



Sample Conditioning & Analytical Filters

PRODUCT FEATURES / BENEFITS

- ◆ Protect Gas and Liquid Sample Systems
- ◆ Simple Proven Designs
- ◆ Membrane Separators for Complete Filtration
- ◆ Extensive Variety of Filter Element Grades Available
- ◆ Low Pressure Drop – Long Life

At United Filtration Systems, Inc., we understand that accurate measurements start with a clean, stable, and properly prepared sample. Our sample conditioning components and analytical filtration solutions are designed to help laboratories, industrial plants, and process-control operations achieve the highest level of data integrity while protecting downstream equipment. Effective sample conditioning ensures that your measurement system receives a representative, interference-free sample—every time.

Our solutions support consistent, reliable operation by helping you:

- Remove particulates before analysis
- Reduce moisture or condensable contaminants for improved system performance
- Extend the life of instrumentation by preventing fouling and blockages
- Protect Instruments by reducing maintenance cycles and downtime
- Enhanced measurement precision by minimizing sample-based noise

Your Analysis Starts With the Right Filtration

Ensure your instruments operate at peak performance by giving them the cleanest, most reliable sample possible. United Filtration Systems, Inc. is here to help you build a filtration strategy that supports accuracy, uptime, and long-term value.



Miniature 5,000 PSIG Housings

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Pressure to 5,000 PSIG, Temperature to 900°F
- ◆ 2-Port Housings for Particulate Removal
- ◆ 3-Port Housings for Coalescing or Bypass Filtration
- ◆ Compact Designs for Fast Response Times
- ◆ Available in Hastelloy, Monel and Other Exotic Materials
- ◆ Sample Conditioning Filters
- ◆ High Pressure Relief Valve

The 110 and 120 Series Filter Housings are designed for use with both gaseous and liquid sample process analyzers. Their compact configuration, low internal volume, and positive O-ring sealing mechanism provide reliable performance in demanding analyzer applications. All wetted components are constructed from 316L stainless steel and are weld-free to ensure compliance with NACE MR-01-75 standards.

For applications requiring PTFE seals, an alternate sealing design is available by adding an "S" suffix to the housing code (e.g., 112S). PTFE seals are integral to the design and cannot be retrofitted into standard housings originally equipped with Viton O-rings. In addition, high-temperature gaskets are compatible only with "S" version housings.



Housing Model	110	112	114	116	120	122	124	126
Port Size (NPT)	1/8"	1/4"	1/8"	1/4"	1/8"	1/4"	1/8"	1/4"
Drain Type (NPT)	1/8"	1/4"	None	None	1/8"	1/4"	None	None
Maximum Pressure (psig)	5000	5000	5000	5000	5000	5000	5000	5000
Internal Volume (cc)	25	25	25	25	34	34	34	34
Weight Of Housing (lbs)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Principle Dimensions: (inches)								
Center Of Port To Head	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Head Diameter	1.42	1.42	1.42	1.42	1.42	1.42	1.42	1.42
Overall Length	2.92	2.92	2.92	2.92	3.98	3.98	3.98	3.98
Element Removal Clearance	1.57	1.57	1.57	1.57	2.36	2.36	2.36	2.36
Maximum Temp. (400°F) Standard Viton O-Ring	GV110	GV110	GV110	GV110	GV110	GV110	GV110	GV110
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	12-32-□	12-32-□	12-32-□	12-32-□	12-57-□	12-57-□	12-57-□	12-57-□
Drawing **For More Detail & Options**	<u>110</u>	<u>112</u>	<u>114</u>	<u>116</u>	<u>120</u>	<u>122</u>	<u>124</u>	<u>126</u>
Housing w/ PTFE Seals Maximum Temp.-PTFE (400°F) Standard	<u>110S</u>	<u>112S</u>	<u>114S</u>	<u>116S</u>	<u>120S</u>	<u>122S</u>	<u>124S</u>	<u>126S</u>

Notes: (1) Replace '□' with grade required, e.g. 12-32-50C

Analyzer Panel Filter

PRODUCT FEATURES / BENEFITS

- ◆ Compact Footprint Provides Versatile Installation
- ◆ Break No Connections When Servicing Filter Element
- ◆ Low Internal Volume for Quick Response Time
- ◆ Hollow Tie Rod Provides Added Protection to Carry-Over During System Start-Ups
- ◆ Ideal for Compact Analyzer Cabinets
- ◆ Pre-Filter for Guardian Membranes
- ◆ Multi-Port Analyzers

The 170 Series offers a compact and versatile solution for modern sample conditioning systems. Designed for inverted (upside-down) or horizontal installation, all connections—including inlet, outlet, drain, and bypass—are located in the head, allowing element servicing without breaking any connections.

A key feature of this design is the hollow tie rod on the outlet side, which directs the filtered stream to the highest point within the vessel. This reduces liquid and solid carryover during system start-ups or upset conditions. A wide variety of filter elements and materials are available to meet specific process requirements.



Housing Model	170 (Four Port)	170LB (Four Port)
Port Size (NPT)	1/4"	1/4"
Drain / By-Pass	1/4"	1/4"
Maximum Pressure (psig)	1500	1500
Internal Volume (cc)	45	65
Weight of Housing (lbs)	1.5	2.5
Principle Dimensions: (inches)		
Center Of Port To Head	0.43	0.43
Head Diameter	2.12	2.12
Overall Length	3.23	4.37
Element Removal Clearance	1.65	2.83
Maximum Temp. (400°F) Standard Viton O-Ring	GV170	GV170
Filter Element Codes: Coalescing Element (Standard) *Other Elements Available - View Drawing	22-35-50CS	22-64-50CS
Drawing **For More Detail & Options**	<u>170</u>	<u>170LB</u>

1,500 PSIG – Stainless Steel Housing

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Pressure to 1,500 PSIG, Temperature to 900°F
- ◆ 3-Port Housing for Coalescing or Bypass Filtration
- ◆ High Pressure Models Available
- ◆ Available in Hastelloy, Monel and Other Exotic Materials
- ◆ CNG Filtration
- ◆ High Pressure Gas Production
- ◆ Sample Process Analyzers
- ◆ Supercritical CO2

The 130 and 140 Series filters are ideal for use with gaseous and liquid sample process analyzers, as well as other demanding applications. Their small internal volume, compact design, and positive O-ring sealing mechanism ensure reliable performance in challenging environments. Each housing is constructed entirely of 316L stainless steel and is free of welds to comply with NACE MR-01-75 standards.

For applications requiring higher flow rates or larger port sizes, please refer to our Model 150/160 Series filters.



Housing Model	130	132	134	136	140	142	144	146
Port Size (NPT)	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"
Drain Type (NPT)	1/4"	1/4"	None	None	1/4"	1/4"	None	None
Maximum Pressure (psig)	1500	1500	1500	1500	1500	1500	1500	1500
Internal Volume (cc)	100	100	100	100	260	260	260	260
Weight of Housing (lbs)	2.5	2.5	2.5	2.5	3.5	3.5	3.5	3.5
Principle Dimensions: (inches)								
Center Of Port To Head	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Head Diameter	2.36	2.36	2.36	2.36	2.36	2.36	2.36	2.36
Overall Length	4.80	4.80	4.80	4.80	9.33	9.33	9.33	9.33
Element Removal Clearance	2.95	2.95	2.95	2.95	7.40	7.40	7.40	7.40
Maximum Temp. (400°F) Standard Viton O-Ring	GV130	GV130	GV130	GV130	GV130	GV130	GV130	GV130
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	25-64-□	25-64-□	25-64-□	25-64-□	25-178-□	25-178-□	25-178-□	25-178-□
Drawing **For More Detail & Options**	<u>130</u>	<u>132</u>	<u>134</u>	<u>136</u>	<u>140</u>	<u>142</u>	<u>144</u>	<u>146</u>
Housing w/ PTFE Seals Maximum Temp. -PTFE (400°F) Standard	<u>130S</u>	<u>132S</u>	<u>134S</u>	<u>136S</u>	<u>140S</u>	<u>142S</u>	<u>144S</u>	<u>146S</u>

Notes: (1) Replace '□' with grade required, e.g. 25-64-50C

Stainless Steel Process Filter Housings

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ 1,500 PSIG / 400°F - Standard
- ◆ 6,000 PSIG Rated & Flanges Available
- ◆ 3-Port Housings for Coalescing
- ◆ Particulate and Bypass Filtration
- ◆ CNG Filtration
- ◆ Blow Molding Equipment
- ◆ Gas Production
- ◆ Mechanical Seal Filter
- ◆ LNG (Liquified Natural Gas) / NGL (Natural Gas Liquids) Filter

Our Gas and Liquid Process Filters protect equipment from sample impurities by removing solids and liquids with up to 99.999% efficiency at 0.01 micron. This series is also suitable for liquid sample process applications when used with pleated liquid elements or stainless steel elements, achieving efficiencies as fine as 1 micron in liquids.

To meet the diverse requirements of process sample filtration, a complete line of filter elements is available in stainless steel, polypropylene, and other corrosion-resistant materials. High-efficiency borosilicate microfiber elements, inert to most liquids and gases, are also offered for applications requiring exceptional chemical compatibility and filtration performance.



