

ABSTRACT

The use of compressed natural Gas (cnG) for vehicle has proved to improve emission quality, reduces dependency on mainstream fuels and increase lubrication oil lifespan. The successful utilization of cnG on the kriss Modenas 110cc has been proven by previous researcher. The current study is carried out in the attempt to improve the pressure regulator which is deemed crucial in the cnG fuel system. Various drawbacks of the previously implied unit prove the need for this study. This study begins with a comprehensive understanding of the pressure regulation system. critical design parameters are carefully selected and optimized accordingly to enhance the final prototype. The flow within the regulator is optimized using FLUENTTM while the structural integrity is backed by american Society of Mechanical engineer (aSMe) pressure vessel code aSMe Section Viii division 1 and related standards on threaded fasteners. The fabrication of the prototype has been formulated from findings and analysis on the design methodology using suitable machining techniques. The performance of the final prototype is obtained from the specially developed pressure regulator test bench.