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11 posts • Page 1 of 1

合 Board index < Mazda MX5/Miata/Eunos < MX5 Engines, Transmission & Final Drive

White Paper - Driver Controlled Atmocharging

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97 MXV Racing Driver



White Paper - Driver Controlled Atmocharging

D Thu Jul 23, 2015 8:23 pm

Driver Controlled Atmocharging

Executive Summary

To sum up, the paper celebrates the modern gift from Japan of cheap revs which overcome outdated concerns about harming an engine by revving it up.....essential to atmocharging it.

The paper also celebrates another gift from Japan inherent in the MX5, Roadster or Miata...人馬一体 or Jinba Ittai, the essential ingredient making atmocharging such a pleasure.

There is a lot of sense in Jinba Ittai but then again an abundance of nonsense can be left behind whenever a horse is involved. So care needs to be taken to look for some sense in, or nonsense on, the White Paper.



But nonsense can explain "*Why is it so*" by making the connections and joining the dots.

So if time is too precious to read the paper, don't join your precious little dots, go the full monty and join some dirty dots done dirt cheap in 2 easy steps....

Step 1. Think of atmocharging as an expression for your love of revs from a fancy head and a willing bottom end both in a cheap engine.

Step 2. Then get into low gear, and take advantage of your engine offering to excite you with some cheap revs . 🤒

1.0 Introduction

This paper encourages drivers to exercise their rights to atmocharge including making the most of gear and gear selection.

Compared with superchargers and turbochargers, atmochargers as one word are, until now unheard of. In fact, to speak of, there are <u>12,500,000 known Superchargers</u> and <u>9,540,000 known Turbochargers</u> but <u>no known Atmochargers</u>.

This paper sheds light on the fact that until now there has been <u>no neologism</u>, no one new word ever attempted, to describe what good drivers have been doing for years.

2.0 But so What ?

This White Paper is the first official disclosure of *Atmochargers* into the public domain. The significance of this can now be experienced by all.

This previously unknown/secret code in red 097 116 109 111 099 104 097 114 103 101 114 can be unraveled by uploading it (copy/paste) to a <u>super computer in the cloud</u>.

One can now imagine a place in history for 97 MXV not only as <u>*The Inventor of Structural Floor Mats*</u> but also *The Father of the Atmocharger*.

3.0 What Value is an Atmocharger ? (now that context is established)

Atmocharging is obtaining a highly responsive power boost (without an auxiliary pump such as a turbo or supercharger) with Japan's gift to the poor, the inline DOHC 16V.

Japan gave revs to poor enthusiasts who spoke of flat heads, siamesed ports, pushrods, cast iron heads & cranks, 8 valves, 3 main bearings, one lowly cam & valve bounce.

Pre the Japanese invasion, starting 2 generations ago and spearheaded by Honda and Yamaha engineers, decent engines for the masses was just a dream.

A dream to hold back a cog and let a pure throughbred of an engine have its head to the shear pleasure of one's senses.

But for poor enthusiasts of old, thoughbreds were beyond reach until a golden age of Japanese engineering tamed the power of this horse for us.

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Back then without seat belts, the cheeks of the poor held on for dear life to a slippery vinyl bench whilst hands were full of 5 turns lock to lock and 3 on the tree.

It was a nightmare, but the poor were undeterred and still sought more excitement. They embraced <u>curtains</u> <u>rather than clothes</u> and sand where it was slippery.

Without curtains, some tragics couldn't get theirs a rockin'. But curtains for some when police would come a-knockin'.



The gift of an atmocharger is ignored by a new generation addicted to <u>the drone</u> of crystal clear ICE along with the throbbing feeling from flat four turbos, V8s, and big sixes.

So it is that so many can't imagine piston dríven revs are the gift to the masses from Japan now theirs for the taking.

So atmocharging remains a plaything of the rich and famous, recognised by the few of the poor able to now spark an equally purist imagination at *6000+ rpm without fear*.

4.0 What is Atmocharging ?

In its purest form, atmocharging is liberating the maximum engine revs most often and to the extent possible, with an engine and a full tank of fuel.