Spring Loaded Element Option (4401 Style)

Our 150–162 series housings (3/4"–2" line size) are also available with a positive push-in type filter element, ideal for systems experiencing significant pressure variations or requiring particulate removal. Unlike conventional designs that use a tie-rod to retain the element, these housings feature elements with end caps bonded or welded in place, providing a robust and reliable fit under demanding conditions. This design also offers compatibility with a broader range of element types. **Spring-loaded and positive-seal versions are designated by the 4401 suffix.**



Housing Model	150	151	152	150-4401	151-4401	152-4401
Port Size (NPT)	1"	1 1/2"	2"	1"	1 1/2"	2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	1500	1500	1500	1500	1500	1500
Internal Volume (cc)	1350	1350	1350	1350	1350	1350
Weight of Housing (lbs)	22.0	22.0	22.0	22.0	22.0	22.0
Principle Dimensions: (inches)						
Center Of Port To Head	1.18	1.85	1.61	1.18	1.85	1.61
Head Diameter	4.33	4.33	4.57	4.33	4.33	4.57
Overall Length	15.04	15.04	15.83	15.04	15.04	15.83
Element Removal Clearance	9.72	9.72	9.72	9.72	9.72	9.72
Maximum Temp. (400°F) Standard Viton O-Ring	GV150	GV150	GV150	GV150	GV150	GV150
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	51-230-□	51-230-□	51-230-□	SL-51-230-□	SL-51-230-□	SL-51-230-□
Drawing **For More Detail & Options**	<u>150</u>	<u>151</u>	<u>152</u>	<u>150-4401</u>	<u>151-4401</u>	<u>152-4401</u>

Notes: (1) Replace '□' with grade required, e.g. 51-230-50CS

Housing Model	160	161	162	160-4401	161-4401	162-4401
Port Size (NPT)	1"	1 1/2"	2"	1"	1 1/2"	2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	1500	1500	1500	1500	1500	1500
Internal Volume (cc)	2400	2400	2400	2400	2400	2400
Weight of Housing (lbs)	38.0	38.0	38.0	38.0	38.0	38.0
Principle Dimensions: (inches)						
Center Of Port To Head	1.18	1.85	1.61	1.18	1.85	1.61
Head Diameter	4.33	4.33	4.57	4.33	4.33	4.57
Overall Length	24.49	24.49	25.27	24.49	24.49	25.27
Element Removal Clearance	19.37	19.37	19.37	19.37	19.37	19.37
Maximum Temp. (400°F) Standard Viton O-Ring	GV150	GV150	GV150	GV150	GV150	GV150
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	51-476-□	51-476-□	51-476-□	SL-51-476-□	SL-51-476-□	SL-51-476-□
Drawing **For More Detail & Options**	<u>160</u>	<u>161</u>	<u>162</u>	<u>160-4401</u>	<u>161-4401</u>	<u>162-4401</u>

Notes: (1) Replace '□' with grade required, e.g. 51-476-50CS

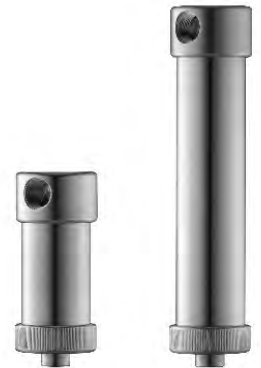
Low Pressure Stainless Steel Housings

PRODUCT FEATURES / BENEFITS

- ◆ Low Cost Design For Low Pressure Applications
- ◆ All 316L Stainless Steel
- ◆ 1/4" NPT Drain (Standard)
- ◆ Sample Conditioning Filtration
- ◆ Emission / Environmental Service
- ◆ Gas Analysis Protection
- ◆ Low Pressure Service
- ◆ No Tools Required to Service

Designed for gas analysis, emissions monitoring, CEMS, and sample process filtration, these low-pressure stainless steel housings are ideal for applications requiring continuous monitoring. While the all-stainless steel construction eliminates direct visual monitoring capability, it provides a cost-effective and durable solution for systems requiring fully stainless wetted components.

The housings feature minimal annular volume to reduce lag time and sample carryover. A 1/4" drain port located in the base allows the units to also be used in bypass or slipstream filtration configurations.



Housing Model	137	138	147	148
Port Size (NPT)	1/4"	1/2"	1/4"	1/2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	150	150	150	150
Internal Volume (cc)	105	105	260	260
Weight of Housing (lbs)	2.5	2.5	3.5	3.5
Principle Dimensions: (inches)				
Center Of Port To Head	0.59	0.59	0.59	0.59
Head Diameter	2.20	2.20	2.20	2.20
Overall Length	5.15	5.15	9.81	9.81
Element Removal Clearance	3.15	3.15	7.56	7.56
Maximum Temp. (400°F)				
Standard Viton O-Ring	GV137	GV137	GV137	GV137
Filter Element Codes: (1)				
Disposable Element (Standard)	25-64-□	25-64-□	25-178-□	25-178-□
*Other Elements Available-View Drawing				
Drawing	<u>137</u>	<u>138</u>	<u>147</u>	<u>148</u>
For More Detail & Options				

Notes: (1) Replace '□' with grade required, e.g. 25-64-50C

Pyrex Glass Bowl Option

PRODUCT FEATURES / BENEFITS

- ◆ Low Cost Design For Low Pressure Applications
- ◆ All 316L Stainless Steel
- ◆ Pyrex Bowl for At A Glance Observations
- ◆ 1/4" NPT Drain (Standard)
- ◆ Sample Conditioning Filtration
- ◆ Emission / Environmental Service
- ◆ Gas Analysis Protection
- ◆ Low Pressure Service
- ◆ Point-Of-Use Monitors
- ◆ No Tools Required to Service

Designed for gas analysis, emissions monitoring, CEMS, and sample process filtration applications where continuous monitoring is required. The Pyrex glass "G" bowl provides full visibility of the filter element, allowing quick and convenient visual inspection.

All-stainless steel housings (designated without the "G" suffix) eliminate visual monitoring capability but offer a cost-effective solution for systems requiring all stainless steel wetted components.

The housing design features minimal annular volume to reduce lag time and sample carryover. A 1/4" drain port located in the base allows these units to be utilized in bypass or slipstream filtration configurations.



Housing Model	117G	127G	137G	138G	147G	148G
Port Size (NPT)	1/4"	1/4"	1/4"	1/2"	1/4"	1/2"
Drain Type (NPT)	1/8"	1/8"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	100	100	100	100	100	100
Internal Volume (cc)	28	40	105	105	260	260
Weight of Housing (lbs)	1.0	1.0	2.0	2.0	3.0	3.0
Principle Dimensions: (inches)						
Center Of Port To Head	0.47	0.47	0.59	0.59	0.59	0.59
Head Diameter	1.58	1.58	2.20	2.20	2.20	2.20
Overall Length	3.38	4.43	5.15	5.15	9.81	9.81
Element Removal Clearance	1.65	2.64	3.15	3.15	7.56	7.56
Maximum Temp. (400°F)						
Standard Viton O-Ring	GV127	GV127	GV137	GV137	GV137	GV137
Filter Element Codes: (1)						
Disposable Element (Standard)	12-32-□	12-57-□	25-64-□	25-64-□	25-178-□	25-178-□
*Other Elements Available-View Drawing						
Drawing	117G	127G	137G	138G	147G	148G
For More Detail & Options						

Notes: (1) Replace '□' with grade required, e.g. 25-64-50C

Standard Guardian Membrane

The Guardian Membrane Series is engineered to provide complete removal of entrained liquids and solids from gas samples assuring sample integrity and protecting downstream analyzers. Each unit is precision-machined from 316L stainless steel, rated for pressures up to 1,500 PSIG, and optimized for low-flow sampling applications.



Key Features:

- **High-Performance Filtration:** Hydrophobic membrane effectively blocks all liquids and particulates, allowing only gas or vapor to pass through.
- **Compact, Robust Design:** Ideal for space-constrained installations while delivering industrial-grade durability.
- **Tool-Free Maintenance:** Membrane service is fast and easy—just unthread the cap and remove the plug. No tubing or connections need to be disturbed.
- **Premium Seal:** Each unit comes with a bonded Viton O-ring to ensure a reliable, leak-tight seal.

All our Guardian Membranes are available in exotic materials: PTFE, Hastelloy C, Monel 400, and Titanium. As an option we also offer Kalrez, EPDM, Buna and PTFE Encapsulated Viton O-rings.

Stainless Steel Model	GMS050	GMS100	GMS105-1/8"	GMS105-1/4"
Port Size (NPT)	1/8"	1/4"	1/8"	1/4"
Drain & Sample Port (NPT)	1/8"	1/4"	1/8"	1/4"
Maximum Pressure (psig)	1500	1500	1500	1500
Internal Volume (cc)				
In Sample Chamber (Behind Membrane)	1.5	3	3.96	3.96
Weight of Housing (lbs)	0.5	1.5	2.0	2.0
Principle Dimensions: (inch)				
Center of Port to Back	0.28	N/A	0.39	0.39
Body Diameter	1.50	1.97	2.48	2.48
Body Depth	1.29	2.01	1.83	1.83
Space Required to Remove Cap	0.79	1.38	0.87	0.87
Maximum Temp. (300°F) Standard Viton O-Ring	GVGMS050	GVGMS100	GVGMS105	GVGMS105
PTFE Membrane Code (1) **Specify: M1 (Low Flow) or M2 (High Flow)	MT.19.□G	MT.33.□HG	MT.33.□HG	MT.33.□HG
Drawing **For More Detail & Options**	<u>GMS050</u>	<u>GMS100</u>	<u>GMS105-1/8"</u>	<u>GMS105-1/4"</u>
PTFE Model Max. Pressure: 100 PSIG, Maximum Temp: 250°F	N/A	N/A	<u>GMS105P-1/8"</u>	<u>GMS105P-1/4"</u>

Notes: (1) Replace the "□" with the flow required. i.e. MT.19.M1G, MT.33.M2HG



Small Footprint – GMS100

The GMS100 assembly features a straight-through flow path, with the inlet port and drain positioned on the same plane. The clean sample outlet is located on the opposite plane, enhancing flow efficiency and reducing the risk of flooding. A simple collar secures both planes of the assembly, allowing for easy disassembly and maintenance without disconnecting any process lines. This user-friendly and compact design is well-suited for space-constrained environments, and the membrane can be mounted either vertically (as shown) or horizontally to accommodate various installation needs.

Integral Coalescing Pre-Filter Membranes

The GMS120/122 series features a traditional T-type design with an integrated coalescing pre-filter housed within the assembly. The GMS127G model adds a Pyrex bowl, enabling easy visual inspection of filter condition at a glance. In this series, the membrane is mounted on top with a vertical outlet, which helps maintain membrane cleanliness by promoting drainage.

A key feature of this series is its unique membrane holder plate, designed for easy maintenance. Once the collar is loosened and lifted, the plate slides out from underneath—allowing for quick membrane replacement without the need to disconnect any fittings.

Guardian Membranes are also available with integrated coalescing pre-filters. A 50C-grade element is positioned upstream of the membrane to effectively remove the majority of liquids and particulates, thereby extending membrane life. This all-in-one design minimizes dead volume, conserves panel space, and reduces potential leak points. These combination units are compatible with the same membrane kits used in our standard Guardian models. Corresponding part numbers can be found at the bottom of the attached chart.



