

LPG MOŽE I OVO



Trenutna potrošnja



Prosječna potrošnja



Relativna autonomija



DOBRODOŠLI U DIESEL/GAS REVOLUCIJU




Prezentira Vam :
Boris Ivančić





Kratka povijest

- Prva diesel-gas konverzija - Rudolf Diesel krajem 1892 godine.
- Diesel-gas konverzije su postale popularne od početka 70-tih, a u ovakvom obliku u masovnoj ugradnji od kraja 80-tih godina prošlog stoljeća.
- Danas je u upotrebi oko 3 mil. vozila sa diesel-gas konverzijom diljem svijeta, a većina je u tehnološki visokorazvijenom azijskim zemljama i Australiji i SAD-u.

• ECE suglasnost o zadovoljavanju propisa

 RDW Vehicle Technology Division

THE NETHERLANDS
(N E D E R L A N D)

 
COMMUNICATION


Concerning ⁽¹⁾:
 - approval granted
 - approval extended
 - approval refused
 - approval withdrawn
 - production definitely discontinued
 of a type of LPG equipment pursuant to Regulation number 67.

Approval number: E4-67R-010201 Extension number: 00

Approval mark:

1. LPG equipment considered ⁽¹⁾:

- Container including the configuration of accessories fitted to the container, as laid down in Appendix 4 to this annex:
- 80% stop valve
- Level indicator
- Pressure relief valve (discharge valve)
- Pressure relief device
- Remotely controlled service valve with excess flow valve
- Multi-valve, including the following accessories:
- Gas-tight housing
- Power supply bushing (pump/actuators)
- Fuel pump
- Vaporizer/pressure regulator
- Shut-off valve
- Non return valve
- Gas tube pressure relief valve
- Service coupling
- Flexible hose
- Remote filling unit
- Gas injection device or injector
- Fuel rail
- Gas dosage unit
- Gas mixing piece
- Electronic control unit
- Pressure/temperature sensor
- LPG filter unit



P.O. Box 777 Tel. + 31 (0)79 345 81 43 Vehicle Approval and Information
 2106 AT Zoetermeer Fax. + 31 (0)79 345 80 43
 The Netherlands www.rdw.nl

LPG-compliance R67-01 v4.00 Page 1 of 4

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COMMUNICATION

Concerning ⁽¹⁾:
 - approval granted
 - approval extended
 - approval refused
 - approval withdrawn
 - production definitely discontinued
 of a type of electrical/electronic sub-assembly ⁽¹⁾ with regard to Regulation number 10.

Approval number: E4-10R-021396 Extension number: 00

Approval mark:

1. Make (trade name of manufacturer) : Lovato Autogas PTY LTD.

2. Type and general commercial description(s) : Generation IV Vapour Injection System

3. Means of identification of type, if marked on the vehicle/component/ separate technical unit ⁽¹⁾ : label

3.1. Location of that marking : See photo added to the report 124242

4. Category of vehicle : M, M1, M2, M3, N, N1, N2, N3, O, O1, O2, O3, O4

5. Name and address of manufacturer : Lovato Autogas PTY LTD.
 1/410 Churchill road
 Kilburn, South Australia
 Australia

6. In the case of components and separate technical units, location and method of affixing of the ECE approval mark : Label on top of the components housing.



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Evropski standardi



ŠTO JE DIESEL/GAS SUSTAV ?

