

# AVENGER™ 33

Particulate & Coalescing Filter



## Avenger™ Model 33 Installation & Operation Instructions

### Manufacturing Contact Information

**A+ Corporation, LLC** *Call for expert product application assistance:*  
41041 Black Bayou Rd. Phone: (225)-644-5255 Website: [www.geniefilters.com](http://www.geniefilters.com)  
Gonzales, LA 70737 Fax: (225)-644-3975 E-mail: [sales@geniefilters.com](mailto:sales@geniefilters.com)

### 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.

### Tools Required

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

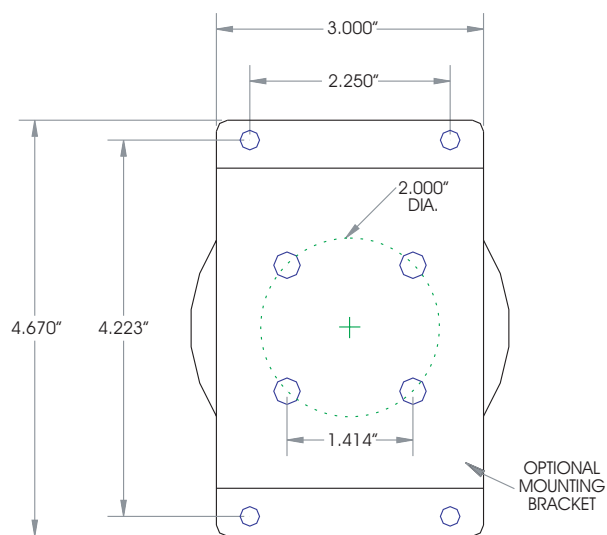
## Technical Specifications

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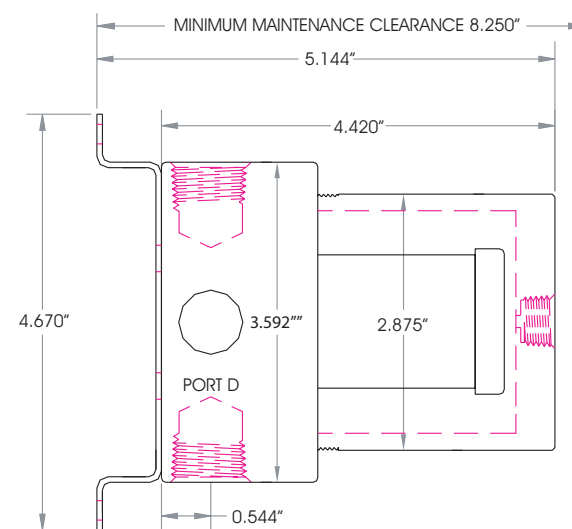
|  |  |
|--|--|
| Maximum pressure rating                  | 1,000 psig   |
| Maximum recommended supply pressure      | Lowest possible pressure consistent with application   |
| Maximum temperature                      | 302°F (150°C)  |
| Flow coefficients, Liquid C <sub>v</sub> | Without element 1.9  |
| Element size                             | Outside Diameter: ~ 1.4"<br>Inside Diameter: ~ 1.0"<br>Length: ~ 2.5"  |
| Port sizes                               | Inlet, Outlet, & Bypass: 1/2" female NPT<br>Gauge: 1/4" female NPT   |
| Number of ports                          | 5  |
| Internal volume                          | 200 cc   |
| Wetted materials                         | Machined parts: 316/316L stainless steel / NACE compliant<br>All other metal parts: stainless steel / NACE compliant<br>Sealing material: Fluoroelastomer standard |

## Dimensions

Back View



Side View



## Installation Instructions

Install the mounting bracket onto the Avenger Model 33 or 38 as per the Mounting Bracket Installation Instructions included in A+ Corporation Mounting Bracket Kit P/N 33-509SS for Model 33 or P/N 38-509SS for Model 38. Aftermarket brackets may be mounted as per the mounting diagrams below. Mount the Avenger horizontally as shown in the diagram. Lock washers may be used on the lower 10-32 screws to tilt the filter as shown to ensure that liquids drain properly. "Port D" should be facing down as shown. An optional upstream pressure gauge may be installed in "Port E" or it may be plugged. The Model 33 has 1/2" NPT ports (except for the 1/4" NPT gauge "Port E") and the Model 38 has 1/4" NPT ports. Refer to the "Application" drawing on Page 2 for tubing connection instructions.

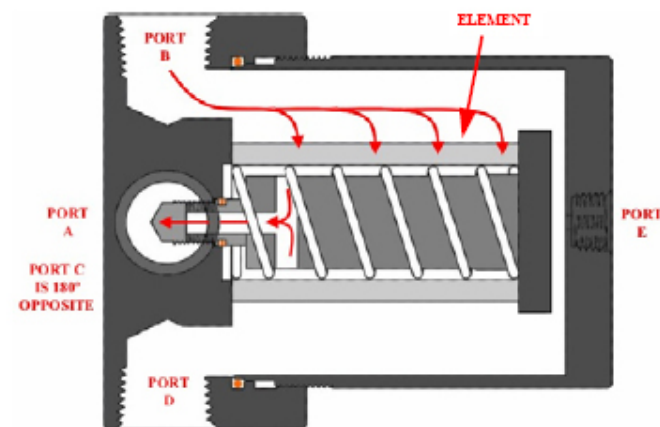
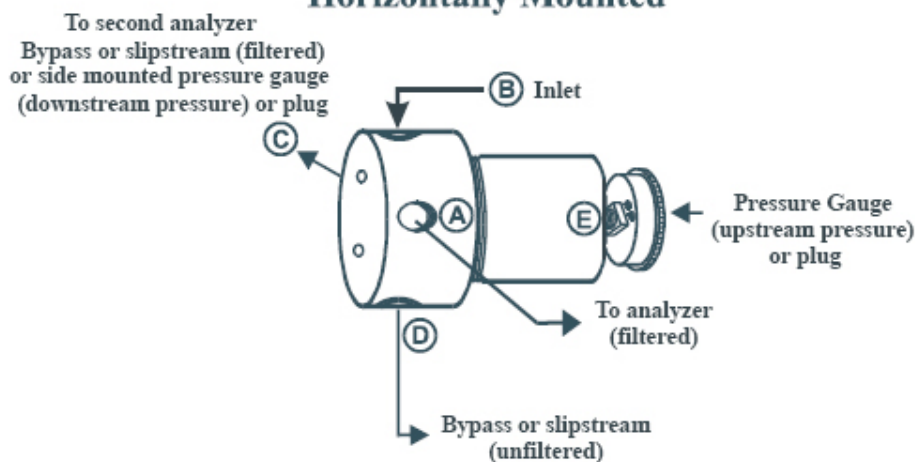
## Application Drawing

