

### Different Seat Options for Greater Sensitivity and Gas Retention

#### Conoflow Diaphragm Application Story

Conoflow's low pressure regulators are provided with three different diaphragm seat options, relieving (venting), constant bleed and non-relieving (no bleed - no relief). These options are offered to provide regulators with greater sensitivity, more responsiveness, retaining harmful gases or fluids within the process line and relieving unused process media in dead ended applications. The choice of diaphragm seat option will be determined by the customer's application.

#### **Diaphragm Seat Option: No Bleed - No Relief (Non-Relieving)**

This type of diaphragm seat option is best suited for applications where the regulated process media is under constantly flowing conditions or when liquids or harmful gases are present in the process media.



### Diaphragm Assembly No Bleed, No Relief 0-03/0-60 P.S.I Range

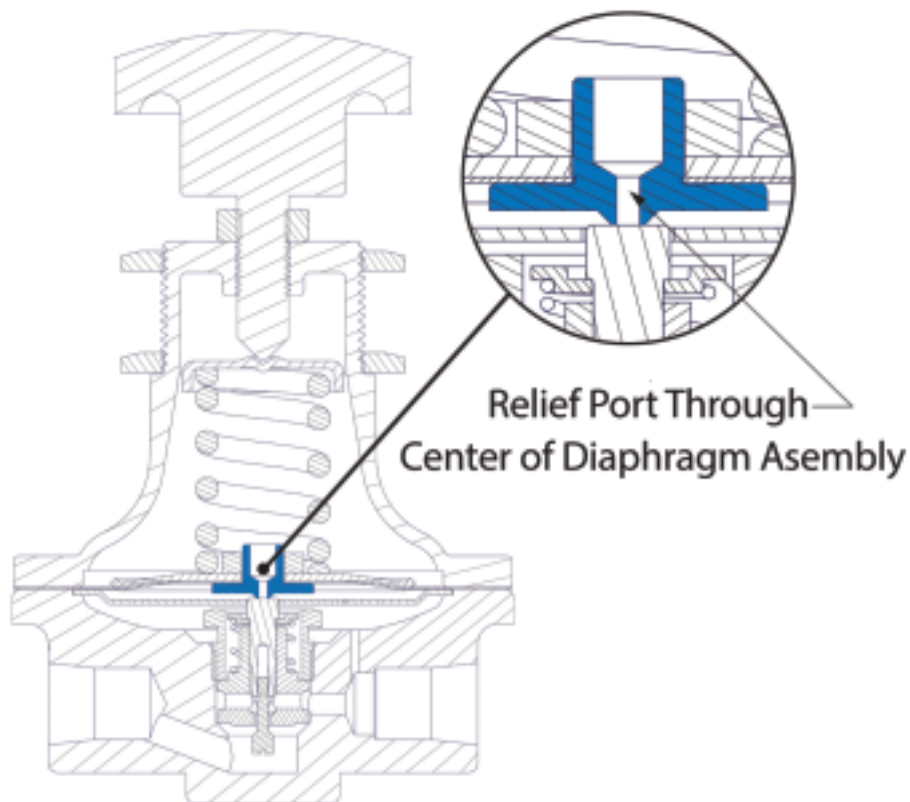
For dead-ended applications (when process flow is not fully consumed), the process media will build pressure under the diaphragm that is greater than the spring force pushing down and allow the nozzle assembly within the chosen regulator to close. Standard nozzle assemblies are metal to metal seated, so leakage will occur at a rate of 100 cc/minute or less. If process flow is not demanded, you will experience supply pressure build downstream and there will be no adjustable control of the outlet pressure until flow conditions resume.

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#### **Diaphragm Seat Option: Relieving (With Relief-No Bleed)**

This type of diaphragm seat option is used to allow relieving (venting or exhausting of process media to atmosphere that is in excess of the regulator's set point.



With supply pressure applied and regulated outlet pressure set point chosen, the diaphragm assembly within a regulator using the "relieving" seat option will relieve (vent or exhaust) any pressure in excess of the outlet pressure set point. If the downstream device cannot consume all process flow, or if the system is dead-end or restricted, pressure will build up under the diaphragm assembly. When the downstream pressure becomes greater than the spring force pushing down, the diaphragm relieving port will open and relieve (vent or exhaust) excess pressure to atmosphere. Once the excess pressure is vented off, the regulator will return to equilibrium (original set point).

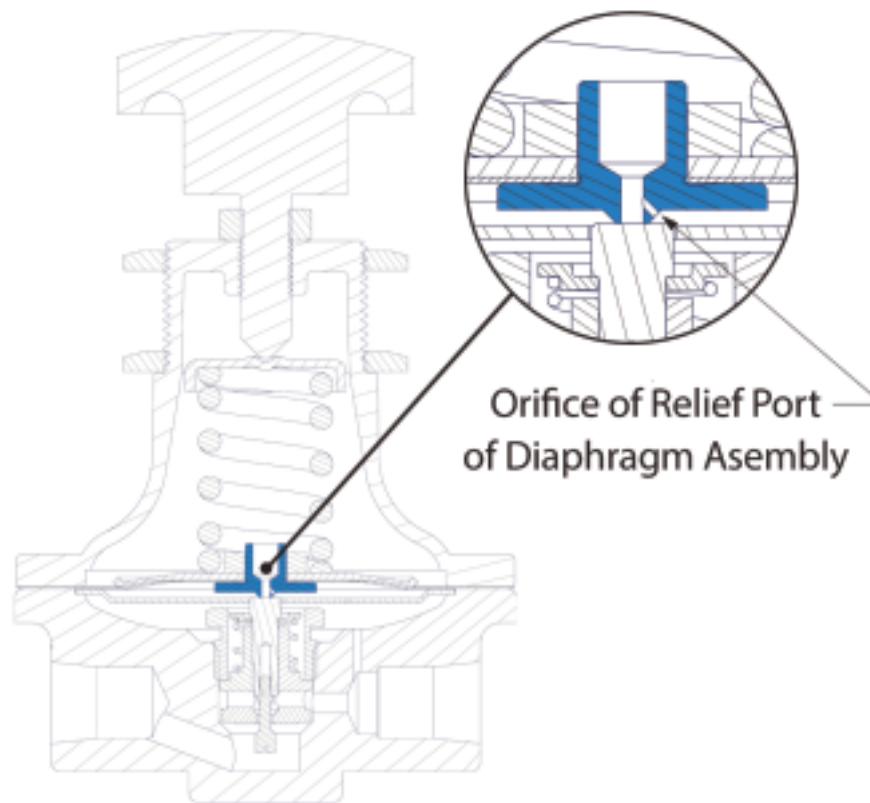
When using this type of seat option, consideration must be given to process media. If harmful gases are within the process media, then a captured bonnet port must be selected. This option allows the user to attach a process vent line.

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##### **Diaphragm Seat Option: Constant Bleed (With Bleed and Relief)**

This type of diaphragm seat option is used to increase responsiveness and stability. **This option is offered within the GH10 Manual Loading Regulator Only.**



In low pressure or calibration applications, the GH10 Regulator with the constant bleed option will provide stable output pressure and immediate responsiveness to changes in downstream pressure and flow conditions. The constant bleed diaphragm seat is an engineering orifice in the diaphragm assembly that allows constant (or continual) bleeding of pressure in excess of the regulated output set point. This type of seat keeps the nozzle plug in a dynamic state by preventing the nozzle from closing completely. This action increases both sensitivity and stability of the regulator.

Like a relieving style diaphragm seat, consideration must be given to process media. If harmful gases are within the process media, then a captured bonnet port must be selected. This option allows the user to attach a process vent line.