

**DESIGN EVALUATION OF A JUICE EXTRACTOR USING DESIGN FOR
ASSEMBLY METHOD**

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ABSTRACT

The purpose of this project is to evaluate the design of a juice extractor by using Boothroyd Dewhurst Method which this method is one of the Design For Assembly (DFA) methods. The project will be conducted using Design for Assembly (DFA) method. DFA method will help to simplify the assembly designs of the product that will leads to significant cost savings and less time to produce a product. DFA will help to estimate the difficulty of assembly, eliminate unnecessary parts and assembly tooling, and design products that are less costly to manufacture. The study will focus on analyzing the current design of juice extractor, reducing the number of parts, and comparing the design efficiency and the cost between the current and improved design. Computer Aided Design (CAD) software will be used as well as DFA method to achieve the objective of completing this project. The details of Boothroyd Dewhurst Method have been described in literature review chapter. The product is evaluated by using Manual Handling Table and Manual Insertion Table. The results of current design are used to make improvement of the juice extractor. Then, new design is made by eliminating or combining the old design so that total cost and time for assemble the juice extractor is reduced. Lastly, comparison is made between new and old design. The target of improvement includes the reduction of parts, operation time, assembly cost and increase the design efficiency.

The targets of improvement are reduce parts from 47 parts to 37 parts, reduce operation time from 263.42 seconds to 200 seconds, reduce assembly cost from RM0.249 to RM 0.20 and increase design efficiency from 39.86% to 65%.

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