

2013

Product Catalog



An ISO 9001:2008 certified Company

A+ Corporation, LLC
41041 Black Bayou Road
Gonzales, LA 70737 USA

Analyzer Sampling Solutions > Moisture & Corrosion Control > Knowledgeware

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Comparison Chart

Type A	✓	✓	✓	✓
Type B	✓	✓	✗	✓
Type C	✓	✗	✗	✓
Type D	✓	✗	✗	✗

Phase Separation Membranes (Gas/Liquid Separation Membrane)

Purpose

- These membranes are used in Series 100 Genie® Membrane Separators™, Supreme Series™ 100 Genie® Membrane Separators™, Genie® Membrane Probes™ and 30 Series Avengers™ with membrane to separate liquid from gas sample.

Notes

- Membrane type should be selected based on the type of liquid to be removed.
- The membrane is NOT rated in micron size, however the effective pore size is less than 1 micron.
- Membrane Composition: The membrane composition is proprietary; however, it will not be easily attacked nor absorb any components in the system. The membrane does not influence the gas composition which flows through it, and is completely inert.
 - The only known substance to attack the membrane is hydrofluoric acid in high concentrations.

	<p><u>Type 5 / Type 6 "BTU" Membrane</u></p> <p><u>Applications:</u></p> <ul style="list-style-type: none"> Separation of ALL types of liquid from gas <p><u>Details:</u></p> <ul style="list-style-type: none"> Maximum temperature: 185°F (85°C) Type 6 "BTU" membrane is exactly the same as Type 5 membrane but named "BTU" due to the large number of natural gas and BTU analysis applications it is used in
	<p><u>Type 2 "Hi-Flow" Membrane</u></p> <p><u>Applications:</u></p> <ul style="list-style-type: none"> Separates high surface tension liquids (i.e., water, glycol) from gas NOT designed to reject hydrocarbon liquids or other low surface tension liquids <p><u>Details:</u></p> <ul style="list-style-type: none"> Mounted to an o-ring for handling purposes Maximum temperature: 302°F (150°C)
	<p><u>Type 7 "Hi-Flow Backed" Membrane</u></p> <p><u>Applications:</u></p> <ul style="list-style-type: none"> Separates high surface tension liquids (i.e., water, glycol) from gas Lower cost option for Type 2 membrane when exotic o-rings are required NOT designed to reject hydrocarbon liquids or other low surface tension liquids <p><u>Details:</u></p> <ul style="list-style-type: none"> Polypropylene backing (check compatibility of polypropylene with your process) Maximum temperature: 302°F (150°C)





Membrane Separators

TeamGENIE: Brandy Patin and Melvin Guidry discuss the 3rd of three stages of human, hands-on inspections of a GENIE® *Spot Sampling Manifold*™.



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Behind-the-Scenes: All GENIE® products progress through three hand-eye inspections by trained staff before leaving the factory. GENIE® products enjoy an unrivaled reputation for long life and reliability in the field.



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GENIE® 170

Membrane Separator

The original brand known for sample conditioning and analyzer protection!



The Series 100 Genie® Membrane Separators™ remove 100% of entrained liquid and particulate in gas samples, which allows only gas sample to flow to analyzers. This action protects analyzers and sample system components against liquid damage. The original Genie® Series 100 models are available in several body styles with different membrane types to accommodate a wide variety of applications. The Genie® Supreme Series™ 100 models accommodate the same applications, yet they offer an improved housing design for easy maintenance and the innovative Liquid Block Technology™ that prevents liquid from being forced across the membrane should sample line pressure conditions become upset.

The Model 170 protects gas systems requiring very low sample flow rates on a continuous or intermittent basis. Its small internal volume and low dead volume 1/16" ports allow the Genie® Model 170 to purge quickly, which is ideal for the removal liquid aerosol droplets from gas samples; it is also perfect for protecting components such as laboratory gas chromatographs. Please note that special low volume fittings must be ordered to use a Genie® Model 170 properly. Other special assemblies may be ordered such as a Universal Assembly™.

Technical Specifications

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

Product Brief

Applications

- Protection against liquids
- On-line and portable analyzers
- GC's, Mass Specs, O₂, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining

Benefits

- Superior analyzer protection
- Helps preserve sample integrity
- Improves analyzer reliability
- Reduces analyzer maintenance

Features

- Genie® Membrane Technology™
- Low internal volume
- Simple design
- No elastomers required for sealing
- Universal Assembly™ option