Stainless Steel Model	GMS120	GMS122	GMS127G
Port Size (NPT)	1/8"	1/4"	1/4"
Drain & Sample Port (NPT)	1/8"	1/4"	1/8" / 1/4"
Maximum Pressure (psig)	1500	1500	100
Internal Volume (cc)			
Upstream (Downstream)	0.118	0.118	0.118
Weight of Housing (lbs)	2.0	2.0	2.0
Principle Dimensions: (inch)			
Body Diameter	2.00	2.00	2.00
Overall Length	5.08	5.08	5.52
Space Required to Coalescing Element	2.36	2.36	2.64
Maximum Temp. (300°F) Standard Viton O-Ring	GVGMS120	GVGMS120	GVGMS120
Coalescing Element PTFE Membrane Code (1) **Specify: M1 (Low Flow) or M2 (High Flow)	12-57-50C MT.33.□HG/50C	12-57-50C MT.33.□HG/50C	12-57-50C MT.33.□HG/50C
Drawing **For More Detail & Options**	<u>GMS120</u>	<u>GMS122</u>	<u>GMS127G</u>
PTFE Model Max. Pressure: 100 PSIG, Maximum Temp: 250°F	GMS120P	GMS122P	N/A

Notes: (1) Replace the "□" with the flow required. i.e. MT.33.M1HG/50C, MT.33.M2HG/50C



Pyrex Glass T-Type

For low-pressure systems up to 100 PSIG, the Model 127G with a Pyrex bowl provides at-a-glance visibility of the coalescing filter element chamber, allowing clear and accurate assessment of sampling conditions. The filter element can be quickly serviced by hand using the knurled base plate, while the captured O-ring design ensures a reliable, leak-free seal every time. For applications where larger amounts of liquid condensate are expected, specify the GMS137 series, which maintains the same user-friendly design.

Combination Membrane Separators

The GMS170 series of integral coalescing membrane separators delivers superior protection for online sampling analyzers. Designed with a unique all-in-one base (head) porting configuration, these units simplify service, minimize leak points, and maintain a compact footprint. Ideal for space-constrained applications. While the GMS170 series can be mounted horizontally, vertical installation is recommended for optimal performance.

Two models are available:

- **GMS170:** Optimized for installations with limited space.
- **GMS170-4791:** A slightly larger model featuring an upgraded microfiber coalescing filter for enhanced removal of excessive liquids and particulates. This integrated coalescing-membrane design eliminates the need for a separate coalescing filter, offering efficient, all-in-one protection.

Key Benefits:

- Protects analyzers from liquids and sub-micron particles
- Reduces system complexity with an integrated coalescing and membrane design
- Simplifies maintenance with quick-service porting and minimal leak points
- Compact and efficient – ideal for both standard and demanding applications

The coalescing membrane combination filter is engineered to remove entrained liquids and particulates in gas service across a wide range of applications, thereby protecting analyzers and sample system components from contamination. Unlike traditional setups, this design eliminates the need for prefiltration, reducing system volume, minimizing installation space requirements, and lowering the risk of leaks.



GMS170

Stainless Steel Model	GMS170	GMS170-4791
Port Size (NPT)	1/4"	1/4"
Drain & Sample Port (NPT)	1/4"	1/4"
Maximum Pressure (psig)	2000	2000
Internal Volume (cc)		
Upstream (Downstream)	33.23 (1.53)	48 (2)
Weight of Housing (lbs)	1.5	1.5
Principle Dimensions: (inch)		
Body Diameter	2.12	2.12
Overall Length	3.23	3.23
Space Required to Coalescing Element	1.61	1.61
Maximum Temp. (300°F)		
Standard Viton O-Ring	GVGMS170	GVGMS170
Coalescing Element		
PTFE Membrane Code (1)	22/32-27-50CS	25-64-50CS
**Specify: M1 (Low Flow) or M2 (High Flow)	MT.33.□HG/170	MT.33.□HG/170-4791
Drawing	<u>GMS170</u>	<u>GMS170-4791</u>
For More Detail & Options		

Notes: (1) Replace the "□" with the flow required. i.e. MT.33.M1HG/50C, MT.33.M2HG/50C

High Flow Membranes

For flow rates up to 15 LPM, we offer the GMS205 Series. This series maintains the user-friendly design of our GMS105 model, but incorporates a larger membrane. The increased surface area not only supports higher flow rates, but also extends service intervals by reducing membrane loading.

Standard assemblies are precision-machined from 316L stainless steel and come equipped with Viton® seals. Each unit is supplied with a hydrophobic/oleophobic membrane permanently bonded to a Viton® O-ring for reliable sealing and chemical resistance.



Material Options for Demanding Applications

All Guardian Membrane assemblies are also available in a range of exotic materials to suit challenging environments, including PTFE, Hastelloy® C, Monel® 400, and Titanium. Optional O-ring materials include Kalrez®, EPDM, Buna-N, and PTFE-encapsulated Viton® to meet specific chemical compatibility or temperature requirements.

Stainless Steel Model	GMS205-1/4"	GMS205-1/2"	GMS305-1/8"	GMS305-1/4"
Port Size (NPT)	1/4"	1/2"	1/8"	1/4"
Drain & Sample Port (NPT)	1/4"	1/2"	1/8"	1/4"
Maximum Pressure (psig)	2200	2200	1500	1500
Internal Volume (cc)				
In Sample Chamber - Behind Membrane	19.69	19.69	28.00	28.00
Weight of Housing (lbs)	7.0	7.0	9.0	9.0
Principle Dimensions: (inch)				
Center of Port to Back	0.63	0.63	0.39	0.39
Body Diameter	3.94	3.94	4.49	4.49
Body Depth (with knob)	3.03	3.03	1.85	1.85
Space Required to Remove Cap	1.38	1.38	3.70	3.70
Maximum Temp. (300°F) Standard Viton O-Ring	GVGMS205	GVGMS205	GVGMS305	GVGMS305
PTFE Membrane Code (1) **Specify: M1 (Low Flow) or M2 (High Flow)	MT.61.□HG	MT.61.□HG	MT.89.□G	MT.89.□G
Drawing **For More Detail & Options**	<u>GMS205-1/4"</u>	<u>GMS205-1/2"</u>	<u>GMS305-1/8"</u>	<u>GMS305-1/4"</u>
PTFE Model Max. Pressure: 100 PSIG, Max.Temp: 250°F	<u>GMS205P-1/4"</u>	<u>GMS205P-1/2"</u>	<u>GMS305P-1/8"</u>	<u>GMS305P-1/4"</u>

Notes: (1) Replace the "□" with the flow required. i.e. MT.61.M1HG, MT.61.M2HG

* We also offer a GMS205ST (Straight Through / Fast Loop) version in which the inlet/outlet ports are directly connected and the membrane only filters what the analyzer requires. *

GMS305-High Volume

The GMS305 Series features an 89 mm membrane, making it ideal for high-flow sampling systems that demand zero liquid entrainment. This model is available with either 1/8" or 1/4" FNPT connections to accommodate a variety of installation requirements.

For optimal protection and performance, the GMS305 is typically paired with a coalescing pre-filter. We recommend our 130 or 137G Series filters, depending on your system's pressure specifications.

Flexible Port Configurations

Across the Guardian product line, mixed-port configurations are available—such as 1/8" and 1/4" FNPT on the same body—to provide installation flexibility and reduce inventory needs.



Integral Coalescing High Flow Pre-Filter Membranes

The GMS130 Series builds on the proven design of our GMS120 Series, offering the same functionality with a physically larger membrane and coalescing element. The increased surface area of both components significantly extends service intervals, making it ideal for demanding or continuous sampling applications. By integrating the coalescing filter and membrane into a single assembly, the GMS130 minimizes sample lag time, conserves panel space (one housing instead of two), and reduces the number of potential leak points by limiting connection interfaces.



Stainless Steel Model	GMS130	GMS132	GMS137G	GMS138G
Port Size (NPT)	1/4"	1/2"	1/4"	1/2"
Drain & Sample Port (NPT)	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	1500	1500	100	100
Internal Volume (cc)				
In Sample Chamber - Behind Membrane	2.2	2.2	2.2	2.2
Weight of Housing (lbs)	9.0	9.0	9.0	9.0
Principle Dimensions: (inch)				
Body Diameter	3.38	3.38	3.38	3.38
Overall Length	5.73	5.73	6.25	6.25
Space Required to Coalescing Element	2.95	2.95	3.15	3.15
Maximum Temp. (300°F) Standard Viton O-Ring	GVGMS130	GVGMS130	GVGMS137	GVGMS137
Coalescing Element PTFE Membrane Code (1) **Specify: M1 (Low Flow) or M2 (High Flow)	25-64-50C MT.61.□HG/50C	25-64-50C MT.61.□HG/50C	25-64-50C MT.61.□HG/50C	25-64-50C MT.61.□HG/50C
Drawing **For More Detail & Options**	<u>GMS130-61</u>	<u>GMS132</u>	<u>GMS137G</u>	<u>GMS138G</u>

Notes: (1) Replace the "□" with the flow required. i.e. MT.61.M1HG/50C, MT.61.M2GH/50C



Pyrex Bowl For Visual Monitoring

The GMS137G and GMS138G Series are low-pressure variants of the GMS130 Series, designed for applications where visual monitoring is essential. These models utilize the same large membrane and coalescing element as the GMS130 but feature a durable Pyrex® glass bowl for clear, at-a-glance inspection of liquid accumulation.

This design is ideal for systems requiring immediate visual confirmation of filter performance and liquid breakthrough, particularly in low-pressure environments.

Technical Details

Our porous membranes are manufactured from pure PTFE, offering exceptional chemical inertness and extremely low absorption characteristics. Designed for reliability across a wide range of applications, these membranes are available in two standard grades to suit various flow and fluid requirements:

- ♦ **M1 (0.1 micron):** A low-flow membrane ideal for most liquid applications.
- ♦ **M2 (0.8 micron):** A high-flow variant recommended for higher surface tension liquids, enabling faster processing without compromising separation integrity.

Membrane Size	MT.19.M1G	MT.19.M2G
Membrane Type	Low Flow	High Flow
Material	PTFE	PTFE
Diameter (mm)	19	19
Thickness (µm)	152	152
Maximum Temperature (°F)	300	300
Recommended Flow Rate (LPM)	0.25	6
Membrane Micron Size	0.1	0.8

Membrane Size	MT.33.M1G	MT.33.M2G
Membrane Type	Low Flow	High Flow
Material	PTFE	PTFE
Diameter (mm)	33	33
Thickness (µm)	152	152
Maximum Temperature (°F)	300	300
Recommended Flow Rate (LPM)	0.35	10
Membrane Micron Size	0.1	0.8

Membrane Size	MT.61.M1G	MT.61.M2G
Membrane Type	Low Flow	High Flow
Material	PTFE	PTFE
Diameter (mm)	61	61
Thickness (µm)	152	152
Maximum Temperature (°F)	300	300
Recommended Flow Rate (LPM)	2	15
Membrane Micron Size	0.1	0.8

Membrane Size	MT.89.M1	MT.89.M2
Membrane Type	Low Flow	High Flow
Material	PTFE	PTFE
Diameter (mm)	89	89
Thickness (µm)	152	152
Maximum Temperature (°F)	300	300
Recommended Flow Rate (LPM)	3	43
Membrane Micron Size	0.1	0.8

The flow rates referenced above are based on a 3 PSID (pounds per square inch differential) across the membrane and are provided for general reference only. While flow can be increased by raising the pressure differential, we do not recommend exceeding 5 PSID, as doing so may compromise membrane integrity.