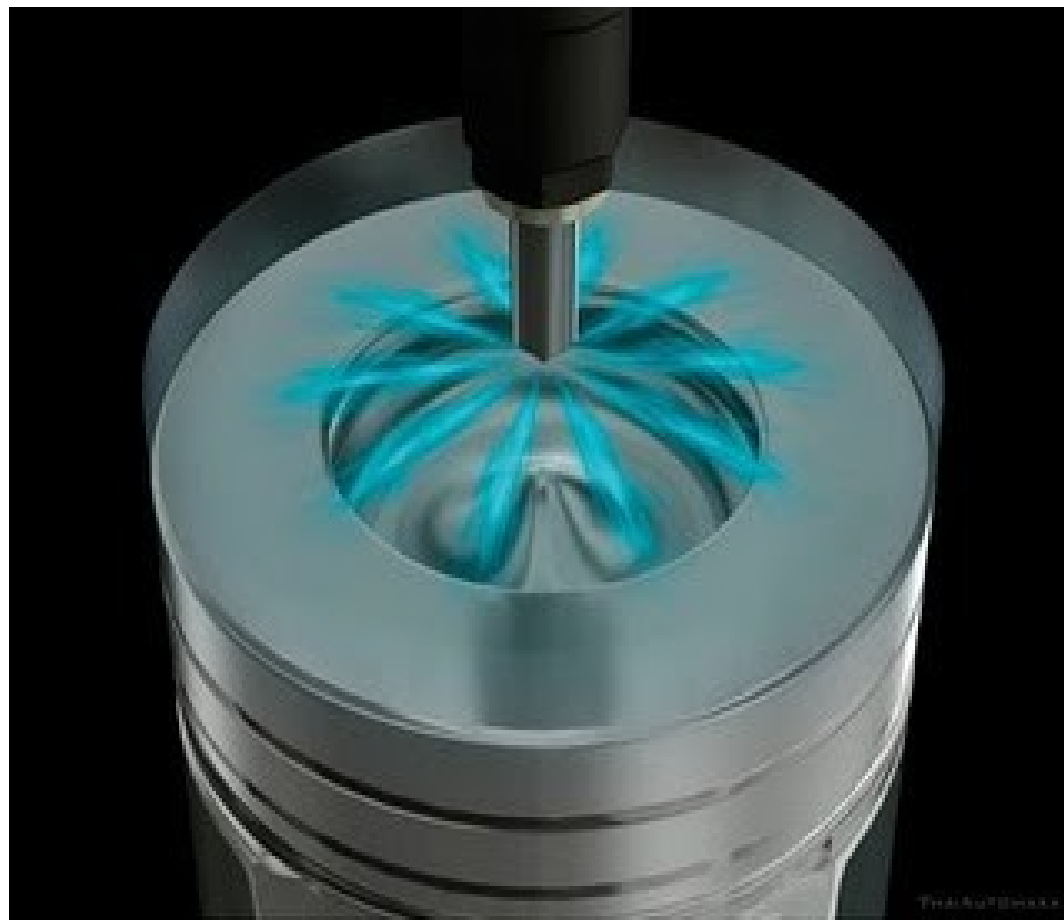
- Sistem omogućava kontrolirano ubrizgavanje malih količina plina (LPG ili CNG) u motor putem sustava dovođenja zraka koji gori zajedno sa naftom.
Plin oplemenjuje proces kcombustije, rezultirajući **potpunim sagorjevanjem nafte.**



