

HIGHER TECHNICAL INSTITUTE

**MECHANICAL ENGINEERING
DEPARTMENT**

DIPLOMA PROJECT

**AN INVESTIGATION INTO THE
DESIGN ASPECTS OF DOMESTIC
AND COMMERCIAL OIL BURNERS**

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M/1051

JUNE 2008

HIGHER TECHNICAL INSTITUTE	PROJECT NO 3774
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AN INVESTIGATION INTO THE DESIGN ASPECTS OF DOMESTIC AND COMMERCIAL OIL BURNERS

OBJECTIVES:

1. To conduct an investigation into the various types of domestic and commercial oil burners.
2. To describe with reference to drawing and diagrams each type.
3. To write down design, constructional operational characteristics, heat loss calculations, burner and unit sizing and controls.
4. To present service and maintenance features for efficient and economical operation.

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PROJECT REPORT

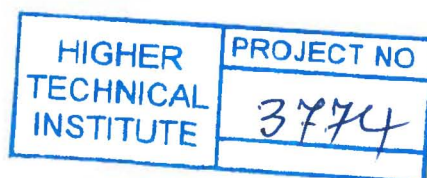
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ABSTRACT

The main objectives of this project is to conduct an investigation into the various types of domestic and commercial oil burners, to describe with reference to drawings and diagrams each type, to write down design constructional and operational characteristics, heat loss calculations burner and unit sizing and controls and finally to present service and maintenance features for efficient and economical operation.

I tried to active these by summarizing the book of Mr. Charles H. Burchardt with title domestic and commercial oil burners and add some other relevant information through the internet and other sources to active my coal.

INTRODUCTION

The fuel burned can be of three types solid liquid and gas. By the term fuel, we mean the substance burned during combustion the process where a substance unites with oxygen and produces heat and light. Oil burners are concerned with liquid fuels, but as so this fuel can not be burned. So in order to burn we have to break it in smaller particles or transform it into gas and vapor. The volatility of a liquid fuel is the ease at which a fuel transforms into vapor at ordinary temperatures.

So in order to have heating we have to have a device to prepare the liquid fuel for combustion by facilitating or hastening its change to a vapor that can be easily mixed with air and burned. This device is mostly concerned with the flash point and viscosity of a fuel. Flash point is the temperature which will momentarily support combustion of a fuel (e.g. No2 fuel oil 110 F). Viscosity is a measure of the resistance to flow. A high viscosity fuel is very thick and the flow is very slow, but viscosity is improved when we preheat the fuel.