Atmocharge Boost is accompanied by a loss in *Negative Boost* <u>expanded on here</u>. Atmochargers add power obtained from a non turbo or non supercharged engine.

However atmocharging itself is free...just be in a lowish gear and control atmocharged boost in mass air flow (obtained by increased velocity not density of air into the engine) by using the right foot.

The means of achieving increased air velocity is via increased engine rpm, subject to the level of police magnetism this action emits. (ref 7.0)

Of course the extent of atmocharging obtained depends on the atmocharger stage the car is taken to (ref 9.0).

5.0 Atmocharging is Driver Controlled

Some of the effect is seen in this dyno graph of a standard engine. The boost in power from 3000 rpm to 6000 rpm is a massive 90% just by maxing out the revs with the load.

戻 Image.

But in real life, this 90% power boost is unobtainable unless the engine load is controlled so that big revs can be bought in at the lower speeds.

The way this is done on the street or road is via lower gear selection....drive in low gear or if not, get there quickly. This is an essential part of driver controlled atmocharging.

Manufacturers now enable driver controlled atmocharging with 5, 6 or even 8 speed boxes. Twin clutch gear changes, servo controlled shifting and steering wheel shift paddles.

6.0 A Substitute for Cubic Inches

More cubic inches is an alternative to atmocharging from high rpm in a lower gear. And what a big bore the engine turns out to be....just a bigger air pump.

Supercharging and turbocharging are also alternatives to atmocharging, boosting the air flow with an external https://mx5cartalk.com/forum/viewtopic.php?f=29&t=68971 4,

pump (shaft or exhaust dríven).

Without cubic inches, MX5 engines cannot boost just by flattening the foot alone, they must be atmocharged by having the revs up in the 1st place.

The secret of atmocharging being that 1.8 litres at 6000 rpm has notionally the same power as 3.6 litres at 3000 rpm. (screamer vs knocker)

So keep the revs up high (well above 4000rpm) all the time and feel the atmocharged response that your MX5 loves to deliver if you rev it hard all the time.

7.0 Is it Legal?

To put it another way, its illegal if the driver is seen to be "*wilfully starting or driving a motor vehicle in a way that makes unnecessary noise or smoke*".

"Necessary" being a fuzzy word like "reasonable" and "acceptable" used in community expression able to evolve to counter fuzzy individual expression like "IDGAF". (Searched with another 4 letter word)

The law does not prohibit legally certified engines rotating at any speed on public roads if necessary to make necessary power.

However the law prohibits tyres rotating at any speed on public roads and this paper demonstrates why this is.

Engines are free to rotate (spin) as fast as is necessary but not tyres, not even by one rev.

Tyres can however legally roll on public roads but even then there are limits as to how fast they can roll.

There is an unheard of form of magnetic radiation, known as <u>cycloidal radiation</u> (the red line) which emanates from the tread of the tyres on a vehicle in motion.

This is not the Red Line on the face of a tacho, this is the Red Line that police watch in order to see that it only ever pats the road on a regular basis, never rubs itself on the road.

This red line is monitored by police and change in wavelength, distortion to its pure waveform or excessive frequency will create police magnetism.

Police will check tyres for sufficient inflation and tread because lack of either will cause disruption to the pure cycloidal radiation.

So we see that the red line is heavily controlled by police, by the community's own thin blue line.

Atmocharging emits another radiation (the individual's thin blue line), in the form of a sinusoidal or sine wave.

SImage

This thin blue line also controls the red line via a clutch, gearbox, propshaft, differential, driveshaft, hub, wheel and tyre.

Right feet control individual thin blue lines, but the community's massively powerful thin blue line powers over all right feet via "pull up" or "pull over" commands.

As duty bound <u>Happy Little Vegemites</u> in our Nanny State, us oldies feel protective and our duty to cherish our young ones with our <u>our thin blue line</u>.

So with next to no limit on the thin blue line, it is unsurprising that police do not check engine revs or rev limiter settings.

8.0 Freedom to Rev at Will

Freedom for the thin blue line allows for foot flat up-shifts and smoother downshift shifts. Observe the foot flat upshifts and the *heel and toe* free throttle blips necessary for proper down shifts.