Membrane Application Guidance

- ♦ **M1 Membrane (0.1 micron):** Ideal for separating most liquids from gas streams.
- ♦ **M2 Membrane (0.8 micron):** Optimized for separating water and other high surface tension liquids from gases.

Guardian Spin Clean

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel
- ◆ 1/4" and 1/2" Ports Available
- ◆ 1500 PSIG Maximum Pressure
- ◆ Integral Porting
- ◆ Protect Liquid and Vapor Analyzers From Small Particles
- ◆ Remove Iron Sulfide Particles
- ◆ Ideal for Control Sample Applications

The **Guardian Spin Clean (GSC)** is engineered around our proprietary Guardian Membrane Series platform, delivering a highly serviceable, field-friendly solution for particulate removal.

All connections are conveniently located on one side of the housing, eliminating the need to disconnect fittings during maintenance. The inlet port is angled to induce a **cyclonic spinning action**, which significantly reduces particulate loading on the filter element. This spinning motion is enhanced by a gently curved vertex edge in the chamber, increasing cyclone velocity and effectively directing heavier particles toward the **bypass drain**.

The **porous stainless steel disc** is housed in an encapsulated, removable plug for quick and clean replacement. This efficient design minimizes downtime and simplifies in-field servicing.

Available Filtration Grades:

005, 1, 3, 10, 25, 50, and 100 micron



Stainless Steel Model	GSC205.31101.□	GSC205.32201.□	GSC205.32202.□
Inlet / Outlet (NPT)	1/4"	1/2"	1/2"
Sample Port (NPT)	1/4"	1/4"	1/2"
Maximum Pressure (psig)	1500	1500	1500
Internal Volume (Behind Membrane Chamber-Clean Side) (cc)	20	20	20
Weight of Housing (lbs)	7	7	7
Principle Dimensions: (inch)			
Center of Port to Back	0.50	0.63	0.63
Body Diameter	3.94	3.94	3.94
Body Depth (With Hex)	2.70 (3.00)	2.70 (3.00)	2.70 (3.00)
Space Required to Remove Cap	1.80	1.80	1.80
Maximum Temp. (400°F) Standard Viton O-Ring	GVGSC205	GVGSC205	GVGSC205
Stainless Steel Disc Included with Housing (1)(2)	FDGSC205-□	FDGSC205-□	FDGSC205-□
Drawing **For More Detail & Options**	<u>GSC205.31101</u>	<u>GSC205.32201</u>	<u>GSC205.32202</u>

Notes: (1) Add Micron Rating Required, e.g. FDGSC205-01, FDGSC205-10, FDGSC205-25 and FDGSC205-50
(2) If ordering Micron Size 005, a minimum order is required.

HOW TO ORDER A GUARDIAN SPIN CLEAN HOUSING

Base Part Number	Number of Ports	Inlet	Outlet	Optional Bypass	Sample	Micron Size
GSC205	3 = 3 Ports	0 = No	0 = No	0 = No	0 = No	005 = 0.5 Micron
	4 = 4 Ports	1 = 1/4"	1 = 1/4"	1 = 1/4"	1 = 1/4"	01 = 1 Micron
		2 = 1/2"	2 = 1/2"	2 = 1/2"	2 = 1/2"	03 = 3 Micron
						10 = 10 Micron
						25 = 25 Micron
						50 = 50 Micron
						100 = 100 Micron

Example Part Number: (GSC205.31101.50)

GSC205 FLOW RATES ⁽¹⁾

	Inlet Flow (LPM) (Port 1)	Outlet Sample Flow (LPM) (Port 2)	Bypass Flow (LPM) (Port 3)	Filter Differential Pressure Across Ports 1 and 2 (PSID)
Empty Housing	3.78	1.89	1.89	0.22
	11.17	5.68	5.49	1.82
	18.56	9.46	9.10	4.32
3 Micron	3.84	1.89	1.95	0.27
	11.40	5.68	5.72	2.14
	18.97	9.46	9.51	5.60
50 Micron	3.86	1.89	1.97	0.26
	11.43	5.68	5.75	2.07
	19.04	9.46	9.58	5.40

Notes: (1) Higher microns result in a reduced pressure drop across the filter disc.

Fast Loop Filters

PRODUCT FEATURES / BENEFITS

- ♦ 316L Stainless Steel or PTFE Construction
- ♦ Compact Design for Fast Reponse Time
- ♦ Choose from Five Housing Sizes
- ♦ Accepts Stainless Steel, PTFE and PEL Elements
- ♦ Available in Hastelloy, Monel and Etc.
- ♦ Sample Process / Remove VOCs
- ♦ Cooling Water Analysis
- ♦ Stack Gas Analyzer Protection

Fast Loop Filters are engineered to minimize the time delay commonly associated with online analyzer sample systems. Unlike traditional three-port T-type designs, our Fast Loop configurations continuously flush the filter element of heavy contaminants while filtering only the sample stream. This design significantly reduces lag time and extends filter element life.

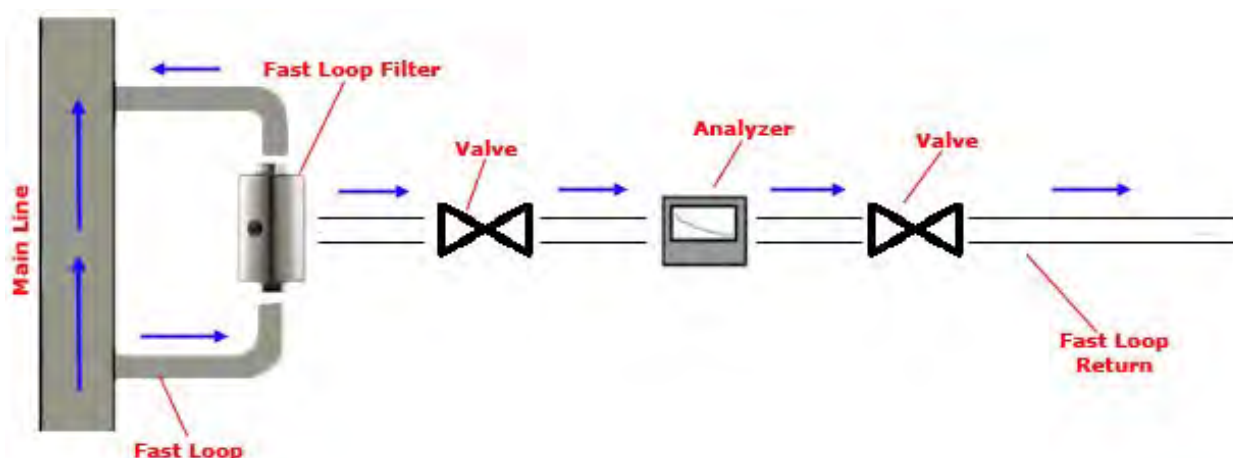
Principle of Operation:

Fast loop filtration employs a high-flow bypass stream to continuously sweep contaminants away from the filter element, while only a small portion of the flow is directed through the element for analysis. This method is particularly effective for applications with heavy particulate loading or where sensitive analyzers require maximum protection from contamination.

Axial velocity within the housing carries bulk contaminants through the fast loop and back to the process stream. The sample stream passes radially through the filter element wall at a lower flow rate, maintaining a clean-side volume that is minimized to reduce lag time and enhance response accuracy.

Performance Recommendation:

For optimal operation and extended element life, a **minimum 4:1 flow rate ratio** between the bypass and sample streams is recommended to maintain continuous flushing and prevent element fouling.



Model Number	116IL-3	126IL-3	127IL-3
Inline Port Size (NPT)	1/4"	1/4"	1/4"
Sample Port Size (NPT)	1/4"	1/4"	1/4"
Maximum Pressure (psig)	5000	5000	5000
Internal Volume (cc)	15	34	50
Annular Volume (cc)	11	15	30
Estimated Weight of Housing (lbs)	2.0	2.5	4.0
Principle Dimensions: (inches)			
Center Of Port To Inlet Port	1.39	1.89	1.61
Body Diameter	1.97	1.97	1.85
Overall Length	2.79	3.80	6.50
Element Removal Clearance	1.97	2.95	5.70
Maximum Temp. (400°F) Standard Viton O-Ring	GV126IL-3	GV126IL-3	GV127IL-3
Filter Element Codes: (1) Stainless Steel Element (Standard) **Other Elements Available-View Drawing**	SS-12-32-□	SS-12-57-□	SS-12-127-□
Drawing **For More Detail & Options**	<u>116IL-3</u>	<u>126IL-3</u>	<u>127IL-3</u>
PTFE Housing Model Maximum Temp. - 300°F, Max. Pressure - 100 PSIG	N/A	<u>126PIL-3</u>	<u>127PIL-3</u>

Notes: (1) Replace '□' with micron required, e.g. SS-12-57-03T
 (*) 127IL-3 standard with all 1/4" ports. [127IL-3-1/2"-1/4"](#) has 1/2" inlet/outlet ports, and 1/4" sample

Model Number	136IL-3	146IL-3	150IL-3-4015
Inline Port Size (NPT)	1/2"	1/2"	1"
Sample Port Size (NPT)	1/4"	1/4"	1/2"
Maximum Pressure (psig)	1500	1500	100
Internal Volume (cc)	80	215	430
Annular Volume (cc)	32	90	280
Estimated Weight of Housing (lbs)	4.0	7.5	9.0
Principle Dimensions: (inches)			
Center Of Port To Inlet Port	2.24	4.60	5.55
Body Diameter	2.50	2.50	4.06
Overall Length	4.50	9.13	11.10
Element Removal Clearance	2.95	7.87	10.27
Maximum Temp. (400°F) Standard Viton O-Ring	GV136IL-3	GV136IL-3	GV150IL-3
Filter Element Codes: (1) Stainless Steel Element (Standard) **Other Elements Available-View Drawing**	SS-25-64-□	SS-25-178-□	SS-51-230-□
Drawing **For More Detail & Options**	<u>136IL-3</u>	<u>146IL-3</u>	<u>150IL-3-4015</u>
PTFE Housing Model Maximum Temp. - 300°F, Max. Pressure - 100 PSIG	<u>136PIL-3</u>	<u>146PIL-3</u>	N/A

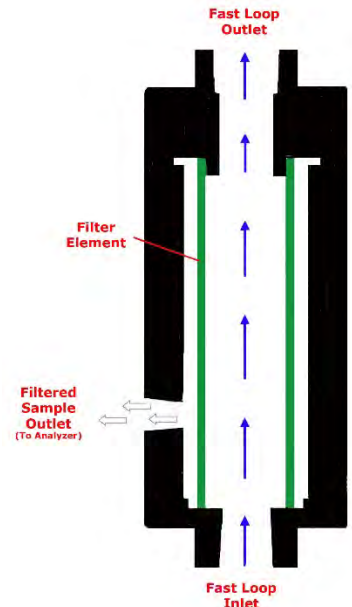
Notes: (1) Replace '□' with micron required, e.g. SS-25-64-03T
 (*) 150IL-3-4015 opens at both ends

Fast Loop Filter Design

The 126IL-3, 127IL-3, 136IL-3, and 146IL-3 models are machined from solid bar stock, eliminating welds and ensuring maximum durability. These housings are rated for 5,000 and 1,500 PSIG respectively, providing reliable performance in demanding applications.