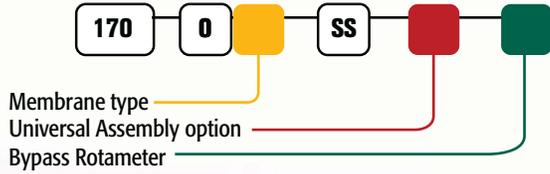
geniefilters.com

Model Numbering & Additional Part Numbers

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

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

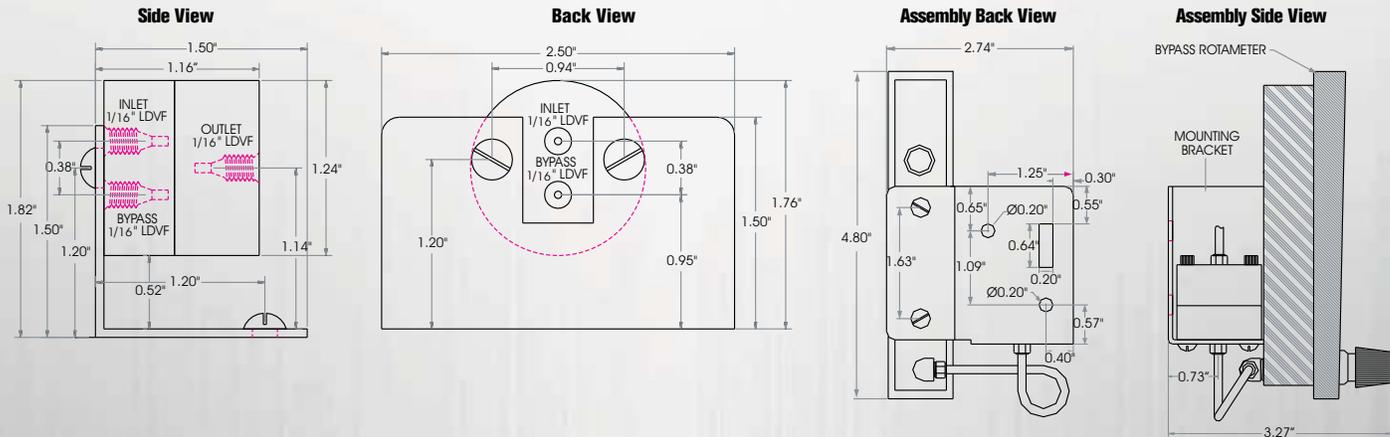
How to build the model number:



How to build the replacement membrane kit number:



Dimensions



Local Distributor

A+ Corporation is the leader in Analytically Correct™ Sample Extraction and Conditioning Systems.

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sales@geniefilters.com > 225.644.5255 > Fax 225.644.3975

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GENIE[®] 120

Supreme Membrane Separator

The original brand known for sample conditioning and analyzer protection!

The Supreme 100 Series™ remove 100% of entrained liquid and particulate in gas samples, which allow only gas sample to flow to analyzers. This action protects analyzers and other sampling components against liquid damage. The Genie[®] Supreme Series™ 100 models can accommodate a wide range of applications just as the original Genie[®] Series 100 Membrane Separators™, yet they offer an improved housing design for easy maintenance and the innovative Liquid Block Technology™ that prevents liquid from being forced across the membrane should sample line pressure conditions become upset. Genie[®] Supreme Series Membrane Separators™ are safe and easy to install and maintain, especially in heated, densely populated cabinets.

The Model 120 is ideal for low flow applications and can withstand high pressure in the housing. This high pressure model has a 1" cross sectional membrane area, the same as the original Genie[®] Model 101, and it is ideal for the removal of relatively small amounts of liquid present on a continuous basis; it is also perfect for protecting gas chromatographs, mass spectrometers, O₂ analyzers, moisture analyzers, and other analyzers with relatively small flow requirements. Please note that special fittings may be ordered, such as a Universal Assembly™. Additional information such as FAQs is available.



Technical Specifications	
Maximum pressure rating	120: 2,000 psig 120UA: 100 psig (due to rotameter limitations)
Maximum recommended supply pressure	Lowest possible pressure consistent with application* *Must not exceed "Pressure rating" listed above
Maximum Liquid Block [®] valve auto-reset pressure	35 psig* *Slowly open the supply pressure so that the minimum differential pressure required to shut off the Liquid Block™ is not met or exceeded.
Maximum temperature	185 °F (85 °C) for Type 6/BTU membrane 302 °F (150 °C) for Hi-Flow Backed membrane
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	1 L/min for Type 6/BTU membrane* 4,000 cc/min for Hi-Flow membrane* *Maximum flow results in approximately 2 psi membrane differential pressure
Bypass flow rates	Requirement varies with application
Port sizes	Inlet, Outlet, & Bypass: 1/8" female NPT
Internal volume	Total with Liquid Block: 2.4 cc Upstream of membrane: 1.3cc Downstream of membrane: 1.1cc Total without Liquid Block: 2.1cc Upstream of membrane: 1.1cc Downstream of membrane: 1.0cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard Membrane: Inert

Product Brief

Applications

- Protection against liquids
 - On-line and portable analyzers
 - GC's, Mass Specs, O₂, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining
- Gas sample conditioning

Benefits

- Helps preserve sample integrity
- Superior analyzer protection
- Quick and easy to install and maintain
- Quick and easy membrane inspection
- Economical

Features

- Genie[®] Membrane Technology™
- Liquid Block™ option
- Low internal volume
- Straight through Bypass
- Built-in membrane retention
- Threaded housing cover
- All connection ports on the housing
- Back mounting
- Universal Assembly™ option



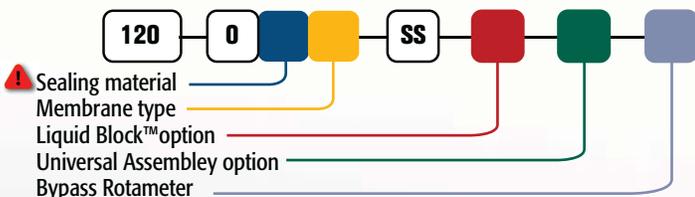
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Model Numbering & Additional Part Numbers

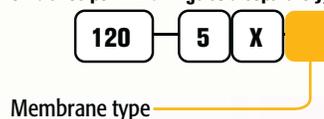
Your model number is determined by your specific needs. Choose options below.