**Application #1:** Particulate Removal From Sample Gas - No Membrane

**Application #2:** Particulate Removal From a Liquid Stream - No Membrane



### Horizontally Mounted



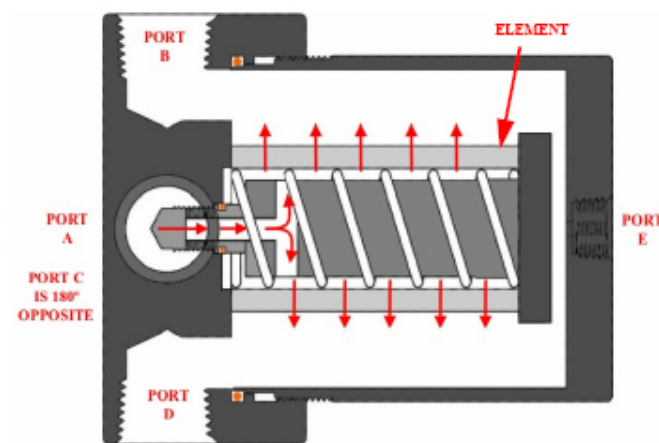
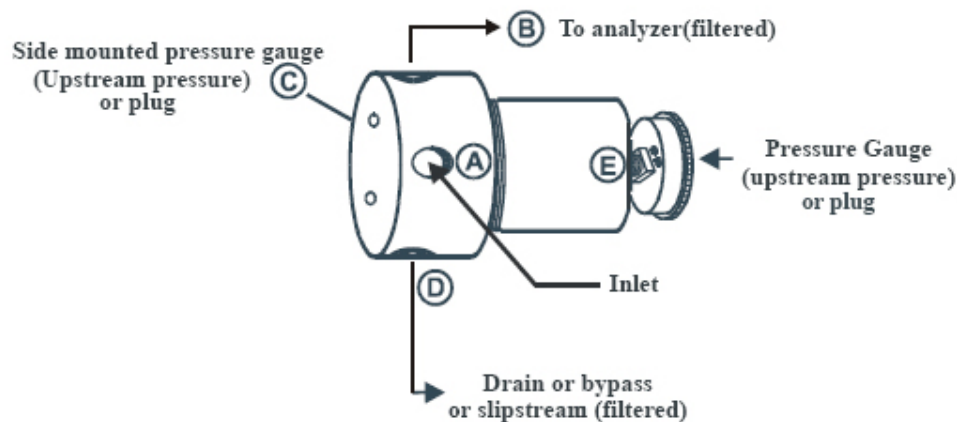
Model 33 & 38 are mounted horizontally. Sample (liquid or gas) with particulate enters port (B) and flows from the element exterior to its interior. An unfiltered bypass stream leaves port (D). Clean, filtered sample flows from the element interior to Ports (A) and (C)

\* Flow is from element exterior (outer) to its interior (center).

**Application #3:** Coalescing Of Liquids And Removal Of Solids From Sample Gas- No Membrane



**Horizontally Mounted**



Model 33 & 38 is mounted horizontally. Gas sample with entrained liquids and particulate enters port **A** and flows from the element interior to its exterior. A filtered bypass stream leaves port **D**. Sample gas flows through the element. Liquid coalesced by the element drains through Port **D**. Clean sample gas leaves Port **B**.

*\*Flow is from the element interior (center) to its exterior (outer).*

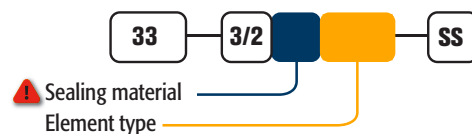
## Model Numbering & Additional Part Numbers

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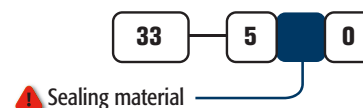
Your model number is determined by your specific needs. Choose options below.

|                                   |   |                                  |  |
|-----------------------------------|---|----------------------------------|--|
| <b>Sealing material</b> ⚠         | 0 = Fluoroelastomer                       | 1 = Perfluoroelastomer           | (other materials available upon request) |
| <b>Element type</b>               | 07CFS = 0.1 micron coalescer fluorocarbon | SS10 = 10 micron stainless steel |  |
| <b>Mounting bracket accessory</b> | Part # 33-509SS (sold separately)         |                                  |  |

#### How to build the model number:



#### How to build the replacement o-ring kit number:



#### How to build the replacement filter element number:



Replacement filter kit contains 5 total. O-ring replacement kit contains all assembly o-rings.

⚠ 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 [dupontelastomers.com](http://dupontelastomers.com) for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.