

ABSTRACT

PT XYZ is a company engaged in the automotive sector, located in Kabupaten Bekasi. One of the products manufactured by the company is car air conditioning (AC). Based on production data from June 2022 to December 2023, it was found that the defect rate of the products exceeded the company's tolerance limits, necessitating an analysis using the DMAI (Define, Measure, Analyze, Improve) approach, along with a fishbone diagram and 5 why's analysis. After conducting the analysis using the DMAI approach, it was determined that the brazing process contributed the most defects, with the types of defects being holes, gaps, and dirt. These defects were associated with the design of the locking bracket for the brazing machine, which became the main issue addressed in this research. The objective of the study was to design a locking bracket for the brazing machine used to connect tubes to the evaporator, in order to reduce the percentage of defects related to holes, gaps, and dirt in the brazing process. The study involved designing a locking bracket for the brazing machine, aimed at connecting the tubes to the evaporator, using the Quality Function Deployment (QFD) method. The result of the research was the design of a locking bracket equipped with a feature to reduce vibrations. The bracket was designed to be securely attached to the brazing machine, thereby minimizing vibrations that occur during the tube-to-evaporator connection process. Stainless 304 was chosen as the material for the bracket due to its durability and resistance to corrosion. The bracket has dimensions of 120 x 100 x 75 cm and consists of 5 parts. Additionally, the study estimated the costs required to manufacture this tool. Based on calculations, the total cost for producing the locking bracket is estimated to be Rp700,450.

Keywords: *defect, DMAI, brazing, QFD*