



Pressure Sensor Technical Information

Filling Procedure

CAUTION: The Sensor must be removed from the pipeline or the pressure in the pipeline must be reduced to zero before performing the following procedures.

Vacuum Filling

Vacuum filling is the most desirable method of filling pressure sensors in the field.

1. Remove the sensor from the pipeline. For Series 40 and 48 install appropriate gaskets and blind flanges on each end. One blind flange must be drilled and tapped to accept a vacuum fitting. For Series 42, use a pipe plug in one end and a pipe fitting in the other end to accept the vacuum line. Use 3 wraps of Teflon tape on the NPT threads to achieve a vacuum tight seal.
2. Remove the NPT plug. Connect the sensor as shown in Figure 1.
3. With valves 2 and 4 closed, open valves 1 and 3. Turn on the vacuum pump.
4. Pull a vacuum of at least 28 inches of mercury (in/HG). Hold this vacuum for a minimum of 5 minutes.
5. Close valves 1 and 3.
6. Open valve 2.
7. Open valve 4 to fill sensor. Wait 1 minute for complete filling and the pressures to equalize.
8. Close valves 2 and 4.
9. Remove the filling connection. Wrap the pipe plug with 3 turns of Teflon tape and reinstall it in the filling port of the sensor. The sensor is now filled.
10. Remove the vacuum line from the blind flange or pressure fitting. If a calibrated pressure source is available, this connection can be used to check the accuracy of the filled assembly.
11. Remove the blind flanges or pipe fittings. The sensor assembly is now ready for installation.

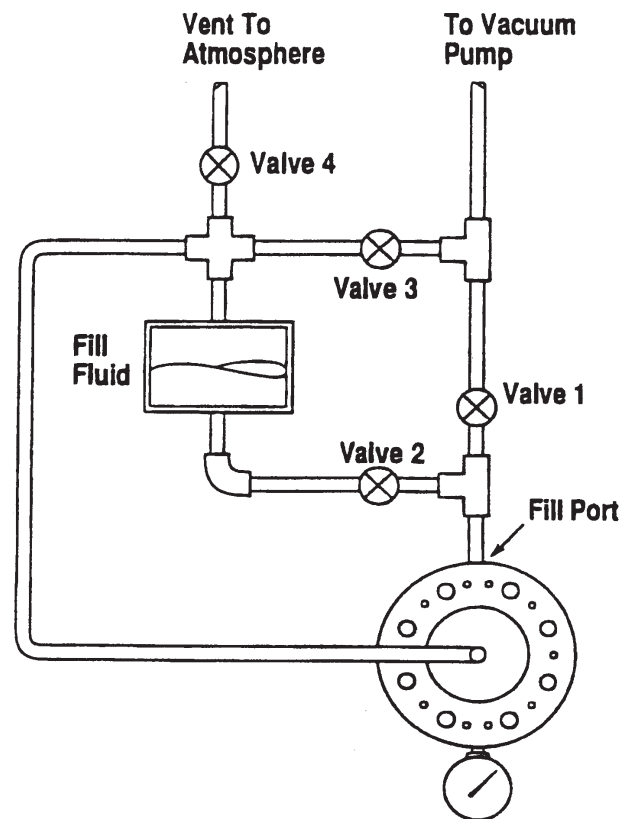


Figure 1
(Vacuum Filling)

Gravity Filling

(sensor removed from pipeline)

1. Remove the sensor from the pipeline.
2. Remove the defective gauge from the sensor.
3. Using a hypodermic syringe, fill the bourdon tube of the new gauge with sensing liquid.
4. Install the new gauge in the sensor body using 3 wraps of Teflon tape to achieve a pressure tight seal.
5. Orient the assembly with the gauge down, as shown in Figure 2.
6. Remove the NPT plug from the filling port.
7. Pour sensing liquid into the NPT filling port until the threaded hole is half full.
8. Press and release the inside diameter of the sleeve a number of times in several places to displace trapped air and dislodge bubbles. The sensor should also be rotated 45 degrees if possible during this operation.
9. Repeat steps 7 and 8 until the liquid level in the NPT filling port does not change and all bubbles are completely gone.
10. Adjust the liquid level in the NPT filling port, to be within 1/4 inch of the outside diameter of the sensor.
11. Wrap the pipe plug with 3 turns of Teflon tape. Install in the filling port and tighten. The sensor assembly is now ready for installation.

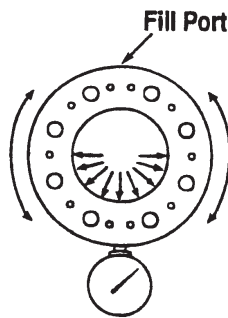


Figure 2
(Gravity Filling - Sensor
Removed From Pipeline)

Gravity Filling

(sensor installed on pipeline)

1. Remove the defective gauge from the sensor.
(Figure 3)
2. Using a hypodermic syringe, fill the bourdon tube of the new gauge with sensing liquid. Cover the end of the gauge pressure port with one layer of plastic food wrap ("Saran" wrap) and wrap the threads with 3 turns of Teflon tape.
3. Pour sensing fluid into the NPT port until the threaded hole is filled to within 1/4 inch of the sensor outside diameter.
4. Puncture the plastic wrap in the gauge pressure port with a pin or needle and install the gauge in the gauge connection of the sensor. Tighten as required. The sensor assembly is now ready for use.

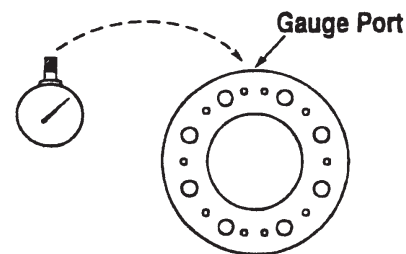


Figure 3
(Gravity Filling - Sensor
Installed in Pipeline)