The freedom to rev at will must be preserved despite the <u>state of vegetation</u> that Happy Little Vegemites sometimes get themselves into.

Ref 5.0 and 11.0 to see how the MX5 is designed to deliver massive atmocharged boost of the order of 90% as a necessary part of the design. That's ok because any change to the blue line is legal.

So with no checks on the thin blue line, one has to defend the charge that that the OEM's noise levels emitted are unnecessary.

But of course the OEMs noise levels are necessary given atmocharging is the only means given for drivers to access the meager power given an MX5 to allow Jinba-Ittai or 人馬一体 to its fullest extent (ref 11.0 and 12.0). As a community MX5 owners must defend their right to use 人馬一体 an individuals thin blue line, to its fullest extent.

Remember, today 人馬一体 is still yours...but tomorrow....Use it or Lose it.

9.0 Staged Atmochargers

Measured stages of atmochargers are available, but by far the biggest grin comes from the well regarded specification of a Stage 3 atmocharger.

A Stage 1 atmocharger is a slick gear shift. This comprises a lot of training and practice mainly.

Some say it is augmented by hand picked shifters, good engine and diff mounts and even these ?

A Stage 2 atmocharger is a Stage 1 plus a light weight flywheel and clutch like the JDM NB6 flywheel & clutch.

A Stage 3 atmocharger is a Stage 2 plus low ratio differential, say a 4.3 JDM or even a <u>4.78 PrettySik-diff</u>. A Stage 4 atmocharger is the low ratio diff plus an ultra light flywheel and clutch like a JDM Tuner <u>CrMo</u> Flywheel.

A Stage 5 and above atmocharger would be an engine enhancement to improve the power potential form an atmocharged boost.

Mazda's BP-4W head and JDM 10.5 CR pistons are examples of OEM Stage 5 or above atmochargers. The numerous Stage 5 and above atmochargers are perhaps best researched by the individual weighing up cost and police magnetism against the power potential.

Fun to imagine what police look for most in Stage 5 and above atmochargers. Is it quad throttles, sick cams, laughing gas or a good head job ?

10.0 Road Vs Street Atmocharging

While open and closed road atmocharging is highly effective in most cases, Street atmocharging is not practical or feasable in many cases of highly atmocharged cars without effective silencing being employed at high rpm.

This is because intake and exhaust modifications to increase atmocharged power sometimes amplify engine noise levels, so increasing the car's police magnetism which in turn suppresses street atmocharging.

However drivers with non OEM Stage 5+ atmochargers emitting induction roar and barks and exhaust burble and farts might find such noise intensifies with atmocharging.

Police can only go after those making unnecessary noise, particularly the low frequency noises which penetrate further into the community.

So be very mindful that it may be difficult defending barks, farts, burbles, drones and other weird brmm brmm noises as being really necessary, particularly when such noise is uncharacteristic of OEM standards.

An arguable exception to this may be the farting sound caused by the <u>OEM rev limiter</u> put there by intelligent design.

Ref 11.0 to understand this is farting by the "horse" put there by intelligent designers to warn dumb shites that too much stick and the horse will shite itself.

In practice increased atmocharger noise actually suppresses street atmocharging and even turns the atmocharger off particularly when police are in range of its magnetism.

On the other hand, road atmocharging, particularly closed road atmocharging is much less of a police magnet and therefore much loved and cherished by atmocharger devotees.

So for noisy versions of Stage 5 and above atmochargers, the extra power potential only works when deployed as a road atmocharger, not as a street atmocharger; due to the effect of police magnetism.

11.0 Jinba-Ittai or 人馬一体

lmage

とある松田の人馬一体 (ロードスター) translated as *Men and horses integral term Matsuda (roadster)* where Matsuda is Mazda.



Start Video and witness the strong duty to 人馬一体, that OEM engineers have, in this case to enhance atmocharged boost via detail analysis of the gear shift.

Atmocharging is key to harnessing the Horse and Rider as one. However excessive police magnetism from noisy intake/exhaust and the horse and rider could be reined in by the words "Pull Over" or "Pull Up". The engineers foresaw Japanese drivers, when confronted by "Pull Over" or "Pull Up" control commands from "Ingrish Pweese", would panic trying to find the reins to pull the horse up or pull it over.

