V.O. Tech.Vegetable Oil Fuel System's
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Thermostat operation update

Most modern day thermostat's come equipped from the factory with a bleed check valve. Some replacement model's come the same way. Some replacement models that do not come with the bleed off valve actually replace the ones that do have it. What we tried some time ago, "with tremendous success" was to block off (solder) the bleed off orifice closed. I did this in a attempt to drive coolant temperature up to the thermostat's pre-set value quicker. The result was huge- especially on cold day's. Coolant temperature on a 20 degree day will reach operating temperature's 20-30% faster than with out the update. See FIG. 1

What does this mean?

The end result is a engine that will reach core operating temperature quicker. This means a few thing's.

(1) Your cabin temperature will increase faster and stay there, that means a nice toasty heater in the winter.

(2) Your engine and Veg. oil temperature's will increase faster as well. This will mean earlier switchover times in the winter. Fuel savings. Less pollution.

(3) Less stress on the engine

Why was the bleed valve equipped in original design?

The bleed off was and is used for a few specific reason's. First and foremost is exactly why it is called what it is. A bleed off. This help's bleeding air out of a cooling system easier. Much easier. In fact it can take longer to bleed out the air with the bleed valve eliminated.

The bleed off allows engine block coolant to bleed off into the radiator while engine is in use. This scenario allows the engine to run cooler-longer. As a result the manufacturers felt they would not be overwhelmed with engine failures. Runs cooler-last's longer.

Do I need to change the thermostat again in the summer?

No. For quite some time bleed off's where never used. As long as the radiator and fan and other component's are working as designed there should be no issues. We do recommend you monitor engine temperature either way.

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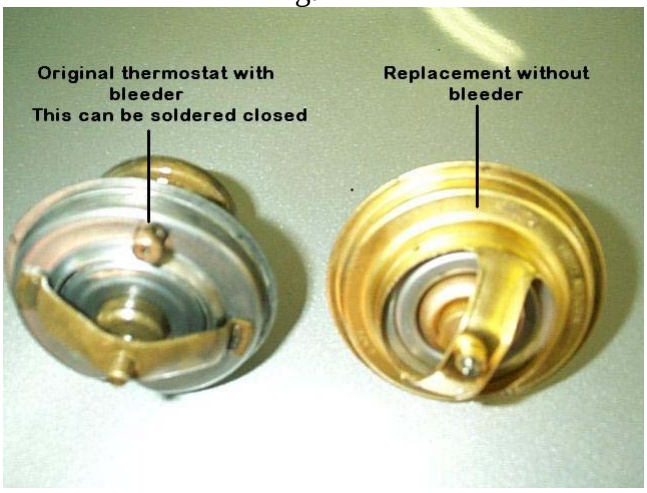
Conclusion

Diesel's in general run cooler than gas engines. It is very hard to get them to temperature due to the lack of heat from explosion of the fuel in the cylinder's. Most run the most efficient at 200 degrees or above. The orifice block off will help it get there quicker. In general a 195 degree thermostat will get engine temp. up to 170-185 degrees. With this method it will help get you there quicker. We have had people tell us their vehicles have more pep, faster and better cabin heat and better fuel economy as a result.

You want engine temps. to be warmer (quicker) so you can get a cleaner more complete combustion. This can actually bring exhaust gas temperature down as well. The diesel engine was designed to ignite it's fuel under compression. That mean's the engine need's to be at normal operating temperature for maximum efficiency. If the core temp. of the engine is just a little warmer-quicker-it will be easier for the fuel to ignite. This mean's the engine is not fighting to ignite under cooler temperatures,- end result is a cleaner running engine, lower exhaust gas temperatures, and a longer lasting engine.

Fig. 1



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