

Diaphragm Seals

PIP #: DS/PI-17B

Applicable to:

ASHCROFT DIAPHRAGM SEALS WITH DAMPENING DEVICES

The use of a dampening device (throttle screw, snubber, etc.) on a gauge or switch/seal assembly is not recommended unless there is very severe pressure pulsation. There is a high degree of inherent dampening when a diaphragm seal is used due to the fact it is a filled system. Also, the small communication hole in the pressure capsule or top housing acts as a restrictor to provide additional dampening.

If a dampening device is needed, the following is recommended:

1. Fill fluid must be silicone or Halocarbon (need low viscosity to minimize response time).
2. Throttle Screw – minimum size 0.020”.
3. Or an Ashcroft Type 1112 pressure snubber with a “D” size pore opening.

Note: Since the throttling device is operating on a “clean” system (all it “sees” is the fill fluid), there is no concern relative to plugging.

A dampening device is not recommended when the instrument is connected to the seal with a flexible line assembly. The small bore size (0.72”) of the line, plus the fill, provides sufficient dampening.

Limiting the size of the restriction between the gauge and the seal assures minimal response time (the time it takes for the gauge pointer to indicate a change in the process pressure) and fill time. A 50% reduction in the hole size of the restrictor will increase the response time and fill time by a factor of 6.

For those diaphragm seal applications where there is both vibration and pulsation, a liquid filled gauge is recommended.