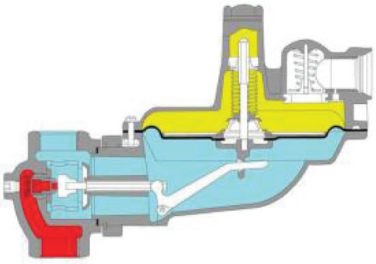
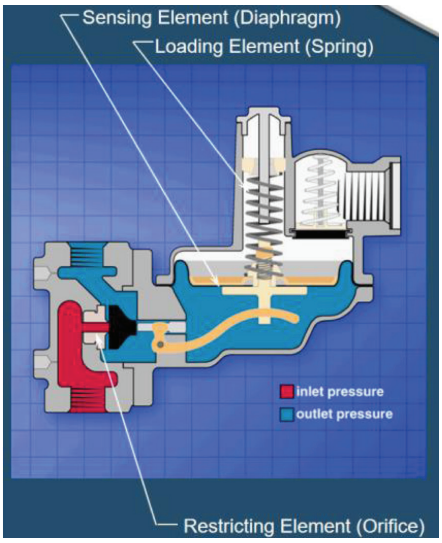
Gas Pressure Regulators – A Safety Device

Gas Pressure Regulators are safety devices used to control the pressure of a gas line from a higher pressure, down to a desired lower pressure to feed downstream equipment and processes. In many cases, the operation of your gas regulator can directly influence the efficiency of a gas system and the life span of downstream equipment and appliances. There are many different types of regulators and the selection of a proper gas regulator is based off specific application information including line size, flowrate, equipment requirements, inlet pressure, desired outlet pressure, location, and safety requirements.



Gas Regulator Operation Basics

For most applications, the direct-operated gas pressure regulator is the best fit. Direct operated regulators are comprised of three key parts that control pressure: a spring, a flexible diaphragm and a valve seat that can control the amount of gas flowing through the regulator. The spring in the regulator acts as a counterweight and puts pressure on the diaphragm in the regulator. This is connected by a lever to the valve seat. As gas enters the regulator and fills the space under the diaphragm, the counter weight of the spring will tell the regulator whether to open (allow more gas) or close (allow less gas). The result is a reduced pressure on the outlet of the regulator based on the tension of the spring that is installed.



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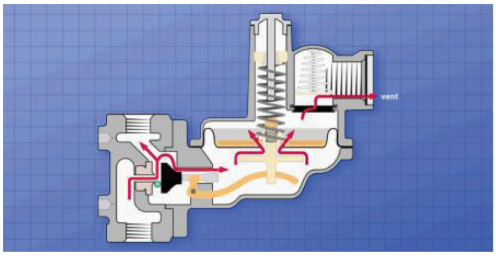
Safety Features

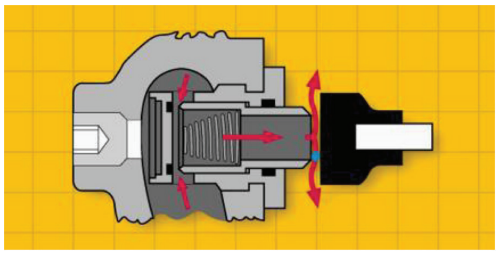
Due to the nature of working with Natural Gas, safety is a very important consideration. While sizing gas regulators, it is crucial to look at added safety features to prevent any future issues. These safety options will protect not only people and facilities in the area but also the equipment downstream and increase the life span of this equipment.

Internal Relief



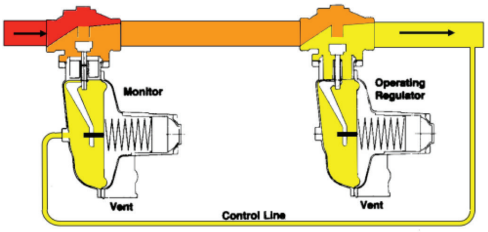
- Over-Pressure Protection
- Protects all downstream equipment or processes from seeing high pressures if regulator fails
- Regulator senses downstream pressure rising, diverts gas through small hole in diaphragm and out of regulator vent.
- Relieving of gas typically caused by debris in regulator or damage to internal regulator parts.

Worker/Monitor Set Up



- Over-Pressure Protection
- Two Gas Regulators installed in series. One regulator, the worker, installed downstream set to desired outlet pressure. The other regulator, the monitor, is installed upstream and set to a slightly higher outlet pressure
- With the help of a control line, the monitor can sense if the worker regulator has failed, and it will take over pressure regulation.
- Benefit: Gas continues to run if there is a regulator failure.

Internal Monitor



- Over-Pressure Protection
- Worker/Monitor set up combined into one regulator.
- Internal Monitor Orifice assembly, orifice will slide to a secondary seat in the event high pressure is sensed.
- Benefit: Saves Space and Need for Control Lines

MBS Engineering • 12893 Alcosta Blvd, Suite K, San Ramon, CA 94583 • (925) 307-6224