

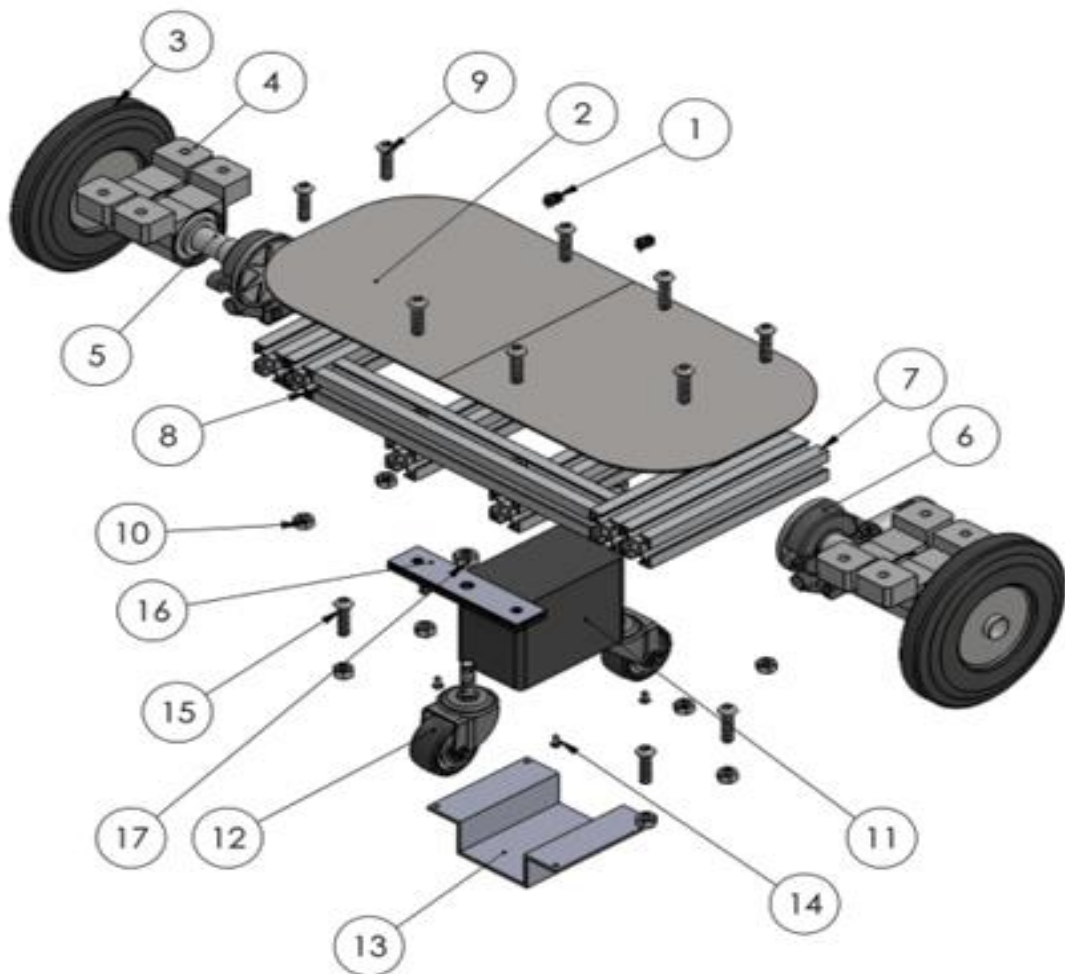
PROTOTYPE DESIGN COLLECTION

SERIES 2



Prototype Design Collection

Series 2



AHMAD NAJMIE RUSLI

**UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
KAMPUS PASIR GUDANG**

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e-ISBN NO 978-967-0033-18-1

First published, 29th September 2023

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PUBLISHED BY:

Universiti Teknologi MARA Cawangan Johor,

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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 106

Automatic Sand Sieve

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PROJECT DESCRIPTION

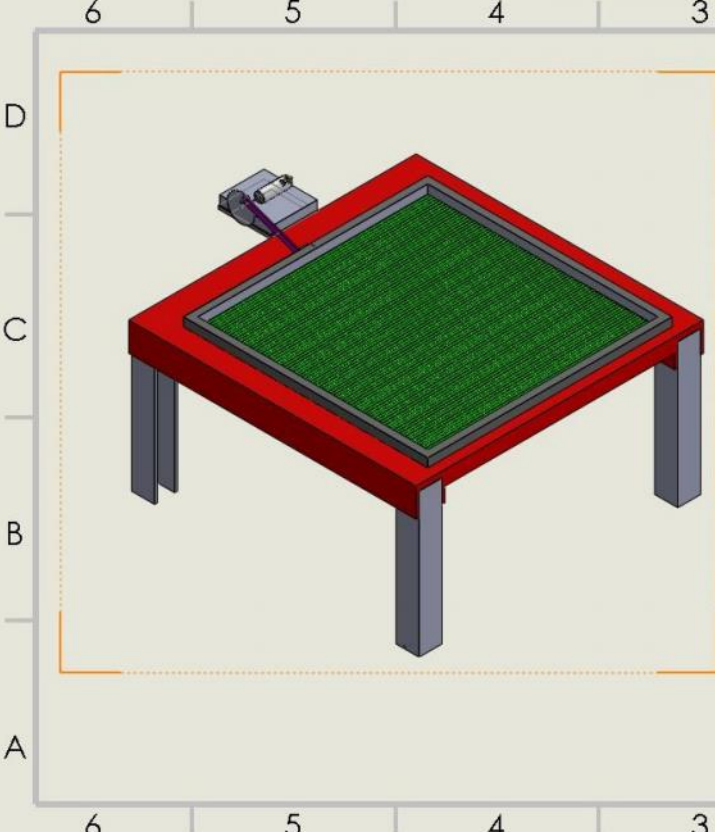
This project focuses on the design and fabrication of an automatic sand sieve machine to aid in the sieving of sands during construction. Traditional manual sieving methods are labor intensive, time consuming, and prone to human error, resulting in inconsistent and unreliable results. By introducing automation to the process, this project aims to improve efficiency, accuracy, and productivity. The automatic sand sieve machine has a motor that vibrates a screen with small mesh sizes to ensure that only small grains of sand pass through. The machine has actuators to regulate vibration speed and amplitude to ensure optimum sieving performance and repeatability. The successful implementation of this product-based project will significantly increase productivity in the construction industry. The automatic sand sieve machine provides a dependable and time-saving solution to facilitate the separation of fine sand particles from the larger ones needed for construction activities such as concrete mixes, mortar preparation and aggregate classification. By automating the sieving process, this project aims to improve the efficiency of construction operations, reduce human error, and improve the overall quality and durability of construction materials.

Keywords: *Automatic, Sand, Sieve*

PROTOTYPE



DESIGN PARAMETER



NAME : ADAM AFIQ BIN KHAIRULFAIZAL	
STUDENT ID : 2020482678	
CLASS : J4EM1104C	
PROJECT TITLE : AUTOMATIC SAND FILTER	
APPROVED:	CHECKED:
PART NO : MAIN IDEA SAND FILTER	
SCALE:	SHEET 1 OF 1