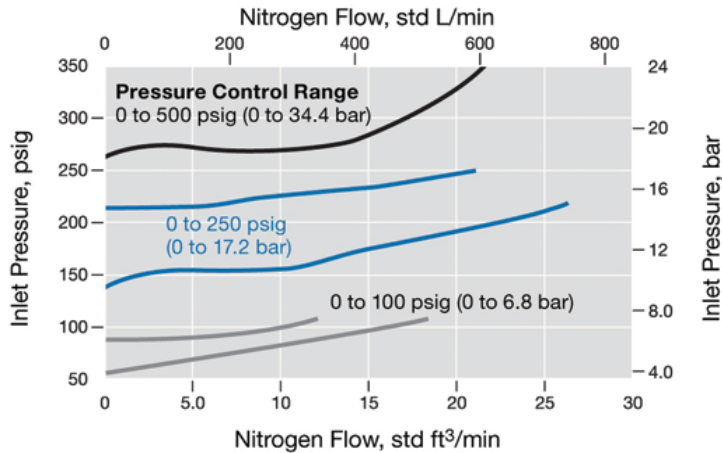


## Glossary of Terms

### Accumulation

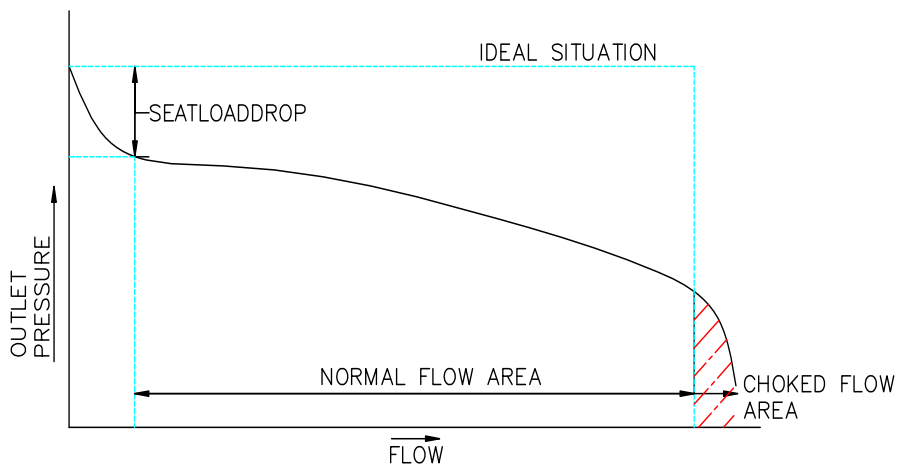
**Definition:** The increase to inlet pressure required to obtain a specified flow rate for a back pressure regulator.

**Causes:** Accumulation is the opposite of droop, pressure will increase as flow increases.



### Choked-Flow Area

**Definition:** The area of a flow curve under which flow demand is greater than the pressure-controlling capabilities of the regulator.

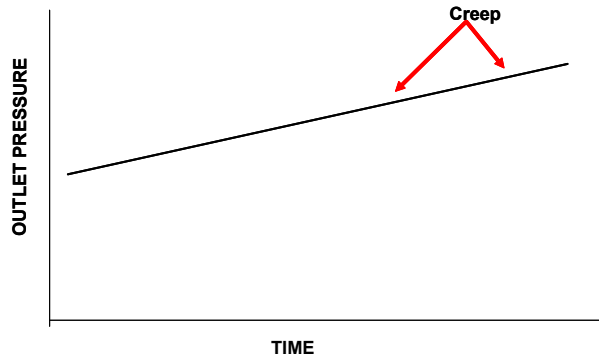


### Creep

**Definition:** An increase in outlet pressure typically caused by regulator seat leakage.

**Causes:**

- Contamination of the seat.
- Damage to the poppet or seat.
- Misalignment of the poppet to the seat.