Now as a result of considerable deliberation and research into the matter, it can be revealed that OEM engineers did actually foresee that eventuality.

They eliminated the risk of the unwanted control commands in the 1st place by making their Stage 5 Atmochargers quiet, ie by simply eliminating the police magnetism.

That's proof OEM engineers aren't such dumb shites after all, so maybe we can learn a thing or too from them.

12.0 A Duty to Honour 人馬一体

The Japanese OEM engineers in the video clearly demonstrate a strong duty to integration of horse and rider, they express as 人馬一体.

They have given us the horse so now it our duty to honour 人馬一体 by riding the horse as the engineers have designed it to be ridden, the 1st duty being to rev the horses guts out quietly.

It is also expected that riders will be as disciplined as proud samural warriors participating in the tradition of Yabusame.

Therefore so we do not shame ourselves we let go of the reins and give the the horse its head by liberating the revs that give power to the horse....aka horsepower.

To do this properly, it is not good enough to be lowly Road Warriors content with road atmocharging out of police range.

One must step up to act like a Shogun, like a powerful Street Warrior practicing street atmocharging within police range, remembering that police will not see <u>a Shogun</u> if the car appears to be <u>flying</u>.

Therefore it is not recommended to give an impression that <u>one of these</u> is being worn.

The 人馬一体 Conspiracy 13.0

No one should conspire against anyone in fulfilling their duty toward the noble cause of 人馬一体. Yet sadly such treachery has been allowed to happen under our very noses.

With the NB8B. Mazda Australia conspired with Mazda UK to specify a 3.6 open differential ratio in the poverty pack ADM and UKDM NB8B SVT.

This senseless act of 人馬一体 cleansing from the spec of ADM and UKDM models was taken in their knowledge that the standard JDM NB8A and B spec was a 3.9 Torsen 2.

To preserve 人馬一体, the NB8B should have had a 4.3 ratio anyway as originally designed for the NA6. Loading up the SVT engine with a 3.6 diff was a bizarre and thoughtless act, particularly on a nation missing out on Autobahns and their speed limits.

This has been proven by the trouble NB8B drivers have removing the grin after restoring and enhancing 人馬一体 with replacement JDM 4.3 Torsen 2 differentials.

Or to put it another way, they found the new limited slip rear end literally gave them a 人馬一体 experience aka <u>horse and rider as one</u>.

14.0 ADM NA6 Vs NA8 The Real Issue

NA6 ADM models have an OEM Stage 1.5 atmocharger because they have a 4.3 diff (vs 4:1) and rotationally lighter flywheel and clutch than the NA8 (but not as light as the NB6).

But NA8 ADM poverty packs miss out altogether. Some say the NA6 had a better engine, than the 1.8, more responsive and willing to rev out.

However it was likely the absence of a Stage 1.5 Atmocharger on the NA8 that was at the root of the problem. This is proven by the transformation that undergoes an NA8 when fitted with a Stage 2 Atmocharger.

15.0 Diffs make a Big Diff

Fuel economy is not necessarily sacrificed by a numerically high ratio diff and high revs. This is because power more than revs, consumes fuel, evidenced by the Honda VTEC engine philosophy.

So fuel usage is not as bad as you might think in an MX5 turning over at high rpm. Stay above 4000 rpm and never ever let revs below 3000 except when idling.

In a 5 speed, stick to say 3rd gear around town with occasional 4th on the freeway in traffic. Unless a Stage 3 Atmocharger is fitted, 5th only works at illegal speeds.

In a 6 speed avoid downshifts to 1st once underway. That simple act makes it easy to think of it as a close ratio 5 speed racing box great for atmocharging.

Essentially it makes 6th very useable and nice, with 1st a saviour of the clutch on hills and as a very effective traffic crawler.

3.6 diffs are prized as antilag devices for turbos, but those embracing 人馬一体, realise what a waste of gears a numerically low ratio ratio diff (like a 3.6) has to the potential for atmocharged boost.

