

# 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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**CHIEF EDITOR:**

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Tel: +60 7-381 8493

# 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 115

### Automatic Knife Sharpener

Mohamad Naqib Bin Norlizan <sup>1</sup>, Noor Hafiz Noordin <sup>2</sup> and Mohd Ghazali Mohd Hamami <sup>3\*</sup>

<sup>1,2,3</sup>*Mechanical Engineering Studies, College of Engineering, Universiti Teknologi MARA  
Johor Branch, Pasir Gudang Campus, 81750 Masai, Bandar Seri Alam, Johor Darul Ta'zim.*

*\*Corresponding author (e-mail): ghazali.hamami@uitm.edu.my*

#### PROJECT DESCRIPTION

The traditional manual knife sharpening process is time-consuming and requires significant energy. Additionally, the results of the process depend on the individual's experience, leading to inconsistency. To address this issue, this study proposes the development of an automatic knife sharpener. The design and fabrication of this machine will incorporate mechanical components, such as a motor, as well as electrical parts to control the mechanism. Standard machining processes like grinding, cutting, and drilling will be employed during the fabrication. The automatic knife sharpener machine is expected to be more efficient than the traditional process in terms of time consumption and consistency of the sharpened blades. In conclusion, the automatic knife sharpener will provide added value to the sharpening process, while also ensuring safety considerations can be implemented.

**Keywords:** *Automatic knife sharpener, Manual knife sharpener process*

#### PROTOTYPE



### DESIGN PARAMETER

