



Technical Bulletin - ITT Conoflow HPNGV Series Regulator Leakage Detection

The ITT Conoflow HPNGV series regulators are designed with a sensitive, elastomeric pressure sensing diaphragm. This diaphragm is exposed to the regulated outlet pressure of the natural gas.

The elastomer used for the diaphragm is fabric reinforced, and the compound was selected and tested to provide the best operation through a wide range of temperatures and additive exposure. The material is designed to survive the presence of mercaptans, moisture, and organic and synthetic compressor oils.

The diaphragm will, however, permit a certain amount of oil, mercaptan and gas permeability. This material will permeate through the diaphragm and collect in the bonnet. The presence of this material, and the ability to detect these hydrocarbons with a sensitive electronic sniffer probe, does not indicate a leak. Electronic sniffer probes are too sensitive, and falsely detect regulator leakage.

To verify the regulator, or the connections to and from the regulator, is / are not leaking, a liquid leak detection solution must be used.

To test the inlet and outlet connections, these connections should be flooded with the liquid leak detection solution and viewed for evidence of bubbling.

To test the regulator for external leakage, the liquid leak detection solution should be applied over the hydrophobic, porous plastic plug which prevents liquids from entering the regulator bonnet (stepped cap on the end of the regulator). This porous plastic plug is white in color, and is designed to permit the diaphragm to sense ambient atmospheric pressure while keeping water out.

If a regulator leak were to occur, any liquid leak detection solution would immediately bubble, when applied to the porous plastic plug.