Transaxle Cooling

Posted by AgRacer - 20 Feb 2014 17:43

Has anyone taken advantage of the new rule allowing transaxle cooling?

Ive started to develop a setup and got a quote from one source that included pump, filter, and cooler with fan that scavenges off the drain plug and returns through the fill plug.

The source seemed to agree that its not a lubrication issue for us but rather a heat issue that kills the bearings holding the ring and pinion. He seemed knowledgeable on our transaxles and also made a good point that particles off the LSD clutches can add to wear, which is why he recommended a filter. Any temps over 220-230 were said to be too high, and that's under what some reports on here were saying they were seeing.

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Re: Transaxle Cooling

Posted by joeblow - 02 Apr 2014 17:07

I do find the turbo setup being made illegal a little curious as it is by far the easiest for Spec guys to install. Most of us have been tearing up various gearboxes anyway to get LSDs and short 5ths and this is one more item that we could utilize cheaply.

Back to our discussion about rules interpretation...

I think the question of how to route the fluid from and back to the gearbox should be stated as X and Y or simply stated as 'open'. As I said before I have a hard time seeing any performance advantage by adding additional return points. Longevity I can say will be added which is better for the class. Cost on this is a factor but if 'open' then do what you want. I can spend lots of money needlessly but I have a set-up in mind that while perhaps not what RacerX intends to do is very simple and cheap.

My pump will be driven off the passenger side axle with a belt. The pickup will be the drain and the return will be either one (in the fill) or two (if allowed). The cooler will be under the car and air will come from below and exit below as well (no holes being cut anywhere for me). I might change my mind and go with the Tilton electric pump too but either way I am following the loose rules as written.

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Re: Transaxle Cooling

Posted by RacerX - 02 Apr 2014 22:12

RacerX wrote:

1.2 944-Spec is a restricted class. Therefore no modifications/changes are allowed unless specifically outlined in these rules.

I don't see in the rules where we can cut the floor to vent a cooler or drill holes in the transaxle for multiple oil return lines. Powers that be may see it otherwise but that is how I see it. The rule intent was to just cool the transaxle fluid, not make it a Borg like creature with oil lines running all over.

A simple electric pump that draws oil from the drain sends it through a cooler and returns it through the fill plug will suffice in keeping temps down. If you want to get fancy, add a thermostat and magnetic filter.

Sorry but I forgot to add this to my last post.

3 Format

These rules are not intended as guidelines; rather they shall serve as the complete set of rules,

and must be strictly followed. These rules and addendums specify the only modifications allowed.

If these rules do not expressly state a modification is allowed, it is prohibited.

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Re: Transaxle Cooling

Posted by AgRacer - 03 Apr 2014 04:46

RacerX wrote:

Sorry but I forgot to add this to my last post.

3 Format

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and must be strictly followed. These rules and addendums specify the only modifications allowed.

If these rules do not expressly state a modification is allowed, it is prohibited.

This was the catch all that I was referencing in my last post. Unlike in the Engine oil cooler ruling which references the stock turbo setup, there is no comparison to an acceptable way to of accomplishing transmission oil cooling.

So based on your logic and a strict interpretation of the catch all rule, since it doesn't state how you can scavenge and return oil, only that you can add any external oil COOLER and PUMP, you therefore have no way to actually accomplish transmission oil cooling.

The alternative interpretation is to say that since it does say ANY external transmission oil cooler is allowed, you are therefore allowed to accomplish that via ANY means so long as all items are external to the transmission.

Not trying to be a pit lane lawyer, I promise...

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Re: Transaxle Cooling

Posted by RacerX - 03 Apr 2014 06:17

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I think it would have been common sense to use the fill and drain plug and not make things more complicated or read into the rules, after all, this class is not meant to be an engine builder or innovator's class. If joeblow wants to spend big bucks on drilling holes and installing cooling jets on his transaxle, what harm does that have? Some might say that he has an unfair competitive advantage.

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Re: Transaxle Cooling

Posted by joeblow - 03 Apr 2014 08:11

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The ONLY competitive advantage having multiple returns would be is that my tranny is less likely to grenade on the track which would be an advantage I will give you that!

By the way your 'common sense' is an interpretation of the rules which is what I am doing as well. You have a system in mind that is using an external electric pump and using the drain and fill ports on the tranny, I get that. However my plan using an external mechanical pump and the drain port with any number of return ports as I so desire is no less an interpretation on the rules than your system. Common sense as a term here is meaningless.

RacerX wrote:

I think it would have been common sense to use the fill and drain plug and not make things more complicated or read into the rules, after all, this class is not meant to be an engine builder or innovator's class. If joeblow wants to spend big bucks on drilling holes and installing cooling jets on his transaxle, what harm does that have? Some might say that he has an unfair competitive advantage.

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