

DILUTION SAMPLE SYSTEM OPERATION MANUAL

Envent Engineering Ltd.

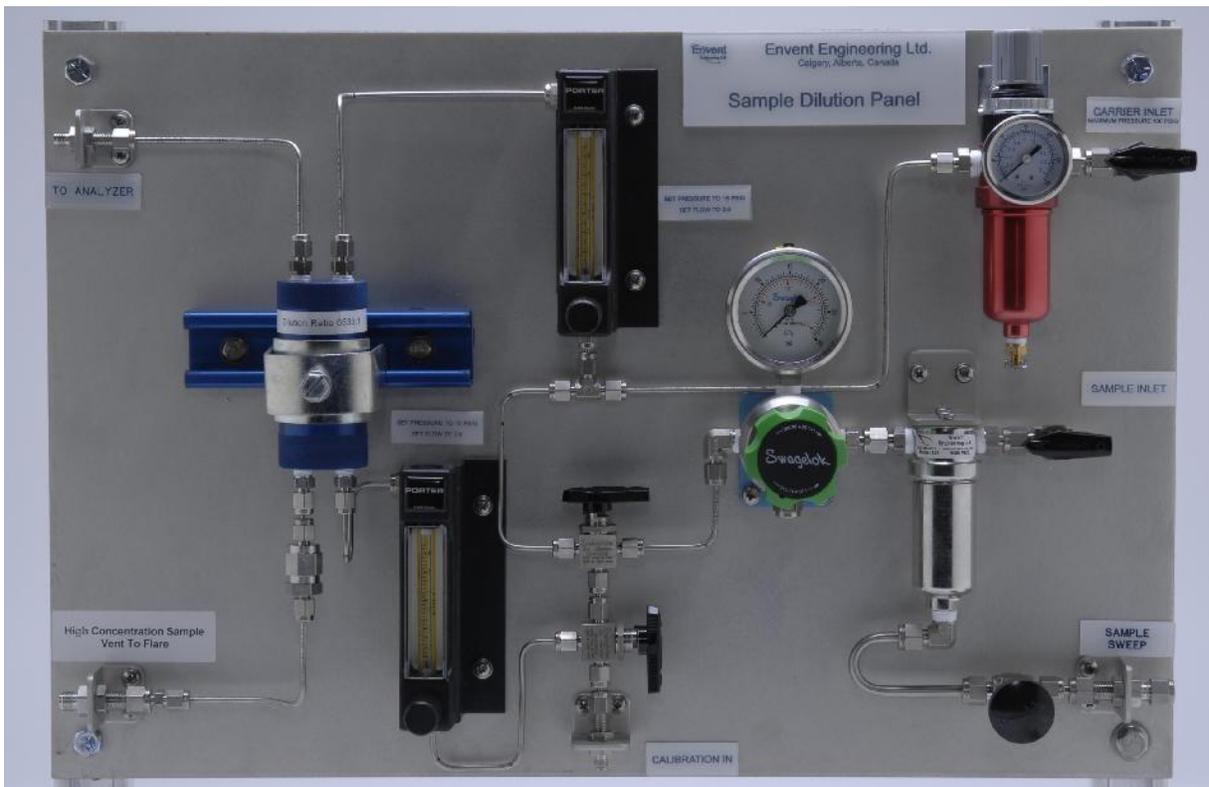
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Dilution Sample System

A standard 330 series hydrogen sulfide analyzer from Envent Engineering will measure up to 0 to 100 ppm, however the tape consumption will be excessive if the analyzer is measuring 50-100 ppm on a continuous basis. The dilution sample system option utilizes a permeable membrane which will dilute a high range hydrogen sulfide sample from as high as 100% hydrogen sulfide by volume to a ppm range of 0-20 ppm/v. The system requires an H₂S free carrier gas such as air, nitrogen or fuel gas.

Caution: High levels of hydrogen sulfide are present in the dilution sample system.

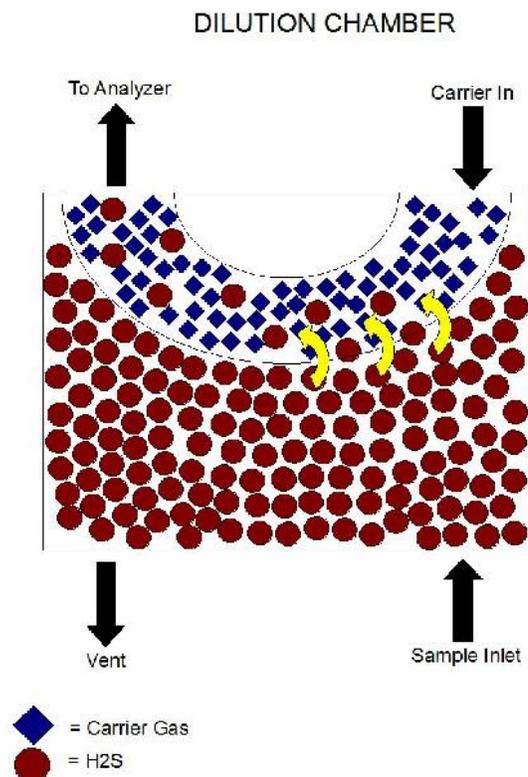
Ensure you are fully familiar with the operation of the dilution sample system before commencing service. Purge the dilution chamber with carrier gas before opening.

