Within your fluid system you are charged with providing accurate, consistent, and repeatable delivery pressures to processes and process equipment. Pressure regulators are designed to reduce the likelihood of process variability, and to protect sensitive equipment. Pressure regulators control fluid pressure (not flow) that could otherwise compromise your system integrity.

Regulators must maintain outlet pressure as inlet pressure and flow vary. Here is how a simple pressure regulator functions:

- A control element (poppet) is used to control fluid outlet pressure by moving into and out of the regulator orifice. As the poppet moves into the orifice it limits fluid flow while decreasing outlet pressure.

- The sensing element (diaphragm) and the sensing chamber (below the diaphragm) are another aspect of pressure reduction in regulators. A regulator’s sensing element responds to pressure changes in the sensing chamber. The sensing element and the control elements move together as pressure changes in the sensing chamber.

- The regulator’s loading mechanism (spring or piston) exerts force on the sensing element to counterbalance the pressure of the fluid inside the chamber. The loading mechanism is set or adjusted to provide the desired outlet pressure of the regulator.

Understanding how a regulator works should help to select the correct product for your application. Failure to properly reduce pressures can lead to system downtime because of damage to equipment. Regulating pressure is essential to achieving accurate consistent and repeatable delivery. Please let us know if we can help you choose the right product for this important application.