

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 47

Development of a Prototype Pet Litter Sand Filtering Machine

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PROJECT DESCRIPTION

Nowadays there are many veterinary clinics and animal hotels that provide care for pets and other animals. One of the important aspects that need to be maintained is the cleanliness of the pet and its surroundings. The pet litter station for example needs to be cleaned from time to time by separating solid faces from the sand by scooping manually using a shovel. To assist in this process, a Pet Litter Sand Filtering Machine is developed. The objective of this product is to develop a semi-automated pet litter sand filtering machine. This product works through a crank mechanism that connects the rod to the filter and is driven by an adapter and speed regulator circuit which controls the speed. The product is also movable because it is attached to wheels. This product is targeted at pet owners, veterinaries, and clinics because it is easy to use and helps clean pet litter in a faster and more convenient way.

Keywords: *Hand trolleys, Adjustable holder*

PROTOTYPE



DESIGN PARAMETER

ITEM NO.	PART NUMBER	QTY.
1	STEEL FRAME	1
2	BEARING HOLDER	3
3	BEARING HOLDER 2	1
4	BEARING	3
5	SHAFT	1
6	SHAFT B	2
7	PULLEY	1
8	PULLEY B	1
9	COUPLING	3
10	MOTOR	1
11	BELTING	1
12	CRANKSHAFT	2
13	CRANKSHAFT 2	1
14	CRANKSHAFT 3	1
15	FILTER	1
16	SPRING	4

EXPLODED A3

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