Our 150IL-3 model is designed with a three-piece construction to reduce overall weight and simplify element maintenance. Both end caps are threaded to the filter body, making servicing quick and efficient.

Additionally, our SG137 and SG147 models feature a Pyrex bowl that allows for direct visual monitoring of the process. In these configurations, the traditional drain port serves as the inlet, while the original inlet functions as the fast loop outlet.



Maintaining the Filter Element

Our stainless steel filter elements are ideal for Fast Loop service, offering excellent corrosion resistance and durability to withstand continuous flushing. A key advantage of stainless steel elements is their ability to be cleaned through back-flushing, extending service life. We offer seven standard filtration grades with 98% efficiency at the following micron ratings: 01, 03, 10, 25, 50, 100, and 200. Grade 25 (25 microns) is commonly used to protect sample flows from visible particulates, while Grade 03 is recommended for removing pipe scale from steam lines. **PTFE sintered elements** are recommended in applications where sample compatibility is a concern or when PTFE Fast Loop housings are employed.

PLE ANALYZER STREAM WATER FLOW RATES IN LPM AT 1.5 PSI DROP¹

Stainless Steel Micron	Size	Housing Model Series					
		126IL-3 10 Series	126IL-3 26PIL-3 20 Series	127IL-3 27PIL-3	136IL-3 36PIL-3 30 Series	146IL-3 46PIL-3 40 Series	150IL-3 50 Series
0.1 Micron)		0.0	0.2	0.25	0.3	0.7	2.0
0.2 Micron)		0.2	0.3	0.6	0.82	2.0	5.0
0.3 Micron)	n	0.4	0.7	1.2	1.6	3.8	9.9
1.0 Micron)		1.0	1.6	2.9	3.9	7.0	20.0
1.3 Micron)	n	1.3	1.7	3.6	5.3	8.3	21.6
1.4 Micron)		1.4	1.8	4.0	5.6	8.8	23.0
1.5 Micron)		1.5	2.1	4.1	5.9	9.9	23.3
1.8 Micron)		1.8	2.6	5.1	7.4	11.7	29.0

Notes: (1) Water Viscosity 1.002 mPa

For optimal performance, a minimum flow rate ratio of 4:1 should be maintained for continuous flushing.

Example: A model 126IL-3 equipped with an SS-12-57-10T (10-micron) element will comfortably deliver 1.6 liters per minute to the analyzer. The fast loop flow should therefore be at least 6.4 liters per minute (4 × 1.6).

Flow rates are generally proportional to pressure drop; if an initial pressure drop of 3 psi is acceptable, the above flow rate can be doubled. Flow rates are also inversely proportional to liquid viscosity.

Please note that disposable microfibre elements are **not recommended** for use in Fast Loop assemblies.

PTFE Filters

PRODUCT FEATURES / BENEFITS

- ◆ PTFE & PTFE / Pyrex Glass Construction
- ◆ Viton O-Ring Standard
- ◆ Pyrex Glass Allows Instant Monitoring
- ◆ Stainless Steel Head Band for Added Strength
- ◆ Corrosive Applications
- ◆ Environmental Service
- ◆ Caustic Applications

PTFE filter housings are engineered specifically for applications requiring exceptional chemical resistance and minimal adsorption. These housings support a range of filter elements for both gaseous and liquid filtration.

Element Compatibility:

- Disposable Fluorocarbon Elements
 - For coalescing and particulate filtration.
- Sintered PTFE Elements
 - For particulate filtration only.

Construction Features:

- Standard O-rings: Viton®
- Recommended O-rings for aggressive chemicals: Kalrez®
- Optional Pyrex® Glass Bowl:
 - Allows visual inspection of the filtration process.

Filtration Applications:

- Media: Gases or liquids.
- Element Selection: Determined by service type (coalescing vs. particulate).
- PTFE Elements in Liquid Service:
 - Flow direction: Outside-to-inside
 - Benefits:
 - Integral support core enhances structural integrity.
 - Enables visual monitoring of element condition.

Please keep in mind that the maximum pressure is 100 PSIG and the maximum temperature is 300°F regardless of O-ring material. **We also offer exotics such as Monel, Hastelloy, Titanium and others which provide higher temperature and pressure ratings.**



Housing Model	120P	122P	120PG	122PG
Port Size (NPT)	1/8"	1/4"	1/8"	1/4"
Drain Type (NPT)	1/8"	1/4"	1/8"	1/8"
Maximum Pressure (psig)	100	100	100	100
Internal Volume (cc)	35	35	81	81
Weight of Housing (lbs)	0.5	0.5	1.0	1.0
Principle Dimensions: (inches)				
Center Of Port To Head	0.39	0.39	0.59	0.39
Head Diameter	1.69	1.69	1.97	1.69
Overall Length	3.86	3.86	4.33	3.86
Element Removal Clearance	2.44	2.44	2.44	2.44
Maximum Temp. (400°F) Standard Viton O-Ring	GV120P	GV120P	GV120PG	GV120PG
Filter Element Codes: (1) Disposable Element (Standard) **Other Elements Available-View Drawing**	12-57-□	12-57-□	12-57-□	12-57-□
Drawing **For More Detail & Options**	<u>120P</u>	<u>122P</u>	<u>120PG</u>	<u>122PG</u>

Notes: (1) Replace '□' with grade required, e.g. 12-57-50C, PT-12-57-03

Housing Model	130P	132P	130PG	132PG	140P	142P
Port Size (NPT)	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"
Drain Type (NPT)	1/4"	1/4"	1/8"	1/8"	1/4"	1/4"
Maximum Pressure (psig)	100	100	100	100	100	100
Internal Volume (cc)	85	85	147	147	260	260
Weight of Housing (lbs)	1.0	1.0	2.0	2.0	3.0	3.0
Principle Dimensions: (inches)						
Center Of Port To Head	0.59	0.59	0.59	0.59	0.59	0.59
Head Diameter	2.48	2.48	2.95	2.95	2.48	2.48
Overall Length	4.80	4.80	5.00	5.00	9.29	9.29
Element Removal Clearance	2.76	2.76	2.76	2.76	7.24	7.24
Maximum Temp. (300°F) Standard Viton O-Ring	GV120P	GV130P	GV130PG	GV130PG	GV140P	GV140P
Filter Element Codes: (1) Disposable Element (Standard) **Other Elements Available-View Drawing**	25-64-□	25-64-□	25-64-□	25-64-□	25-178-□	25-178-□
Drawing **For More Detail & Options**	<u>130P</u>	<u>132P</u>	<u>130PG</u>	<u>132PG</u>	<u>140P</u>	<u>142P</u>

Notes: (1) Replace '□' with grade required, e.g. 25-64-50C, PT-25-178-03

Multi-Port

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Multi-Port Housing
- ◆ Traditional T-Type with Integral Support Core
- ◆ Analyzer Protection
- ◆ Sample Process Filter
- ◆ Multi-Line Filter

The 120B / 122B Series filters are designed for gaseous and liquid sample process analyzers. Their small internal volume, compact design, and positive O-ring sealing mechanism make them ideal for demanding analyzer applications. Constructed entirely of 316L stainless steel and free of welds, these housings comply with NACE MR-01-75.

The 120B Series builds on the standard features of our 120 Series housing and includes a built-in support core for enhanced element stability.

B4 Model Features:

- Four head ports and one bowl port **allow multiple sample streams** to be serviced by a single filter assembly or can accommodate gauges, vents, and/or drains.
- When using a head port as a drain, the B4 should be installed horizontally or on a slight incline to ensure proper liquid drainage. Element servicing is simple, as no connections need to be broken.

Design Advantages:

- The built-in support core provides extra stability for elements in liquid streams and superior collapse protection in heavily contaminated gaseous samples.
- Filter elements slip over the support core and are secured by the bowl.
- An integral mounting bracket is included for easy installation.



**Flow Path of 120B4 Ports:
(Multi-Port Housing)**
Port 1: Out to In
Port 2: Out to In
Port 3: Out to In
Port 4: In to Out
Port 5: Traditional Drain

Housing Model	120B	122B	120B4	122B4
Port Size (NPT)	1/8"	1/4"	1/8"	1/4"
Drain Type (NPT)	1/8"	1/4"	1/8"	1/4"
Maximum Pressure (psig)	5000	5000	5000	5000
Internal Volume (cc)	30	30	30	30
Weight on Housing (lbs)	1.0	1.0	1.0	1.0
Principle Dimensions: (inches)				
Center Of Port To Head	0.39	0.39	0.39	0.39
Head Diameter	1.73	1.73	1.73	1.73
Overall Length	3.71	3.71	3.71	3.71
Element Removal Clearance	2.36	2.36	2.36	2.36
Maximum Temp. (400°F) Standard Viton O-Ring	GV120B	GV120B	GV120B	GV120B
Filter Element Codes: (1) Disposable Element (Standard)	12-57-□	12-57-□	12-57-□	12-57-□
*Other Elements Available-View Drawing				

Drawing

For More Detail & Options

[120B](#)

[122B](#)

[120B4](#)

[122B4](#)

Notes: (1) Replace '□' with grade required, e.g. 12-57-50C

Sight Glass

PRODUCT FEATURES / BENEFITS

- ◆ Pyrex Bowl with Safety Guard
- ◆ Service is Quick and Simple with Only One Removable Base
- ◆ Level Indicator
- ◆ Flow Indicator
- ◆ Four Standard Sizes
- ◆ No Tools Required to Service

Four standard sizes are available, based on our Pyrex and stainless steel filter assembly design. Each housing incorporates a guarded Pyrex bowl for visual monitoring of tank or boiler liquid levels. The compact Model SG117 is specifically designed for flow observation applications.

