

**UNIVERSITI TEKNOLOGI MARA**

**DESIGN, ANALYSIS AND  
FABRICATION OF CAN CRUSHER**

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## **ABSTRACT**

The main objective of this project is to build a Can Crusher machine to minimize scrap volume and reuse cans, making it easier to transport them to a recycling facility. Nowadays, a considerable number of cans are used in factories, restaurants, and other establishments, necessitating a large amount of room for storing or dumping the used cans. This project entails the creation of a Can Crusher that uses a single slider crank mechanism to reduce the volume of cans by at least 70%. Usually, the machine can crusher have many types which is manual operated can crusher and automatic can crusher. For manual operated can crusher, it use human physically which is hand to make the machine works. While, for automatic can crusher there have many concept that have been used to make the machine works which is pneumatic, hydraulic, and also DC Motor. However, automatic machine is quite expensive to get it. So, this project will produce a product that can provide many advantages that is a product used from quality materials and also durable. For instance, this product is very easy to use by consumers and at the same time consumers can generate side income by selling the wastage can. The manufacturing process will applied in order to build one product such as welding process, drilling process and cutting process. After done complete the task according to the planning, the project need to make a testing product capability either the product can operate or not. From this final project, it will provide more knowledge about the mechanical engineering to the student. All information about this product should be identified in order to make the fabrication process going smoothly.

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# TABLE OF CONTENTS

	<b>Page</b>
<b>CONFIRMATION BY SUPERVISOR</b>	<b>ii</b>
<b>AUTHOR'S DECLARATION</b>	<b>iii</b>
<b>ABSTRACT</b>	<b>iv</b>
<b>ACKNOWLEDGEMENT</b>	<b>v</b>
<b>TABLE OF CONTENTS</b>	<b>vi</b>
<b>LIST OF TABLES</b>	<b>viii</b>
<b>LIST OF FIGURES</b>	<b>ix</b>
<b>LIST OF ABBREVIATIONS</b>	<b>xi</b>
<b>CHAPTER ONE : INTRODUCTION</b>	<b>1</b>
1.1 Background of Study	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Scope of Work	2
1.5 Significance of Study	3
<b>CHAPTER TWO : LITERATURE REVIEW</b>	<b>4</b>
2.1 Information on existing products, patents, standards	4
2.1.2 Automatic can crusher	5
2.2 Product design specification based on literature view	6
<b>CHAPTER THREE : METHODOLOGY</b>	<b>8</b>
3.1 Introduction	8
3.2 Prototype drawing and bill of material, BOM	8
3.3 Calculation and Computational analysis	14
3.3.1 Calculation Analysis	14
3.3.2 Computational analysis	16
3.4 Fabrication process	18
3.5 Final fabricated working prototype	26

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background of Study**

Can crusher products are widely used in many industries for crushing aluminium cans. Among the industries or shops that often use the product are such as the beverage industry and also scrap dealers for the purpose of reducing the empty cans and recycling [1]. The advantages of can crusher products are not only for the industry but it also can give benefit to the other people. This is because can crusher is an easy product to use and it is suitable to be placed anywhere. Can crusher also be able to reduce the environment pollution of this world.

This project contains of designing and fabrication of can crusher. In designing process, it will develop and make the performance more improve, so that there has no doubt about the design and concept. For use this can crusher product, its need a little energy to crush the aluminium can. To make this project, it requires a lot of skills in mechanical engineering which are welding process, vertical bend saw, bending machine and also shearing machine. For this product, it will focus on the civilian people for their use at home. This is because, it can give many benefits to people which is can clean the house area and also can reduce the wasted around the environment.

### **1.2 Problem Statement**

Many humans usually use their feet to crash the cans. By this method, it will waste of time and also endangers themselves. Therefore, they will easily get injuries whether minor or major injuries. Nowadays many industries have produced a lot of product can crusher but most of their production has to put the product on the wall and it is not portable. Their products are also unable to crash the cans in large quantities because they have no shape like a hopper. Therefore, it will give trouble and also inconvenience to the user to use it.