

## **ABSTRACT**

*PT pindad is a manufacturing company that manufactures military and commercial products in Indonesia. One of the products produced is the air brake system. Air brake system is a train braking system that has many components and one of which is coupling head. In 2018 PT pindad produces 24,709 coupling head components and has 1,245 defect components. With the percentage of defect of 5.2% and the tolerance limit of the company defect of 2.04%, it makes the coupling head component the object of this research. This study uses the six sigma method to minimize defects in coupling head components with the DMAIC stage. Starting with define, namely the problem identification stage and found on the mold making process which resulted in defects in the form of shear and sand inclusion. Followed by the measure stage, which is the stage used to measure the stability and capability of the process, and know the process that is outside the control limit and know the DPMO of 6639 and the sigma level of 3.97. The process beyond the control limit will then be determined the root cause of the problem and the proposed correct improvement in the analyze process by using fishbone diagram identification and FMEA. Furthermore, the improve phase is carried out to give the right proposal based on the root of the problem obtained to reduce shear defect and sand inclusion. Proposals are given based on machine, human, and method as the cause of shear defect and sand inclusion. The correct improvement proposal is in the form of measuring aids in the mold model to measure the diameter of the mold model straightener bolt, as well as a tool for checking sand molds and models to determine the diameter of the straightening hole in the sand mold and the diameter of the straightener on the model and the addition of warning posters so that operators become more aware in hopes of not finding defects going forward and can improve quality.*

*Key words: Pindad, Defect, Six sigma, DMAIC, Coupling head*