

FINAL PROJECT

**COMPARISON ANALYSIS OF ENGINE
PERFORMANCE USING I-VTEC SYSTEM AND
ENGINE WITHOUT I-VTEC SYSTEM HONDA
CR-V**



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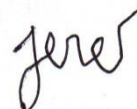
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I assert verify that the research entitles:

COMPARISON ANALYSIS OF ENGINE PERFORMANCE USING I-VTEC SYSTEM AND ENGINE WITHOUT I-VTEC SYSTEM HONDA CR-V

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 it is not a plagiarism of a research that has been published, except the information source that used to solve the problem.

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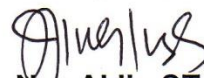
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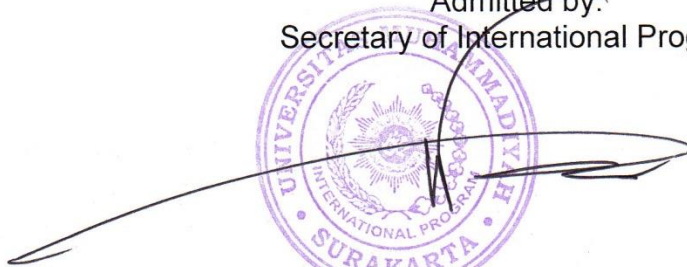
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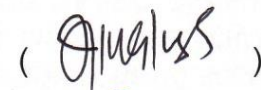
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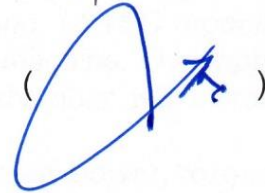
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COMPARISON ANALYSIS OF ENGINE PERFORMANCE USING I-VTEC SYSTEM AND ENGINE WITHOUT I-VTEC SYSTEM HONDA CR-V

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ABSTRACT

Vehicle manufactures develop technology which can increase of performance and the engine can have a great power and torque. One of this technology is using Intelligence Variable Timing and Lift Electronic Control (i-VTEC) that can be used to solve problem above because it can control timing valve. i-VTEC can increase engine performance that can make the gasoline engine will increase power and torque. The aim of this research is to compare power and torque on active i-VTEC and non-active i-VTEC system on Honda CRV.

This test was done by installing Honda CR-V 2.4 with active i-VTEC and non-active i-VTEC on Dynamometer. The Dynamometer presented the data of power and torque based on engine rotation.

The result from Dynamometer test showed that maximum torque from engine use active i-VTEC is 211.7 Nm at 4900 Rpm and maximum torque from engine non-active i-VTEC is 202.8 Nm at 5350 Rpm. The engine torque using active i-VTEC is 3.67% higher than non-active i-VTEC engine. The maximum power from engine use active i-VTEC system is 181.5 Hp at 6910 Rpm and maximum power from engine non-active i-VTEC system is 167.7 Hp at 7020 Rpm. The engine power using active i-VTEC is 9.33% higher than non-active i-VTEC engine. I-VTEC organizes timing of valve which can make overlapping on the machine. Overlapping make number of air fuel mixture in combustion chamber will increase which can make performance will increases.

Keywords: gasoline engine, i-VTEC, Dynamometer, power, torque.

MOTTO

No matter how hard the situations. Don't Give up. Do it not for Myself but
for people I love because I exist for them.

(Jonas Suhardi)

Our task is not to succeed. Our task is to try, because in trying that we find
and learn to build an opportunity to succeed.

(Mario Teguh)

DEDICATION

This research paper is dedicated to:

Allah SWT,

Thanks for the best everything that You have given for me and thanks for

Your love that always make me to never give up to do the best.

I believe that You will always give me the best for everything.

My beloved Mom and Dad,

Thanks for your prayer, love and support.

You always give me happiness but I often made you disappointed.

I am sorry and I promise to give you the best in the future.

All of my family,

Thanks for your prayer, love, support and everything.

All of my friends,

Thanks for your support and love me.

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The final project entitles "Comparison Analysis of Engine Performance Using i-VTEC System and Engine Without i-VTEC System HONDA CR-V" can be done because of helping and supporting from other people. Therefore, writer sincerely would like to say thanks and appreciation to:

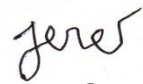
1. Ir. Sri Sunarjono, MT, Ph.D., as the Dean of Engineering Faculty of Muhammadiyah University Surakarta.
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The writer realizes that this research paper is far from being perfect, so the writer sincerely welcomes any constructive comment, criticism, and suggestions from anyone.

