

**UNIVERSITI TEKNOLOGI
MARA**

**DISSERTATION ABOUT DESIGN
AND FABRICATE OF
REVOLVING BASE CONVEYOR
BELT**

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ABSTRACT

Many small-scale industries rely on manual labour for transporting raw materials within their facilities. However, there are also industries that utilize fixed-position equipment such as cranes, hoists, small industrial trucks, and conveyors. Traditional conveyor belts are designed for linear material movement, which can be limiting when materials need to be transported in multiple directions or when space is restricted. However, this prototype is considered with the objective of designing and fabricating a revolving base conveyor belt. The prototype will be going through multiple process such as 3D modelling using SOLIDWORKS and fabricated while utilising manufacturing processes such as drilling, cutting, grinding, and milling. The expected outcome of this prototype is to demonstrate a way of transporting items into multiple directions in a manner of time. For conclusion, the prototype will be able to solve problems with restricted space such in a warehouse.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Conveyor belts are commonly used in every manufacturing plant for transporting large quantities of items[1]. It is also not limited to manufacturing use but also to commercial use, for instance express delivery services. It also offers flexible solutions to warehousing, distribution, and logistics. Conveyor belts are not commonly used in daily household as they are not cost-effective for small operations[2].

Due to increasing demand of online shopping and express services in Malaysia, courier services companies must add more warehouses to fulfil the demands[3]. However, the more items are coming in the more they need to transport them at a fast pace. This is where conveyor belts take place to transport large volumes of items at a time[4].

Today, normal conveyor belts are used where it can transport items from one place to another with required route[5]. To alter the route for some items in a long interval of time, I would like to propose a design which is a revolving base conveyor belt. By combining some of the ideas that I got from observations, I would like to design and fabricate a small prototype of the model but instead for small items.

The aim of this study is to make an alterable route of the belts when there are some items that need to go to other sorting places. However, to increase the efficiency of the model we need to automate the revolving base, considering this project is for small items the base will be manually adjusted by the user.