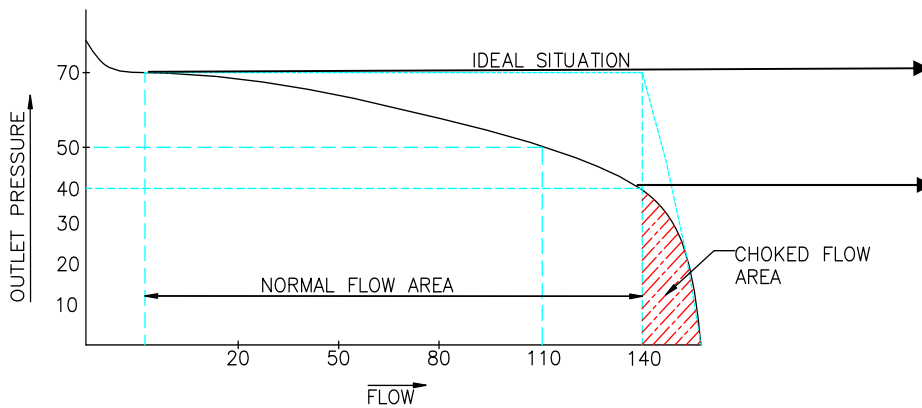
**How to prevent:**

- Use upstream filtration.
- Do not use regulator as a shut-off device, especially in gas service.

**Droop**

**Definition:** A decrease in outlet pressure caused by an increase in flow rate to a pressure-reducing regulator.

**Causes:** Droop is primarily caused by the set spring. The more flow required, the more the set spring relaxes and loses load force causing the outlet pressure to drop (droop).

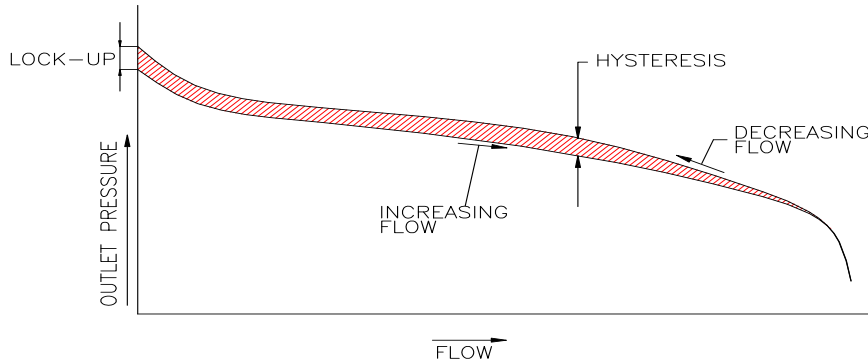


**How to prevent:**

- Use a longer spring.
- The set spring causes droop. Look at the set spring first.
- Use a dome-loaded regulator, it has less droop than a spring-loaded regulator.
- Use external feedback (EF) or electronic pilot regulators (EPR) as they produce low or virtually no droop.

**Hysteresis**

**Definition:** The difference between flow curves for increasing and decreasing flow.



### Joule-Thomson Effect

**Definition:** When a high-pressure gas drops in pressure the gas expands causing a heating or cooling effect, depending on the gas.

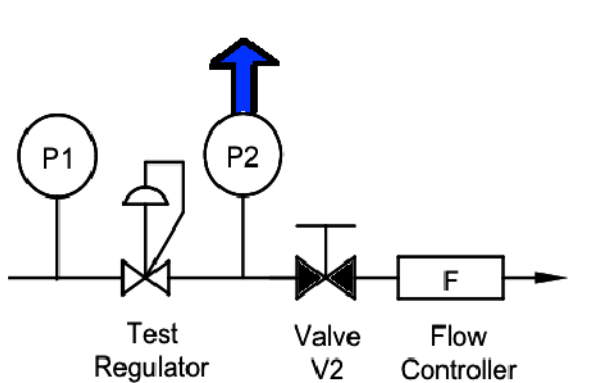
**What does Joule-Thomson mean to me?**

- Cooling of your system fluid may cause constituents to drop out, changing the composition.
- Liquid in the fluid stream may freeze, impairing or damaging the regulator.
- Even if your fluid is a pure gas the decrease in temperature may damage elastomeric seals.

### Lock-Up

**Definition:** An increase in outlet pressure that occurs as the flow rate is decreased to zero.

As outlet pressure builds, the balance of forces favour the control element, which allows the poppet to seat itself and close off inlet pressure. Therefore, P2 increases when V2 is shut-off.



### Seat Load Drop:

**Definition:** The initial pressure drop experienced when a regulator starts from a no-flow state.

### Supplier Pressure Effect (SPE)

**Definition:** The effect on the set pressure-reducing regulator as a result of a change to inlet pressure. This is normally experienced as an increase in outlet pressure due to a decrease in inlet pressure.