

## **HP limit / power to weight / pro built /low cost**

Posted by SvoChuck - 24 Sep 2010 14:41

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Racers

We the series directors are looking into an issue and more input is better.

My desire is to keep/return 944-spec to low cost equal racing the issue we are interested in finding more information about is do you need a "pro built" engine to compete like spec miata or can you just freshen up a non 88 piston engine. ? If we continue to go the spec miata route then maybe we could add more cars to our racing by allowing other high cost items .

story

I did some work on Scott Boves 4th place car before Nationals when I shared the dyno with Tim C. He asked that I look deeper for non compliance ( the car was built for Cup before I fixed it) as it turns out those numbers were a bit lower than what we saw from others at Nationals...

Another director spoke about how 130-133hp used to be great dyno numbers but now it seems that those numbers will not run upfront.

Ram Air ? does this work and or does it fit with 944-spec in the future ?

Claimer rule ? If you finish in the top 10 you can buy the winners engine for \$4,000 ??? I will chime in on this one right away I have never seen a claimer series where the competitors can be or remain friends

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HP vs weight ? Dyno HP ? Traqmate HP ?

Could we add a restrictor plate to cars making over 130 HP/135TQ or have them make a small change that would give them a smaller advantage while keeping most of our other rules intact ?

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## **Re:HP limit / power to weight / pro built /low co**

Posted by Big Dog - 26 Sep 2010 07:45

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I agree with many of Palmr28's comments. This should not be about who builds and engine. I do not see it as a discussion about engines at all. I think engines have been seized on as a "whipping boy". To me, if there is going to be some big discussion, it would have to be about all of the inherent differences between various model years and models of our cars and I do not see that as practical or desirable.

As for the issue of 88 pistons vs older ones, it would seem that it is NO issue given that we have a 10.5 compression limit. This limit allows early pistons to shave the head more to get exactly the same compression of an 88 piston engine so there is NO issue to continue to discuss here, it seems to me. My goodness, how can there be talk about a "weight penalty" for 88 pistons when a shaved head engine will give exactly the same compression. We have much more variation in LSD's affecting performance than the 88 piston issue but we have all agreed that the LSD issue is finished.

The rule change of several years ago devastated 944-Spec in So. Cal. We do not need that again, EVER.

We have a basic set of rules that I believe work well. Other than minor tweaks, as we had last year, they should be left alone for many years into the future. Too much of this talk will drive away potential racers like Palmr28.

Big Dog

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### **Re:HP limit / power to weight / pro built /low cost**

Posted by Traknut91 - 26 Sep 2010 07:55

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Reply to Sterling Doc #8193

Just for the record, Tom Atteberry's engine was the only engine I worked on that was at the Nationals. I only re-assembled it. It was a dead stock, all original parts 1982 944 engine that was given to Cal Poly University Engineering department by Porsche in 1983. The only non-original parts were new bearings because students had scratched them during many dis-assemblies. Before going to the Nationals, it dyno'd at 7sOnly on their Dynojet242 @ 127 rwhp with a muffler and 132 rwhp without a muffler (the way it ran at Miller). Tom did not dyno his engine at Miller but others that did, LOST about 25 rwhp UNCORRECTED. When the Dynojet corrections were applied, most GAINED 1-2 rwhp. The dyno used at Miller was also a DynoJet242.

My opinions:

Your rules are very good. You have a 10.5/1 CR limit that was checked at Nationals. Keep them simple.

Don't allow chips or headers.

Allowing correction of cam timing change resulting from increasing compression within the 10.5/1 is a good idea but doing this via a crankshaft offset key is a BAD idea because it changes the balance shaft timing also. If you are going to do this, do it at the camshaft. I have spent literally hundreds of hours on my engine dyno developing SCCA ITS engines. The original factory camshaft timing is the best setting so...if someone wanted to make a "gain" by changing the timing to some other setting, let them. In racing these cars, the power between 4800 rpm and 6200 rpm is the most important. Peak power is almost always made between 5800 and 6000 rpm. If someone wants to advance his camshaft more than the factory setting, the peak power will be lower and peak torque will be under 4000 rpm where the engine is never used. If someone wants to retard his camshaft, the peak power might go up over 6000 rpm but he will lose peak torque and power below 6000 rpm. This also is not advantageous to the racer.

Your idea of a spec piston is a good one BUT it would not be cheap. It would not be cheap because the original factory aluminum piston is IRON plated over the aluminum and then TIN plated over the iron. This is done because aluminum will gaul when run on the exposed silicon aluminum bore of the 944/928. New pistons wouldn't correct the worn out cylinder walls of these 29 to 22 year old engines.

What would be your solution for the cylinder walls for these spec pistons. A solution to this problem will have to be found eventually as these cars age but perhaps the time isn't right now.

Your idea of a weight penalty is a poor one as any rebuild of a cylinder head eventually requires material removal to make it flat. You already have a 10.5/1 limit of compression ratio. All this penalty would do is make the hot combination an 85/2-87 engine with a shaved head and no weight penalty.

Jon Milledge

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**Re:HP limit / power to weight / pro built /low cost**  
Posted by cbuzzetti - 28 Sep 2010 01:36

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Hi Jon, welcome to the ZOO!!!!

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## **Re:HP limit / power to weight / pro built /low cost**

Posted by Sterling Doc - 28 Sep 2010 01:45

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Jon, thanks for taking the time to check in. Your experience is definitely helpful here, and your points are well taken.

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## **Re:HP limit / power to weight / pro built /low cost**

Posted by jaje - 28 Sep 2010 13:52

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This might not be popular but the majority of us don't run the high compression engine (88 pistons or shaved heads)...so why allow the use of them in the first place?

Those with 88' pistons in their motors can easily sell them and net a nice stash of cash. Even those with shaved heads can sell those to normal 944 guys as they are always looking for that little bit more. If we can remove these variables we can even out the field more HP wise. It also might help get more racers to look at 944s b/c they don't need to have the rare high compression motor and it saves them ~ \$1000 from buying these pistons or shaving the head by a professional shop...just for the idea of having to keep up with the guys who have them or we think have them. This is supposed to be a low budget spec series and this rule just does not fit with that spirit.

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