



Alfa Romeo

Klub van Pretoria

Club of Pretoria

Veloce

Nuusbrief / Newsletter

2012/02



"Fair pleasure, have I found thee here,
Cuore sportivo, thy spirit dear!"

Komitee/Committee 2012

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VERGADERINGS / MEETINGS

Die klub vergader elke derde Woensdag van die maand 19:00 by die POMC-klubhuis, Keuningstraat, uit Watermeyerstraat, Silverton, Pretoria. The Club meets every third Wednesday of the month at 19:00 at the POMC Clubhouse, Keuning Street, off Watermeyer Street, Silverton, Pretoria.

VRYWARING / DISCLAIMER

Die opinies wat in hierdie nuusbrief verskyn is nie noodwendig die van die klub nie. Die klub aanvaar geen verantwoordelikheid vir die korrektheid van tegniese data of prosedures wat gepubliseer word nie.dfgd

The opinions expressed in this newsletter are not necessarily those of the club. The club accepts no responsibility for the correctness of technical data/procedures which may be published.

Voorsitter se storie



Hello Alfiste!

Die jaar het met n spoed weggetrek kan nie glo waar trek ons al nie. Ek moet sê die komitee het alles onder beheer en ons sien uit na 'n goeie jaar.

As daar lede is wat voorstelle het, kom praat met ons, dit kan die klub help..... onthou dis elke lid se reg om gelukkig te wees.

Dan wil ek net vir Dolf sterkte toewens en 'n vinnige herstel..... ek het vanmiddag met Elsie gepraat en sy sê die ou rakker was na die operasie by en het geweet wie by hom is.

So ook Albie Bloem sterkte en wens jou ook 'n spoedige herstel toe die boere is mos nie sissies nie.

Ek wil vra een Woensdagaand 'n maandkom kuier saam met ons by die klub, kom ontspan en geniet die Aand.

So ook wil ons vra vul nuwe vorms in en betaal lede geldjie asb.

Ek verstaan ons EVENTS manne is vol verrassings..... ons wag, onthou ondersteun asb..... julle kry punte as julle bywoon en deelneem.

As daar iets is wat julle wil bestel by regalia vra vir Jacobus hy sal julle kan help maar onthou ons kan nie goed bestel en dan daarmee sit nie.

Die ledesake was altyd 'n kopseer maar Saloméjy doen fantastiese werk . 'Alet, dankie vir jou harde werk..... asb 'Alet het altyd stories en/of artikels ens nodig vir die nuusbrief.

Dankie vir een en almal ARCOP is 'n GREAT klub!

Hierdie maand moet julle nie vergeet..... die 14de moet julle die dames bederf. (vaaltyndag!)

Groete

Philip

Uit die Redakteur se pen

Die aanhaling op die voorblad, is afkomstig van Alfa Romeo Ireland Fb. Een van hul lede, Therese Coveney het 'n kompetisie gewen wat deur dié Klub aangebied is. Sy was die wenner met haar inskrywing met onder andere 'n dvd van hoe sy haar Giulietta ervaar. Het ook haar eie webblad! Gaan kyk gerus! Die gedig, *An Ode to Giulietta*, (met haar toestemming geplaas in ons nuusbrief!) is geskryf deur 'n vriend van haar met 'n voorliefde vir 'n rooi Giulietta!

Uitstappies in die beplanning vir 2012 as voorsmaak: Skattejag - Mrt; Mahem - Apr; **Go Kart 6 Mei 2012!!!**; Spit & Polish asook versekering - Jun; **BAANDAG - 14 Julie 2012!!**; Cars in the Park - 5 Aug; **See naweek - 21 - 24 Sept!**; Dealership run - Okt; Breakfast run - Nov en Jaareindfunksie Des. Sodra die datums vir die beplande byeenkomste vasgemaak is, gee ons dit deur in die nuusbrief.

Weet jy van iemand met 'n oulike Alfastaaltjie/-ondervinding/foto's gee dit asb deur na die volgende epos adres vir die nuusbrief!
alete@kleinfontein.net.

Alfagroete

'Alet



Ledegeld R350 betaalbaar voor Maart 2012 !