16.0 Its a Buzz

Too few drivers get intimate with their rpm limiters in daily street driving and there is no excuse for this in these days of the modern Japanese twin cam engine.

Sure the B6 and BP 16V engines are not Honda or Toyota engines, but standard, they are still strong and reliable with modern synthetic oils at their rev limit.

Atmocharging emits a beautiful buzzing sound at full noise. An atmocharged buzz is ok, but even better is the sheer thrill of an atmocharged scream.

It is nice to get one's hands on two big T's (B6T and BPT); but it is also ok to give them the big A.

Why not brag about that B6A or BPA under the bonnet ?....A for Atmocharged !

So do yourself a favour, buy a big mirror and look at the car you are driving. Then the penny will drop, its not frantic driving, its just more revs and gear changes which provide 人馬一体.

And start to enjoy the trip. Turn off the ICE and go for a buzz down the road and if the opportunity arises go screaming around the corners.

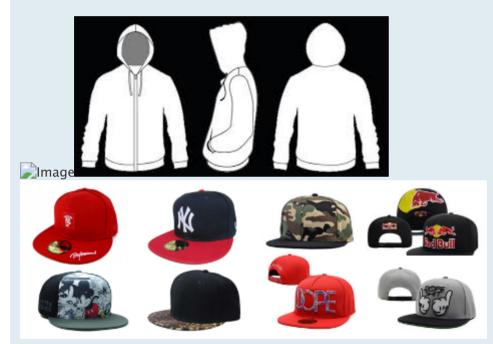
17.0 Gear Selection

If findings in this paper are added to <u>previous findings</u>, a key driver outcome for street atmocharging suddenly emerges.

Not only must the car be in the right gear, so must the drivers head be in the right gear. That also then begs the question.....Is the headgear worn a Police Repellent or a Police Magnet ?



Recommended Headgear for Street Atmocharging



Non Recommended Headgear for Street Atmocharging

18.0 Conclusion

Key driver outcomes from *Driver Controlled Atmocharging* are a buzz or a ticket.

- The buzz is dependent on control that drivers have to get close up and intimate with their rev limiters.

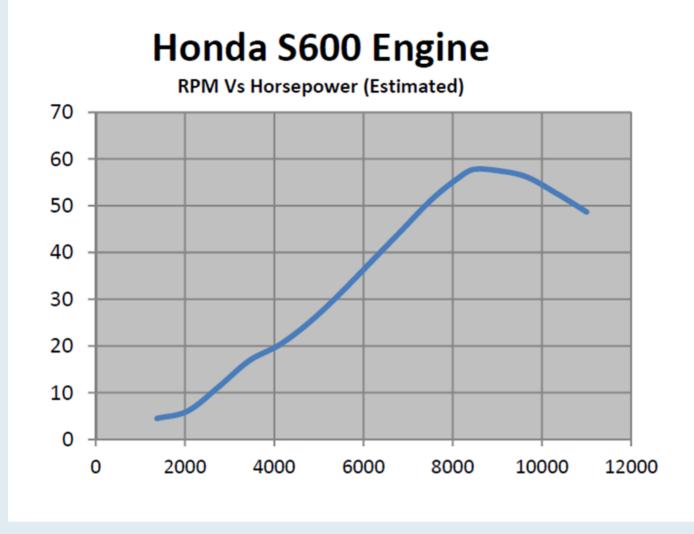
- The ticket is dependant on control that drivers have over police magnetism emitted by Stage 5 and above atmochargers in the context of road or street atmocharging.

Elimination of police magnetism emanating from atmochargers, as adopted by OEM engineers, ref 11.0, is likely to be an effective practice in avoiding a ticket while having a buzz.

That begs the question.....Have suppliers of non OEM atmochargers taken the care to eliminate the issue of tickets also ?

Are they defending our right to atmocharge, to realise levels of 人馬一体 on the street at least those that OEM engineers originally foresaw for us ?

And to learn how to atmocharge simply use your imagination. Imagine a time when **atmocharging was all you had**, when all you had <u>was 600 cc</u> sucking on 4 carbies.



Nothing under 6,000 rpm soon taught drivers that it was much more than *necessary*, it was imperative to be in the right gear.



