

GENIE[®] 133

Supreme Membrane Separator



Genie[®] Supreme™ Model 133 Installation & Operation Instructions

Manufacturing Contact Information

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Safety Warnings

- ⚠ Failure to abide by any of the safety warnings below may result in equipment failure and serious injury or death.
 - ▶ Valve off the sample flow before installation.
 - ▶ Do not exceed any equipment pressure ratings.

Application Note

- ▶ To achieve the maximum recommended flow rate through a Genie 133 with the Liquid Block option, at least 30 psi of pressure difference is required between the inlet and outlet ports if the Genie contains a Type 6 membrane, or at least 5 psi for a Type 7.

Tools Required

- ▶ Four #10 screws for mounting bracket to panel.
- ▶ Screwdriver for mounting bracket to panel.

Technical Specifications

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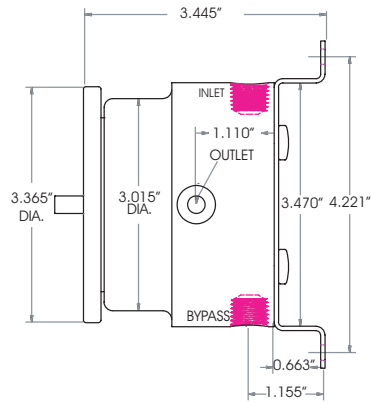
| | |
|---|---|
| Maximum pressure rating | 3,000 psig (206.8 barg) Probe Assembly: 2,500 psig (172.4 barg) |
| Maximum Liquid Block™ valve auto-reset pressure | 2,000 psig (137.9 barg) Slowly open the supply pressure so that the minimum differential pressure required to shut off the Liquid Block™ is not met or exceeded. |
| Temperature range | Type 6 membrane: -15°F (-26.1°C) to 185°F (85°C) *Type 7 membrane: -15°F (-26.1°C) to 300°F (149°C) <i>*Actual limit depends on sealing material chosen. Refer to Temperature Range Comparison Chart.</i> |
| Maximum Recommended Flow Rate Results in approx. 2 PSI pressure differential. For higher flow rates, contact the factory. | Type 6 Best Rejection: 5.4 SLPM (11.4 SCFH) Type 7 Highest Temps: 7.1 SLPM (15.0 SCFH) |
| Bypass flow rates | Requirement varies with application |
| Port sizes | Inlet, Outlet, & Bypass: 1/4" female NPT |
| Internal volume Listed with and without Liquid Block™ respectively | Total: 43.7 cc , 44.9 cc Upstream of membrane: 40 cc Downstream of membrane: 3.7 cc , 4.9 cc |
| Wetted materials | Machined parts: 316/316L stainless steel / ISO 15156-3 compliant All other metal parts: stainless steel / ISO 15156-3 compliant Sealing material: User defined Membrane: Inert |



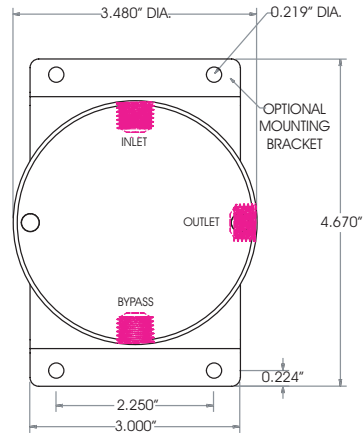
Dimensions

Individual product

Side View



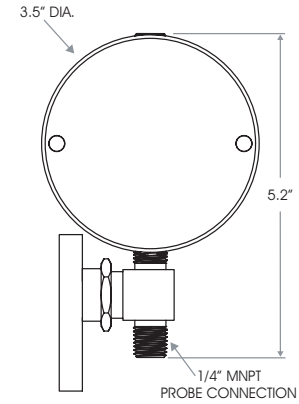
Front View



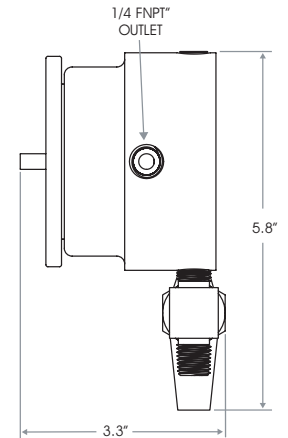
If left outlet required, invert Genie and use port labeled "BYPASS" as inlet, because sample must enter upper port.

Probe mounted assembly

Front View



Side View



Refer to 760 or GPHV product sheet for probe dimensions and technical information.

Mounting Instructions Without Optional Bracket

Note: Separate instructions for mounting using the optional bracket will be included with bracket. The **Genie[®] Supreme[™]** is designed to be back mounted to hold it stationary for quick and easy servicing. The optional bracket makes installation easier. The **bypass port** must face downward for the **Genie[®]** to function properly.

Step 1. Position the Genie[®] on the panel

- ▶ Position the **Genie[®]** so that the final position of the **bypass port** will be facing downward. **Bypass port** positioning is important for draining the rejected liquids.

Step 2. Mount

- ▶ Affix the **Genie[®]** to the panel surface.
- ▶ Fasten the **Genie[®]** to the panel using two ¼" diameter screws.

