



Genie® Model 170 Installation and Operation Instructions

Manufacturing Contact Information

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U.S. Patent 5,476,586

Safety Warnings

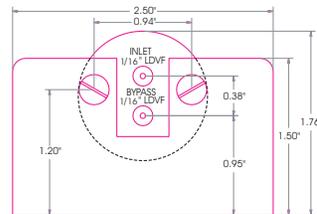
- ⚠ Failure to abide by any of the safety warnings below will result in release of fluid at full pipeline pressure and could result in serious injury or death.
 - ▶ Do not exceed any equipment pressure ratings.

Technical Specifications

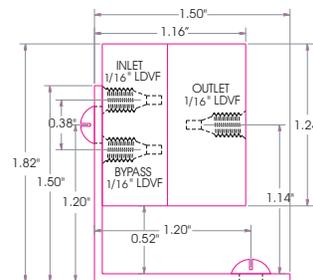
Maximum pressure rating	170: 500 psig 170UA: 100 psig (due to rotameter limitations)
Maximum recommended supply pressure	Lowest possible pressure consistent with application *Must not exceed "Pressure rating" listed above
Maximum temperature	185 °F (85 °C) for Type 6/BTU membrane 302 °F (150 °C) for Hi-Flow membrane
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	300 cc/min for Type 6/BTU membrane* 750 cc/min for Hi-Flow membrane* *Maximum flow results in approximately 2 psi membrane differential pressure
Port sizes	Inlet, Outlet, & Bypass: 1/16" low volume fittings
Internal volume	0.16 cc
Wetted materials	Machined parts : 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Membrane: Inert

Dimensions

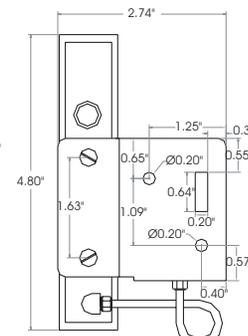
Back View



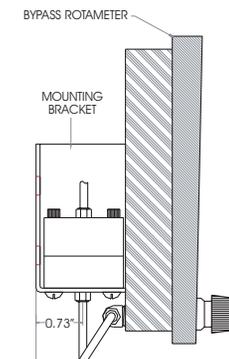
Side View



Back View



Side View



Function

The Genie[®] is installed as the last element of a gas sample conditioning system. Its function is to protect an analyzer against liquid entrained in sample gas. In normal operation, gas flows through the Genie[®] membrane to the analyzer. Liquid droplets or slugs, if present in the sample gas, are shed by the membrane. This liquid is removed from the “bypass” port on a continuous or periodic basis. Should the Genie[®] become totally filled with liquid, flow will discontinue to the analyzer. After the liquid is removed, flow to the analyzer is restored.

How it works

The Genie[®] membrane contains microscopic passages which permit molecules of all gases, or vapors, to flow through with ease. Liquids consist of large numbers of molecules that cling tightly together. As a group, these molecules in the liquid cannot flow through the membrane’s small passages. Even the smallest of aerosol droplets are removed by this process. The gas or vapor composition of a sample flowing through the Genie[®] membrane is unchanged.

To obtain optimum performance with the Series 100 Genie[®] Membrane Separator Model 170, observe the following guidelines:

1. Install the Genie[®] Separator immediately upstream of the analyzer or gas pump to be protected. Insure that the sample gas temperature downstream of the Genie[®] outlet port is the same or higher than the temperature of the Genie[®] Separator. This will prevent sample gas components from traversing the membrane as a gas or vapor then condensing on a cooler surface downstream. Mount the Genie[®] Separator as indicated on the mounting diagram to insure proper drainage of separated liquids. Observe maximum operating temperature limits indicated on the reverse side of these instructions.
2. Establish a “bypass” flow stream to bring fresh sample to the separator quickly, and provide a means for continuous removal of separated liquids.
3. Maintain the lowest possible “inlet” port sample pressure consistent with good overall system operation. It is important to note that sample flow will cease should liquid fill the entire “inlet” portion of the Genie[®] housing. Most system designs would then allow the sample pressure downstream of the Genie[®] Separator to “bleed off” to zero. With the downstream pressure at zero, the membrane differential pressure is now equal to the sample pressure supplied to the Genie’s[®] “inlet” port. If the membrane differential pressure is excessive at the same time that the “inlet” is flooded with liquid, it is possible that small quantities of liquid may be forced through the membrane. Back-pressure control of sample gas downstream of the Genie[®] Separator would eliminate this problem. Therefore, it may be desirable to provide back-pressure control on the Genie’s[®] “outlet” gas stream if either of the two following conditions prevail:
 - a. The Genie[®] Separator’s “inlet” pressure exceeds 10 PSIG and liquid hydrocarbon is likely to fill the “inlet” portion of the housing.
 - b. The Genie[®] Separator’s “inlet” pressure exceeds 30 PSIG and water or other liquids exhibiting high surface tension characteristics are likely to fill the “inlet” portion of the housing.

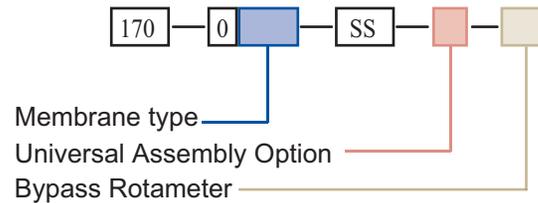
*Consult A+ Corp for assistance in specific applications.
4. Avoid “blowing down” sample from the Genie’s[®] “bypass” port which may allow the “inlet” pressure to drop below the “outlet pressure”. This condition may result in a momentary reversal of internal gas flow allowing the membrane to expand away from its support and become damaged.

Model Numbering & Additional Part Numbers

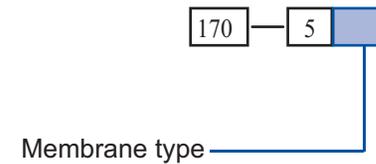
Your model number is determined by your specific needs. Choose options below. Part # 170-005-SS-U-1 is recommended for most applications.

Membrane type	T2 = Hi-FLOW (bonded to Teflon gasket)	6 = Type 6/BTU
Universal Assembly option	Blank = No Universal Assembly option	U = Universal Assembly option
Bypass Rotameter* (only if option U is selected) <small>*Dwyer Rotameter with Integral Valve</small>	0 = Without Rotameter	1 = 10-100 cc/min* 2 = 100-1000 cc/min*
Mounting bracket accessory	Part # 170-509-SS (sold separately)	
Fitting kit accessory	Part # 170-Ferrule (sold separately - 3 sets per kit)	

How to build the model number:



How to build the replacement membrane kit number:



 We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors.

 Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet.  Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials and other materials of construction for their application.