Sealing material 	0 = fluoroelastomer	1 = perfluoroelastomer	(others available upon request)
Membrane type	6 = Type 6/BTU	7 = Hi-Flow Backed	
Liquid Block™	Blank = No Liquid Block™	LB = Liquid Block™	
Universal Assembly option	Blank = No Universal Assembly	U = Universal Assembly	
Bypass Rotameter* (only if option U is selected) *Dwyer Rotameter with Integral Valve	0 = Without Rotameter	1 = 10-100 cc/min*	2 = 100-1000 cc/min*
Mounting bracket	Part # 120-509-SS (sold separately)		
O-ring replacement	Part # 120-500 (sold separately)		

How to build the model number:

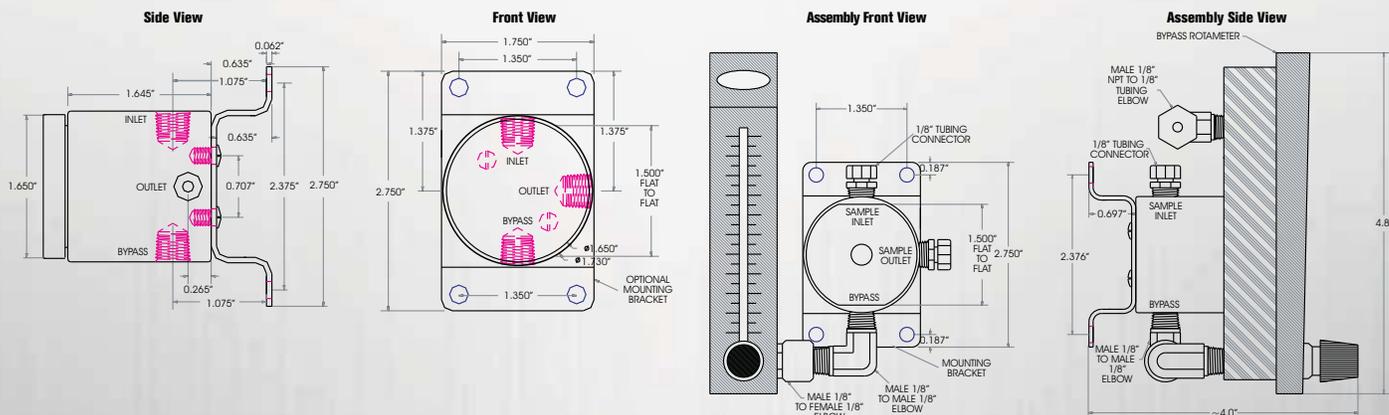


How to build the replacement membrane kit number: (Five membranes per kit. O-rings sold separately)



 We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions



Local Distributor

A+ Corporation is the leader in Analytically Correct™ Sample Extraction and Conditioning Systems.

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GENIE[®] 123

Supreme Membrane Separator



The original brand known for sample conditioning and analyzer protection!

The Supreme 100 Series™ remove 100% of entrained liquid and particulate in gas samples, which allow only gas sample to flow to analyzers. This action protects analyzers and other sampling components against liquid damage. The Genie[®] Supreme Series™ 100 models can accommodate a wide range of applications just as the original Genie[®] Series 100 Membrane Separators™, yet they offer an improved housing design for easy maintenance and the innovative Liquid Block Technology™ that prevents liquid from being forced across the membrane should sample line pressure conditions become upset. Genie[®] Supreme Series Membrane Separators™ are safe and easy to install and maintain, especially in heated, densely populated cabinets.

The Model 123 is ideal for applications requiring higher flow rates or larger quantities of liquid than the Genie[®] Supreme Model 120 can withstand. It offers a 2" diameter membrane, the same membrane cross sectional area as the original Genie[®] Model 130 or Genie[®] Model 130M, and it is ideal for removing unintermitted liquid flow from gas samples; it is also perfect for protecting components such as "on-line" analyzers, gas chromatographs, or mass spectrometers. This model is not available with the Liquid Block feature. If Liquid Block feature is desired, the Model 123HP should be selected. Additional information such as FAQs is available.

Technical Specifications

Maximum pressure rating	2,000 psig
Maximum recommended supply pressure (For more information see product FAQs)	Lowest possible pressure consistent with application* *Must not exceed "Pressure rating" listed above
Maximum temperature	185 °F (85 °C) for Type 6/BTU membrane 302 °F (150 °C) for Hi-Flow Backed membrane
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	5,130 cc/min for Type 6/BTU membrane* 13,000 cc/min for Hi-Flow Backed membrane* *Maximum flow results in approximately 2 psi membrane differential pressure with minimum of 70 psig inlet pressure
Bypass flow rates	Requirement varies with application
Port sizes	Inlet, Outlet, & Bypass: 1/4" female NPT
Internal volume	Total: 10.3 cc Upstream of membrane: 5.4 cc Downstream of membrane: 4.9 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard Membrane: Inert

Product Brief

Applications

- Protection against liquids
 - On-line and portable analyzers
 - GC's, Mass Specs, O₂, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining
- Gas sample conditioning

Benefits

- Helps preserve sample integrity
- Superior analyzer protection
- Quick and easy to install and maintain
- Quick and easy membrane inspection
- Economical

