

# AVENGER™ 33M

Particulate & Coalescing Filter



## Avenger™ Model 33M Installation & Operation Instructions

### Manufacturing Contact Information

**A+ Corporation, LLC** *Call for expert product application assistance:*  
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### Safety Warnings



- ▶ 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..
- ▶ Valve off the sample flow before installation.
- ▶ Do not exceed any equipment pressure ratings.

### Tools Required

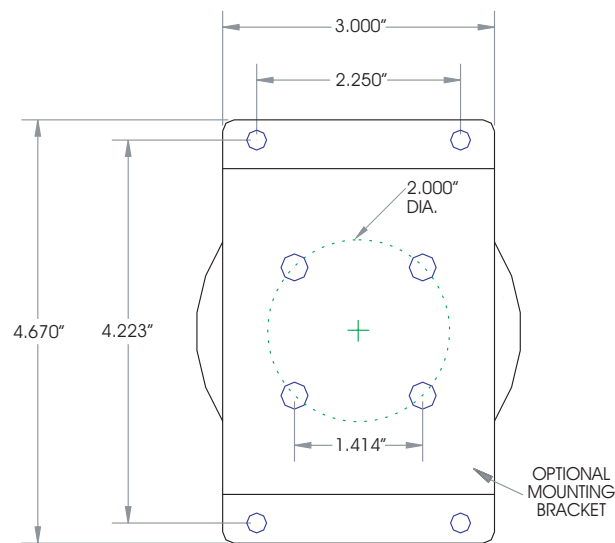
- ▶ Screwdriver for mounting bracket to panel.

## Technical Specifications

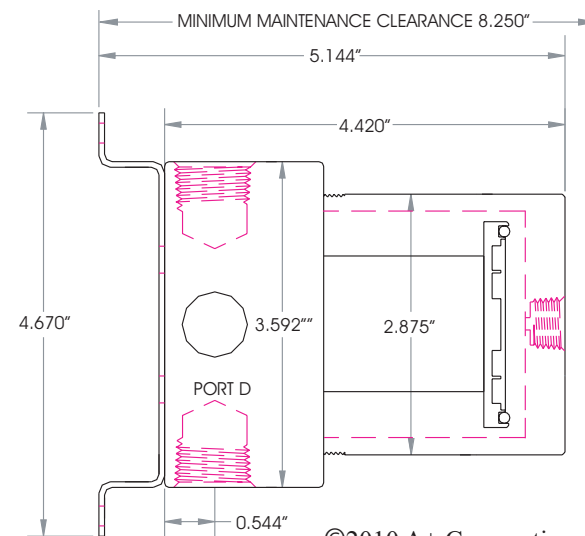
Technical Specifications	
<b>Maximum pressure rating</b>	1,000 psig (68.9 barg)
<b>Maximum Liquid Block™ valve auto-reset pressure</b>	85 psig (5.8 barg) Slowly open the supply pressure so that the minimum differential pressure required to shut off the Liquid Block™ is not met or exceeded
<b>Maximum temperatures</b>	<b>Type 6 membrane:</b> 185°F (85°C) <b>*Type 7 membrane:</b> 300°F (149°C) * Actual limit depends on sealing material chosen. Refer to Temperature Range Comparison Chart.
<b>Maximum Recommended Flow Rate</b> Results in approx. 2 PSI pressure differential. For higher flow rates, contact the factory.	<b>Type 6 Best Rejection:</b> 4.7 SLPM (10 SCFH) <b>Type 7 Highest Temps:</b> 13 SLPM (27 SCFH)
<b>Element size</b>	<b>Outside Diameter:</b> ~ 1.4" <b>Inside Diameter:</b> ~ 1.0" <b>Length:</b> ~ 2.5"
<b>Port sizes</b>	<b>Inlet, Outlet, &amp; Bypass:</b> 1/2" female NPT <b>Gauge:</b> 1/4" female NPT
<b>Number of ports</b>	5
<b>Internal volume</b>	200 cc
<b>Wetted materials</b>	<b>Machined parts:</b> 316/316L stainless steel / ISO 15156-3 compliant <b>All other metal parts:</b> stainless steel / ISO 15156-3 compliant <b>Sealing material:</b> User defined <b>Membrane:</b> inert