Honda has shown us that high revving atmocharge history can <u>repeat itself</u> even turning its back on the atmocharger.

Beware of a turbocharged future demonstrated by this evil minded <u>Happy Jappy</u>.

We can honor the memory of a fallen enemy, by celebrating their earlier fundamental belief in free breathing revs.

Although our revs are comparatively modest, lets lose our modesty, lets *Use the Revs or Lose the Revs* given us by intelligent <u>design of the horse</u>.

Keith

Racing Into Corners Every Day

Garido Fast Driver

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Re: White Paper - Driver Controlled Atmocharging

D Thu Aug 20, 2015 2:10 pm

Ah Keith, I love your threads and posts. Don't you ever change. Your ability to combine information with good humour is second to none 😀

97 MXV Racing Driver

Re: White Paper - Driver Controlled Atmocharging

Tue Aug 25, 2015 9:24 am

66 Garido wrote:

Don't you ever change.

Big Mistake..Big...Huge.... 😝

Is the 1.5 ND a case of Skyactiv Overreach?

Checkout the ratios.

The gearing is just too high for a high compression 1.5 Screamer engine with a 7500 rpm redline.....人馬一体 Test Fail !

The fractional improvement they achieved in the Highway Fuel Number won't Save the Planet.

That dreaded feeling of deja vu from the mismatch of the 3.6 diff to the NB8b is inescapable.

6th Overall on the ADM NB8B is 3.00 while 6th overall on the 1.5 ND is 2.89 or 4% taller again on an engine with 11% less torque...so wrong and clearly a lost 人馬一体 opportunity.

Here is the <u>evidence from the past</u> that an atmocharger 4.1 ratio diff from the 1.5 ND auto will be in demand for the 1.5 ND manual.

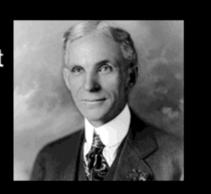
That would give it an overall 6th ratio of 4.1, close to an NB8b transformed by a 4.78 Prettysik-diff. Of course the 4.1 diff is OEM so can't be called Pretty-sik 🔁 Just Insane ! 😁

Getting back to serious matters, Mazda can be forgiven for high gearing the 2.0 ND perhaps, but not the 1.5 ND.

Has Mazda foolishly followed the crowd on Twitter mesmerised into Saving the Planet with a fractionally lower highway fuel number on their upcoming 1.5 ND purchase ?

Oh great father Henry, please forgive Mazda's Sales and Marketing Division, for it knows not what Twitter and Focus Groups do to fundamental engineering, innovation and the virtue of 人馬一体.

"If I had asked people what they wanted, they would have said faster horses." - Henry Ford



Blind Freddy can see that, compared with the 2.0 ND, the only thing a 1.5 ND has going for it, is its revs. It has 7500 of them, and at only 1.5 litres, you have to pull every rev possible. <u>Sing along</u>...*Every rev is sacred, every rev is great, if a rev is wasted, 人馬一体 is lost....*

Engineers should have stood firm allowing Mazda's Sales and Marketers do their job......**Selling the Revs !** and **Selling a Modern Screamer** of an engine to the Crossover Crowd.

The white shoe brigade won't go hungry, as there is always the 2.0 ND Knocker for those who want to listen to the ABC on the Autobahn.

Just need to try some good old fashioned <u>sales techniques</u> on the punters. 😁