Features

- Genie[®] Membrane Technology™
- Low internal volume
- Straight through Bypass
- Built-in membrane retention
- Threaded housing cover
- All connection ports on the housing
- Back mounting



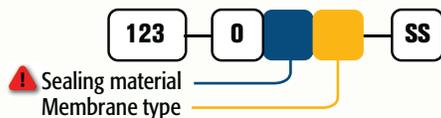
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Model Numbering & Additional Part Numbers

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

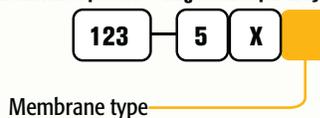
Sealing material ⚠	0 = fluoroelastomer	1 = perfluoroelastomer	(other materials available upon request)
Membrane type	6 = Type 6/BTU	7 = Hi-Flow Backed	
Mounting bracket accessory	Part # 123-509-SS (sold separately)		
O-ring replacement	Part # 123-500 (sold separately)		

How to build the model number:



How to build the replacement membrane kit number:

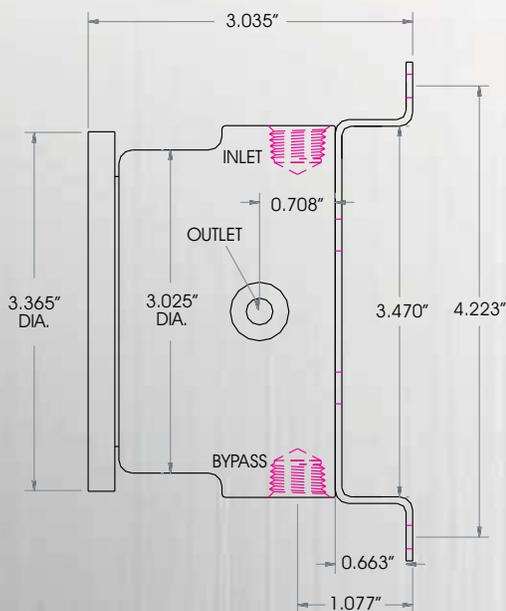
(Five membranes per kit. O-rings sold separately)



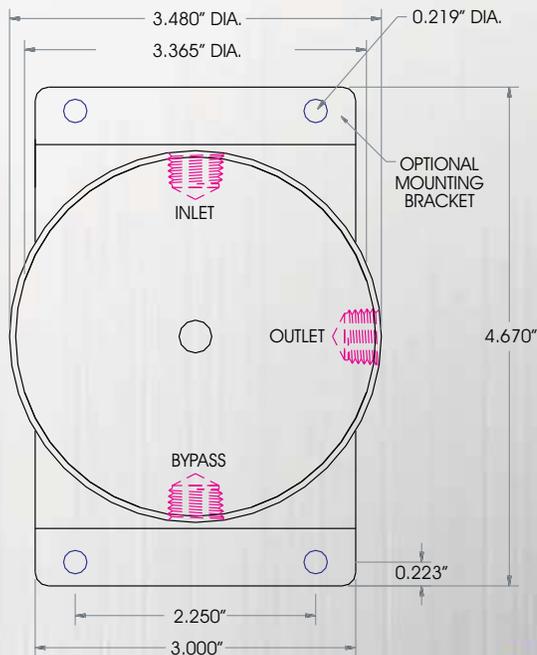
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Side View



Front View



Local Distributor

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GENIE[®] 123HP

Supreme Membrane Separator

The original brand known for sample conditioning and analyzer protection!

The Supreme 100 Series™ remove 100% of entrained liquid and particulate in gas samples, which allow only gas sample to flow to analyzers. This action protects analyzers and other sampling components against liquid damage. The Genie[®] Supreme Series™ 100 models can accommodate a wide range of applications just as the original Genie[®] Series 100 Membrane Separators™, yet they offer an improved housing design for easy maintenance and the innovative Liquid Block Technology™ that prevents liquid from being forced across the membrane should sample line pressure conditions become upset. Genie[®] Supreme Series Membrane Separators™ are safe and easy to install and maintain, especially in heated, densely populated cabinets.

The Model 123HP is ideal for high-pressure applications. It has the same design as the Genie[®] Supreme Model 123, except that it comes standard with a high pressure Liquid Block™. It offers a 2" diameter membrane, the same membrane cross sectional area as the original Genie[®] Model 130HPM, and it is ideal for removing unintermitted liquid flow from gas samples; it is also perfect for protecting components such as "on-line" analyzers, gas chromatographs, or mass spectrometers. Additional information such as FAQs is available.



Technical Specifications	
Maximum pressure rating	2,000 psig
Maximum recommended supply pressure <small>(for more information see product FAQs)</small>	2,000 psig
Maximum Liquid Block™ valve auto-reset pressure	2,000 psig* <small>*Slowly open the supply pressure so that the minimum differential pressure required to shut off the Liquid Block™ is not met or exceeded.</small>
Maximum temperature	185 °F (85 °C) for Type 6/BTU membrane 302 °F (150 °C) for Hi-Flow Backed membrane
Maximum recommended membrane flow rate <small>(For higher flow rates contact the factory)</small>	5,130 cc/min for Type 6/BTU membrane* 13,000 cc/min for Hi-Flow/Hi-flow Backed membrane* <small>*Maximum flow results in approximately 2 psi membrane differential pressure with minimum of 70 psig inlet pressure</small>
Bypass flow rates	Requirement varies with application
Port sizes	Inlet, Outlet, & Bypass: 1/4" female NPT
Internal volume	Total with Liquid Block: 9.1cc Upstream of membrane: 5.4cc Downstream of membrane: 3.7cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard Membrane: Inert