## Dimensions

**Back View**



**Side View**



## Installation Instructions

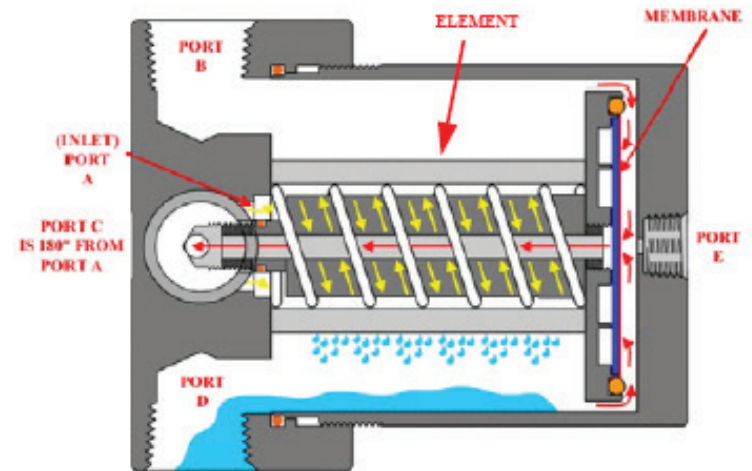
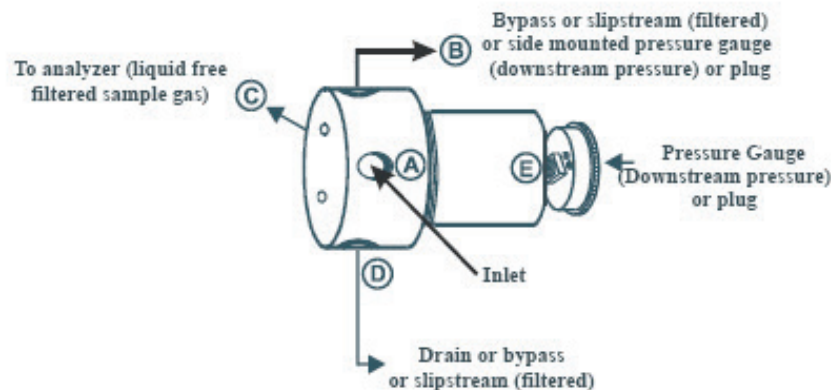
Install the mounting bracket onto the Avenger Model 33M or 38M as per the Mounting Bracket Installation Instructions included in A+ Corporation Mounting Bracket Kit P/N 33-509SS for Model 33M or P/N 38-509SS for Model 38M. Aftermarket brackets may be mounted as per the mounting diagrams below. Mount 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 downstream pressure gauge may be installed in "Port E" or it may be plugged. The Model 33M has 1/2" NPT ports (except for the 1/4" NPT gauge "Port E") and the Model 38M has 1/4" NPT ports. Refer to the "Application" for tubing connection instructions.

## Application Drawing

### Application #1: Coalescing Of Liquids And Removal Of Solids From Sample Gas- With Membrane



#### Horizontally Mounted



Model 33M or 38M mounts 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 Membrane. Clean, liquid-free sample gas leaves Port **C**. Liquid rejected by the membrane drains through Port **D**

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

## Model Numbering & Additional Part Numbers

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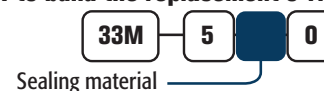
Your model number is determined by your specific needs. Choose options below.

<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>Membrane type</b>	6 = Better Rejection; Rejects ALL types of liquids from vapor 7 = Highest Temps; Rejects ONLY high surface tension liquids	
<b>Liquid Block™</b>	Blank = No Liquid Block™	L = Liquid Block™
<b>Mounting bracket accessory</b>	Part # 33-509SS (sold separately)	

#### How to build the model number:



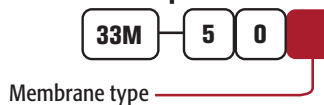
#### How to build the replacement o-ring kit number:



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



#### How to build the replacement membrane kit number:



Replacement filter and membrane kits contain 5 each. O-ring replacement kit contains all assembly o-rings.