

FINAL PROJECT

**COMPARISON ANALYSIS OF ENGINE
PERFORMANCE BETWEEN CONVENTIONAL ENGINE
(CARBURETOR) SYSTEM AND ELECTRONIC FUEL
INJECTION (EFI) ENGINE SYSTEM OF TOYOTA
KIJANG SERIES 7K-E**



RESEARCH PAPER

**Submitted as a Partial Fulfillment of the Requirements for Getting the
Bachelor Degree of Engineering in Automotive Department**

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January 2011**

DECLARATION OF RESEARCH AUTHENTICITY

I assert verily that the research entitles:

COMPARISON ANALYSIS OF ENGINE PERFORMANCE BETWEEN CONVENTIONAL ENGINE (CARBURETOR) AND ELECTRONIC FUEL INJECTION (EFI) ENGINE OF TOYOTA KIJANG SERIES 7K-E

That made to fulfill some of requirements to get bachelor degree of Engineering in Automotive Department of Muhammadiyah University of Surakarta, as far as I know is not a plagiarism of a research that has been published, except the information source that used to solve the problem.

Surakarta, December 2010
Researcher,

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VALIDATION SHEET

The Final Project entitles "Comparison Analysis of Engine Performance between Conventional Engine (Carburetor) and Electronic Fuel Injection (EFI) Engine of Toyota Kijang Series 7K-E" has been Approved by supervisors for getting the Bachelor Degree of Engineering in Automotive Department of Muhammadiyah University of Surakarta.

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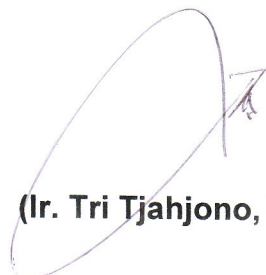
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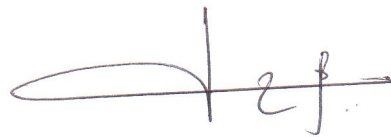
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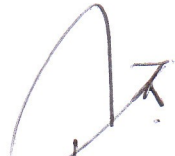
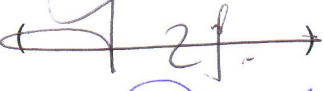

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SUMMARY

Safri Gunawan. D700 070 005. Comparison Analysis of Engine Performance between Conventional Engine (Carburetor) System and Electronic Fuel Injection (Efi) Engine System of Toyota Kijang Series 7k-E. Research Paper. Muhammadiyah University of Surakarta. 2010.

The research is presented to get the number of comparison for torque, power, and specific fuel consumption between conventional engine (carburetor) system and electronic fuel injection (EFI) engine system. The method that used to get the data is by using the experiment method. The research is begun by preparing tools and materials those will be used for making test bed. After that is assembling the system on the engine alternately after getting the data including voltage, current, engine rotation (rpm), and fuel consumption ($m\ell$). Based on the experiment and parameter those have been experimented, the engine performance on the conventional system is lower at the high engine rotation than electronic fuel injection system, and when the engine rotation is low, the engine performance of the conventional system is higher than electronic fuel injection system, and the specific fuel consumption on the conventional engine system at high engine rotation is more wastefully than electronic fuel injection system, but at low engine rotation, the conventional engine system is more economical than electronic fuel injection system.

Key words: torque, power, and specific fuel consumption.

ACKNOWLEDGMENT



Assalamu'alaikum Wr. Wb.

Alhamdulillahirobbil'alamin. Praise and gratitude be to ALLAH SWT, the lord of universe, because of his blessing and guidance the research paper can be done.

The Final Project entitles “Comparison Analysis of Engine Performance between Conventional Engine (Carburetor) And Electronic Fuel Injection (EFI) Engine of Toyota Kijang Series 7K-E” can be done because of helping and supporting from other people. Therefore, writer sincerely would like to say thank and appreciation to:

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14. Those who cannot be mentioned one by one, writer wants to say his thank and appreciation to all of them.

The writer realizes that this research paper is far from being perfect, so the writer sincerely welcomes any constructive comment, criticism, and suggestion from anyone.

Wassalamualaikum Wr. Wb.

Surakarta, February 2010
The writer

MOTTO

يُسْرًا أَلْعَسْرِمَعِ فَإِنَّ

For indeed, with hardship [will] be ease

يُسْرًا أَلْعَسْرِمَعِ إِنَّ

Indeed, with hardship [will be] ease

(Q.S. Al-Insyirah 5-6)

لَشَدِيدٌ عَذَابِي إِنَّ كَفَرْتُمْ وَلَئِن لَّا زِيدَنَّكُمْ شَكَرْتُمْ لَئِن رُّكُومًا تَأَذَّنَ وَإِذْ



And remember! Your Lord caused to be declared (publicly): "if ye are grateful, I will add more (favours) unto you; but if ye show ingratitude, truly My punishment is terrible indeed." (Q.S. Ibrahim: 7)

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