

Kraisunate Hemsuk, Lieutenant 2009: Impact of Ignition Timing on Performance, Exhaust Gas Temperature and Emissions of Diesel Engine Converted to Natural Gas. Master of Engineering (Mechanical Engineering), Major Field: Mechanical Engineering, Department of Mechanical Engineering. Thesis Advisor: Assistant Professor Pipon Boonchanta, Ph.D. 100 pages.

This paper presents the Impact of ignition timing on performance, exhaust gas temperature and emissions of the Mitsubishi 6D16-0A diesel engine converted to a natural gas fueled engine. The engine was dyno-tested using typical Thai-quality natural gas with fully-open throttle and stoichiometric mixture at engine speeds of 1,800, 2,000, 2,200 and 2,400 rpm. The test results indicated optimum ignition timings with respect to engine performance, exhaust gas temperature and emission levels. The outcomes of this work offered a guideline to optimize the ignition timings of the converted Mitsubishi 6D16-0A diesel engine and other engines of similar specifications, with respect to performance and exhaust gas temperature. Moreover, the findings of this study provides information for optimizing a natural gas engine conversion for exhaust emissions reduction.

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