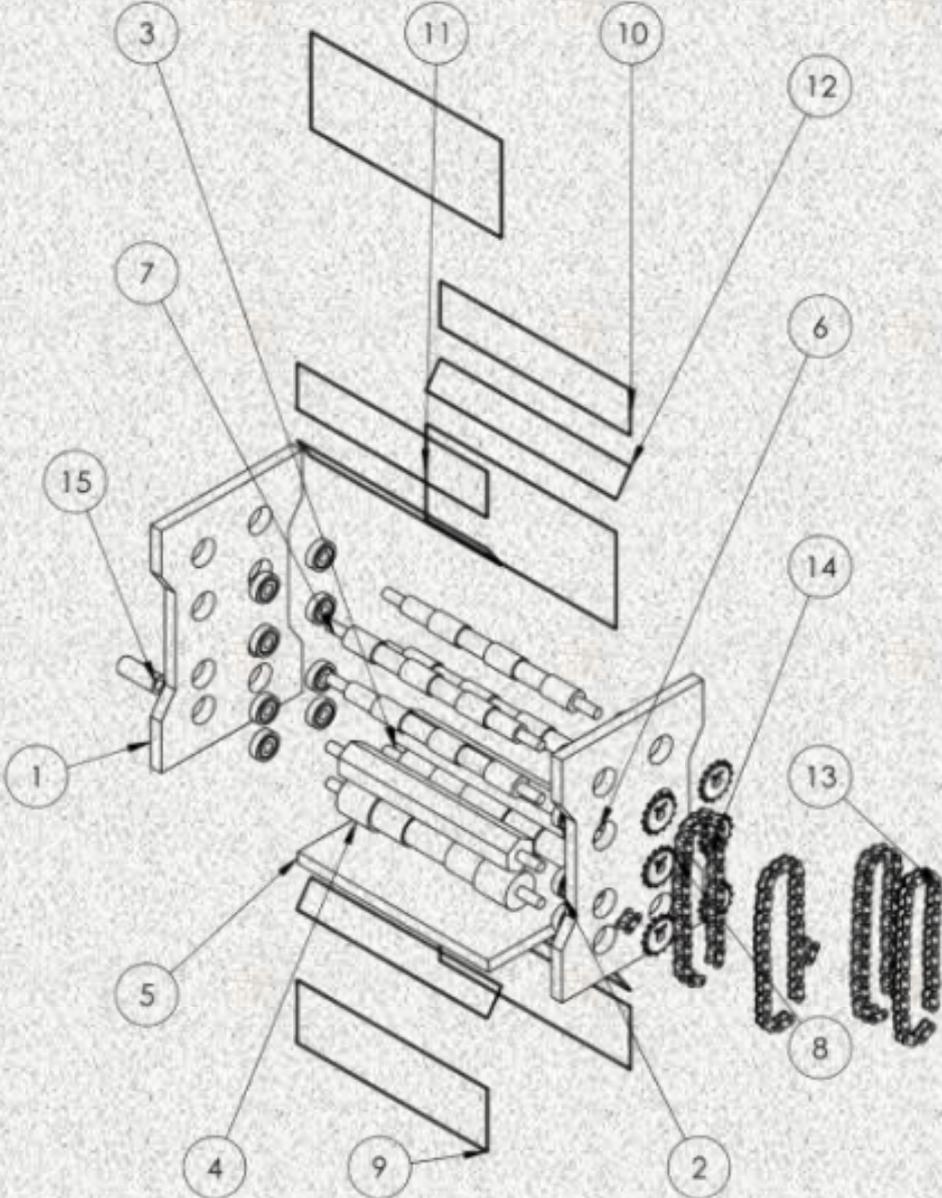
SERIES 4



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 16

### Design Concept of Paper Shredder Machine

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#### PROJECT DESCRIPTION

This paper deals with the design of a paper shredder machine that will safely, efficiently, and without wastes shred documents. Much information is very private in nature, so it must be protected with the advent of information technology; hence, efficient destruction by way of document shredding remains a need at offices and personal levels. The goal is the realization of an affordable, user-friendly machine able to shred paper into small, unreadable pieces to ensure all useful data are destroyed, thus preventing unauthorized disclosure of any information. The project is intended to address the current weaknesses in document disposal methods, including inefficient manual tearing and unsafe burning implications on the environment. These will incorporate a detailed mechanical design phase, careful choice of materials and components, rigorous testing aimed at ensuring operational safety and efficiency, and complete documentation of the process from the development of a concept to the constructed prototype. The result should be an operative paper shredder that has predefined shredding capacities and is constructed ensuring noise reduction with a little disturbance effect, also including all the necessary precautions as to its safe use, and applicable in all situations where one needs a practical means for the secure disposal of documents. Such a project does not only meet technical requirements but also helps raise awareness with respect to data security and further track sustainable waste management practices in modern society.

**Keywords:** *paper shredder, design, machine*

#### PROTOTYPE



**DESIGN PARAMETER**

