

2016-02-08

VTR1000F Carburetor Heating System

<http://www.superhawkforum.com/forums/technical-discussion-28/carb-heat-lines-26919/>

From the tech description of the VTR in 1997:

The thermostat has two valves and two separate, but linked, operating modes. The lower valve is open when the engine is cold and allows the flow of coolant through the bypass circuit and heater tubes to the carburetors. When the coolant temperature reaches 75 degrees C the main thermostat valve opens fully, allowing flow to the radiators to begin. At 90 degrees C the lower valve closes, shutting off the flow to the bypass circuit and carburetor heater tubes.

<http://www.rexresearch.com/yunick/yunick.htm>

<http://www.rexresearch.com/yunick/4862859.htm>

<http://www.superhawkforum.com/forums/technical-discussion-28/next-stupid-ques-plug-heater-hoses-20755/>

Originally Posted by Hawkrider View Post

Way back in the day when I was tuning my bike I hooked up a shutoff valve on my carb heating supply hose and dyno'd back-to-back with it on and off. Results were interesting: Bike actually made more power with the carb heating turned on than it did with it off. Possible errors in this are the fact that I did the "off" run last. Bikes typically make their best power after you blow all the crap out and the oil is thinner, though it only makes a small difference by 0.5 - 1.0 hp. That was the same amount the two dyno runs were off by. I concluded that the carb heating does not affect performance at all, and other than the hoses being a PITA to hook/unhook when working on it, they harm nothing.

Hawkrider's testing would seem to indicate that removal of the carb hoses has, essentially, no effect on power.

In hot climate no difference at all so far as has been reported...

But if you are doing cold starts it's a bitch without it... And it does benefit from better atomization with the heated fuel as soon as the temps drop from "hot" to "normal" (The VTR has big honking carbs!)

Quote:

Originally Posted by bjorn toulouse View Post

If you're doing a "cold start" the coolant is at the same ambient temp as the carb bodies and the fuel.

Rex

Quote:

Originally Posted by cornandp View Post

True, but the temp of the coolant will have gone up significantly in 30 seconds. So without the lines you may need to keep the choke on for a lot longer.

Ooor... You could just try it... I did... at 16C outside temp I still had the choke on 10km from my house... And it stalled at all the lights... With them... No more stalling...

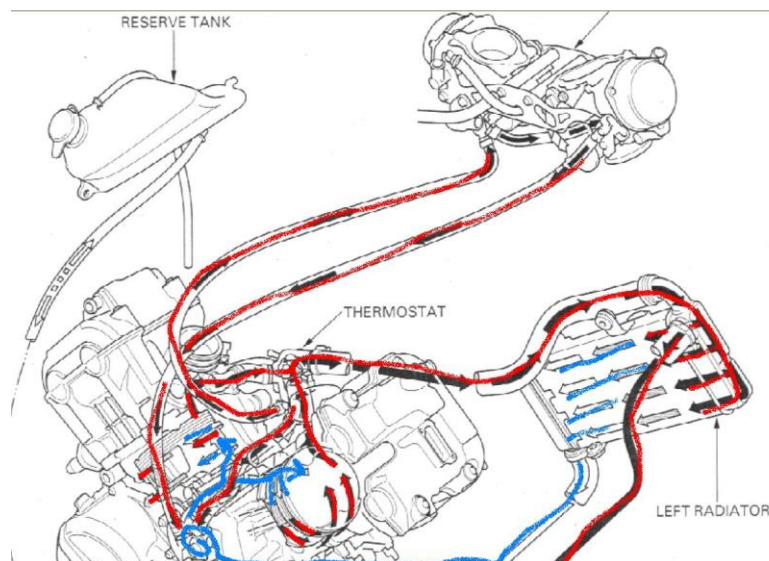
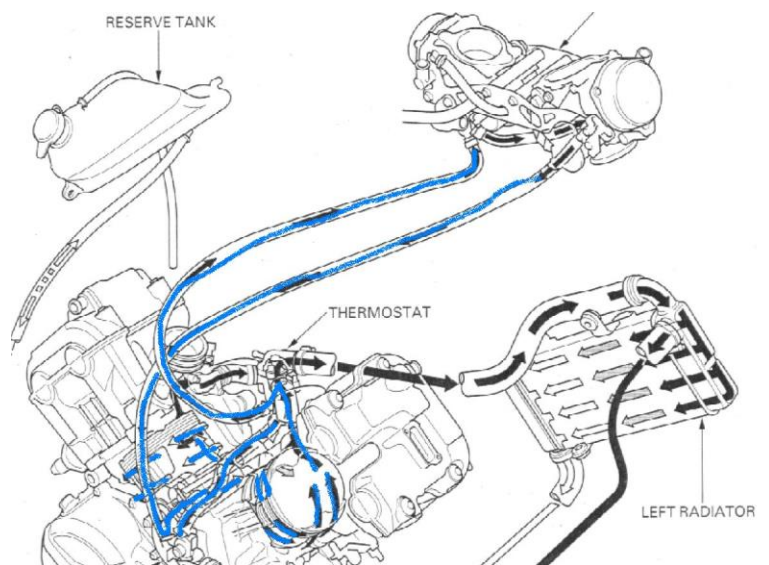
<http://www.superhawkforum.com/forums/technical-discussion-28/quick-pair-system-question-20625/page2/#post241539>