Keith

Racing Into Corners Every Day



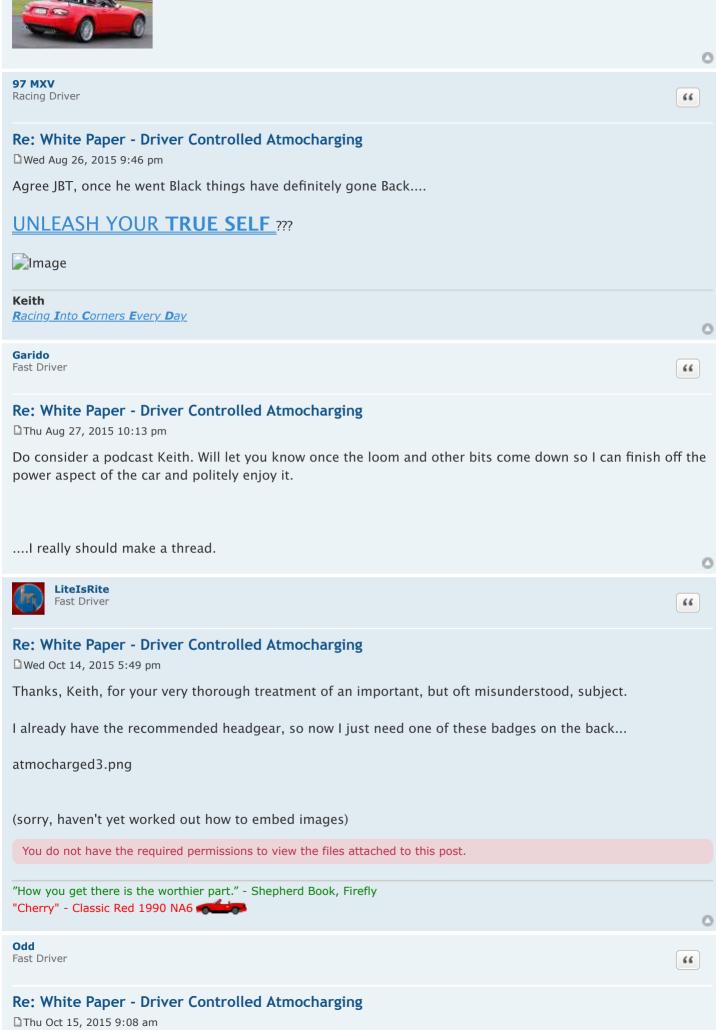
Re: White Paper - Driver Controlled Atmocharging

Tue Aug 25, 2015 9:51 am

From your quote above Keith, it looks like Henry Ford was on the cusp of discovering Jinba Ittai....and then sadly missed it in favour (favor?) of one colour (color?) fits all.

0

66



97 MXV	
Love your work 😏	
LiteIsRite	
I've downloaded that imageit's going on my boot	
You can't demand respectyou have to earn it NA8 for Fun, CX5 for carrying crap;)	0
wedge_A Driver	66
Re: White Paper - Driver Controlled Atmocharging	
Excellent post! Excellent.	0
97 MXV Racing Driver	"
Re: White Paper - Driver Controlled Atmocharging	
A Convert tossing his Dodge Viper Cubic Inches for Cheap Revs !!!	
Probably as close as one can get to <u>Pure Atmocharging Hot Rod</u> on a budget.	
When you live in a Nanny State where they ban cheap revs like this all you can say is California here I come !!	
Except where do you put the gun rack ? 🙂	
Keith <u>Racing Into Corners Every Day</u>	0
97 MXV Racing Driver	"
Re: White Paper - Driver Controlled Atmocharging Fri Nov 13, 2015 12:44 pm	
Watching <u>this part of that video</u> a few times the reality sets in that in Australia we are not allowed to cheap bike powered revs like that California style MX5 rat rod.	ask for

Forget their canyon runs, imagine our <u>hills alive</u> with the sound of the frantic and chaotic scream of 12,000 cheap fully atmocharged revs complete with near zero torque....then weep with despair.

Yet strangely enough we can ask for heaps more cheap cubic inches with more torque than we need in a V8 speeding Bullet – No Problem....That is so annoying.



Nevertheless that's life so the moral to the story has to beJust don't waste the revs you have been given......It wastes too much fun.

Every Rev is Precious.....but every Rev is Free. 😁

So with the *Sound of Revs* in our great car in our great country, we must <u>start at the very beginning</u>. When you Atmocharge you begin with C-D-G, C-D-G, the 1st 3 moves just happen to be C-D-G (Clutch, Downshift and Get set to Go !).

So children we must get into a lower gear and make the most of the sound of the revs we have. Remember children OEM Revs are Free, Perfectly Legal and still Great Fun to be so on song and in tune.

Now where has LiteIsRite's badge/sticker got to?

Image

Is it still in floating in hyperspace wondering what form and font to take before landing on our rear garnishes ???



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