



AUTOMOBILE AIR-CONDITIONING TEACHING KIT (R-134a)

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ABSTRACT

In this project, our main objective is to produce a training rig for the following automobile air-conditioning systems viz, the R134a and R12 system as a teaching kit.

Besides that, we have to learn about the installation and inspection of both of these systems. On this project, we started by disassembling and overhauling the R-12 and R134a systems with the right tools. Servicing the parts give us knowledge about the parts, their functions, and their designs.

Reassembling back all the parts and components is one of the more important aspects of this work. One has to prevent carelessness in putting back all the parts. The air-conditioning system can be mounted on the frame and will be tested for its performance.

Lastly, a design of the rig to run under both systems have been carried out. Construction of the prototype rig costs approximately RM 6000 and took one year to design and fabricate. The completed rig has been assembled with a panel board showing the principle operation of these systems which are mounted on the frame, and an operations manual which included a description on servicing, overhauling and trouble diagnosis needs of the systems has been produced. The benefits of this project are that we learn not only its operation, but the servicing, overhauling and inspection of the R-12 & R134a systems as well.

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CHAPTER I

INTRODUCTION

1.1 General Introduction On Air conditioning.

Twelve thousand years ago, people start to discover refrigeration and air-conditioning. They start with simple form of system and use it for the purpose of comforting their lives. Although these early systems were crude by today's standards, they serve the same purpose as modern units.

Many aspects of modern life became possible only after air-conditioning system were developed from year to year. It then makes it possible to change the condition of the air in the enclosed area. Since modern man spends most of his life in enclosed area, air-conditioning is actually more important and can produce a greater influence on man than outdoor weather.

By definition, air-conditioning is the process by which air is cooled or heated, cleaned or filtered, and circulated or recirculated. The quantity and quality of the conditioned air is also controlled. This means that the temperature, humidity, and volume of air can be controlled at any time in any given situation. Under ideal situation, air-conditioning can be expected to accomplish all of these tasks at the same time.

In the history of air-conditioning system, automobile air-conditioning was available in 1940, but it did not become popular until about 1960. Since that time, interest in automobile air-conditioning has continued to increase. Air-conditioning is now one of the most popular automobile accessories.