Kratak osvrt na funkciju sustava



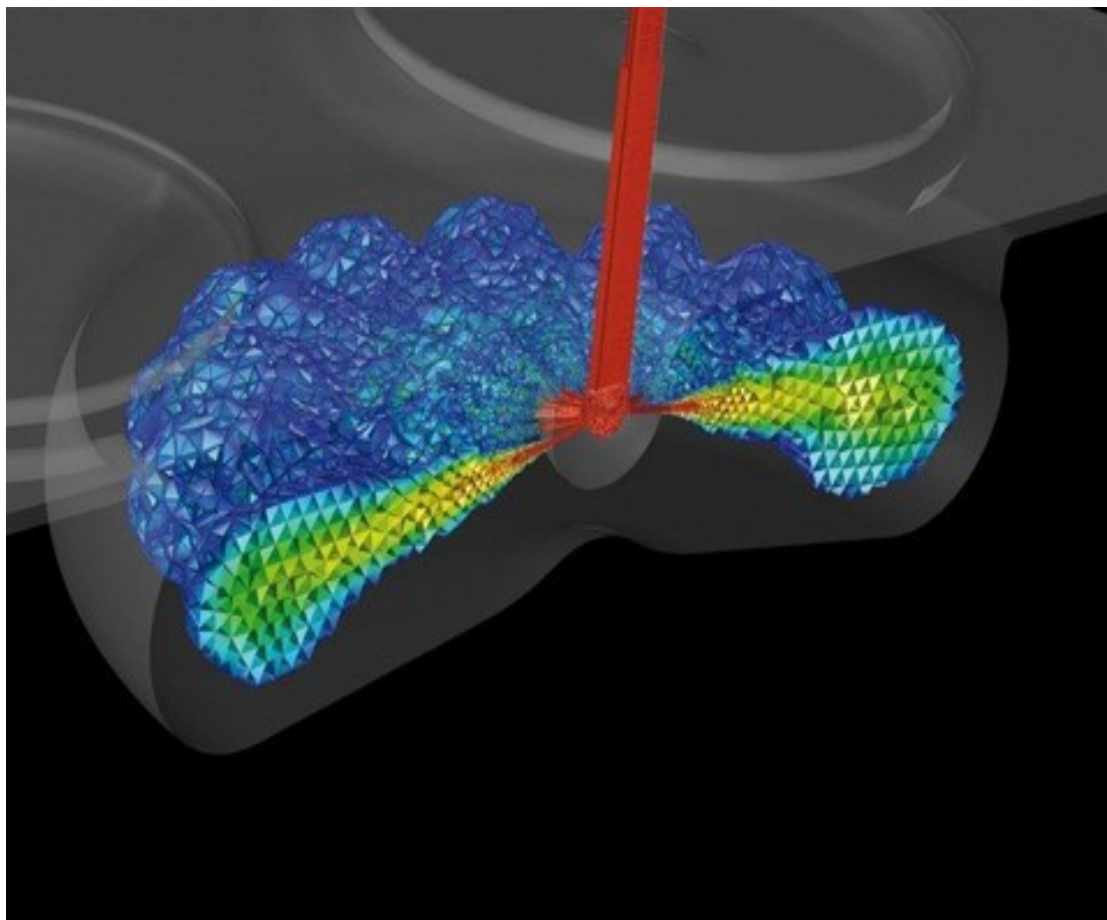
Ubrizgavanje goriva
putem izrazito visokih
pritisaka na što više
mjestâ u gorivu komoru
klipa.



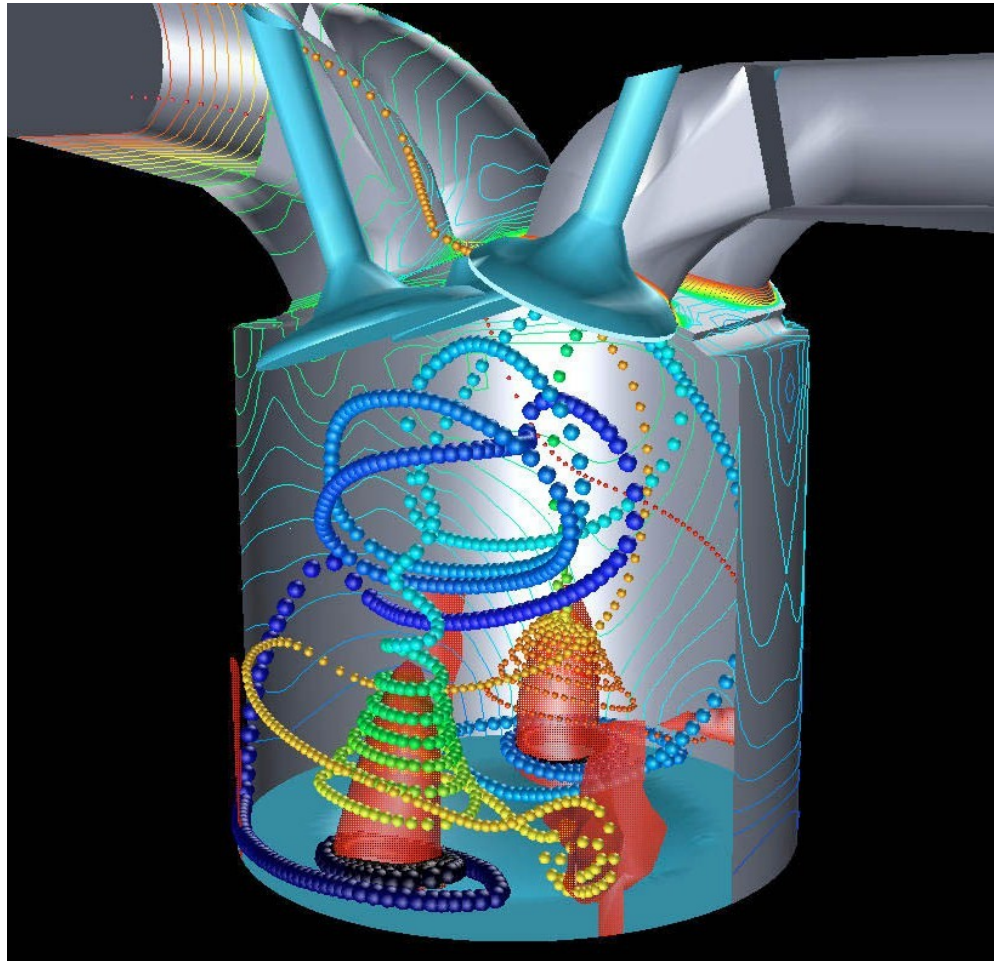
Efikasnost dizel motora
ovisna je o više faktora.