Product Brief

Applications

- Protection against liquids
 - On-line and portable analyzers
 - GC's, Mass Specs, O₂, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining
- Gas sample conditioning
- High pressure sampling processes

Benefits

- Helps preserve sample integrity
- Superior analyzer protection
- Quick and easy to install and maintain
- Quick and easy membrane inspection
- Economical

Features

- Genie Membrane Technology™
- Liquid Block™
- Low internal volume
- Straight through Bypass
- Built-in membrane retention
- Threaded housing cover
- All connection ports on the housing
- Back mounting



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Model Numbering & Additional Part Numbers

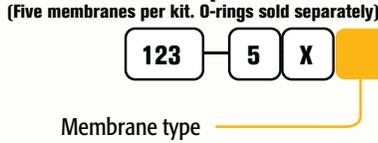
Your model number is determined by your specific needs. Choose options below.

Sealing material ⚠️	0 = fluoroelastomer	1 = perfluoroelastomer	(other materials available upon request)
Membrane type	6 = Type 6/BTU	7 = Hi-Flow Backed	
Mounting bracket accessory	Part # 123-509-SS (sold separately)		
O-ring replacement	Part # 123-500 (sold separately)		

How to build the model number:



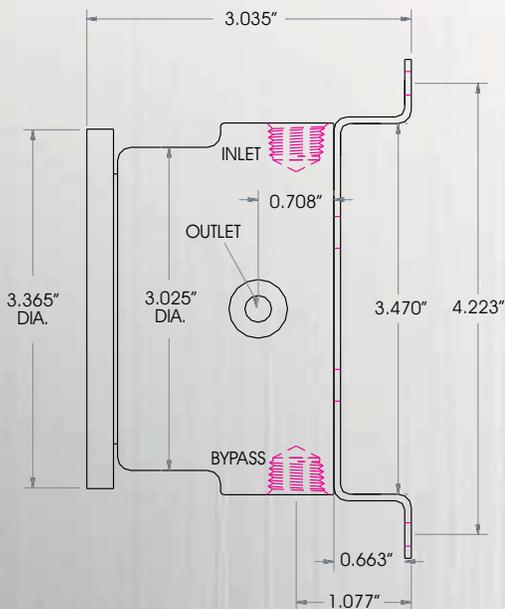
How to build the replacement membrane kit number:



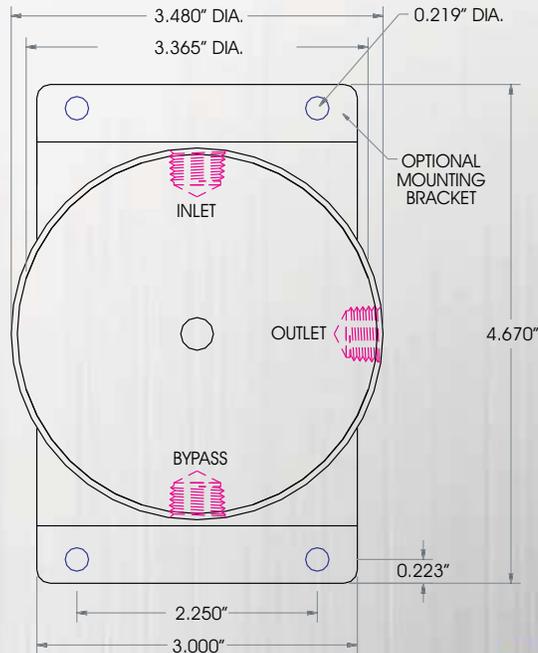
⚠️ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Side View



Front View



Local Distributor

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Contact us for expert product application assistance.

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GENIE[®] 225

Membrane Separator

The original brand known for sample conditioning and analyzer protection!



The Supreme 200 Series™ remove 100% of suspended, immiscible liquids in liquid hydrocarbon samples, which allow only hydrocarbon liquid sample to flow to an analyzer. This action protects analyzers against damage to analyzers and sample system components. The Genie[®] Supreme Series 200 models can accommodate a wide range of applications just as the original Genie[®] Series 200 membrane separators, yet they offer an improved housing design for easy maintenance. Genie[®] Supreme Series Membrane Separators™ are safe and easy to install and maintain, especially in heated, densely populated cabinets.

The Model 225 protects liquid hydrocarbon systems from water, caustic, sulfuric acid or other immiscible liquids where the operating pressure does not exceed 2000 psig. Ideal for high-pressure applications, it also removes absorbed gases, gas bubbles, or volatile organic carbon (VOC) compounds from water sample at the same pressure rating. This model has the same design as both the original Genie[®] Model 205 and Model 205HP, except it includes a standard screw off cover to allow easier membrane maintenance.