All models feature a double open-ended glass bowl clamped between two stainless steel end plates. This construction eliminates the need for external through-bolts, providing a simplified assembly for ease of installation and service.



Housing Model	SG117	SG127	SG137	SG147
Port Size (NPT)	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	100	100	100	100
Internal Volume (cc)	26	36	105	255
Principle Dimensions: (inches)				
Head Diameter	1.57	1.57	2.20	2.20
Overall Length	3.07	3.82	4.65	9.13
Removal Clearance	2.46	2.76	3.54	8.03
Maximum Temp. (400°F)	GVSG117	GVSG127	GVSG137	GVSG137
Standard Viton O-Ring				
Drawing	SG117	SG127	<u>SG137</u>	SG147

For More Detail & Options

Miniature Ultra High Pressure Housings – 10,000 PSIG

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Pressure to 10,000 PSIG, Temperature to 900°F
- ◆ Compact Designs for Fast Response Times
- ◆ Free From Welds NACE Compliant
- ◆ Available in Hastelloy, Monel and Other Exotic Materials
- ◆ Alternative Fuel Protection
- ◆ Injection Pumps
- ◆ CNG Boosters

The 110HP and 120HP Series Filters are designed for high-pressure applications, including gaseous and liquid sample process analyzers and fuel cell filtration. The compact housing design with low internal volume minimizes sample hold-up, while the positive O-ring sealing mechanism provides a secure and leak-tight connection. All wetted components are constructed from 316L stainless steel and are free of welds to ensure corrosion resistance and structural integrity. These housings are fully compliant with NACE MR-01-75 requirements.



Housing Model	110HP	112HP	114HP	116HP	120HP	122HP	124HP	126HP
Port Size (NPT)	1/8"	1/4"	1/8"	1/4"	1/8"	1/4"	1/8"	1/4"
Drain Type (NPT)	1/8"	1/4"	None	None	1/8"	1/4"	None	None
Maximum Pressure (psig) (1)	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Internal Volume (cc)	23	23	23	23	32	32	32	32
Weight of Housing (lbs)	5.0	5.0	5.0	5.0	6.0	6.0	6.0	6.0
Principle Dimensions: (inches)								
Center Of Port To Head	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Head Diameter	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Overall Length	4.13	4.13	4.13	4.13	5.12	5.12	5.12	5.12
Element Removal Clearance	1.57	1.57	1.57	1.57	2.56	2.56	2.56	2.56
Maximum Temp. (400°F) Standard Viton O-Ring	GV110HP	GV110HP	GV110HP	GV110HP	GV110HP	GV110HP	GV110HP	GV110HP
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	12-32-□	12-32-□	12-32-□	12-32-□	12-57-□	12-57-□	12-57-□	12-57-□
Drawing **For More Detail & Options**	<u>110HP</u>	<u>112HP</u>	<u>114HP</u>	<u>116HP</u>	<u>120HP</u>	<u>122HP</u>	<u>124HP</u>	<u>126HP</u>

Notes: (1) Replace '□' with grade required, e.g. 12-32-50C

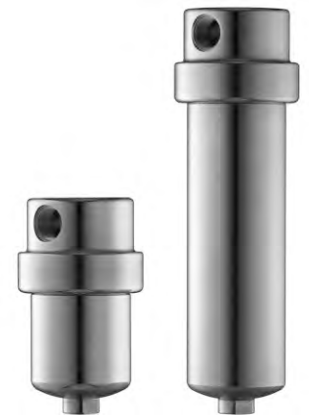
High Pressure Mid-Size Housings – 3,000 PSIG

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Compact Design
- ◆ 3,000 PSIG Rated
- ◆ 3-Port Housings for Coalescing or Bypass Filtration
- ◆ Ideal for CNG Filtration
- ◆ Alternative Fuel Protection
- ◆ Cryogenic Production
- ◆ Gas Plant Sampling

The 130HP and 140HP Series Filters feature a rugged, yet straightforward design, making them an excellent choice for CNG applications and other high-pressure systems. Their compact housing and low internal volume help minimize sample carry-over during system start-up. For applications with higher liquid loading, a shorter filter element can be installed to increase reservoir capacity.

These housings are available with SAE port connections and are well suited for use as second-stage filters in CNG fueling and dispenser stations. Standard pressure ratings include 1500, 3000, 6000, and 10,000 PSIG to accommodate a wide range of system requirements.



Housing Model	130HP	132HP	134HP	136HP	140HP	142HP	144HP	146HP
Port Size (NPT)	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"
Drain Type (NPT)	1/4"	1/4"	None	None	1/4"	1/4"	None	None
Maximum Pressure (psig)	3000	3000	3000	3000	3000	3000	3000	3000
Internal Volume (cc)	110	110	110	110	270	270	270	270
Weight of Housing (lbs)	4.5	4.5	4.5	4.5	7.5	7.5	7.5	7.5
Principle Dimensions: (inches)								
Center Of Port To Head	0.59	0.59	0.59	0.59	0.59	0.59	0.59	0.59
Head Diameter	2.52	2.52	2.52	2.52	2.52	2.52	2.52	2.52
Overall Length	5.04	5.04	5.04	5.04	9.53	9.53	9.53	9.53
Element Removal Clearance	2.95	2.95	2.95	2.95	7.40	7.40	7.40	7.40
Maximum Temp. (400°F) Standard Viton O-Ring	GV130HP	GV130HP	GV130HP	GV130HP	GV130HP	GV130HP	GV130HP	GV130HP
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	25-64-□	25-64-□	25-64-□	25-64-□	25-178-□	25-178-□	25-178-□	25-178-□
Drawing **For More Detail & Options**	<u>130HP</u>	<u>132HP</u>	<u>134HP</u>	<u>136HP</u>	<u>140HP</u>	<u>142HP</u>	<u>144HP</u>	<u>146HP</u>

Notes: (1) Replace '□' with grade required, e.g. 25-64-50C

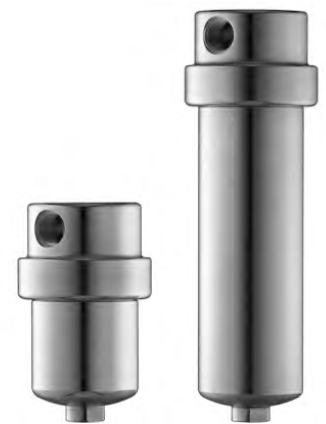
Ultra-High Pressure Mid-Size housings – 6,000 PSIG

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Compact Design
- ◆ 6,000 PSIG Rated
- ◆ 3-Port Housings for Coalescing or Bypass Filtration
- ◆ Ideal for CNG Filtration
- ◆ High Pressure Liquid Service
- ◆ Chemical Processing
- ◆ CNG Dispensers
- ◆ Dry Seal Gas Panels

The 130VP and 140VP Series Filters are engineered for gaseous and liquid process filtration, offering a rugged yet straightforward design that makes them well suited for CNG applications and other high-pressure systems. For applications with high liquid content, a shorter filter element can be installed to increase reservoir capacity.

These housings are available with SAE port connections and are ideal as second-stage filters for CNG fueling and dispenser stations. Standard pressure ratings include 1500, 3000, 6000, and 10,000 PSIG.



Housing Model	130VP	132VP	134VP	136VP	140VP	142VP	144VP	146VP
Port Size (NPT)	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"	1/4"	1/2"
Drain Type (NPT)	1/4"	1/4"	None	None	1/4"	1/4"	None	None
Maximum Pressure (psig)	6000	6000	6000	6000	6000	6000	6000	6000
Internal Volume (cc)	130	130	130	130	270	270	270	270
Weight of Housing (lbs)	10.5	10.5	10.5	10.5	15.0	15.0	15.0	15.0
Principle Dimensions: (inches)								
Center Of Port To Head	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Head Diameter	3.35	3.35	3.35	3.35	3.35	3.35	3.35	3.35
Overall Length	6.44	6.44	6.44	6.44	10.92	10.92	10.92	10.92
Element Removal Clearance	2.95	2.95	2.95	2.95	7.40	7.40	7.40	7.40
Maximum Temp. (400°F) Standard Viton O-Ring	GV130VP	GV130VP	GV130VP	GV130VP	GV130VP	GV130VP	GV130VP	GV130VP
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	25-64-□	25-64-□	25-64-□	25-64-□	25-178-□	25-178-□	25-178-□	25-178-□
Drawing **For More Detail & Options**	<u>130VP</u>	<u>132VP</u>	<u>134VP</u>	<u>136VP</u>	<u>140VP</u>	<u>142VP</u>	<u>144VP</u>	<u>146VP</u>

Notes: (1) Replace '□' with grade required, e.g. 25-64-50C

High Pressure 3,000 PSIG Process Filters

PRODUCT FEATURES / BENEFITS

- ♦ 316L Stainless Steel Construction
- ♦ 3,000 PSIG / 400°F - Standard
- ♦ 6,000 PSIG Rated & Flanges Available
- ♦ 3-Port Housings for Coalescing
- ♦ Particulate and Bypass Filtration
- ♦ Chemical Processing
- ♦ Aerospace Filtration
- ♦ Booster Compressors
- ♦ Water Injection
- ♦ Diaphragm Compressors

Our 150HP and 160HP series high-pressure filter housings are constructed from 316L stainless steel, delivering exceptional performance and value in demanding service conditions. The threaded head-to-bowl connection with a captured O-ring ensures a positive, leak-free seal—even in highly corrosive or high-pressure environments. Rated to 3000 PSIG, these housings are suitable for a wide range of gas and liquid filtration applications.

To meet the diverse requirements of process and sample filtration, we offer a complete selection of compatible filter elements in stainless steel, polypropylene, and other corrosion-resistant materials. For critical applications, high-efficiency borosilicate microfiber elements are available, providing excellent chemical inertness and compatibility with most liquids and gases.



