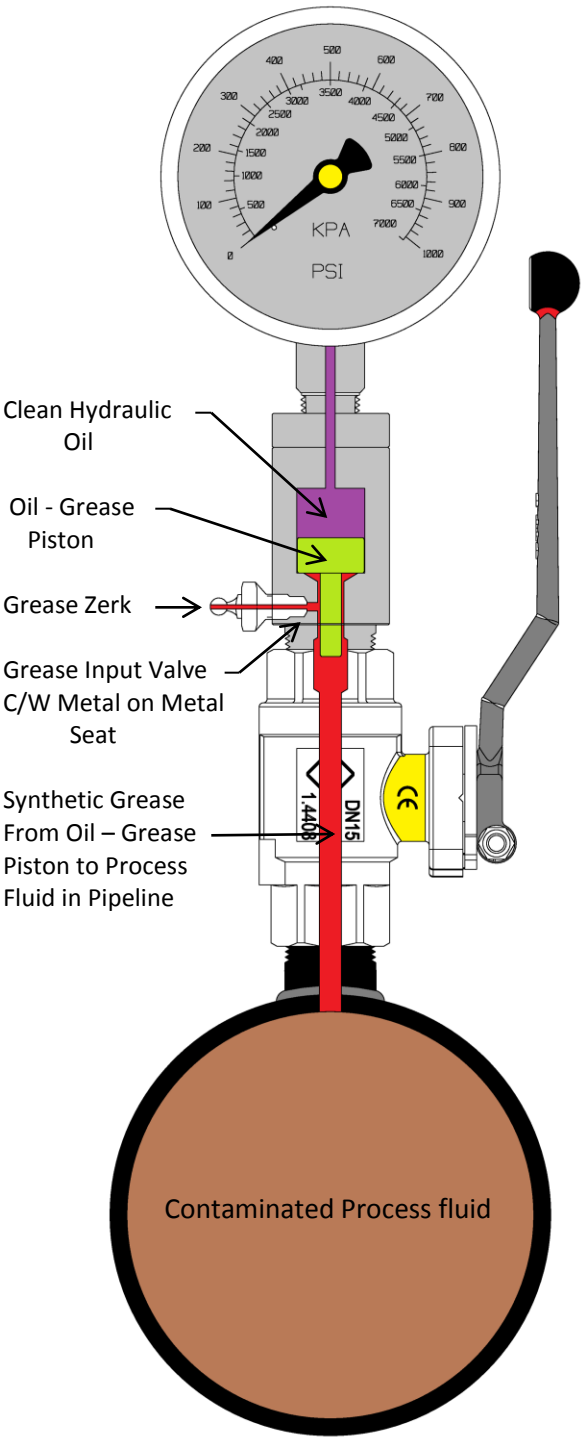


THE HASELOH GAUGE GUARDIAN™

The Gauge Guardian™ provides important protection for Gauges and sensors on pipelines, well heads and process control plants. The **Gauge Guardian™** protects the gauge or sensor against contaminated fluid This valve also protects against catastrophic loss of fluid if the gauge or sensor is sheared off. The **Gauge Guardian™** also provides freeze off protection all the way from the process fluid to the gauges and sensors.

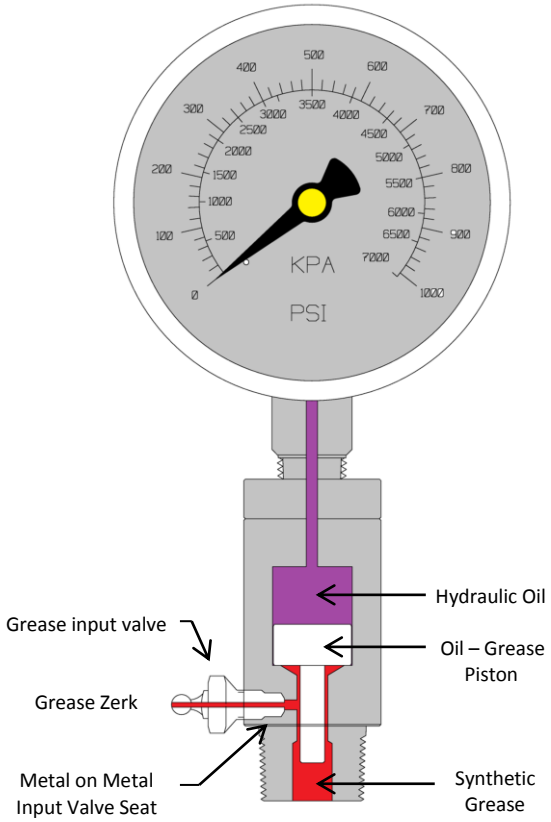
GAUGE GUARDIAN™ CONSTRUCTION

The output side, or top body, of **Gauge Guardian™** connects to the measuring device, such as a pressure transducer or gauge. The measuring device and the output side body are filled with clean, lightweight hydraulic oil. A piston with cup seals and a pressure relief valve is inserted into the cylinder bore of the bottom body. The lower half (input) of the **Haseloh Gauge Guardian™** body then screws to the output side, or top body, and an O-ring seals the two halves. Subsequently, the piston isolates the two chambers from one another.

The input side is then connected to the medium that needs to be measured, such as a ball valve on the pipeline. The input side of the system contains a Grease Input Valve. The ball valve is first opened, then the Grease Input valve is opened and synthetic grease is pumped into the system via a conventional grease gun. The synthetic grease fills the cavity of the input side from the piston all the way down through the ball valve to the liquid surface inside the pipeline. Once all the cavities are filled with grease, the grease input valve is closed and tightened. The grease input valve and the body of the Input half of the **Gauge Guardian™** both have a matching machined metal seat, which when tightened effectively seals the Grease Input valve. This grease input valve utilizes a metal on metal seat much like an automotive hydraulic brake system bleeder valve, and when tightened effectively seals the unit.

HOW IT WORKS

The liquid or gas pressure inside the pipeline pushes against the synthetic grease, the grease transmits the force to the piston. The piston transmits the force, to the lightweight hydraulic oil, the oil then transmits the pressure to the sensor or gauge. The pressure sensor or gauge, are never in contact with the process medium. The transducer or gauge only ever comes in contact with clean, lightweight hydraulic oil; preventing any freezing or plugging off. This same isolation system protects the sensor or gauge from H2S gas infringement. The synthetic grease, which is pumped into the lower portion of the **Gauge Guardian™** extends down to the process medium, creating a barrier which will not allow H2S gas to infringe. In the event of transducer or gauge shear off, the oil – grease piston dead ends at the top of the **Gauge Guardian™** and will not allow the escape or release of the process medium to the atmosphere or the ground. The only loss of fluid is the small amount of hydraulic oil on the top of the piston



Gauge Guardian™ is effective in preventing catastrophic process fluid loss under the following conditions:

- Sheared off electronic transducer or gauge.
- Burst Borden tube on gauges
- Burst element on electronic pressure sensors.

The **Gauge Guardian™** provides a simple, maintenance free solution for your pressure measuring needs.

HASELOH GAUGE GUARDIAN™SPECIFICATIONS

Max. Working Pressure ... 2000 Psi (13,800 Kpa)
Temperature Range. -40°F – 100°F (-40° C – 38°C)
Available Male Sizes 1/2" NPT, 3/4" NPT, and 1" NPT
Available Gauge Sizes 1/8" NPTF, 1/4" NPTF,
And 1/2" NPTF

Metro Tanks Ltd.
Manufacturing Division
1320-9th Ave. West
PO Box 2345
Kindersley, Sask.
S0L 1S0
Visit us at www.haseloh.ca