Technical Specifications

Maximum pressure rating	2,000 psig
Maximum recommended supply pressure	2,000 psig
Maximum temperature	302 °F (150 °C)
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	150 cc/min in Diesel* 200 cc/min in Kerosene* 450 cc/min in Gasoline* <small>*Maximum flow results in approximately 10 psi membrane differential pressure</small>
Port sizes	Inlet, Outlet, & Bypass: 1/4" female NPT
Internal volume	Total: 0.73 cubic inches Upstream of membrane: 0.47 cubic inches Downstream of membrane: 0.26 cubic inches
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard Membrane: Inert

Product Brief

Applications

- Allows for continuous liquid sampling in any process industry including natural gas, petrochemical, and oil refining.
- Analyzer protection against immiscible liquids
- Liquid sample conditioning

Benefits

- Superior analyzer protection
- Helps preserve sample integrity
- Safe and easy to install and maintain, especially in heated, densely populated cabinets
- Extended membrane service life
- Quick and easy membrane inspection
- Economical

Features

- Genie[®] Membrane Technology™
- Low internal volume
- Straight through Bypass
- Threaded housing cover
- All connection ports on the housing
- Back mounting



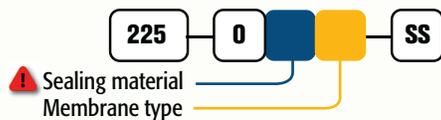
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Model Numbering & Additional Part Numbers

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

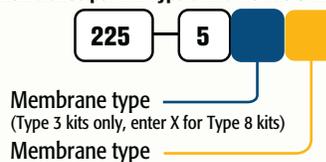
Sealing material ⚠	0 = fluoroelastomer	(other materials available upon request)
Membrane type	3 = Liquid/Liquid membrane (with bonded o-ring)	8 = Liquid/Liquid Backed membrane
Mounting bracket accessory	Part # 225-509-SS (sold separately)	
O-ring replacement	Part # 225-500 (sold separately)	

How to build the model number:



How to build the replacement membrane kit number:

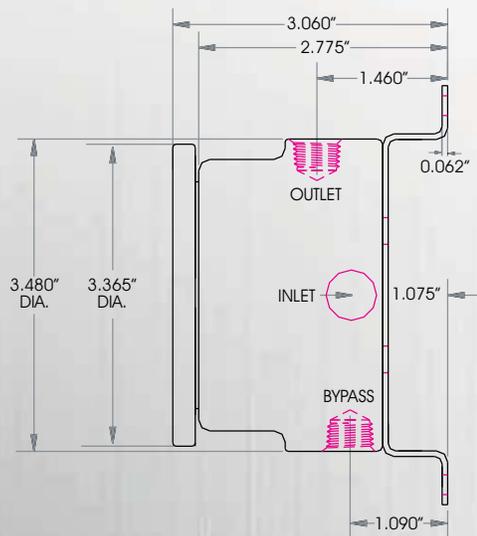
(Five membranes per kit. Type 3 kits include o-rings)



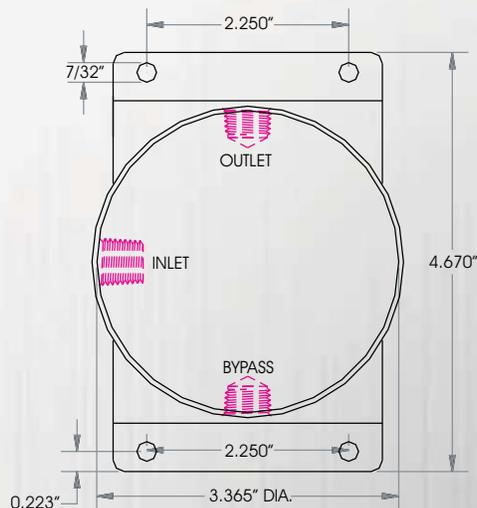
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Side View



Front View



Local Distributor

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Membrane Probes & Probe Regulators

TeamGENIE: Rhett Breaux builds a test jig for a new GENIE® component.



www.geniefilters.com



An ISO 9001:2000 certified company.



Behind-the-Scenes: All GENIE® products are tested to withstand stresses far beyond what they will experience in actual service.



www.geniefilters.com





The safest and most versatile probes available on the market!

Liquid carry over from the pipeline into the sample conditioning system should be prevented when sampling natural gas as it can directly impact the accuracy of the compositional analysis and also damage the analyzer. Industry standards state that equipment used to remove liquid from the sample must be operated at flowing temperature and pressure conditions. Genie® Probes™ provide a means to insert Genie® Membrane Technology™ directly into a pipeline for the purpose of separating unwanted liquid and particulate from the gas sample at flowing temperature and pressure conditions, in compliance with industry standards.

The GPR™ consists of a housing and a membrane tip probe regulator. The housing is installed in a depressurized pipeline through a vertically mounted thread-o-let or flange, and contains a “foot valve” in its lower end. Inserting the probe into the housing opens the “foot valve”, allowing pipeline gas to flow freely through the membrane. The sample pressure is reduced immediately downstream of the membrane, inside of the pipeline. Heat is transferred from the pipeline to the regulator to prevent excessive Joule-Thomson cooling, which helps prevent condensation during pressure regulation. Retracting the probe from the housing closes the foot valve, making it possible to perform probe maintenance without depressurizing the pipeline. This insertion/retraction method is considerably less expensive and complex than pneumatic or hydraulic methods.

A regulator manifold is available with a pressure gauge, ball valve, and relief valve attached. The GPR™ housing is also available with an additional port on the side that allows for the injection of test gas into the probe tip for the purpose of performance testing the entire SCS.

