UNIVERSITI TEKNOLOGI MARA

DESIGN AND FABRICATION OF PNEUMATIC CAN CRUSHER

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ABSTRACT

The pneumatic can crusher project represents an innovative solution to streamline the recycling process of aluminum cans, combining efficiency with user safety. In response to the need for sustainable waste management, this project introduces a can crushing system powered by compressed air, offering a practical and environmentally conscious approach. The design prioritizes user safety by implementing features that allow can crushing without posing harm to the user. In addition, through the use of a pneumatic system, the project achieves optimal force and speed, ensuring the efficient crushing of cans while minimizing manual effort. The compact and versatile design allows for integration into various settings, from commercial establishments to public spaces, promoting responsible waste disposal and recycling habits. This abstract highlight the project's key contributions, including its commitment to safety, efficiency, and sustainability. The pneumatic can crusher project showcases a forward-thinking solution to address the challenges of waste reduction and environmental impact, aligning with the broader goal of fostering eco-friendly practices.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

Can crushing has been used by people for compression of cans after usage for a long time, the can crushers are used in industries which crush cans. The can crusher machine is widely used in beverage industries or in scrap dealers to reduce the volume of cans.[1] This machine is primarily used to save space and for recycling. It can be placed anywhere.

In today's life most of the food items are packed in cans like cold and hot drinks and other beverages. Commercial establishments like cafeteria and bars, need to deal with leftover cans.[2] Storage of these cans is often a problem, and these increases total volume of the trash. Therefore, using can crusher in such places proves to be advantageous.[2] This is because can crusher offers highly efficient in recycling.

The idea to control the cans waste is some industry has made several machines to crush the cans. However, this machine is too big and not relevant to put at the public places and, it is too expensive.[3] Usually, some cleaner use their leg to stamp the cans and that will consume half of their energy to work whole day and they will be tired and not all the cans are crushed.

A can crushing system is proposed here that enables cans to be crushed by users without causing harm to themselves. This is a very useful system for restaurants, hotels, and public places where there are a large quantity of cans needs to be disposed. The can crusher can crush them one at a time in a perfect shape without sharp edges that can injured the user. As a result, the existence of a pneumatic cans crusher can speed up the process and it also helps to avoid wasting user time. With this, the efficiency of the can crusher machine will improve.

The aim of this project is to enhance the current design of Can Crushing machine. The goal here is to ensure the validity and reliability of the can crusher machine with respect to human user experience while using the machine. Through this project, an enhancement and redesigning the can crusher machine will be done by using state-of-art SolidWorks 2019. A prototype will be fabricated as a proof of concept by the end of Final Year Project 2.