Motor durability
Posted by Aslet - 24 Oct 2009 07:46

I had a cooling system failure on track in Aug and toasted the motor. I got a new (used) long block and had it all re-sealed and new rob bearings (a known failure point I hear). I was just at Watkins Glen and the motor blew (after 2 months from install). The connecting rod broke due to a bad nut holding it on. So I again have to get a new long block and do some work on it! I want to make sure I do it right this time. First I am going to get Raceware connecting rod hardware! I will also do the rod and main bearings, along with seals and belts/water pump. Are there any other items that are worth fixing up or changing? What are good upgrades to do on a stock 944 NA motor for better durability? Is getting the crankshaft cross drilled worth it?

Thanks,

Randy

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Re:Motor durability
Posted by Big Dog - 28 Oct 2009 14:57

As I understand, porting and polishing is prohibited.

There is no rule about how the valves are ground. I, frankly, don't know how mine are done. I have never had the head off to look at. My engine builder sends it to someone he likes and puts it back on.

Joe, is there an issue here? Should I look into what was done on the valves?

Jim

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Re:Motor durability
Posted by Aslet - 28 Oct 2009 22:37

Rules for something like Spec racing are meant to keep cost down. Yes, there are ways to get around some rules from technicalities in how they are written. This violates the overall fair nature and sportsmanship, however. Overall, you are only allowed to do what the rules say you CAN. If it is not talked about in the rules, it is not allowed. This is the general and honest way to interpret.

Again, if you want to max out a 944, you can find somewhere to race it. You could also spend over $15k on an engine without blinking. Spec 944 series are for cheap and fun racing, don't complicate or cloud the issue with politics!

Just my views.

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Re:Motor durability

Posted by 944cer - 29 Oct 2009 02:32

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"stock valve job" is a valve job done on the head to manufacturer's specs concerning valve seat angles and shaving tolerances. As mentioned earlier, if the rules don't specifically allow a certian modification it is not allowed.

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Re:Motor durability

Posted by joepaluch - 30 Oct 2009 06:40

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I have had good success with motors. Oil coolers on motors with spun bearings are suspect. They could be ok, but probalby are not. Be very careful.

When you teardown a junkyard motor replace the rod bearings and main bearings. Balance bearings are a good idea too, but honestly I have never done that.

New waterpump is a good idea if you don't know the history of it, but a recient waterpump is not likely to fail.

As for the head you want it brought back to or check to factory specs. Beyond factory specs is not legal. Factory heads are not ported or polished. They have just the raw cast surface on there. So it needs to stay that way.

Oil pumps tend to last a life time. Cranks often cannot be re-used after a bearing spin, but sometimes can. Have them checked. Used cranks can be found cheap if you look. You want to avoid oversized bearings if you can since these get expensive fast.

Baffling the pan is a good iead as it drilling the crank. External oil coolers are good to lower oil temps and lower water temps if you did the waterbath cooler.

Now given all that the motors can last for a long time. Sometimes they don't. One think to know is rod nuts are somewhat special. Some engines came with flat rod nuts and other with serrated nutes. There are some notes in the manual that says to always use new nuts as One version is not be used twice. If it was a rod nut failure that could have been the issue.

Also it is easy to get the lower balance shaft 180 out when pull the gear off it. Thus you can line up the mark perfect, but have it 180 out. This will cause extra vibes that you might be able to feel. If you don't you risk craking the fuel rail and a fire or braking the oil pickup tube and blowing a motor.

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Re:Motor durability

Posted by tcomeau - 28 Nov 2009 22:54

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Joe,

It looks like the cause of failure with Richmond's engine at Nat's was a rod cap came loose on # 4.

I want to believe that the stock rod cap nuts are fine if you follow the Fact. manual. I haven't seen a failure of these. I was asked if we should consider allowing ARP brand hardware.

Thoughts?

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