



**UNIVERSITI TEKNOLOGI MARA CAWANGAN
JOHOR**

PASIR GUDANG

MEC 299

AUTOMATED WRAPPING MACHINE

AZULAIFIZ FAUZAN BIN AZNAM

2020882052

SUPERVISOR:

MOHD NOOR HALMI AB LATIF

MARCH AUGUST 2022

ABSTRACT

Jalen Sdn Bhd is one of the companies that need to use a wrapper to wrap every product that they use before exporting it to other retailer. This means that everything needs to be post by any courier service. Most people that used a wrapping machine are people that work on a factory that produce many products in a short period. However, Jalen Sdn Bhd are still company that use a normal wrapper which use too much manpower and consume so much time to wrap a single product. So, this project is to make an automatic and portable wrapping machine. This could solve the main problem of the company which is too much time consuming and manpower to wrap a single product. In order to develop an approach that matches my objectives, the method and studying that I use involve my field which is mechanical engineering. This machine main purpose is to wrap a pallet size product. This machine also portable machine which is quite rare to have a portable wrapping machine that could wrap a pallet size product. This machine can also easily maintenance due to its joining process. Finally, this machine could help to solve Jalen Sdn Bhd problem since the machine used a motor to reduce main power and save the user time since it has a higher rotation speed compared to normal wrapping process.

ACKNOWLEDGEMENT

Firstly, I am thanking God for giving me the opportunity to complete my diploma without any problem and delay. Even there is covid 19 that might screw things up, however I still could finish my diploma on time. My gratitude also to my supervisor, Mohd Noor Halmy Ab Latif for guiding me to finish this project and dissertation.

Finally, this dissertation is dedicated to my parents who never know what the meaning of tired of raising and educate me. This piece of victory is dedicated to both of you. Alhamdulillah.

TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF ABBREVIATIONS	x
CHAPTER ONE : INTRODUCTION	1-3
1.1 Background of Study	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Scope of Study	2
1.5 Significance of Study	3
CHAPTER TWO : LITERATURE REVIEW	4-11
2.1 Benchmarking/Comparison with Available Products	4-6
2.2 Related Manufacturing Process	7-9
2.3 Sustainability/Ergonomic Related Items	9
2.4 Patent and Intellectual Properties	10
2.5 Summary of Literature	11
CHAPTER THREE : METHODOLOGY	12-25
3.1 Overall Process Flow	12
3.2 Detail Drawing	13-15
3.3 Engineering Calculation and Analysis	16-17
3.4 Bill of Materials	18

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Jalen Sdn. Bhd. is a HALAL food manufacturing company based in Malaysia. The company produces. Soy Sauce, Chili Sauce, Tomato Ketchup, Oyster Flavored Sauce, Flavored Cordials, Artificial Vinegar, Black Pepper Sauce and Taucho [1]. This product needs to be packed as one big product. The product will be packed in cartons and then placed on the pallet before being wrap together and transport it to customer.

However, the company face a problem which the process used too much human energy and time since it is a manual process. Manual wrapping process could led to injuries to the operator and could affect the work result. So, this product is studied and focus to help Jalen Sdn Bhd factory to solve their problem. This machine is focused on reduce the human energy and time usage which called as automated wrapping machine.

1.2 Problem Statement

At this day, there is numerous company that use wrapping machine to seal their product and delivered it to other destination. However, there are too much manpower used in this product since the machine need someone to stick plastic and walk around to wrap the product. This causes the factory operator need to use a lot of workers and will lose money on high salary demand. This might cause a loss to factory operator.

After that, Time also one of the biggest problems on this manual wrapping machine product. This is because a man would reach their limit and became tired. So, the rate of wrapped product decreases due to the worker tiredness. This will cause the factory to produce less product and can't get a great immense of profit.