Dagboek/Diary

ARCOP noggin	-	15 Feb 2012
Liefdadigheids MOTORSKOU	-	18 Feb 2012
ARCOSA Fiat Club Africa Regularity Rally	-	18 Feb 2012
ARCOSA Chicks Regularity Rally	-	19 Feb 2012
ARCOSA noggin	-	22 Feb 2012
ARCOSA Breakfast run	-	4 Mrt 2012
ARCOP Baandag	-	14 Julie 2012
ARCOP (see) Wegnaweek	-	21-24 Sep 2012

VERJAARSDAE:	Lede:	Nic Maré	20 Febr 2012
		Renier Snyman	27 Febr 2012
		Pierre v Bassen	02 Mrt 2012
		André Gerber	05 Mrt 2012
		Jacobus Vermeulen	16 Mrt 2012
	Gade:	Rosarie Saaijman	23 Febr 2012
		Salomé Swanepoel	04 Mrt 2012
		Elsie vd Walt	04 Mrt 2012
		Elné Marais	11 Mrt 2012
		Junice vd Merwe	14 Mrt 2012
HUWELIKSHERDENKING:	O Dawid en T Mae Dippenaar		23 Febr 2012
	Carlo en Leoni vd Merwe		29 Febr 2012

DRAINFIX NOODLOODGIETERS

FRANCOIS EN GYS VERMEULEN

012 345 1956

Die Menlyn Jury Fliet Aand

Bronwen Graham

Die weer het nie op sy beste gelyk oppad Menlyn toe nie, en ons het begin wonder hoeveel mense die weer sal aandurf om die fliet aand saam met ons te kom geniet. Daar aangekom en toe gehoor watter fliets speel, dit was vir wyle 'n grootmens skokkende nuus dat hulle nou eers 'n kinderfliet moet deur sit. Ons almal het onder 'n afdakkie saamgetrek en gesit en gesels en kuier totdat die fliet begin het. Teen die tweede fliet het almal opgegee teen die weer en in hulle warm motors gaan sit om nie te verkleum van die koue nie. Al die Alfa's wat saam gestaan het in die inry parkeer ruimte was darem 'n mooi gesig. Ten spyte van die weer het ons die aand baie geniet, baie dankie vir almal wat dit saam met ons geniet het. Baie geluk aan Tannie 'Alet en Oom Lou – hulle middelste seun het terwyl ons gevliet het, verloof geraak! Weereens dankie aan almal wat saam met ons die weer aangedurf het – ek glo dit was vir almal net so lekker soos wat dit vir ons was.



My Alfa/van der Merwe Storie (Deel 5 van 5)

Hendri du Plessis

Na drie maande se swoeg en sweet was my motor reg om vir die eerste keer die pad te vat, en nee ek was nie genooi om die eerste keer in my monster te ry nie. Die motorwerktuigkundige wou alleen met die motor ry om te sien wat hy maak, en hy het gesê as ek in die motor klim is dit 'n gewig nadeel en sal dit nie die ware verrigting kan ten toon stel nie.

Die motorwerktuigkundige kom terug met die motor en hy glimlag glad nie, trek die motor in die werkwinkel en maak dadelik die enjinkap oop. Nou is ek bekommerd het iets gebreek of wil dit nie werk nie, of is die motor nou stadig? En hy sê niks nie, na twee minute onder die motor op die vloer klim hy weer terug in die motor en ry weer met hom uit en het nogsteeds geen gesigsuitdrukking nie.

Maar hierdie keer trek hy met 'n groot spoed weg by die werkwinkel en dit klink fantasties en lyk baie indrukwekkend. Na so vyf min. is die motorwerktuigkundige terug met die motor en nou lyk hy tevredenou eers word ek gesê ek kan die motor om die blok vat. Maar die motorwerktuigkundige ry saam om seker te maak alles loop mooi met die vuurwa. En is dit nou vir jou 'n transformasie! Ek kan nie glo hoe mooi die motor loop nie, en dit met so min veranderings aan die standaard enjin. Natuurlik kan ek nie die glimlag van my bakkies af kry nie, maar die glimlag word toe gou van my bakkies afgehaal. Want ek kan nie met die motor huistoe gaan nie, my motorwerktuigkundige wil vir so twee dae met die motor ry om seker te maak alles is reg. Hy wil tot vandag toe nog nie erken dat my motor lekker ry nie en hy maar net bietjie lekker wou ry vir 'n slag nie!