Najvažniji su:

- količina kvalitetnog zraka
- finoća raspršivanja
čestica goriva.



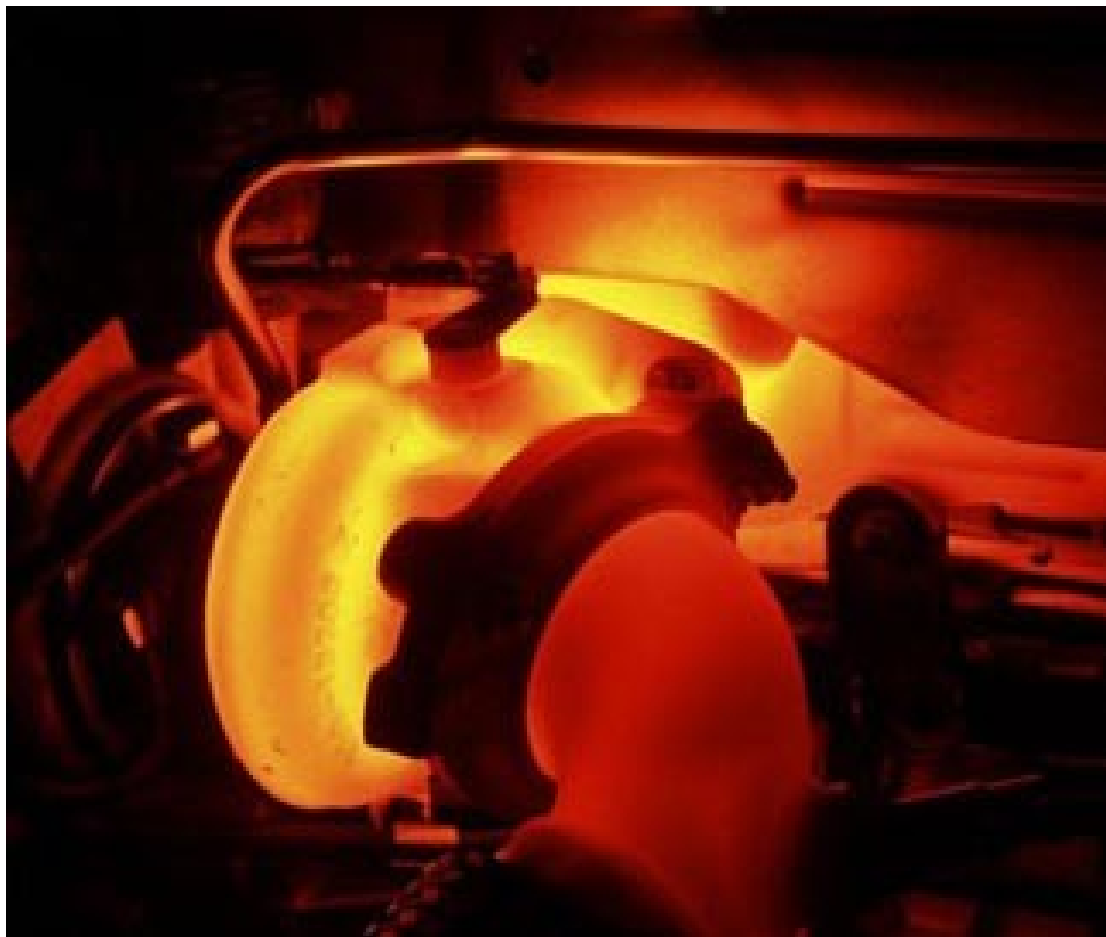
Dinamika plina u cilindru,
neposredno prije kraja
faze indukcije



