CHAPTER 1

INTRODUCTION

1.1   Background of study

Inventory control is important to take part in the production system. A policy is not appropriate in both operations lead to shortages, which released the cost, or the shares are not necessary, which reduces the capital asset. Thus, efficient supply planning methods to order the correct quantity of components at the right time should be developed. This is especially true when uncertainties occur. It could be classifying them in two main categories: input (as external supply or demand reliability) and process (as machine breakdown, etc.). To minimize the influence of these uncertainties, enterprises implement safety stocks, but stock is expensive. So, the problem is to control inventories and to avoid stockout while maintaining a high level of service [1]. In this supply chain the decisions are related to the following questions:

- What are optimal moments and optimal quantities to supply?
- Which product to manufacture, when and how much?
- Which demands to satisfy, with what products and at what quantities?

The demand forecast provides information on the needs of the end; this information needs to be sent from distribution centers to the production sites and suppliers of raw materials by way of planning activities. For this, the Material Requirement Planning (MRP) techniques are widely used. There exists a lot of inventory control software based on the MRP approach. In a deterministic environment, the MRP logic

gives an optimal just-in-time schedule. Material requirement planning (MRP) is basic tool for performing the detailed material planning function in the manufacture of component parts and their assembly into finished item. MRP is used by many companies that have invested in batch production process. This project address the material requirement planning system for front door body assembly of a car and will be focusing on master production schedule (MPS), bill of material (BOM) and inventory status data. The reports discuss the overall plans for development of the MRP model.

1.2   Problem Statement

Panel Front Door Left Hand Side is an assembly product, composed of a variety of components that are manufactured and assembled in an assembly line. The main clients of panel front door assembly line are the car assembly lines. The cost of backlogging those clients is very high since without panel front door the car cannot be assembled, and therefore the line has to change its predicted sequence, affecting in turn, and other elements on the car supply network. One day, the clients don't receive this product when the production lines start. It cause the front door assembly line stops and cause the late of car production. The company has been fined for RM 1,000 for each late of supply the part. The current system that company used is reorder-point that used in plant for manufacturing and inventory management. This system is not effectiveness to overcome to supply the panel front door left hand side.

1.3   Objective

To develop spreadsheet MRP model for Panel Front Door Left Hand Side Assembly.

1.4   Scope of Study

The basic function of MRP system includes inventory control, bill of material processing and elementary scheduling. MRP helps organizations to maintain low inventory levels. It is used to plan manufacturing, purchasing and delivering activities. MRP can be applied to items that are purchased from outside suppliers and to sub-assemblies, produced internally, that are component of more complex items. The data that must be considered include the end item being created, how much is required at a time, when quantities are required to meet demand, shelf life of stored materials, inventory status records, bill of material and planning data.