Tot my groot opgewondenheid twee dae later kan ek my motor terug kry, maar daar is 'n bietjie hartseer ook, ek moet die fantastiese sportwagon teruggee. Maar net 'n kilometer later in my motor en ek het vergeet van die vaal sportwagon.

So besef ons toe op die kalender pronk 'n geleentheid vir n dynodag, en ek besluit om die motorwerktuigkundige te beloon deur my motor nog te 'upgrade' sodat die wenkbroue gelig word by die dyno dag. Ons besluit toe om 'n nuwe uitlaatstelsel vir die motor te kry, ek sê toe die motor moet stil wees, maar die asemhaling moet optimaal wees, en dit het ons verseker reggekry. Die volgende stap was 'n tussenverkoeler nadat dit geïnstalleer is, stel ons toe die 'boost' optimaal asook die brandstof toevoer. Klim in die motor en looi hom vir die eerste keer, en dit voel of die motor ontplof soos hy wegtrek. Dit is net eenvoudig ongelooflik wat die motorwerktuigkundige uitgerig gekry het met die skamele 2.0 liter twins spark motor, en die ergste van alles is dat die 'boost' nie op die 'limit' gestel is nie. Hierdie verstelling waarop hy nou is, is om die motor betroubaar te hou en nie die perke van die motor te toets nie. Goeie werk motorwerktuigkundige, jy is 'n uitbinker.

Nou ja ons gesels die aand voor die dynodag en ons reken so 200 kw op die wiele en ons sal 'happy' wees,tot ons skok na twee lopies op die dyno masjien en motor loop 'n konstante 252 kw op die wiele. Dit is absoluut opgeloflik en het ons stoutste verwagtinge oortref en my motor is toe aangewys as die sterkste motor in ARCOP, ek het nog die gasbraaier om dit te bewys.

Die heel laaste deel van my storie gaan oor die tweede Alfa Romeo wat ek gekoop het, naamlik 'n 166,..... ek sal volgende maand my storie plaas oor die 166. Maar ek wil net vir julle sê..... vir iemand wat baie onlangs eers 'n Alfa Romeo gekoop het, is ek nie vir een dag spyt oor die Alfa Romeo's nie. En sover as wat dit moontlik is sal ek Alfa's ry, dit is my groot liefde en passie in my lewe.

Net so ter afsluiting wil my broer wat sy mond uitgespoel het oor die Alfa's nou ook een hê, snaaks wat die motors aan 'n mens doen!

Hier is nou die groot "reveal" van die werkswinkel en my motorwerktuigkundige:

Motorwerktuigkundige - Gerhard van der Merwe (Lank en maer, kan iemand my laat weet as hulle hom sien, ek soek hom)

Werkswinkel – Turbonutters (Dit is waar my gesonde motors gaan vir facelifts en dit is sommer my motors se gym ook hulle word net sterker)

Hoop almal het 'n geseënde maand.



LAAT DJE WJELE ROL met Bronwen Graham aan die stuur.

Saamgestel deur Hendri du Plessis

1. Wat is die eerste Alfa Romeo wat jy besit het?
Bronwen : 1976 Alfa Romeo Sud 1.3



2. Wat is die huidige Alfa Romeo/s in jou motorhuis?
Bronwen : My Alfa Romeo 147 1.6
3. Volgens jou smaak wat is die mooiste Alfa Romeo wat in produksie is/was?
Bronwen : Die Alfetta GT
4. Wat is die beste kleur in jou opinie vir n Alfa Romeo?
Bronwen : Natuurlik moet dit rooi wees
5. Watse Alfa Romeo sal jy nog graag in jou motorhuis wil parkeer? (Oud/Nuut)
Bronwen : Die nuwe Giulietta
6. Hoekom is jy so n groot Alfa Romeo aanhanger?
Bronwen : Vir my het 'n Alfa 'n persoonlikheid, dit is nie net nog 'n kar nie
7. Hoekom dink jy is Alfa Romeo wereldwyd se verkope so swak?
Bronwen : Die swak After Sale Service, en omrede parte so duur is
8. Wat is jou opinie oor die huidige nuwe Alfa Romeo's?
Bronwen : Ek dink die nuwe Alfa's is iets baie mooi vir die oog
9. As jy nie n Alfisti was nie, wat dink jy sou in die motorhuis staan?
Bronwen : My Opel Monza
10. Wat dink jy van selfone/rekenaars?
Bronwen : Dit is "Highly Overated" en mense kan nie meer kommunikeer op die goeie ou manier nie
11. Wat dink jy van 'n elektriese voertuig, dink jy dit pas by 'n Alfa Romeo?
Bronwen : Glad nie - Ek sal nie 'n elektriese Alfa wil ry nie
12. As jy eendag sou terug kom aarde toe, wat sal jy wil wees?
Bronwen : 'n Arend - dit sal lekker wees om te kan vlieg, vry te wees en alles vanuit 'n nuwe perspektief te sien