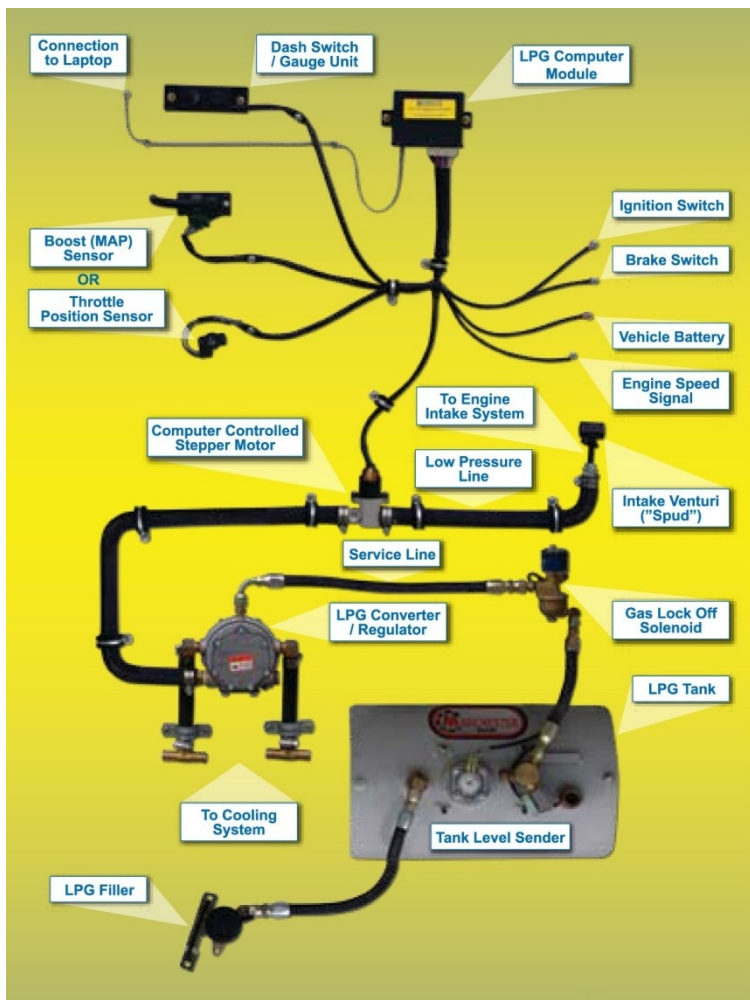
Poboljšanje
izgaranja nafte na
95-98%.

Povećanje
energetskih
vrijednosti procesa
sagorijevanja.

