

**A DESIGN, ANALYSIS
AND FABRICATION AN
AUTOMATIC
WHITEBOARD
CLEANER**

**HAZIQ SYAKIR BIN ISMAIL -
2020600938**

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

College of Engineering

Feb 2023

ABSTRACT

The name of this project is Automatic Whiteboard Cleaner, this idea inspired when students or teachers leave the classroom and forgot to clean the whiteboard because they rushing to go home. From that, the project is to make students or teachers to clean the whiteboard much easier. There are some problem to make that this project used in all schools , universities or offices. For example this project needs a electric power supply when its work. Therefore, this project need a power supply to do the work. Objectives of this project is to help peoples clean the whiteboard with simple and easier method. In conclusion, hope this project can make it easier method to erase the whiteboard and use at classroom, school, office or place that use whiteboard for presentation. Therefore, demands for this project will increase in the industry.

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, Ts. Hazriel Faizal bin Pahroraji

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. And In sha Allah I will graduate in Diploma Mechanical Engineering in 2023.

TABLE OF CONTENTS

	Page
CONFIRMATION BY SUPERVISOR	iii
AUTHOR'S DECLARATION	iv
ABSTRACT	v
ACKNOWLEDGEMENT	vi
TABLE OF CONTENTS	vii-viii
LIST OF TABLES	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS	xi
CHAPTER ONE : INTRODUCTION	1-2
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	2
CHAPTER TWO : LITERATURE REVIEW	3-12
2.1 Benchmarking/Comparison with Available Products	3-5
2.2 Related Manufacturing Process	6-7
2.3 Sustainability/Ergonomic Related Items	8
2.4 Patent and Intellectual Properties	9-11
2.5 Summary of Literature	12
CHAPTER THREE : METHODOLOGY	13-24
3.1 Overall Process Flow	13-14
3.2 Detail Drawing	14-21
3.3 Engineering Calculation and Analysis	22
3.4 Bill of Materials	22

CHAPTER ONE

INTRODUCTION

1.1 Background of Study

In today's age of technology, there are lots of machine that make people lifestyle easier. For example, before they have lift and elevator people used stairs to goup or down the building and it required more energy rather than using lift. Therefore, technology has helped people to do work more simple. The question is what machine that can help a teacher or student to clean the whiteboard with simple method ?

The popularity of whiteboards increased rapidly in the mid-1990s and they have become a fixture in many offices, meeting rooms, school classrooms and other work environments. Whiteboards became officially available in 1960s, but did not become widely used until 30 years later. Early whiteboards needed to be wiped with cloth and makers had a tendency to leave marks behind, even after erasing the board. Dry-erase markers for whiteboards were invented in 1975. Whiteboards started being commonly used by businesses in the early 1990s due to concerns over health problemsin children with dust allergies and the potential for chalk dust to damage computers. By the late in 1990s, about 21% of American classrooms had converted from chalkboard to whiteboards. So, this idea is name a Design and Fabrication of Automatic Whiteboard Cleaner. This machine can help a teacher or student to cleanthe whiteboard. Usually, teacher or student need to move when clean the whiteboard but this machine people just need to switch on the button then it will clean the whiteboard.

1.2 Problem Statement

This project needs a electric power supply when it do the work. It also will increase the payment of bil. Electric. Furthermore, it needs to be exposed more to people so that they will buy this project. Not many industry has been created this machine because of low demands in citizens. That is why not everyone knows about this project.