An Ode to Giulietta

How vainly they themselves do bring
To drive a number or the rings,
And their pragmatic drivings be
Crown'd from some want of status see,
Whose short and narrow-minded gaze
Does prudently their toils repay;
While all the joy and passion starts
To weave the garlands of the heart!

Fair pleasure, have I found thee here,
Cuore sportivo, thy spirit dear!
Mistaken long, I sought you then
In status and the eyes of them:
Your sensuous lines, in here be found,
I am to thrill and passion bound:
Society is all but rude
To this sublime beatitude!

No grey nor blue has ever fed
So amorously as your rosso red.
Mad lovers, cruel in their shame,
Say in these cars their mistress' name:
Little, alas! they know or heed
How far these beauties yours exceeds!
Fair car! Should I thine engine stoke,
No name shall but your own be spoke.

What wondrous life in this I steer!
The Alfa growl about my ears;
Those luscious cylinders make her sing
As the road beneath to her does cling;
The sun and sea and sight of beach
Into our view themselves do reach;
Swelling *con brio*, as we pass,
The waves rush forward then break like glass.

When we have run our passions' heat,
The others make their best retreat:
Those cars, that mortal boredom chase,
Are ten a cent in every place;
Giuletta bursts the greyness so
Only that she might let passion flow;
Why operate a mere machine
When Giuletta rhymes with all your dreams.

Rob Sadlier,

(a friend of Therese Coveney who was the winner of Alfa Romeo Giulietta competition in Ireland.)



Therese Coveney van Dublin, Ierland saam met haar gesin en haar Giulietta!

Die Blou Alfa, die Hond en die Papier

Rudi Windisch

Dit het alles in Augustus 2011 begin met "Cars in the Park" waar ek en my vrou besig was met kinder-vermaak wat ek nà 'n lang rusperiode weer aan die gang gekry het. Ons was reeds douvoordag by Swartkops besig om die terrein voor te berei, toe die klassieke motors begin instroom. Net daar en dan het ek vir my vrou gesê dat ek ook graag 'n ou motor wil hê, en sy het gehou van die idee.

Natuurlik was my eerste keuse 'n Alfa... Ek het lank terug 'n aantal Alfa's gery, ondermeer 'n Berlina 1750, Alfetta 2000 Executive en twee Alfetta GT's. My droom was egter nog altyd om of 'n GT Junior of 'n Giulia te ry. Die aand nà die gedoente by Swartkops, begin ek met die soektog na 'n GT Junior of 'n Giulia op die Internet. Ek het selfs 'n aantal smekende advertensies op Junkmail geplaas om te sê dat ek een soek. Een ou het my laat weet hy wil sy Junior verkoop, maar hy bly in Leandra. Ek het gaan kyk en nie van die Junior gehou nie - deels omdat die verkoper se elektriese hek teen my Volkswagen Kombi se deur gestamp het - maar dis 'n ander storie... Die Junior was net nie mooi en kompleet genoeg vir die prys wat hy wou hê nie.

Die soektog op Junkmail en Gumtree raak toe 'n daaglikse instelling en een mooi Woensdagaand in September (die derde Woensdag van die Maand) ongeveer 5 uur, sien ek toe 'n advertensie vir 'n ligblou 1985 Alfa GTV wat ook nog altyd een van my gunsteling Alfa's was. Ek bel die adverteerder onmiddelik en hy reken my hy is eintlik op pad na die Alfa Klub toe en dat hy besig is om aan te trek, te eet, skottelgoed te was, maar omdat ek naby hom bly kan ek seker maar gou kom kyk as ek baie vinnig maak. Vyf minute later is ek daar en onmiddellik sien ek hierdie motor is presies wat ek soek! Ons onderhandel oor 'n aanvaarbare prys en ek koop die Alfa die volgende dag.