<http://www.superhawkforum.com/forums/technical-discussion-28/vtr-carb-diagrams-11246/>

I thought we went through this before? Didn't we decide that since the supply line to the carb heating comes from the bottom of the thermostat housing (which also has coolant coming from the motor) then the carb heating is always on. The thermostat being open or closed does not turn carb heating on or off. The thermostat is either open or closed. It's not a three-way valve.

This is the way I understand it as the engine is cool before the thermostat opens:

Greg N.



<http://www.superhawkforum.com/forums/modifications-performance-29/took-off-carbs-first-time-10435/>

The coolant through the carbs does not prevent icing. It's to help with rideability when the engine is first started. The thermostat is supposed to stop the flow of the coolant once the temp starts to rise.

That said I've bypassed mine. In fact I've pulled the hose setup from the carbs all together.

Jamie Daugherty

Josh - I have not noticed a single difference. I ride down to the mid-30's and have seen no issues at all.

Dave - I really don't think it's an issue. The carbs should not be 'heated' on these engines anyway. It's supposed to help cold performance by making the intake charge a little warmer and therefore simulating the condition that the bike was jetted for. I hope that makes sense. As I mentioned before, the thermostat is supposed to stop flow once the engine is up to temperature. I just don't trust this system and would rather err to the side of power, that's why I disabled mine. There are no performance gains to be had, it's one of those 'just in case' kind of things.

Jamie Daugherty

AS for the carb heating, looking at the diagram on the first page of the cooling system in the Service Manual, it shows that it is attached to the thermostat housing, but shows that it has flow through it all the time. I've always heard it's to prevent icing/frosting on humid days where the dew point temp is low. The venturi in the carbs can lower temps to the point that the humidity in the air will start to build up as ice on the throats. I guess the carb heating prevents this.

Way back in the day when I was tuning my bike I hooked up a shutoff valve on my carb heating supply hose and dyno'd back-to-back with it on and off. Results were interesting: Bike actually made more power with the carb heating turned on than it did with it off. Possible errors in this are the fact that I did the "off" run last. Bikes typically make their best power after you blow all the crap out and the oil is thinner, though it only makes a small difference by 0.5 - 1.0 hp. That was the same amount the two dyno runs were off by. I concluded that the carb heating does not affect performance at all, and other than the hoses being a PITA to hook/unhook when working on it, they harm nothing.

Greg N.

<http://www.superhawkforum.com/forums/technical-discussion-28/carburetor-heaters-16784/>

11-18-2008, 07:33 AM #3

smokinjoe73

If you look at the schematic of the cooling system, simply clamping the hoses off will prevent the coolant from flowing to the carbs AND cause more coolant to flow through the rest of the system. I have had mine clamped for years & ride down to about 17 degrees F with no problems. Still warms up at the same rate as before but seems to run cooler in traffic. Seems to be the appendix of the bike (like the pair system). If you remove it you can go on living.

Years ago when I was initially tuning the VTR I installed a valve in the coolant supply line to the carbs. Did dyno runs back to back with valve on and off. I actually lost about .5 hp with the valve shut. How? I have no idea but it was conclusive enough for me to put on a new hose and leave the system alone.

Greg N.

<http://www.superhawkforum.com/forums/technical-discussion-28/carburetor-cooling-lines-11010/>

04-05-2007, 08:50 AM #2

Zedicus

i yanked mine out. i havent had any problems. technically on high humidity days u might get a bit of condinsation of even frost but i think that would be only in extreme cases. i run hopped up ATV's with huge highflowing carbs and tons of velosity through them, they get cold but hav never had issues with frost or excess condensation.