

## ***ABSTRACT***

*Pt. Sinar Terang Logamjaya or PT. STALLION is a manufacturing company that produces automotive parts for motorcycles. One of the parts produced at PT STALLION is metal fuel filler (MFF) which has a constant production and high volume. Metal fuel filler is a part that is used as a constituent part in a motorcycle gas tank. It is known that metal fuel filler parts that were produced from August 2020 to February 2021 produce a defective product quantity that varies depending on the daily production target. The average percentage for defective products was 0.86%, while the target set by PT STALLION for defects was 0.2%. Improvements are needed to overcome the defect problems that occur. The highest defect in the metal fuel filler production process is a broken part, scratch, not center, and wrinkles defect that occurs in the drawing process.*

*This final project uses the DMAI approach from Six Sigma, starting at the define stage it consists of SIPOC diagram by describing how each process works, identifying the CTQ of products and CTQ processes, and identifying the type and number of defects that occur in the product. At measuring stage contains the measurement of problematic processes based on product CTQ, process CTQ, identifying the dominant process that contributes the most to the CTQ product so that the dominant process will be corrected. Finding the root of the problem in the selection process using fishbone diagrams and priority problem solving using FMEA. At the analyze stage, it contains an analysis of the root causes of the highest priority in FMEA using 5 why's. In the improve stage, it contains a proposed defect improvement using 5W + 1H and detail of the proposal design.*

*The proposed improvements in this final project are the Poka Yoke design concept for the lower dies, the lubrication line design concept for the lower dies, and the modular automatic lubrication system design concept that will be integrated into the lower dies. Poka Yoke design can minimize operator errors when placing parts on the lower dies, the design of the lubrication path on the lower dies can produce constant and comprehensive lubrication, the lubrication system can reduce the operator's task of manually lubricating parts. This proposed improvement aims to minimize the root cause of the problem from the man and machine factor which are the main causing defects in the MFF part. This proposed design then made using 3d software to visualize the design concept results.*

*Evaluation of the results improvement design concept is carried out by analyzing the advantages and disadvantages of the design concept results, analyzing the work stages of the operator to adapt the new design results, and verifying the results to get input from the company to be implemented.*

*Keywords: Quality, Defect, DMAI, Poka Yoke, Mechanical Drawing*