Die oomblik toe ek egter die papiere soek, kom ek met 'n skok agter dat die voertuig se lisensie 5 jaar agterstallig is, dat die kar uit 'n boedel gekoop is, ens, ens, ens. Lang stories. Onmiddellik gaan die stemmetjie hier diep in my binneste mal en vertel my hierdie ou is besig om my te verneuk en hy het geweet van die probleem met die lisensie! Ongelukkig is hierdie stemmetjie direk aan my tong verbind en ek bel die man en vertel hom in geen onsekere terme dat ek my geld terug soek en dat hy 'n "crook" is! Die Alfa Klub man was egter geensins gestres nie en het net gesê dat hy dit sal uitsorteer. Dit help my stresvlakke ongelukkig niks en ek hou aan om hom oor die volgende paar weke te besoek en te bel, maar hy bly rustig en 3 weke nà die koop, bel hy my en sê ek kan die papiere kom haal... WOW! - Al die stres was pure verniet!!!

Ek vra toe sommer my nuutgevonde vriend om die Alfa deur die toets te sit en te registreer ook. So is dit toe en met die volgende Alfa Klub vergadering is ek ook toegerus om na die klub te gaan met my eie Alfa.

Daar was egter nog 'n kinkel in die kabel... Die aand toe ek die lisensie en die registrasie papiere by my vriend gaan haal, sit ek die dokumente in my motorfiets se helm op 'n lae tafeltjie neer, en ons begin heerlijk gesels. Dit was 'n lekker aand en daar het 'n briesie getrek. Dis egter toe ek wou ry wat ek byna hartversaking kry! My vriend het 'n jong hond met die naam Giulia wat enigiets eet wat rondlê. Klaarblyklik het die wind my Alfa se papiere uit die helm gewaai en die dokumente op die grond laat belad. Die lisensie dokument was nog daar, maar die registrasie sertifikaat was in 32 stukkies! Ek beveel die hond om op te hou met sy vernietiging van die sertifikaat en sodoende herwin ek die meeste daarvan. Hoogs die hel in gryp ek my goed en trek daar weg met 'n stink spoed terwyl dinge soos "Conspiracy" deur my brein spoel. By die huis plak ek die dokument sorgvuldig aanmekaar, maar daar is 'n paar stukkies weg en ek weet ek gaan hulle nie soek nie, want die kleur (en geur) gaan nie dieselfde wees nie!

My enigste opsie was dus maar om 'n duplikaat registrasie papier aan te vra en dit het 'n einde gemaak aan daardie stresvolle petalje.

Later in 2011 het ek die See-naweek meegemaak met dieselfde blou Alfa, maar dis 'n la-a-a-ng en nog 'n stesvolle storie, maar daarvoor skryf ek later.

Groete aan my goeie vriende Chris, Schalk en oorlede Giulia.



MultiAir – Deel 2

deur Corrie de Wilde

Before we get to the Fiat Powertrain Technologies' article let us just look at what pumping losses are. All fluids and gasses move from one place to the next, due to differences in pressure. So air moves into the cylinder because when the piston goes down and the pressure in the cylinder is much lower than outside. The throttle in a semi open or full open position and the mass meter are obstacles and influence the flow of air through the intake system negatively.

When you change a gear, the revs were up in one gear, now we close the throttle. The air was moving into the cylinder quite rapidly and suddenly the throttle close. The engine is still turning fast and the pressure between the throttle and the valve low as the engine still "sucks" the air. On the outside of throttle, for a second the pressure is higher than the air outside, as the air rams into the throttle plate. Then the pressure wave bounce off the plate en die pressure is now slightly lower than outside.(aa) Then you open the throttle again after you changed the gear. Now the low pressure in the cylinder must draw the standing air in again. But the whole volume of the intake manifold must first be filled with air before anything can go into the cylinder. By removing the throttle plate, the manifold will stay 'charged' with air and there will be less pumping losses.

This is one of the advantages of individual throttle bodies. The pumping losses are much less as the area between the valve and the throttles are smaller. With individual throttles you don't see large power gains on the dyno as this measurement is done at open throttles.

