

# 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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# 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 15

### Yard Cleaner

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#### PROJECT DESCRIPTION

The goal of this project is to facilitate the efficient cleaning and disposal of debris using a raking process. Traditionally, workers have had to manually collect cut grass and other debris by hand, which can result in dirty hands and require them to repeatedly bend over. This project aims to make the cleaning process easier and more accessible for workers, especially older individuals. The proposed solution involves a pulley system that incorporates a switch, DC motor, sprockets, shafts, chains, and rakes. By simply pressing a switch button, workers can activate the chain and rake mechanism to efficiently gather the cut grass. The hope is that this project will not only improve cleaning efficiency but also contribute to the health and well-being of workers, including older individuals and housewives, who would otherwise experience physical strain and discomfort during the cleaning process.

**Keywords:** *Cleaning machine, Design, Fabricate, Suitable Appliances*


#### PROTOTYPE





DESIGN PARAMETER



REVISION RECORD				
		COURSE NAME: MEC 300:FINAL YEAR PROJECT 2		
GROUP : J4EM1105D				
APPROVED:	CHECKED :	DRAW: 30/12/2022		
DRAWING TITLE : CLEANYARD MACHINE				
PART NAME : ASSEMBLE PARTS				
PART NO : -				
REV:	SCALE :	PROJECTION:	WEIGHT:	SHEET:
0	1:20			-



ITEM NO.	PART	MATERIAL	QTY.
1	FRAME	MILD STEEL	1
2	BEARING HOUSING	STEEL	6
3	SHAFT	MILD STEEL	3
4	OUTER CHAIN	STEEL	287
5	INNER CHAIN	STEEL	287
6	AL ATTACHMENT	STAINLESS STEEL	4
7	SPROCKET(1)	STEEL	7
8	SPROCKET(2)	STEEL	1
9	CASTER	RUBBER	4
10	BRACKET	STEEL	1
11	DC MOTOR	ALLOY STEEL	1
12	SPINDLE	STEEL	1
13	RAKE	STEEL	2

REVISION RECORD				
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GROUP : J4EM1105D				
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DRAWING TITLE : CLEANYARD MACHINE				
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