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Surakarta, 22 December 2014
Writer


Jonas Suhardi

CONTENTS

TITLE	i
DECLARATION OF RESEARCH AUTHENTICITY.....	ii
APPROVAL	iii
VALIDATION.....	iv
ABSTRACT.....	v
MOTTO.....	vi
DEDICATION.....	vii
ACKNOWLEDGMENT	viii
CONTENT.....	x
LIST OF FIGURES	xiii
LIST OF TABLE	xv
CHAPTER I INTRODUCTION	
1.1 Background of The Study.....	1
1.2 Objectives of The Study	2
1.3 Benefit of The Study.....	2
1.4 Problem Limitation	3
CHAPTER II REVIEW OF LITERATURE	
2.1 Literature Study.....	4
2.2 Fundamental Theory	5
2.2.1 Combustion	5
2.2.2 Four Stroke Engine Work	6
2.2.3 Ideal Otto Cycle	9

2.2.4	Engine Performance Parameter	16
2.2.5	Engine Performance Characteristic	18
2.2.6	Volumetric Efficiency	19
2.2.7	Debit	20
2.2.8	Valve Timing	22
2.2.9	Overlapping	22
2.3	I-VTEC System Construction	23
2.3.1	ECM / ECU (Electronic Control Unit)	24
2.3.2	VTC (Variable Timing Control) Actuator.....	25
2.3.3	VTC Oil Control Solenoid Valve.....	26
2.4	Operation of i-VTEC.....	26
2.4.1	Mechanism of VTEC.....	26
2.4.2	Mechanism of VTC.....	28
2.5	Efecctiveness of i-VTEC System.....	30

CHAPTER III ENGINE TEST METHODOLOGY

3.1	Flow Chart of Engine Test	33
3.2	Place and Time Research	36
3.3	Material	36
3.4	Tools	37
3.5	Experiment Procedures	39

CHAPTER IV ANALYSIS

4.1	Analysis of Power.....	40
4.2	Analysis of Power.....	44

CHAPTER V CONCLUSION AND SUGESTION

5.1	Conclusion	48
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5.2 Suggestion 48

REFERENCES

APPENDIX

LIST OF FIGURES

Figure 2.1	The four stroke operating cycle.....	7
Figure 2.2	P-V diagram for four stroke cycle engine	8
Figure 2.3	Otto cycles	10
Figure 2.4	P-V diagram and T-S diagram	10
Figure 2.5	Ideal air-standard Otto Cycle	11
Figure 2.6	Schematic of principle of operation of dynamometer	17
Figure 2.7	Engine performance curves	18
Figure 2.8	Area of valve clearance	21
Figure 2.9	Valve timing	23
Figure 2.10	Overlapping mechanism	23
Figure 2.11	i-VTEC system diagram.....	24
Figure 2.12	i-VTEC control using ECM.....	24
Figure 2.13	VTC Actuator	25
Figure 2.14	VTC Oil Control Valve.....	26
Figure 2.15	VTEC mechanism.....	27
Figure 2.16	VTEC Power graphic	28
Figure 2.17	Mechanism of advance position.....	29
Figure 2.18	Mechanism of retard position.....	29
Figure 2.19	Mechanism of hold position	30
Figure 2.20	i-VTEC technology	31
Figure 2.21	Conceptual graphic operation during various conditions ..	31

Figure 3.1	Engine Test Flowchart	33
Figure 3.2	Honda DOHC i-VTEC Engine	36
Figure 3.3	Scheme of Dynamometer	38
Figure 4.1	Graphic comparison of analysis Torque between active i-VTEC system and non-active i-VTEC system.....	41
Figure 4.1	Graphic comparison of analysis Torque between active i-VTEC system and non-active i-VTEC system.....	45

LIST OF TABLE

Table 2.1 Influence Loads toward Valve timing	32
Table 3.1 Specification of Honda Jazz Engine.....	37
Table 4.1 Comparison of the Torque from testing using active i-VTEC system and non-active i- VTEC system	40
Table 4.1 Comparison of the Power from testing using active i- VTEC system and non-active i- VTEC system	44