In real life going through gears there are more gained than what is measured.

(aa) When the throttle suddenly close, with a tuned length ram air manifold the pressure wave will travel to the plenum and if there are a flat surface in the plenum the wave will bounce back towards the throttle creating a higher pressure area ready to flow into the manifold. Unfortunately this do not work well on our high reving engines as the length of the runner must be about 700 mm for an engine that rev to 6000 rpm. (Ram air has nothing to do with a funnel blowing air into the air cleaner at speed)

MULTIAIR: THE ULTIMATE AIR MANAGEMENT STRATEGY (A public domain article)

Multiair is the new electro-hydraulic system of engine valves for dynamic and direct control of air and combustion, cylinder by cylinder and stroke by stroke

Thanks to a direct control of the air through the intake engine valves without using the throttle, MultiAir helps reducing fuel consumption; pollutant emissions are likewise reduced through combustion control.

MultiAir is a versatile technology, easily applicable to all gasoline engines and with future potential developments also for Diesel engines

Benefits:

Fuel consumption and emissions reduction Increase of both max power and torque

The History of Fiat MultiAir Technology:

In the last decade, the development of the Common Rail technology for Diesel engines marked a breakthrough in the passenger car market. To be competitive also in the field of gasoline engines, Fiat Group decided to follow the same approach and focus on breakthrough technologies. The aim was to provide customers with substantial benefits in terms of fuel economy and fun-to-drive while maintaining the engine intrinsic comfort characteristics, based on a smooth combustion process and on light structures and components.

The key parameter to control Diesel engine combustion and therefore performance, emissions and fuel consumption is the quantity and characteristics of the fuel injected into cylinders. (The maximum air is always going into the cylinder as there are no throttle on a diesel.—My note) That is the reason why the Common Rail electronic Diesel fuel injection system was such a fundamental breakthrough in Direct Injection Diesel engine technology.

The key parameter to control gasoline engine combustion, and therefore performance, emissions and fuel consumption, is the quantity and characteristics of the fresh air charge in the cylinders. In conventional gasoline engines the air mass trapped in the cylinders is controlled by keeping the intake valves opening constant and adjusting upstream pressure through a throttle valve. One of the drawbacks of this simple conventional mechanical control is that the engine wastes about 10% of the input energy in pumping the air charge from a lower intake pressure to the atmospheric exhaust pressure.

A fundamental breakthrough in air mass control, and therefore in gasoline engine technology, is based on direct air charge metering at the cylinder inlet ports by means of an advanced electronic actuation and control of the intake valves, while maintaining a constant natural upstream pressure.

Research on this key technology started in the 80's, when engine electronic control technologies reached the stage of mature technologies. At the beginning world-wide research efforts were focused on the electromagnetic actuation concept, following which valve opening and closing is obtained by alternatively energizing upper and lower magnets with an armature connected to the valve. This actuating principle had

the intrinsic appeal of maximum flexibility and dynamic response in valve control, but despite a decade of significant development efforts the main drawbacks of the concept - its being intrinsically not fail-safe and its high energy absorption - could not be fully overcome.

At this point most automotive companies fell back on the development of the simpler, robust and well-known electromechanical concepts, based on the valve lift variation through dedicated mechanisms, usually combined with cam phasers to allow control of both valve lift and phase. The main limitation of these systems is low flexibility in valve opening schedules and a much lower dynamic response; for example all the cylinders of an engine bank are actuated simultaneously thereby excluding any cylinder selective actions. Many similar electromechanical valve control systems were then introduced over the past decade.

In the mid 90's Fiat Group research efforts switched to electro-hydraulic actuation, leveraging on the know-how gained during the Common Rail development. The goal was to reach the desired flexibility of valve opening schedule air mass control on a cylinder-by-cylinder and stroke-by-stroke basis.

The electro-hydraulic variable valve actuation technology developed by Fiat was selected for its relative simplicity, low power requirements, intrinsic fail safe nature and low cost potential.

The Fiat Multiair Technology: how it works: The operating principle of the system, applied to intake valves, is the following: a piston, moved by a mechanical intake cam lobe, is connected to the intake valve through a hydraulic chamber, which is controlled by a normally open on/off Solenoid Valve.

