

## Headers Question

Posted by 944sracer - 05 Sep 2011 20:53

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I am re-reading the rules and I noticed something odd. according to the rules regarding headers:

12.7.1 The stock genuine Porsche OE exhaust manifold (header) is required. The stock header consists of two separate manifolds, one connecting cylinders 1 and 4 and the other connecting cylinders 2 and 3. Headers may be welded to repair cracks and headers may be wrapped with appropriate materials so long as the wrap is removable. Headers may not be coated or painted inside or outside.

Why is it that we allow for header wrap but not header coating? If I am not mistaken the wrap can open the door to exhaust headers rotting if they aren't installed correctly or the special sealant is not used. Also aren't the advantages the same when comparing one to the other?

Can some one enlighten me please? I am I missing something?

TIA

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## Re: Headers Question

Posted by 944sracer - 06 Sep 2011 20:13

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### **JerryW wrote:**

Justify why the change meets the concept of the Spec class and it can be reviewed in the next rules change period. However the "if it ain't broke don't fix it" and "No New Rules" concepts will also be invoked (some loudly !).

There are many that feel the rules should change as little as possible and only when really needed (I'm one of them). Just because someone somewhere has a nifty new widget doesn't mean we should allow it.

I TOTALLY agree Jerry! Someone wanted to allow 968 valve springs for some crazy reason! However, the argument that its against the rules because the car didn't come with it stock has the hint of a double standard. We can box the steel A-arms, add oil coolers, modify the front valence, etc.

The coating is safer than the header wrap and I can get some quotes as to its price. A header wrap kit is \$80+. We allow changes to the rules for safety and reliability. Would it be considered if i do the research and provide some hard info about it?

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## Re: Headers Question

Posted by Bamf3000 - 06 Sep 2011 20:45

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header wrap and coating are less for actual HP gains and more for lower engine bay temps and cooling which both do a great job of depending on coating. A header coating will not add any real performance gain compared to wrap, in fact most coatings are quite useless for performance and heat retention, which is why I don't see a problem with coating since we allow header wrap. Header wrap just has the hassle of putting on and taking off if necessary and potential of causing damage to the header through corrosion and possible safety hazard if oil/fuel gets on them as they tend to hold it in.

I see it as being in the same category as a turbo radiator, oil cooler, brake ducting, engine belly pan. They all focus on keeping the car cooler.

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## Re: Headers Question

Posted by 944sracer - 06 Sep 2011 21:47

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So I have done some research. A quick google search reveals that a 4-cylinder header can range from about \$150 if you ship it off to have someone do it for you, or \$50 for a 12 oz. can to do it yourself. the downside is that you have to heat treat it yourself.

I have an email out to a local coating guy for some info on before and after temps and what not.

Joe,

what would you say to the coating that provides no hp gains but lowers overall engine bay temps? Would this not satisfy the classes desire to keep costs low (lower engine temps less stress/abuse) without jeopardizing our matra of no rules changes that lead down the road of Spec Miata? I would not hold you to your remarks on the forum.

Obviously this is an academic discussion for now and would need some serious vetting from multiple people. I do however think that the header wrap and the coating are very very similar in performance

characteristics. the coating provides the benefits of the wrap without the downfall of increasing the rust/corrosion risk factor.

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## Re: Headers Question

Posted by joepaluch - 07 Sep 2011 06:31

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### 944sracer wrote:

...However, the argument that its against the rules because the car didn't come with it stock has the hint of a double standard. We can box the steel A-arms, add oil coolers, modify the front valence, etc.

Oil Cooler and modded fron valence come directly from running these cars. This class started in 2002 and over the nearly 10 years running these cars we have learned what mods are both cheap and effective. Oil cooler help reduced oil temps and that is very important in engine life especially for the bearings. Cutting the valence for brake ducts/oil cooler duct is cheap. Cutting out center bar is mod I have seen that lowers water temps when racing in very hot conditions. In Az we have raced in temps of 105 degrees and cutting the valence is one thing that can keep guys on track running in those temps vs parked with an overheated car.

Boxing the steel arms as purpose as well. It known the short alumium control arms have a tendacny to fail ball joints on lower cars. Backdating to steel arms eliminats that ball joint problem, but many beleive the steel flexes more than aluminum. So in lieu of allowing really expensive \$1600 charlie arms (which are no longer avaiable anyway) we allow backdate to steel and boxing to provide what many believe is &quot;safe&quot; control arm option ad a low price. Personally I run stock steel arms. I think they are fine, but some like the piece of mind runnign reinforced steel arms.

Point is nearly 10 years on we have the rules pretty well defined. We have car prep at level that is both a reasonable cost and provides a reasonable level of reliablity and safety. The performance level and fun to drive factor of the cars is also pretty good. So in my mind there are no glaring problem with car prep in the class. For now rules creep and closing down loophole whihc might upset the balance of performance and cost are more critical than anything else.

So any tweak needs to have a pretty clear reason why we should change. Why will it make the class better overall?

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## Re: Headers Question

Posted by joepaluch - 07 Sep 2011 06:43

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**944sracer wrote:**

...Joe,

what would you say to the coating that provides no hp gains but lowers overall engine bay temps?  
Would this not satisfy the classes desire to keep costs low (lower engine temps less stress/abuse) ...

Show me how much engine bay temps drop at speed between wrap and not. Remember this &quot;at speed&quot; not idle. Belly pans improve radiator efficiency and most of all are STOCK... Every car came with them new and the radiator work better with them in place. It not about under hood temps, but about managing the air flow through the radiator.

BTW... When we changed the rule on headers years ago it was due in part to a a specfic header. Cost for header was \$650 and with the coating (which was an extra \$200) it was reported to gain 10hp. The idea was that be trapping the heat in the exhaust you could get higher exhaust gas velocity and therefore better cylinder scavenging. Thus you could get better cylinder filling and with more air you get more power once you add a bit more fuel.

Now are all coatings created equal? The engineer in me says no they are not, but once you start with any coating you open the rules for all coatings as there is no way to do a metallurgical evaluation in tech.

If you don't feel header wrap is safe due to oil saturation then don't run it.

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