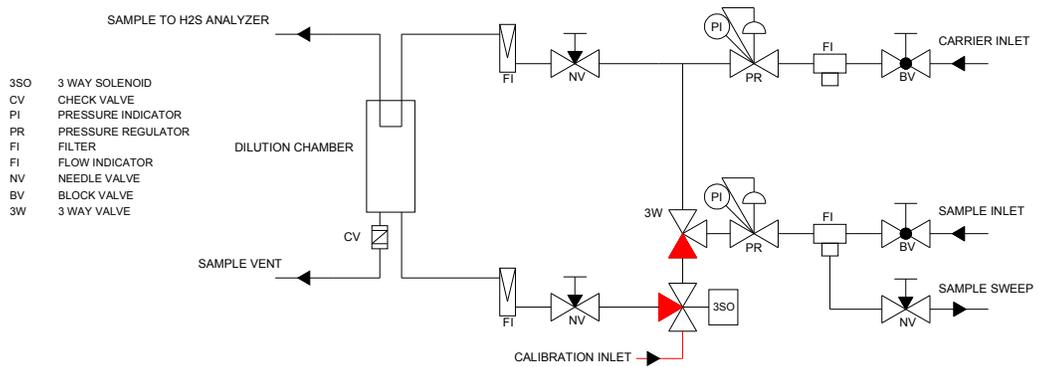
A leak check of the dilution chamber should be performed after service of the dilution chamber

Dilution Chamber

The dilution chamber has membrane tubing coiled in the dilution chamber. As the gas enters the chamber a small portion of the gas permeates through the membrane. It then mixes with the carrier gas, which is then analyzed by the hydrogen sulfide Analyzer.

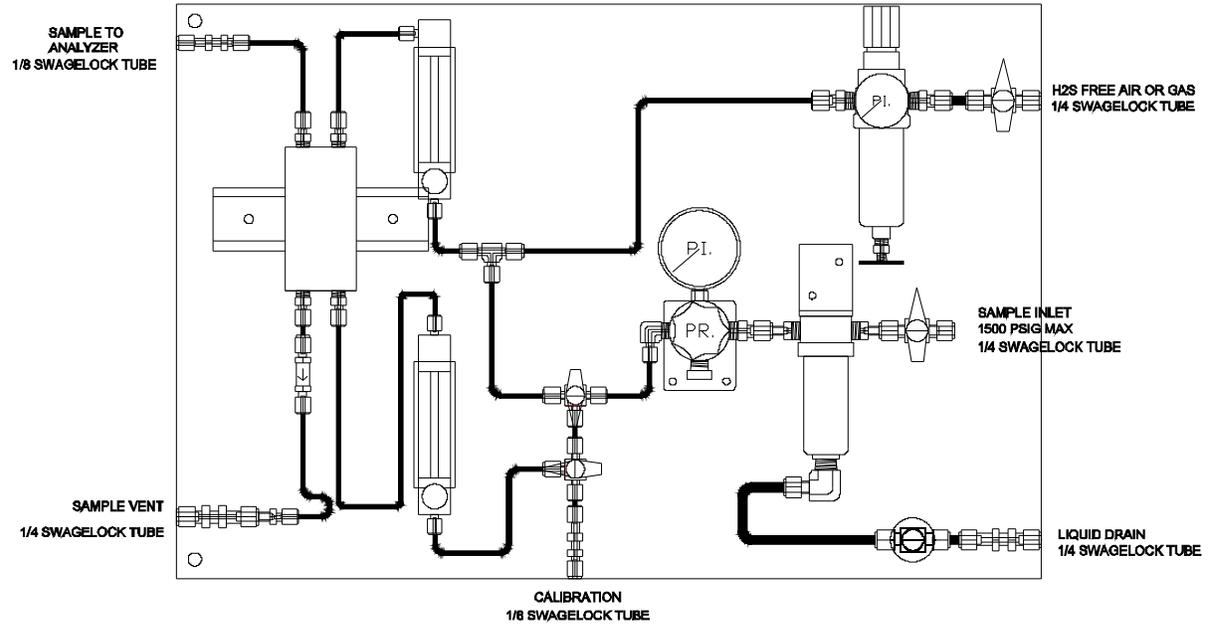
A calibration fitting is provided for introduction of a calibration gas. A three way valve is also provided to allow the dilution chamber to be purged with carrier gas prior to being serviced.





- 3SO 3 WAY SOLENOID
- CV CHECK VALVE
- PI PRESSURE INDICATOR
- PR PRESSURE REGULATOR
- FI FILTER
- FI FLOW INDICATOR
- NV NEEDLE VALVE
- BV BLOCK VALVE
- 3W 3 WAY VALVE

Dilution Sample System Flow Diagram



Dilution Sample System Layout

Leak check procedure

After opening the dilution chamber it should be checked for leaks.
Switch the three way valves to the purge position
Set the carrier gas pressure to 10 psig
Plug the Sample To Analyzer port
Observe the carrier flowmeter and ensure it drops to zero flow
Plug the Sample Vent
Observe the sample flowmeter and ensure it drops to zero flow

Service Procedure

The dilution sample system will generally operate for up to one year with no service required. It will also protect the analyzer from liquid or particulate contamination in the sample. If the dilution sample system is flooded with hydrocarbon liquids, water or compressor oil, the dilution membrane tubing may require replacement.

Turn the three way valves to the purge position
Allow the dilution chamber to purge with carrier gas for 5 minutes
Remove the 1/8" Swagelok tubing fittings from the top and bottom of the dilution housing
Remove the bracket holding the dilution housing to the panel
Remove the top of the dilution canister
Inspect the dilution tubing, looking for damage or discoloration
Replace the dilution tubing if necessary
Refer to the factory calibration sheet for the specified length of tubing or measure the original length and duplicate it.

Contact Envent Engineering Ltd. For replacement membrane tubing

Reverse the above procedure to restore the dilution chamber to service
Re-calibrate the analyzer after replacing the dilution membrane tubing