Technical Specifications

Maximum pressure rating	3,500 psig
Maximum temperature	185 °F (85 °C)
Internal volume	13.758 cc
Outlet port size	1/4" female NPT
Minimum pipeline size	4"
Outlet pressure range (psig)	0-10, 0-25, 0-50, 0-100, 0-250, 0-500 (other ranges available upon request)
Process connection	3/4" or 1" male NPT
Thread-o-let requirement	3/4" female NPT* *Inner diameter must not be less than 0.910" 1" female NPT* *Inner diameter must not be less than 1.141" for 1.1" diameter housing or less than 0.910" for 0.9" diameter housing
Mounting orientation	Vertical (preferred), or 45° maximum angle relative to vertical
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Foot Valve sealing material: Perfluoroelastomer standard Probe sealing material: Neoprene rubber standard Regulator seat material: PFA Membrane: inert



Product Brief

Applications

- Extract a representative sample from a multi-phase gas source
- Pressure Regulation
- Protection against liquids
 - Online and portable analyzers
 - BTU, H2S, Moisture, and others

Benefits

- API 14.1, GPA 2166 and ISO 10715 probe compliance
- Pipeline gas helps to temperature change at regulation point
- Helps to preserve sample integrity
- Helps to improve safety of personnel and equipment
- Does not require hydraulic fluid
- Probe maintenance without line depressurization

Features

- Genie® Membrane Technology™
- Pressure regulation at probe tip, inside of pipeline
- Vibration resistant
- No dead volume
- Low internal volume
- J-slot safety
- Optional calibration port



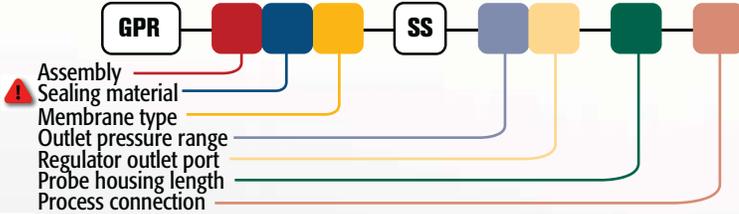
geniefilters.com

Model Numbering & Additional Part Numbers

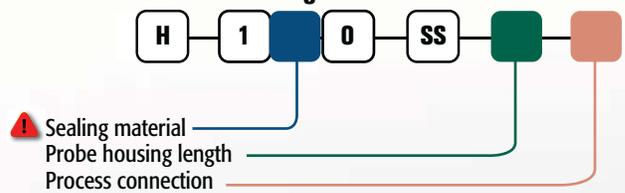
Your model number is determined by your specific needs. Choose options below.

Assembly	1 = GPR without housing	2 = GPR with housing				
Sealing material ⚠	0 = Neoprene rubber	(other materials available upon request)				
Membrane type	6 = Type 6/BTU	7 = Hi-Flow Backed				
Outlet pressure range (psig)	00 = 0-25	01 = 0-50	02 = 0-100	03 = 0-250	P4 = 0-500	09 = 0-10
Regulator outlet port	1 = 1/4" MNPT to 1/8" tube connector		4 = 1/4" FNPT			
Probe housing length	Blank = 4"		B = 7"		C = 9"	
Process connection	Blank = 3/4" NPT x 0.9 dia.*		P = Calibration gas option 3/4" NPT x 0.9" dia.*			
	1 = 1" NPT x 1.1 dia.		1A = 1" NPT x 0.9 dia.*		*Not recommended for welding	
Membrane replacement	Part # GP-506		(contains 5 membranes per kit - sold separately)			
	Part # GP-CMA-506		(contains 2 complete assemblies - sold separately)			

How to build the model number:



How to build the housing model number:

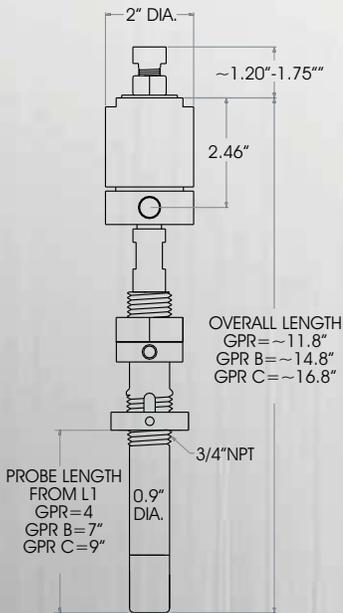


⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

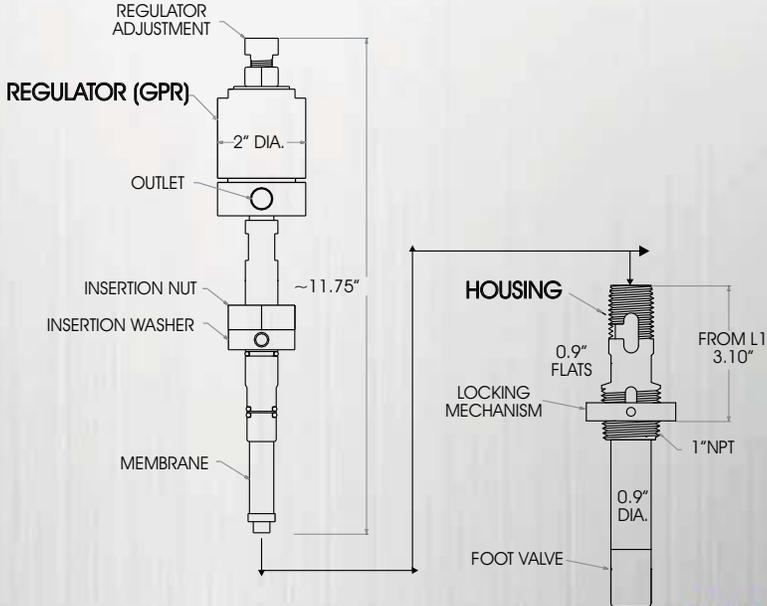
Inserted

3/4" NPT x 0.9" DIAMETER HOUSING SHOWN



Extracted

1" NPT x 0.9" DIAMETER HOUSING SHOWN



Local Distributor

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GENIE[®] GP2[™]

Membrane Probe

The safest and most versatile probes available on the market!