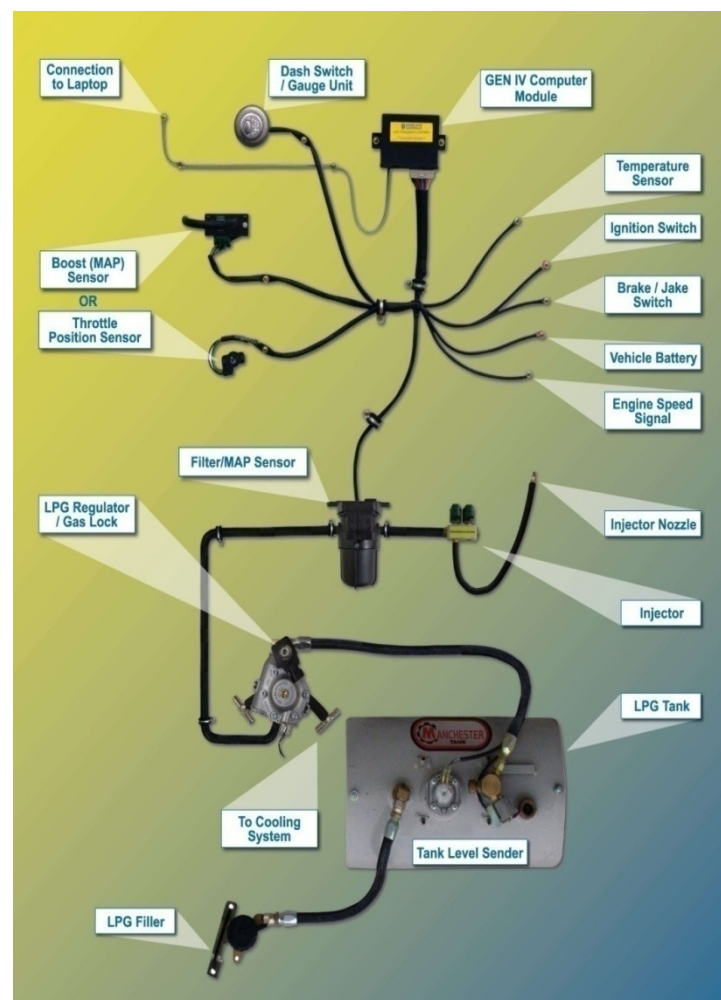
Termički izazov.



Venturi



GEN IV Injection



Prikaz razvoja sustava





Pneumatski elementi

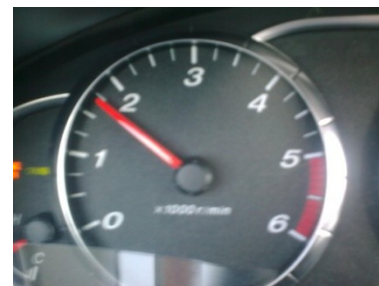
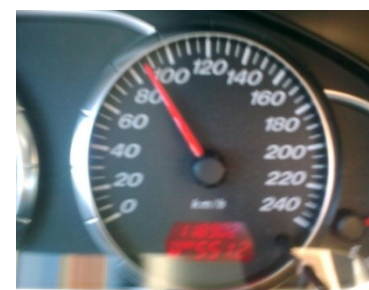
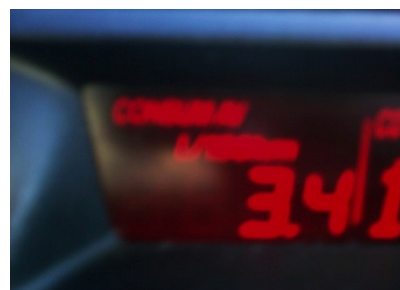
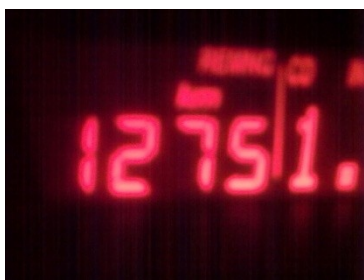
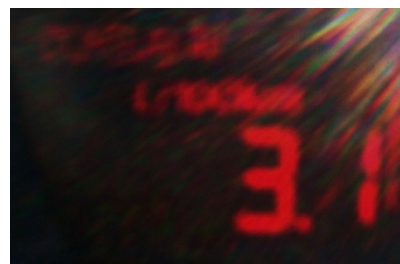
Kontrolni modul

