



HPNGV Series - Technical Bulletin Regulator Temperature Considerations

The HPNGV series fuel pressure regulators are designed with special seal materials. These seals are designed to remain flexible and perform their function at extremely cold temperatures, while resisting degradation by natural gas, compressor oils, odorants, engine coolants, and other fluids normally present in natural gas vehicle fuel system.

These seals can resist momentary temperature excursions to 275 °F, however sustained moderate to high temperature will lead to premature age hardening. This premature age hardening will reduce the useful life of the regulator as it will cause the diaphragm or other seals to leak, intermittently or continuously, at cold or ambient operating temperatures.

For this reason, vehicle applications which do not experience sustained high gas flow rates (such as buses and other engine applications where idling is a significant portion of the vehicle operation) can be equipped with a coolant circulation bowl that contains a temperature sensed coolant flow reduction valve. With this option, the regulator comes equipped with a thermostat, which closes when the coolant temperature exiting the coolant bowl exceeds 100 degrees F. (40 °C). By preventing excessive heating of the regulator by hot engine coolant, heat related age hardening of the seals is prevented.

It is very important to assure the coolant lines are connected correctly to the coolant bowl when the bowl is equipped with this thermostat. If the coolant feed line is mistakenly connected to the thermostat connection side of the coolant bowl, the thermostat could prematurely close and not permit sufficient warm coolant to flow through the regulator. The regulator coolant connections are identified as "IN" and "OUT", referring to the coolant feed and engine return line connections.

The HPNGV regulator needs to be validated in the intended application as it is a dynamic part of the fuel system and responds to different fuel systems differently. During this validation, it is imperative that the impact of the vehicle operating duty cycle on the regulator is considered carefully. Each application needs to verify that the suitable coolant flow balance is achieved so the regulator life is maximized and internal ice and hydrate formation risk is minimized.

ITT Conoflow does not condone the alteration or modification of this product without factory product engineering review and subsequent written authorization. Unauthorized modifications will void the regulator warranty and could lead to potentially dangerous failure modes.