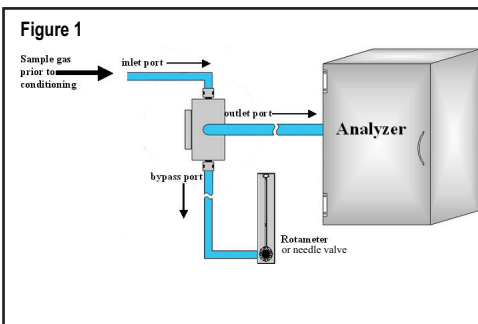
Installation Instructions

Step 1. Depressurize the system

- ▶ Valve off the sample flow prior to installation of the **Genie[®] Supreme Membrane Separator[™]**
- ▶ If the supply pressure is above the **Genie[®] maximum recommended supply pressure** or above the pressure rating of any component in the sample system, then a pressure regulator should be installed upstream of that component before the sample flow is started.

Step 2. Connect the Genie[®]

- ▶ The **Genie[®]** ports are labeled **inlet**, **outlet**, and **bypass**. Connect tubing from the sample stream to the **Genie[®] inlet port**. The **bypass port** must be facing downward for the **Genie[®]** to function properly (Figure 1).
- ▶ Connect tubing from the **Genie[®] outlet port** to the analyzer or next device in the sample system. The **Genie[®]** should be located as close to the analyzer as possible to prevent the sample gas temperature from decreasing; otherwise, condensation could occur downstream of the **Genie[®]** and the sample integrity would be affected.
- ▶ Connect the **Genie[®] bypass port** to a throttling valve. A rotameter containing a valve may be installed at the **bypass port**, but only if the **inlet port** pressure is below the rotameter pressure rating. The **bypass port** allows rejected liquid and particulate to be drained. Do not plug the **bypass port** or leave it open to the atmosphere.



Maintenance Note

Note: **Genie[®] Supreme Membrane Separators[™]** are virtually maintenance free. On occasion, the membrane and o-rings will need replacing. Replacement instructions are shipped with replacement membrane and o-ring parts.

Operating Instructions

Note: The distance between the **Genie[®]** and the analyzer should always be minimized. If the sample dewpoint is typically above ambient temperature, then heat tracing may also be required in order to maintain sample integrity. Equations of state software is available to aid in representative sampling by simulating sampling conditions and determining if composition changes occur.

Step 1. Getting started

- ▶ Establish the minimal **bypass** port flow that will bring fresh sample quickly yet allow for continuous removal of separated liquids.
- ▶ For models containing Liquid Block[™]: Slowly open the supply pressure so that the minimum differential pressure required to shut-off the Liquid Block[™] is not met or exceeded..

Step 2. Points to consider during operation

- ▶ Avoid “blowing down” the sample from the **bypass port**; otherwise, the **inlet** port pressure may drop below the **outlet** port pressure resulting in internal reverse flow.
- ▶ Maintain the lowest possible **inlet port** sample pressure consistent with good overall system operation in order to prevent excessive membrane differential pressure.
- ▶ Maintain the sample flow rate through the **Genie[®] outlet port** below the **maximum recommended flow rate**. When the flow rate is below the maximum recommended, then the **membrane differential pressure** will typically be below 2 psi, providing that all of the membrane area is available for flow. Accumulation of liquid or particulate on the membrane surface could decrease the membrane area available for gas flow, which would result in an increase of **membrane differential pressure**. Very few liquid components will flow through the membrane when the **membrane differential pressure** is below 2 psi. Some applications allow for a much higher **membrane differential pressure**.

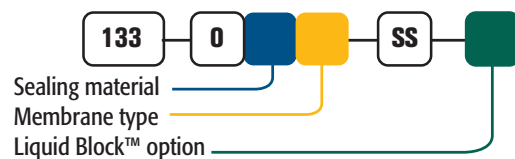
Model Numbering & Additional Part Numbers

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

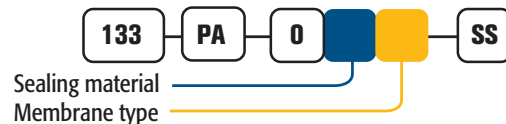
| | | | |
|-----------------------------|---|------------------------|--|
| Sealing material | 0 = fluoroelastomer | 1 = perfluoroelastomer | (others available upon request) |
| Membrane type | 6 = Better Rejection; Rejects ALL types of liquids from vapor 7 = Highest Temps; Rejects ONLY high surface tension liquids | | |
| Liquid Block™ option | Blank = No Liquid Block™ | LB = Liquid Block™ * | *May be restrictive for vacuum service |
| Mounting bracket | Part # 133-509-SS (sold separately) | | |

Model number:



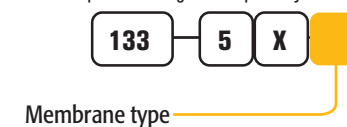
Assembly for probe mounting:

Refer to 760 or GPHV product sheet for probe dimensions and technical information.
Not recommended for custody transfer BTU analysis.



Replacement membrane kit number:

Five membranes per kit. O-rings sold separately



Membrane replacement sealing material number:

One o-ring per kit.

