Design for Assembly (DFA) On Sandwich Toaster

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ABSTRACT

The idea of this project is to explain the growing significance the design of assembly (DFA) and evaluate the design of a sandwich toaster by using Boothroyd Dewhurst method. Nowadays, a DFA method is usually used for improvement in product design. This method will help for improving product for easy and low cost assembly, focusing on functionality and on assimilabllity concurrently. DFA will help to estimate the difficulty of assembly, eliminate unnecessary parts and design products that are less costly to manufacture. The project majority based on Computer Aided Design (CAD) software as well as DFA method criteria to accomplish the purpose of implementation this project. Further, literature review is details on Boothroyd Dewhurst method. The study will concentrate on analyzing the current design of sandwich toaster, reducing the number of parts, and comparing the design efficiency and the cost between the previous and latest design. The product is evaluated by using Manual Handling Table and Manual Insertion Table. The design efficiency, cost assembly time, operation time and part are calculated based on the data obtained from evaluation. The results of current design are used to make improvement of the product. In that case, latest design is complete by eliminating or combining the previous design accordingly that total cost and time for assemble the product is reduced. Last but not least, comparison is made between latest and previous design. The improvement are decrease parts from 55 parts to 33 parts, decrease operation time from 264.03 seconds to 177.15 seconds, reduce assembly cost from RM 0.3251 to RM 0.2306 and followed by design efficiency from 37.49% to 54.19% are increased.

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