When the Solenoid Valve is closed, the oil in the hydraulic chamber behaves like a solid body and transmits to the intake valves the lift schedule imposed by the mechanical intake cam. When the solenoid valve is open, the hydraulic chamber and the intake valves are de-coupled; the intake valves do not follow the intake cam anymore and close under the valve spring action. The final part of the valve closing stroke is controlled by a dedicated hydraulic brake, to ensure a soft and regular landing phase in any engine operating conditions. Through Solenoid Valve opening and closing time control, a wide range of optimum intake valve opening schedules can be easily obtained. (The intake valves now open according to throttle demand of the vehicle's driver – My note)

For maximum power, the Solenoid Valve is always closed and full valve opening is achieved following completely the mechanical cam, which was specifically designed to maximize power at high engine speed (long opening time).

For low-rpm Torque, the Solenoid Valve is opened near the end of the cam profile, leading to early intake valve closing. This eliminates unwanted backflow into the manifold and maximizes the air mass trapped in the cylinders.

In engine part load, the Solenoid Valve is opened earlier causing partial valve openings to control the trapped air mass as a function of the required torque. Alternatively the intake valves can be partially opened by closing the Solenoid Valve once the mechanical cam action has already started. In this case the air stream into the cylinder is faster and results in higher in-cylinder turbulence.

The last two actuation modes can be combined in the same intake stroke, generating a so-called "Multilift" mode, that enhances turbulence and combustion rate at very low loads.

The Multiair Technology Benefits The Multiair Technology potential benefits for gasoline engines exploited so far can be summarized as follows:

- Maximum Power is increased by up to 10% thanks to the adoption of a power-oriented mechanical cam profile
- Low-rpm Torque is improved by up to 15% through early intake valve closing strategies that maximize the air mass trapped in the cylinders.
- Elimination of pumping losses brings a 10% reduction of Fuel Consumption and CO₂ emissions, both in Naturally Aspirated and Turbocharged engines with the same displacement
- Multiair Turbocharged and downsized engines can achieve up to 25% Fuel Economy improvement over conventional Naturally Aspirated engines with the same level of performance
- Optimum valve control strategies during engine warm-up and internal Exhaust Gas Recirculation, realized by reopening the intake valves during the exhaust stroke, result in emissions reduction ranging from 40% for HC / CO to 60% for
- Constant upstream air pressure, atmospheric for Naturally Aspirated and higher for Turbocharged engines, together with the extremely fast air mass control, cylinder-by-cylinder and stroke-by-stroke, result in a superior dynamic engine response

Application of the Multiair Technology to FPT Engines The first world-wide application of the Multiair technology will be the Fire 1400cc16V Naturally Aspirated and Turbocharged engines. The second application is a new Small Gasoline Engine (SGE - 900cc Twin cylinder) where cylinder head design has been specifically optimized for the Multiair actuator integration. Here again, there will be both a Naturally Aspirated and a Turbocharged version. A specific Turbocharged engine version will be bi-fuel (gasoline- CNG). Thanks to radical downsizing, the Turbocharged Small Gasoline Engine achieves Diesel-like CO₂ emission levels, which are further reduced in its Natural Gas version with CO₂ emissions lower than 80 g/km in many vehicle applications.

Further Potential of the Multiair Technology All breakthrough technologies open a new world of further potential benefits, which are usually not fully exploited in the first generation, in order to minimize industrial risk. The Common Rail technology, a Fiat worldwide premiere in 1997, paved the way to more than a decade of further technological evolutions such as “Multijet” for multiple injections, Small Diesel Engines and the very recent Modular Injection technology, soon to be launched on the market.

Similarly, the Multiair technology, a Fiat worldwide premiere in 2009, will pave the way to a wave of further technological evolutions for gasoline engines:

- Integration of the Multiair Direct air mass control with direct gasoline Injection to further improve transient response and fuel economy.
- Introduction of more advanced multiple valve opening strategies to further reduce emissions.
- Innovative engine-Turbocharger matching to control trapped air mass through combination of optimum boost pressure and valve opening strategies.

While electronic gasoline fuel injection developed in the 70's and Common Rail developed in the 90's were fuel specific breakthrough technologies, the Multiair Electronic Valve Control technology can be applied to all internal combustion engines whatever fuel they burn.