– uloga i opis

- kompjuterski nadzor.
- kontrola opterećenja i brzine vrtnje motora
- široka mogućnost programiranja
- sistem je potpuno ne intruzivan
- nije isključen sustav ubrizgavanja dizel goriva



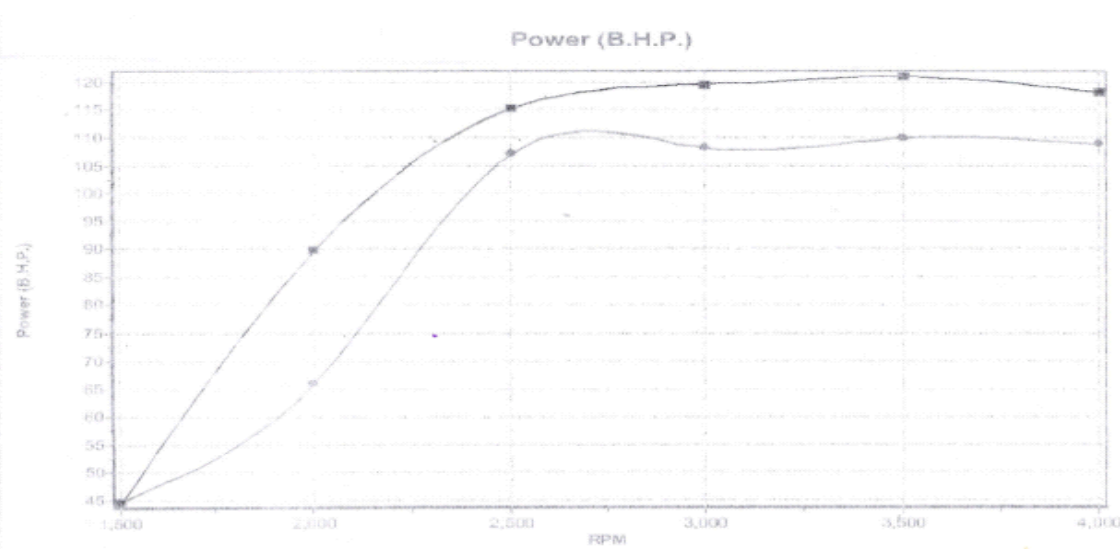
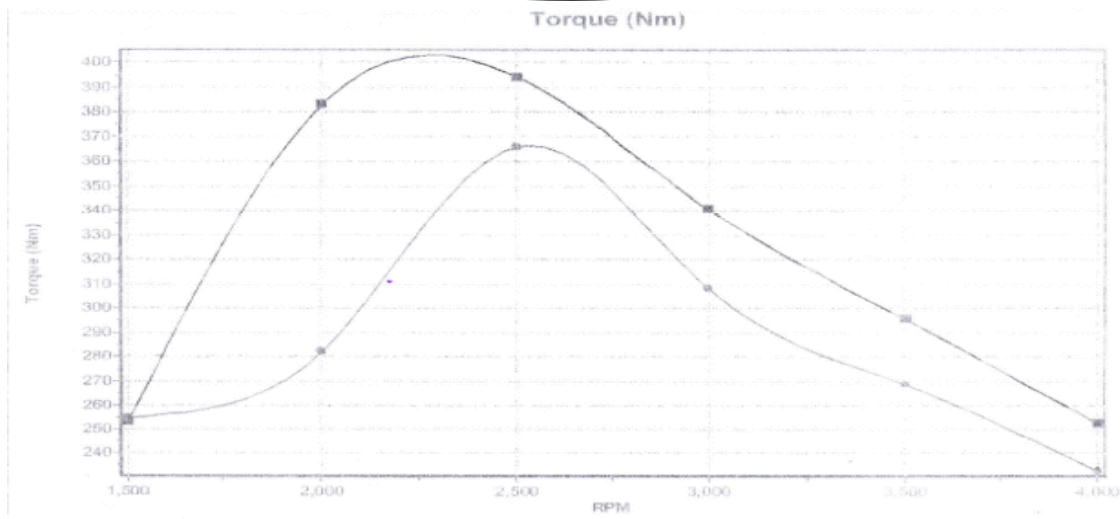
PRAVILNO BALANSIRANA FUMIGACIJA



