

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:

Ahmad Najmie Rusli

CONTENT EDITORS:

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Norhisyam Jenal

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Nurulnatisya Ahmad

Radzi Abdul Rasih

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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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Ammar Hakim bin Aidi¹ and Nurul Hanna binti Mas'aud^{2*}

^{1,2}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): nurul989@uitm.edu.my

PROJECT DESCRIPTION

Spending time sitting in front of desk to do work is common among the people in Malaysia from as early as 5 years old. But spending a lot of time on workspace can lead to a passive lifestyle which will bring negative impact into daily life. A simple action like standing up and stretching after hours of sitting down can release a tension muscle and help body to feel much better. Therefore, a height adjustable desk is recommended to make sure that the user can change posture during working. The main objective of this project is to design and fabricate an ergonomic height adjustable desk. Other than the impressive height adjuster the desk also needs to be sturdy and that is where the use of mild steel frame comes in handy to provide a sturdy and confident frame. A few methods are conducted starting with problem identification, designing a several concept using SolidWorks, design selection and fabrication. Upon completing the product, it is then being tested to make sure that it is functioning well. Finally, product should provide the user of the desk a good ergonomic position for a better sitting or standing position to do work for hours in front of computer and reduce muscle fatigue and pain. In conclusion, this product will benefit a lot of people if being fabricate properly.

Keywords: *Ergonomic, Adjustable desk, Standing position, Design, Working posture*

PROTOTYPE



DESIGN PARAMETER

