

Studies on the Tokai University System of Lean Burn Engine and a Racing Car for Le Mans

by

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Abstract

A promising result was obtained with the preliminary test of a new type engine system that can clear away problems with stratified charge lean burn engine currently being commercialized and having a potential to improve fuel economy. This engine system centers round a brand new practical technology that provides stable ignition and fast burn of homogeneous pre-mixed air-fuel mixture and is composed of a super charged system that can achieve lean burn for full operating range and of a unique device to activate catalyst. This study is subsidized by the Kanagawa High-Technology Foundation.

On the other hand, as a measure to promote an education on actual "MONOZUKURI"(manufacturing), a prototype car, TOP'03 (Tokai Original Proto'03), is also being studied aiming to participate in the Le Mans 24 Hours in 2003. The car is installed with YR45 engine of which fundamental design was done by Tokai University under a research trust. This 4.5liter, V8, NA (Natural Aspiration) engine produces 600ps with an air restrictor that satisfies racing regulation. Fundamental chassis layout was completed as a graduation study of the students. The necessary fund will be provided by external sponsorship and advertising contracts. If this plan comes true it will make the first participant from the academic sector in 70 years history of the Le Mans 24 Hours.

Keywords: Lean burn engine, Homogeneous mixture, Fast burn, Multi point ignition, Gasoline engine, Racing car, Racing engine, Le Mans

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