Multiair, initially developed for Spark Ignition engines burning light fuel ranging from gasoline to Natural Gas and hydrogen, has wide potential also for Diesel engine emissions reduction.

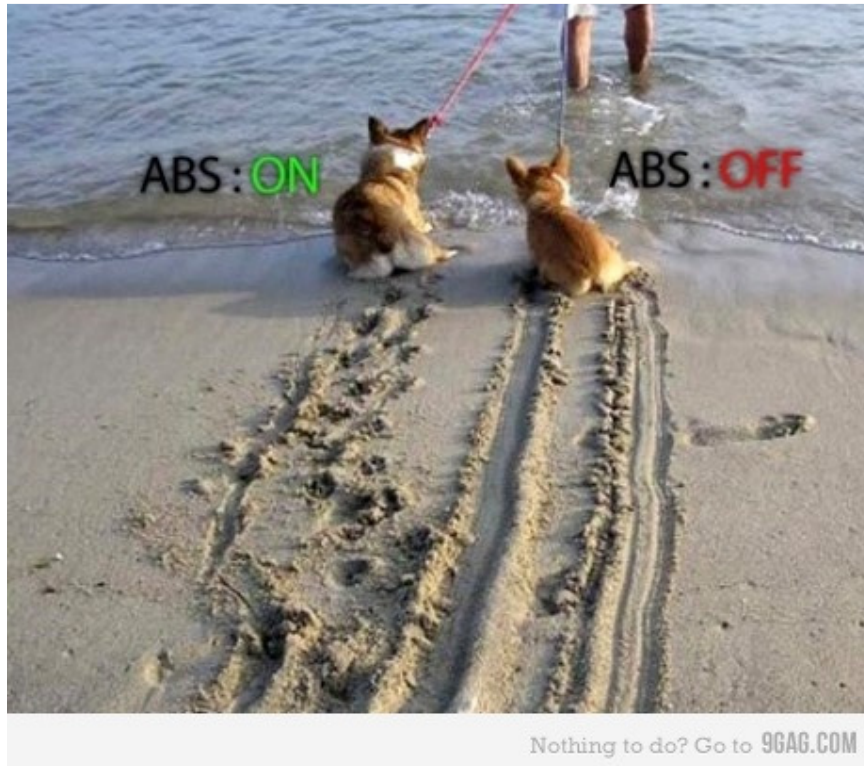
Intrinsic NOx reduction of up to 60% can be obtained by internal Exhaust Gas Recirculation (iEGR) realized with intake valves reopening during the exhaust stroke, while optimal valve control strategies during cold start and warm-up bring up to 40% HC and CO reduction of emissions. Further substantial reduction comes from the more efficient management and regeneration of the Diesel Particulate Filter and NOx Storage Catalyst, thanks to the highly dynamic air mass flow control during transient engine operation. Diesel engine performance improvement is similar to that of the gasoline engine and is based on the same physical principles. Instead, fuel consumption benefits are limited to few percentage points because of the low pumping losses of Diesel engines, one of the reasons of their superior fuel economy.

In the future, powertrain technical evolution might benefit from a progressive unification of gasoline and Diesel engines architectures.

A Multiair engine cylinder head can be therefore conceived and developed, where both combustion systems can be fully optimized without compromises. Moreover the Multiair electro-hydraulic actuator is physically the same, with minor machining differences, while internal subcomponents are all carry over from the Fire and SGE applications.

FIAT POWERTRAIN TECHNOLOGIE

Lag - 'n - Slag



Ingestuur deur Chris Swanepoel

After a car crash one of the drivers is lying injured at the side of the road. 'Don't worry,' said a policeman, a Red Cross nurse is coming to attend to you.' Oh no,' groaned the victim, 'couldn't I have a blonde, cheerful one?'

A careful driver is one who has just spotted a speed camera.

Koos wil sy kar verkoop, maar niemand wil die kar koop teen die prys waarvoor hy dit adverteer nie. "Draai die myle bietjie terug, man," gee sy vriend, Jan, raad.

Koos maak toe so. Twee dae later sien Jan nog steeds vir Koos met die kar rondry. "Het jy toe nog nie die kar verkoop nie?" vra Jan vir Koos. "Weet jy," antwoord Koos, "die kar het nou so min myle op dat ek besluit het om dit nie te verkoop nie."

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