GENIE®225
Membrane Separator

Genie® Model Supreme 225
Installation and Operation Instructions

Manufacturing Contact Information

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Safety Warnings

Failure to abide by any of the safety warnings below will result in release of fluid at full pipeline pressure and could result in serious injury or death.

- Do not exceed any equipment pressure ratings.

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GENIE® sampling solutions

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Technical Specifications

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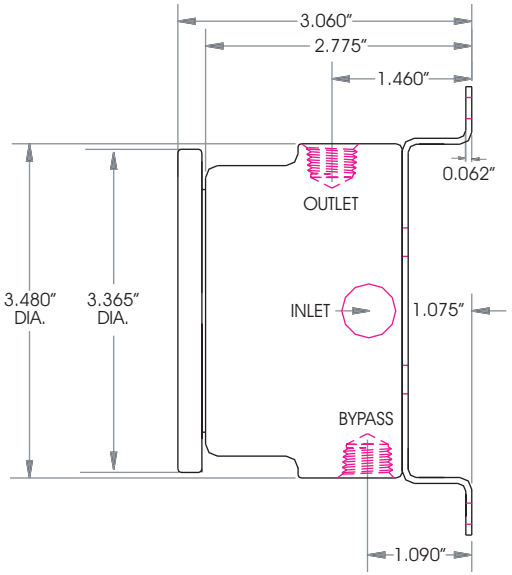
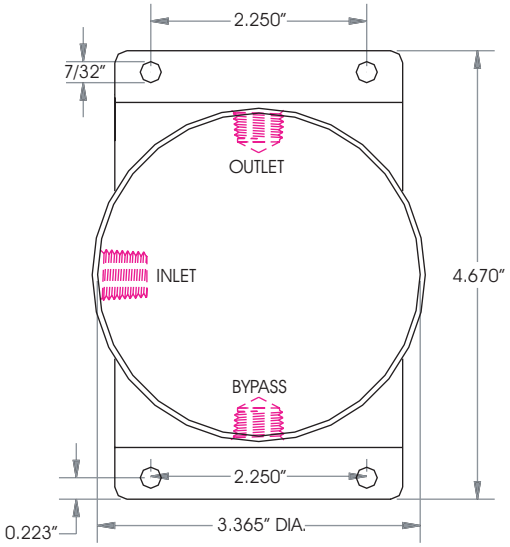
Maximum pressure rating	2,000 psig (137.9 barg)
Maximum temperature	300 °F (149 °C)* * Actual limit depends on sealing material chosen. Refer to Temperature Range Comparison Chart.
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	150 cc/min in Diesel* 200 cc/min in Kerosene* 450 cc/min in Gasoline* *Maximum flow results in approximately 10 psi membrane differential pressure
Port sizes	Inlet, Outlet, & Bypass: 1/4" female NPT
Internal volume (cc)	Total: 12 Upstream of membrane: 7.7 Downstream of membrane: 4.3
Wetted materials	Machined parts: 316/316L stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: User defined Membrane: Inert

Dimensions

Side View



Front View



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Instructions

To obtain optimum performance with the Genie® Membrane Separators Model 225, observe the following guidelines:

1. Install the Genie® separator the minimum distance upstream of the analyzer to be protected. Mount the separator as indicated on the mounting diagram. Do not allow the sample to cool downstream of the Genie® Separator or else additional immiscible liquid may condense.
2. Establish the minimal "bypass" flow that will bring fresh sample to the separator quickly.
3. Maintain a flow rate thru the Genie® that will minimize membrane differential pressure.
4. **Removal of immiscible liquid from a hydrocarbon liquid.** Hydrocarbon liquid readily flows through the membrane and exits from the "outlet" port. The immiscible liquid is rejected by the membrane and flows out of the "bypass" port, along with hydrocarbon liquid.

   Removal of dissolved gas or volatile organic carbon (VOC) from water sample. All of the water sample flows out of the "bypass" port. Establish this flow rate in accordance with the required transport time.

   Method #1 -A vacuum source is applied to the "outlet" port to remove dissolved gas or VOC from the water. The gas or VOC then flows through the membrane. An auxiliary gas may be introduced in the "outlet" stream to act as a carrier for the dissolved gas or VOC.

   Method #2 -An alternative is to mix the auxiliary gas with the water sample upstream of the Series 200 separator. A portion of the dissolved gas or VOC will transfer to the auxiliary gas. The auxiliary gas, containing equilibrium concentrations of the dissolved gas or VOC, will flow through the membrane and exit the separator from the "outlet" port.

   Removal of gas bubbles from water. Sample water flows into the "inlet" port, intimately contacts the entire membrane surface, then exits from the "bypass" port. Gas bubbles flow through the membrane and exit from the "outlet" port. If desired, an auxiliary gas may be introduced in the "outlet" stream to act as a carrier if the gas flow rate is low, and if it is desirable to reduce the gas transport time.

Precaution

The membrane is designed and supported to accommodate sample flow entering from the inlet/bypass cavity, traveling through the membrane, then moving to the outlet cavity. If the sample flow should become reversed, even momentarily, it is likely to damage the membrane. Flow reversals can occur when valves are operated in the improper sequence, or when external operating conditions suddenly change. An example of improper sequence of valve operation is when the "inlet" sample flow of a liquefied gas is blocked without first blocking the "bypass" flow. If this were to occur, the liquid sample downstream of the membrane would reverse flow as a result of depressurization in the "inlet" cavity, through the bypass port.

Solution

A simple solution is to install a check valve directly in the Genie's® "outlet" port to prevent reverse flow. In addition, "tee" in a line after the outlet check valve (CV1) that ties into the bypass line before the needle valve. This pressure relief line also has a check valve (CV2). Installation. CV1 and CV2 should have a cracking pressure between 1/3 and 1 PSI. Ideally, CV1 should be installed directly into the 1/4" FNPT "outlet" port of the Genie® 225. By installing CV1 in this manner, the volume of liquid gas between the check valve and membrane is minimized, thereby reducing the possibility of membrane damage.

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Model Numbering & Additional Part Numbers

Your model number is determined by your specific needs. Choose options below.

Sealing material	0 = fluoroelastomer	*(other materials available upon request)*
Membrane type	8 = Liquid/Liquid Backed membrane	*(consult the factory if composition contains Xylene.)*
Mounting bracket accessory	Part # 225-509-SS *(sold separately)*	
O-ring replacement	Part # 225-500 *(sold separately)*	
Membrane replacement	Part # 225-5X8 *(contains 5 membranes per kit)(sold separately)*	

How to build the model number: