

**UNIVERSITI TEKNOLOGI MARA**

**DEVELOPMENT OF A PROTOTYPE  
PNEUMATIC CAN CRUSHER**

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## **ABSTRACT**

As time passes, more and more cans are manufactured for the packaging industry. However, problems arise when these can piles are difficult to manage and take too long to settle. To tackle this issue, many can crushers have been created, however, those available have various drawbacks that limit their efficiency. As a result, some changes must be made to the current product in order to achieve better results. A pneumatic can crusher is a machine that can speed up the process of crushing can, and it is powered by compressed air, make it more simple and neat. The project for Final Year Project (FYP) is to make some improvement of existing can crusher, which is can crusher capable of crush multiple can at a time. This project intends to design, analyse and fabricate a pneumatic can crusher that of high quality, capable of doing the job well and having a reasonable price. In conclusion, this project surely will benefit the society and help recycling jobs become easier.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

In recent years, recycling has become more popular and began to be practiced by most people in this country. In fact, the recycling rate is increasing from 30.67% in 2020 to 31.52 in 2021 and this trend is expected to continue going forward [1]. However, this percentage is still low when compared to countries such as Germany, Austria and South Korea whose percentage exceeds 50%. One of the common recycled products is aluminum can. The recycling rate of it is higher than any other used packaging material [2].

However, there are still concerns regarding aluminum cans. There are a lot of used aluminum cans that need to be disposed of. Due to the limited space available, these cans need to be crushed first to maximize the use of space [3]. However, if only manpower is used, this process will take a long time to complete. The effectiveness will reduce because of the slowness of the process.

Therefore, the existence of machines that can make the process of recycling cans easier and more effective is truly needed, as it encourages people to recycle more. As a result, numerous can crusher designs have been developed. Despite the fact that the problem of human energy consumption has been solved, there are still many can crushers on the market that are slow in the process of crushing cans.

As a result, the existence of a pneumatic cans crusher capable of crushing multiple cans at once is greatly required. It not only speeds up the process, but it also helps to avoid wasting user time. With this, the efficiency of the can crusher machine will improve.

### 1.2 Problem Statement

As time went on, the community in Malaysia began to realize the importance of recycling programs, especially for beverage cans. However, there are some issues and problems that arise in regard to the can crushers on the market. The slow process of