COMPARATIVE STUDY OF MOTOR PERFORMANCE 4 STROKE SINGLE CYLINDER STATIONARY USING GASOLINE FUEL AND LPG

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Abstract
Oil fuel is decrease while it needs is increasing gradually, such as the premium type of gasoline needs is increase continuously. A variety alternative to overcome this problem has been done, included using LPG (Liquefied Petroleum Gas).

The modification is needed to use LPG as fuel of the gasoline engine. This modification will include adding a mixer. This mixer will mix air and fuel before entering the combustion chamber. The mixer that used to modify the engine generator is a venturi mixer. Afterwards, analysis performance of motor using gasoline and LPG with a constant speed test.

Results measurement and analysis of performance shows that efficiency of LPG generator set has higher than gasoline generator set. The use of LPG fuel is lower than gasoline. The efficiency at constant speed 3000 rpm using LPG is 9,2 % with BHP 1062,5 Watt, Torque 3,384 Nm, Bfsc 0,000083 Kg/Wh, Bmep 425 Kpa, while using gasoline the efficiency is 2,81 % with BHP 1187,5 Watt, Torque 3,78 Nm, Bfsc 0,00291 Kg/Wh, Bmep 494.79 Kpa. From those results of experiment can be found out that the efficiency of the generator set using LPG fuel is higher than using gasoline fuel.

Keywords: Gasoline fuel, LPG (Liquefied Petroleum Gas), Performance, Venturi mixer