Spring Loaded Element Option (4401 Style)

Our 150HP–162HP series housings (3/4"–2" line size) are also available with a positive push-in type filter element, ideal for systems experiencing significant pressure variations or requiring particulate removal. Unlike conventional designs that use a tie-rod to retain the element, these housings feature elements with end caps bonded or welded in place, providing a robust and reliable fit under demanding conditions. This design also offers compatibility with a broader range of element types. **Spring-loaded and positive-seal versions are designated by the 4401 suffix.**



Housing Model	150HP	151HP	152HP	150HP-4401	151HP-4401	152HP-4401
Port Size (NPT)	1"	1 1/2"	2"	1"	1 1/2"	2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	3000	3000	3000	3000	3000	3000
Internal Volume (cc)	1250	1250	1250	1250	1250	1250
Weight of Housing (lbs)	34.0	34.0	34.0	34.0	34.0	34.0
Principle Dimensions: (inches)						
Center Of Port To Head	1.50	2.05	2.05	1.50	2.05	2.05
Head Diameter	4.72	5.12	5.12	4.72	5.12	5.12
Overall Length	14.29	15.47	15.47	14.29	15.47	15.47
Element Removal Clearance	9.72	9.72	9.72	9.72	9.72	9.72
Maximum Temp. (400°F) Standard Viton O-Ring	GV150HP	GV150HP	GV150HP	GV150HP	GV150HP	GV150HP
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	51-230-□	51-230-□	51-230-□	SL-51-230-□	SL-51-230-□	SL-51-230-□
Drawing **For More Detail & Options**	<u>150HP</u>	<u>151HP</u>	<u>152HP</u>	<u>150HP-4401</u>	<u>151HP-4401</u>	<u>152HP-4401</u>

Notes: (1) Replace '□' with grade required, e.g. 51-230-50CS

Housing Model	160HP	161HP	162HP	160HP-4401	161HP-4401	162HP-4401
Port Size (NPT)	1"	1 1/2"	2"	1"	1 1/2"	2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	3000	3000	3000	3000	3000	3000
Internal Volume (cc)	2500	2500	2500	2500	2500	2500
Weight of Housing (lbs)	57.0	57.0	57.0	57.0	57.0	57.0
Principle Dimensions: (inches)						
Center Of Port To Head	1.50	2.05	2.05	1.50	2.05	2.05
Head Diameter	4.76	5.12	5.12	4.76	5.12	5.12
Overall Length	23.97	25.16	25.16	23.97	25.16	25.16
Element Removal Clearance	19.37	19.37	19.37	19.37	19.37	19.37
Maximum Temp. (400°F) Standard Viton O-Ring	GV160HP/2	GV160HP/2	GV160HP/2	GV160HP/2	GV160HP/2	GV160HP/2
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	51-476-□	51-476-□	51-476-□	SL-51-476-□	SL-51-476-□	SL-51-476-□
Drawing **For More Detail & Options**	<u>160HP</u>	<u>161HP</u>	<u>162HP</u>	<u>160HP-4401</u>	<u>161HP-4401</u>	<u>162HP-4401</u>

Notes: (1) Replace '□' with grade required, e.g. 51-476-50CS

Ultra-High Pressure 6,000 PSIG Process Filters

PRODUCT FEATURES / BENEFITS

- ♦ 316L Stainless Steel Construction
- ♦ 6,000 PSIG / 400°F - Standard
- ♦ Flanges Available
- ♦ 3-Port Housings for Coalescing
- ♦ Particulate and Bypass Filtration
- ♦ Ultra High Pressure Gas Systems
- ♦ Booster Compressors
- ♦ Mechanical Seal Filter
- ♦ Critical Process Filtration

Our 150VP and 160VP series of ultra high-pressure 316L stainless steel filter housings deliver exceptional performance and value in the most demanding applications. The precision-machined, threaded head-to-bowl connection with a captured O-ring ensures a positive, leak-free seal—even in highly corrosive environments. With a pressure rating of 6,000 PSIG, these housings are ideal for a broad range of gas and liquid filtration applications.

The VP Series versions of our 150 and 160 housings are built to order, allowing us to tailor each unit to your exact specifications. Custom options include differential pressure port taps, vent ports, specific face-to-face dimensions, and flange configurations. We can even manufacture a fully machined filter head with integral flanges for specialized installations.

To meet the diverse requirements of process and sample filtration, we offer a complete line of compatible filter elements in stainless steel, polypropylene, and other corrosion-resistant materials. High-efficiency borosilicate microfiber elements, chemically inert to most liquids and gases, are also available for critical applications.



Spring Loaded Element Option

Our 150HP–162HP series housings (3/4"–2" line size) are also available with a positive push-in type filter element, ideal for systems experiencing significant pressure variations or requiring particulate removal. Unlike conventional designs that use a tie-rod to retain the element, these housings feature elements with end caps bonded or welded in place, providing a robust and reliable fit under demanding conditions. This design also offers compatibility with a broader range of element types. Spring-loaded and positive-seal versions are designated by the 4401 suffix.



Housing Model	150VP	151VP	152VP	150VP-4401	151VP-4401	152VP-4401
Port Size (NPT)	1"	1 1/2"	2"	1"	1 1/2"	2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	6000	6000	6000	6000	6000	6000
Internal Volume (cc)	1300	1300	1300	1300	1300	1300
Weight of Housing (lbs)	70.0	70.0	70.0	70.0	70.0	70.0
Principle Dimensions: (inches)						
Center Of Port To Head	1.97	1.97	2.16	1.97	1.97	2.16
Head Diameter	5.91	5.91	5.91	5.91	5.91	5.91
Overall Length	17.09	17.09	17.09	17.09	17.09	17.09
Element Removal Clearance	9.72	9.72	9.72	9.72	9.72	9.72
Maximum Temp. (400°F) Standard Viton O-Ring	GV150VP	GV150VP	GV150VP	GV150VP	GV150VP	GV150VP
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	51-230-□	51-230-□	51-230-□	51-230-□	51-230-□	51-230-□
Drawing **For More Detail & Options**	<u>150VP</u>	<u>151VP</u>	<u>152VP</u>	<u>150VP-4401</u>	<u>151VP</u>	<u>152VP</u>

Notes: (1) Replace '□' with grade required, e.g. 51-230-50CS

Housing Model	160VP	161VP	162VP	160VP-4401	161VP-4401	162VP-4401
Port Size (NPT)	1"	1 1/2"	2"	1"	1 1/2"	2"
Drain Type (NPT)	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
Maximum Pressure (psig)	6000	6000	6000	6000	6000	6000
Internal Volume (cc)	2500	2500	2500	2500	2500	2500
Weight of Housing (lbs)	70.0	70.0	70.0	70.0	70.0	70.0
Principle Dimensions: (inches)						
Center Of Port To Head	1.97	1.97	2.16	1.97	1.97	2.16
Head Diameter	5.91	5.91	5.91	5.91	5.91	5.91
Overall Length	26.58	26.58	26.58	26.58	26.58	26.58
Element Removal Clearance	19.37	19.37	19.37	19.37	19.37	19.37
Maximum Temp. (400°F) Standard Viton O-Ring	GV160VP/2	GV160VP/2	GV160VP/2	GV160VP/2	GV160VP/2	GV160VP/2
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	51-476-□	51-476-□	51-476-□	51-476-□	51-476-□	51-476-□
Drawing **For More Detail & Options**	<u>160VP</u>	<u>161VP</u>	<u>162VP</u>	<u>160VP-4401</u>	<u>161VP-4401</u>	<u>162VP-4401</u>

Notes: (1) Replace '□' with grade required, e.g. 51-476-50CS

High Pressure Alternative Fuel Dispenser Filter

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Two Standard Versions: 1" NPT or SAE8 Ports
- ◆ 5800 PSIG (4700 PSIG on CRN Registration)
- ◆ Positive Fit Filter Element
- ◆ Ideal CNG Dispenser Filter
- ◆ Alternative Fuel Filter

United Filtration Systems' stainless steel 180VP Series is purpose-built to withstand the rigorous demands of compressed natural gas (CNG) applications. Whether installed on a booster compressor or mounted on a dispenser rack, the 180VP Series delivers exceptional protection, durability, and performance in high-pressure environments.

The compact footprint and flexible configuration options make the 180VP Series a robust, adaptable solution for CNG filtration. With multiple filter element choices available, these units provide effective removal of both:

- Particle contamination
- Liquid aerosols (coalescing filtration)

This dual-function capability ensures cleaner gas, safer operation, and extended equipment life.

At the core of every 180VP filter is a positive-fit, push-in style filter element designed for secure placement and exceptional reliability. Each element incorporates:

- Reinforced support and outer cages
- High-strength construction to withstand system upsets
- Durability through extreme pressure fluctuations and large pressure swings

These features ensure consistent performance even under the most demanding CNG conditions.



Housing Model	180VP-1"	180VP-SAE8
Port Size (NPT)	1"	SAE8
Drain Type (NPT)	SAE6	SAE6
Maximum Pressure (psig)	5800	5800
Internal Volume (cc)	750	750
Weight of Housing (lbs)	40.0	40.0
Principle Dimensions: (inches)		
Center Of Port To Head	1.25	1.25
Head Diameter	5.47	5.47
Overall Length	12.79	12.79
Element Removal Clearance	9.06	9.06
Maximum Temp. (250°F) Standard Buna-N O-Ring	BN180VP	BN180VP
Filter Element Codes: (1) Disposable Element (Standard) *Other Elements Available- View Drawing	SL-180-38-172-□	SL-180-38-172-□
Drawing **For More Detail & Options**	<u>180VP-1</u>	<u>180VP-SAE8</u>

Inline Filter Housings

PRODUCT FEATURES / BENEFITS

- ◆ 316L Stainless Steel Construction
- ◆ Integral Support Core
- ◆ Uniform Body – Ideal for Heating Jacket
- ◆ Ideal Last Chance Filter
- ◆ Protect Stack Gas Analyzers
- ◆ Available in Hastelloy, Monel, Etc.
- ◆ Stack Gas Analyzer Protection
- ◆ Heated Line Filter
- ◆ Emission / Environmental
- ◆ Cylinder (Bottled) Gas

In-line Filter Housings are designed specifically for particulate removal in systems requiring extended service intervals. These housings are not intended for coalescing applications and are not compatible with adsorption cartridges.

Their compact design makes them suitable for low flow rates or relatively clean systems where installation space is limited. Typical applications include cylinder (bottled) gas filtration and use as a final-stage filter downstream of a larger pre-filter. The uniform body construction also supports heated applications, as a heating jacket can be easily mounted to provide consistent thermal transfer and uniform heating of the filter element.



