

ABSTRAK

Perkembangan teknologi yang semakin modern mendorong para pelaku industri di bidang otomotif khususnya mobil untuk mengembangkan suatu produknya agar kendaraan bermotor menjadi lebih hemat bahan bakar serta ramah bertenaga. Tingkat permintaan para penggunaan kendaraan agar memiliki mobil dengan mesin yang bertenaga namun irit bahan bakar telah menjadi pemicu timbulnya teknologi baru yang dikenal dengan nama I-DSI (Intelligent Dual & Sequential Ignition) itu berada di mesin type GD3. Dimana system teknologi ini dilengkapi dengan sepasang busi pada setiap silindernya.

Dari permasalahan di atas, penyusun tertarik untuk melaksanakan "ANALISIS PENGARUH SISTEM PENGAPIAN I-DSI (*INTELLEAGENT DUAL & SEQUENTIAL IGNITION*) TERHADAP EFISIENSI BAHAN BAKAR PADA MESIN TYPE GD3". Guna mendapatkan hasil yang akurat dalam penelitian ini peneliti melakukan perhitungan berdasarkan data spesifikasi serta data teoritis yang telah didapatkan. Adapun tahapan perhitungan yang akan dilaksanakan antara lain; menentukan Tekanan Efektif Rata – Rata (Mep), Daya Indikator (), Daya Poros () serta Konsumsi Bahan Bakar ().

Sehingga didapatkan kesimpulan bahwa mesin GD3 dengan teknologi sistem pengapian i-DSI mampu meningkatkan daya mesin dan menurunkan konsumsi bahan bakar spesifik bila dibandingkan dengan mesin berteknologi non i-DSI untuk spesifikasi mesin yang sama, berikut hasil analisa parameter performansi mesin sehingga dapat disimpulkan; torsi mesin mengalami kenaikan rata-rata 1,82 Nm bila menggunakan sistem pengapian i-DSI untuk mesin berteknologi i-DSI di putaran mesin 2700 RPM torsi mencapai 128 Nm sedangkan untuk mesin berteknologi non i-DSI 126.18 . Daya mesin pada mesin berteknologi i-DSI pun mengalami kenaikan rata-rata 7,867 kW untuk mesin berteknologi i-DSI di putaran mesin 2700 RPM daya mencapai 361.728 kW sedangkan untuk mesin berteknologi non i-DSI 356.584 kW. Pada Konsumsi bahan spesifik untuk mesin berteknologi i-DSI di putaran mesin 2700 RPM konsumsi bahan bakar mengalami penurunan rata-rata 7,722 / untuk mesin berteknologi i-DSI di putaran mesin 2700 RPM konsumsi bahan bakar mencapai 286.884 / / . sedangkan untuk mesin berteknologi non i-DSI 291.940 / / .

Kata Kunci: Otomotif, Intellegent Dual & Sequential Ignition, Mesin Bensin

ABSTRACT

Increasingly modern technological developments encourage industry players in the automotive sector, especially cars to develop a product so that motor vehicles become more fuel efficient and friendly to power. the level of demand for vehicle use to have a car with a powerful engine but fuel economy has become a trigger for the emergence of new technology known as the I-DSI (Intelligent Dual & Sequential Ignition) that is in the GD3 type engine. where the technology system is equipped with a pair of spark plugs on each cylinder.

From the above problems, the authors are interested in carrying out "ANALYSIS OF THE EFFECT OF I-DSI IGNITION SYSTEM (INTELLEAGENT DUAL & SEQUENTIAL IGNITION) ON FUEL EFFICIENCY IN THE GD3 TYPE MACHINE". in order to get accurate results in this research the researcher performs calculations based on specification data and theoretical data that has been obtained. As for the calculation steps to be carried out, among others; determine the Average Average Pressure (Mep), Indicator Power (), Axle Power () and Fuel Consumption ().

So it was concluded that the GD3 engine with i-DSI ignition system technology was able to increase engine power and reduce specific fuel consumption when compared with non i-DSI technology machines for the same engine specifications, following the results of performance parameter analysis machine so that it can be concluded; engine torque has increased by an average of 1.82 Nm when using the i-DSI ignition system for i-DSI technology at 2700 RPM torque reaching 128 Nm while for non i-DSI 126.18. engine power on i-DSI-tech engines also experienced an average increase of 7,867 for i-DSI technology at 2700 RPM of power reaching 361,728 kW while for non i-DSI technology 356,584 kW. on specific material consumption for i-DSI technology at 2700 RPM engine consumption, fuel consumption has decreased by an average of 7,722 gr / kW-hour for i-DSI technology at 2700 RPM engine consumption of fuel consumption of 286,884 gr / kW-hour while for non-tech machines i-DSI 291,940 gr / kW-hour.

Keywords: Automotive, Intellegent Dual & Sequential Ignition, Gasoline Engine

