

UNIVERSITI TEKNOLOGI MARA

WRIST FLAMETHROWER

**MUHAMMAD FARHAT AMININ BIN MOHD
FERDAUS
2021831066**

Dissertation submitted in partial fulfillment
of the requirements for the degree of
Diploma
(Mechanical Engineering)

College of Engineering

Feb 2024

ABSTRACT

This project is to present the creation of a wrist worn flamethrower. Using a modified lighter turning it into a gas cartridge and a using the concept of fluid mechanics, the gas cartridge can produce a spray of butane gas suitable for combustion. With an ignition point at the front, a small flame can be produced and shot out of the device. This project discusses about the wrist flamethrower and results that were obtained from the project made. In conclusion based on the prototype, the author discussed the advantages and points need to be considered when working on the prototype.

ACKNOWLEDGEMENT

Firstly, I wish to thank God for giving me the opportunity to embark on my diploma and for completing this long and challenging journey successfully. My gratitude and thanks go to my supervisor, Mr. Abdul Hadi bin Abdol Rahim @ Ibrahim.

Finally, this dissertation is dedicated to my father and mother for the vision and determination to 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	xi
CHAPTER ONE : INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	2
1.3 Objectives	2
1.4 Scope of Study	2
1.5 Significance of Study	3
CHAPTER TWO : LITERATURE REVIEW	4
2.1 Benchmarking/Comparison with Available Products	4
2.2 Review of Related Manufacturing Process	7
2.3 Patent and Intellectual Properties	8
2.4 Summary of Literature	14
CHAPTER THREE : METHODOLOGY	16
3.1 Overall Process Flow	16
3.2 Detail Drawing	16
3.3 Engineering Calculation and Analysis	18
3.4 Bill of Materials and Costing	20
3.5 Fabrication Process	21

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Safety is an important thing for a harmonious community. It ensures that a person can live their life without any worry of being assaulted. Sadly, we live in a time where desperate people may attack unsuspecting people for valuables and recognition, so usually safety measures like patrol officers and guards are seen to ensure everyone's safety. However, this does not guarantee that assault cases no longer happen.

As a current example, some men were arrested for assaulting a worker after being reprimanded for unsanitary behavior. A video of them fighting went viral on social media. This shows that even in a public place, assault can happen. So we need to be prepared for anything.

The current solution is to either practice martial arts for self defense or to carry pepper spray. However, martial arts classes can get expensive and take time to master. And the assailant might also have learned a martial art. Pepper spray is also useless if the assailant wears glasses and a mask.

My solution to this problem is the Wrist Flamethrower, a small flamethrower that only uses a small spark and modified lighters. With this device, the user can make a spark and shoot flames out of their hands. This can be used to either scare away any potential assailants, or even burn them if the situation is bad enough.

The aim of this study is to make a Wrist FlameThrower that is light enough to carry around anywhere and powerful enough to spray out a big flame when used. This is so that the attacker cannot easily detect that the user is wearing something to protect them with.