Housing Model	116IL	126IL	136IL	146IL
Port Size (NPT)	1/4"	1/4"	1/2"	1/2"
Maximum Pressure (psig) (1)	5000	5000	1500	1500
Internal Volume (cc)	15	30	92	220
Weight of Housings (lbs)	1.0	1.0	2.0	3.0
Principle Dimensions: (inches)				
Body Diameter	1.39	1.39	1.89	1.89
Overall Length	3.11	4.09	5.12	9.60
Element Removal Clearance	2.00	3.66	3.67	8.15
Maximum Temp. (400°F) Standard Viton O-Ring	GV126IL-3	GV126IL-3	GV136IL-3	GV136IL-3
Filter Element Codes: (2) Disposable Element (Standard) *Other Elements Available-View Drawing	12-32-□	12-57-□	25-64-□	25-178-□
Drawing **For More Detail & Options**	<u>116IL</u>	<u>126IL</u>	<u>136IL</u>	<u>146IL</u>

Notes: (1) At 400°F. Above 400°F pressure ratings are reduced – consult UFS for exact rating
(2) Replace '□' with grade required, e.g. 25-64-50C

Shroud Deflector Filter Housings

PRODUCT FEATURES / BENEFITS

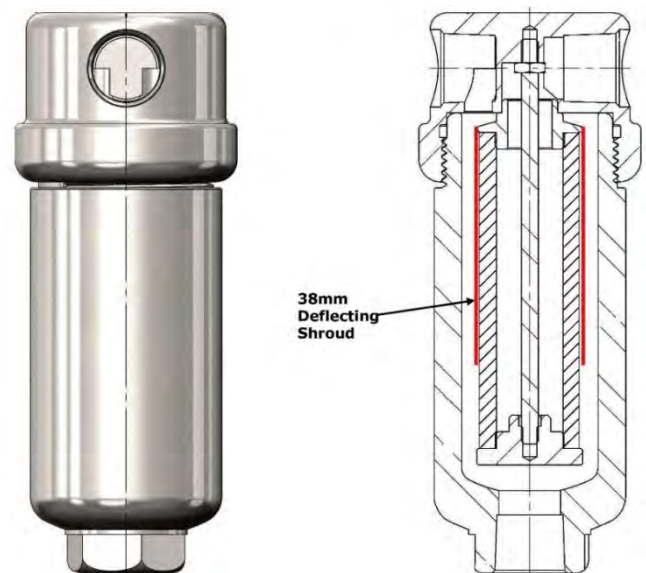
- ◆ Compact Design
- ◆ Available On All T-Type Housings
- ◆ Simple But Effective Design
- ◆ Use with Stainless Steel Elements for Prolonged Service Intervals
- ◆ Eliminate Heavy Loading of Final Filter
- ◆ Protect Gas & Liquid Sample Systems
- ◆ Capture Rust and Pipe Scale from Stream Lines
- ◆ Protect Coalescing Filters from Particles

A simple and effective method for prefiltering sample streams with high particulate content is the use of a shroud-deflector tube surrounding the outer wall of the filter element. This permanent shroud redirects the incoming flow, causing heavier debris to settle at the base of the housing. **This option is available for all T-Type style housings, regardless of material.**

Performance Recommendations:

- Use a **five-layer stainless steel filter element** with the smallest micron rating that meets flow requirements.
- Employing the finest practical micron size prolongs element life by preventing larger particles from embedding in the filter wall; instead, these particles settle to the bottom of the bowl.

The design minimizes annular volume to increase velocity turbulence, while maintaining the lower one-third of the element exposed for direct flow. A secondary polishing filter is recommended downstream to capture any residual material.



Model 122 with Shroud

Ordering Information:

To specify this option, add the term "Shroud" to any of our T-Type filter model numbers.

Options for Stainless Steel Housings

Inverted Housings

PRODUCT FEATURES / BENEFITS

- ◆ No Connections to Break for Service
- ◆ Element Stands Vertical
- ◆ Ideal for Coalescing
- ◆ Compact Installation
- ◆ Analyzer Protection
- ◆ Pre-Filter for our Guardian Membrane Separators
- ◆ Used in Sample Cabinets with Space Constraints
- ◆ CNG Dispensers
- ◆ Dry Seal Gas Panels

In applications where space is limited and maintenance is critical, our Inverted (IVT) housings provide an ideal solution. All line connections—including inlet, outlet, and drain ports—are in the head of the unit. This design allows all tubing to remain in a single plane within the panel and simplifies element servicing, as no lines need to be removed to replace the element.

The drain port is positioned at the lowest point in the head module to quickly evacuate liquids and reduce entrainment. The element is maintained in a vertical orientation to ensure proper liquid drainage, unlike other head-port drain assemblies that are typically mounted horizontally, which can result in slower drainage and increased downstream carryover.

Applications and Features:

- Quick and easy element service
- Efficient liquid drainage
- Space-saving design for panel-mounted installations
- Optional integration with a membrane separator (as in GMS170)

Ordering Information:

Inverted housings can be ordered with a bowl drain connection (e.g., IV112) or without a bowl drain (e.g., IV116). The traditional drain bowl connection can alternatively be used as a vent or gauge port.

Bubblers

PRODUCT FEATURES / BENEFITS

- ◆ Many Sizes to Choose From
- ◆ Easy to Service
- ◆ Economical
- ◆ Wash Out Samples
- ◆ Add Humidity to Samples
- ◆ Knock Out Harmful Vapors

Many of our filter housings can be converted into **"bubblers"**, enabling a gas sample to pass through a liquid. The standard element retainer is replaced with a hollow stack featuring a small orifice, which bubbles the sample stream through the liquid.

Applications include:

- Scrubbing unwanted components from the sample stream
- Humidifying a sample stream

Ordering Information:

To convert a standard filter to a bubbler, simply add the suffix **"B"** to the housing code. Transparent housings without drain ports are preferred, as they allow continuous liquid level monitoring and eliminate a potential connection point.



Catch Pots

PRODUCT FEATURES / BENEFITS

- ◆ Low Pressure Drop
- ◆ Cost Effective / Many Sizes to Choose
- ◆ No Element to Service
- ◆ Can Be Utilized as a T-Type Sight Glass
- ◆ Remove Bulk Liquids and Solids
- ◆ Protect Coalescing Filters

In compressed gas and sample process applications, large volumes of liquid and high particulate loads can overwhelm filter elements, reducing their life and performance. Flooding of coalescing elements or blinding from particulate can occur if proper prefiltration is not provided.

A simple solution is a **catchpot**, which replaces the filter element with a hollow stack. The stack dramatically changes the airflow direction, acting as a baffle to remove the majority of contaminants. Catchpot housings should be used upstream of a final filter to capture any residual condensation or particulate.

Ordering Information:

All filter housings can be converted to catchpots by adding the suffix **"CP"** to the housing code.



Exotic Materials

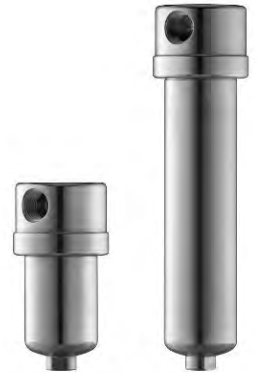
PRODUCT FEATURES / BENEFITS

- ◆ Large Range of Material Available
- ◆ Some Items In Stock for Quick Delivery
- ◆ Hastelloy, Duplex for High Strength / Extreme Conditions
- ◆ Titanium for Strength and Light Weight Conditions
- ◆ Brass, Nickel, Monel, and Inconel for Chemical Compatibility and Oxygen Service

Our Extensive Material Capabilities for Custom Filtration Solutions

United offers a comprehensive library of exotic materials designed to meet the demands of specialized filtration applications. Our capabilities include the fabrication of custom filter housings and elements from a wide range of metals tailored to suit diverse operating environments.

Whether your application demands corrosion resistance, high-temperature durability, or unique mechanical properties, United provides filtration solutions built to perform under the most challenging conditions.



Filter Elements

- Available in Hastelloy and Monel
- Many sizes in stock for immediate delivery

Material Certifications

- Full certifications are available for all housings and elements upon request.

All standard housing designs are offered in Exotic Materials.

We also can Silconert® (Inert Silicone Coating) our 316L Stainless Steel Filter Housings for H₂S, Mercury, Ammonia, and Active Compound Sampling and Transfer.

Silconert® Treated Housings

PRODUCT FEATURES / BENEFITS

- ◆ Creates an Inert Flow Paths for Better Sample Process Control
- ◆ Fast Accurate Results the First Time
- ◆ No Adsorption
- ◆ Fast Calibration
- ◆ Analytical Sampling and Laboratory Applications
- ◆ Process Refinery and Sample Process Applications
- ◆ Reliable Flare and Stack Gas Sampling

Stainless steel filters, due to their high adsorptive surface area, can capture H₂S, mercaptans, and other sulfur compounds, potentially compromising analyzer performance. In continuous emission monitoring systems (CEMS), sulfur adsorption can delay accurate measurements by **up to 90 minutes or more**.

SilcoNert® 2000 provides a complete passivation treatment for stainless steel surfaces, including filter housings and elements. This inert coating:

- Penetrates even the smallest pores of stainless steel surfaces
- Prevents adsorption of sulfur compounds and mercury at **parts-per-billion levels**
- Reduces moisture contamination
- Improves overall sample system performance

Disposable filter media are inherently inert and do not require SilcoNert® treatment; however, stainless steel elements should be treated to create a fully inert flow path.

Applications:

- Automotive emissions testing
- CEMS and other high-sensitivity sulfur compound analyses
- High-temperature operations where galling and element sticking may occur

Ordering Information:

Any stainless steel filters supplied by United Filtration Systems/Headline Filters can be **SilcoNert® 2000 treated**, with an estimated delivery time of **2–3 weeks**. The coating also facilitates element removal by creating a smooth surface, particularly beneficial for heatable H-series housings.



SAE, Socket Welds (SW), Tube Stubs (TS), or Flanges

PRODUCT FEATURES / BENEFITS

- ♦ SAE Threads for Positive O-Ring Seal
- ♦ Socket Weld or Butt Weld Provide 100% Leak Free Installations
- ♦ Tube Stubs for Convenient Tube Fitting Installations
- ♦ Flanges Available in a Variety of Sizes and Pressure Ratings
- ♦ SAE Threads are Ideal When A Housing Needs to be Removed Repeatedly
- ♦ Tube Stubs Provide Simple, Clean, Leak Tight Installation
- ♦ Use of Flanges Provides Easy Access for Cleaning and Inspection

Standard products are supplied with **FNPT connections**. Optional connection types include:

- **SAE**
- **BSPP (British Standard Pipe Parallel)**
- **Socket Weld (SW)**
- **Butt Weld (BW)**
- **Flanged**, including Raised Face (RF), Weld Neck (WN), Butt Weld (BW), Socket Weld (SW), and Tube Stub (TS)

Many SAE configurations are stocked for immediate shipment, and lead times for special connections are typically under **three weeks**.

Additional Services:

- **Hydrostatic testing** is available upon request.

