

# 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 32

### Design and Fabrication of The Semi-Automated Clothes Wringer

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#### PROJECT DESCRIPTION

The washing machine is one of the greatest inventions created by mankind that didn't get enough praises then it deserves. Most houses have at least one washing machine. But not everyone can afford the luxury of owning a washing machine. So, the group that can't afford to own a washing machine opted to hand-wash their dirty garment. The effect of this action leaves them with injured hands due to excessive exposure to chemicals substance in the detergents. By introducing them to this machine, it may help them overcome the problems they had to face when hand-washing dirty laundry. The objective of the project is to design and fabricate a machine that can extract excess water from garments during hand-washing laundry. By a flick of a switch, the machine will do its job and then the garments are ready to hang to dry. The Semi-Automated Clothes Wringer is an innovation of the old-fashioned clothes wringer which was widely used in the eastern part of the globe.

**Keywords:** *Extract, Wringer, Innovation*

#### PROTOTYPE



**DESIGN PARAMETER**

FAKULTI KEJURUTERAAN MEKANIKAL (FKM) UNIVERSITI TEKNOLOGI MARA (UTM) JOHORE KAMPUS PASIR GUDANG				
Course Name	MEC 299 FINAL YEAR PROJECT I SESSION: MARCH 2022 - AUGUST 2022			
Group	J4EM1104D			
Approved	Checked	Drawn		
		MUAZ AZMUDDIN BIN ABRUFUDIN		
Drawing Title	ASSEMBLY OF THE SEMI- AUTOMATED CLOTHES WRINGER			
Part Name	-			
Part No.	-			
Rev.	Scale	Projection	Weight	Sheet
0	1:15		7.5kg	12/13

ITEM NO.	PART NUMBER	QTY.
1	body frame	1
2	roller frame	1
3	roller	2
4	pillar	2
5	SPROCKET	1
6	GEAR	1
7	Swivel caster_STEP	4
8	Mofeur DC - MY1016	1
9	chain	87

FAKULTI KEJURUTERAAN MEKANIKAL (FKM) UNIVERSITI TEKNOLOGI MARA (UTM) JOHORE KAMPUS PASIR GUDANG				
Course Name	MEC 299 FINAL YEAR PROJECT I SESSION: MARCH 2022 - AUGUST 2022			
Group	J4EM1104D			
Approved	Checked	Drawn		
		MUAZ AZMUDDIN BIN ABRUFUDIN		
Drawing Title	ASSEMBLY OF THE SEMI- AUTOMATED CLOTHES WRINGER			
Part Name	-			
Part No.	-			
Rev.	Scale	Projection	Weight	Sheet
0			7.5kg	12/13