

ABSTRACT

This research discusses the problems that exist in PT. XYZ, a company that produces military and commercial products. One of the commercial products produced is the air brake system for trains. In the air brake system there is a brake coupling, which has a component called the nozzle. In the production process of the existing nozzle components at PT. XYZ, the nozzle is not subjected to a leak test before being assembled into a brake coupling. So that causes when testing the brake coupling, the highest percentage of reject leakage was found, namely the nozzle component of 1.27%. Thus, in this study, a nozzle leak test will be carried out by designing a proposed tool based on user needs. To support this research, the Nigel Cross rational product design method is used. In this rational method, there are 6 stages, namely clarifying objectives, establishing functions, setting requirements, determining characteristics, generating alternatives, and evaluating alternatives. With the design using a rational method, it is hoped that the tools can work well in testing the leakage of the nozzle so that it can minimize the reject nozzles found during brake coupling testing.

Keywords: nozzle, tools, leak test, rational method