Rezultati u našem slučaju

Zakretni moment povećan je sa 320 Nm na 410 Nm, a krivulja je u najstrmijoj fazi već nakon 1500 o/min, sa maksimumom na 2200 o/min, što je povećanje od 20% i **specifični moment od 200 Nm po litri zapremine**

Realna snaga je povećana sa 109 ks /1700 o/min na 122 ks / 3500 o/min



Apsolutni iznosi redukcija štetnih emisija za vozila proizvedena do 2006

	Osobni i SUV program*	Gospodarski program**
CO kg/annum	7,5 – 25,5	37,5 – 127,5
THC+NOX kg/annum	6,62 – 11,76	33,2 – 58,8
PM kg/annum	0,374 – 3,29	1,87 – 16,45

Apsolutni iznosi redukcija štetnih emisija za vozila proizvedena nakon 2006

	Osobni i SUV program*	Gospodarski program**
CO kg/annum	9,47 – 13,91	47 – 69,55
NOX kg/annum	1,48 – 6,16	7,4 – 30,81
THC+NOX kg/annum	1,6 – 2,94	8,2 – 14,72
PM kg/annum	0,02 – 0,996	0,1 – 4,98

*podrazumjeva prosječnu godišnju kilometražu do 20 tkm.

**podrazumjeva prosječnu godišnju kilometražu oko 100 tkm.

Redukcija emisija štetnih plinova



Prednosti korištenja:

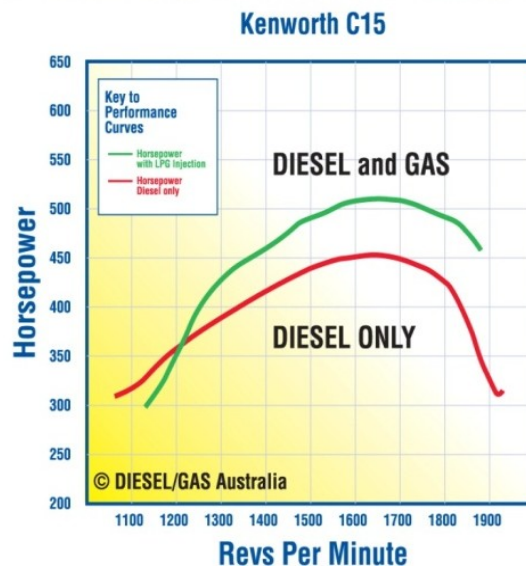
- Ušteda na gorivu.
- Povećanje relativnog dosega vozila.
- Povećanje snage motora.
- Povećanje zakretnog momenta.
- Manje izmjena brzina, te smanjenje opterećenja posebice automatskih mjenjača u vozilima osobnog i lakog dostavnog programa
- Viša prosječna brzina.
- Tiši i pravilniji rad motora, koji ima smanjenu frikciju pokretnih dijelova zbog savršenog izgaranja gorive smjese
- Eliminacija čađe u ispušnom sustavu.
- Produžuje životni vijek turbine, filtera čađe, katalizatora i senzora kisika čime kolateralno znatno smanjuje incidenciju kvarova i troškove održavanja vozila

Što nam to konačnici donosi?

- Visoka ekološka prihvatljivost



- Bolja vozna svojstva



- Ekonomičnija vožnja



GDJE JE SVE MOGUĆE UGRADITI SUSTAV?

- Ako je vaš motor pogonjen bilo kojim oblikom dizel goriva, možemo Vam ugraditi uređaj.



DIESEL/GAS AUSTRALIA

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