Liquid carry over from the pipeline into the sample conditioning system should be prevented when sampling natural gas as it can directly impact the accuracy of the compositional analysis and also damage the analyzer. Industry standards state that equipment used to remove liquid from the sample must be operated at flowing temperature and pressure conditions. Genie[®] Probes[™] provide a means to insert Genie[®] Membrane Technology[™] directly into a pipeline for the purpose of separating unwanted liquid and particulate from the gas sample at flowing temperature and pressure conditions, in compliance with industry standards.

The GP2[™] probe consists of a housing and a membrane tip probe. The housing is installed in a depressurized pipeline through a vertically mounted thread-o-let or flange, and contains a “foot valve” in its lower end. Inserting the probe into the housing opens the “foot valve”, allowing pipeline gas to flow freely through the membrane. Retracting the probe from the housing closes the foot valve, making it possible to perform probe maintenance without depressurizing the pipeline. This insertion/retraction method is considerably less expensive and complex than pneumatic or hydraulic methods.

An optional flow restrictor is available to prevent liquids from being forced through the membrane, and should be selected when the probe is being used in spot and composite sampling applications. The GP2[™] housing is also available with an additional port on the side that allows for the injection of test gas into the probe tip for the purpose of performance testing the entire SCS.



Product Brief

Applications

- Extract a representative sample from a multi-phase gas source
 - Spot, composite or continuous gas sampling
- Protection against liquids
 - Online and portable analyzers
 - BTU, H2S, Moisture, and others

Benefits

- API 14.1, GPA 2166 and ISO 10715 probe compliance
- Helps to preserve sample integrity
- Protects analyzers
- Helps to improve safety of personnel and equipment
- Does not require hydraulic fluid
- Probe maintenance without line depressurization

Features

- Genie[®] Membrane Technology[™]
- Vibration resistant
- No dead volume
- Low internal volume
- J-slot safety
- Optional calibration port

Technical Specifications

Maximum pressure rating	3,500 psig
Maximum temperature	185 °F (85 °C)
Internal volume	13.758 cc
Outlet port size	GP2: 1/8" female NPT; GPCSA: 3/4" female NPT
Process connection	3/4" or 1" male NPT*
Thread-o-let requirement	3/4" female NPT* *The inner diameter of all openings in pipe wall and thread-o-let must not be less than 0.910" 1" female NPT* *Inner diameter must not be less than 1.141" for 1.1" diameter housing or less than 0.910" for 0.9" diameter housing
Mounting orientation	Vertical (Preferred), or 45° maximum angle relative to vertical required
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Foot Valve sealing material: Perfluoroelastomer standard Probe sealing material: Neoprene rubber standard Membrane: inert



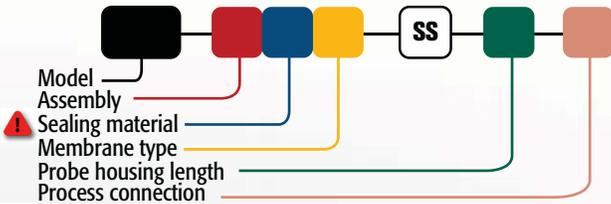
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Model Numbering & Additional Part Numbers

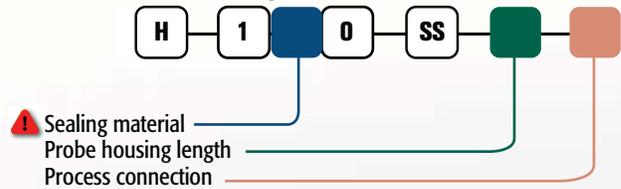
Your model number is determined by your specific needs. Choose options below.

Model	GP2 = Probe w/ 1/8" FNPT outlet	GPCSA = Probe w/ adapter for YZ, PGI, & Welker Sampler
Assembly	1 = without housing	2 = with housing
Sealing material ⚠	0 = Neoprene rubber	(other materials available upon request)
Membrane type	6 = Type 6/BTU	7 = Hi-Flow Backed
Probe housing length	Blank = 4"	B = 7" C = 9"
Process connection	Blank = 3/4" NPT x 0.9 dia.* 1 = 1" NPT x 1.1 dia.	P = Calibration gas option 3/4" NPT x 0.9" dia.* 1A = 1" NPT x 0.9 dia.* *Not recommended for welding
Flow restrictor (recommended)	Part # ACC-SS-4-SRA2EA	1/8" MNPT x 1/4" FNPT (sold separately)
Membrane replacement	Part # GP-506 Part # GP-CMA-506	(contains 5 membranes per kit - sold separately) (contains 2 complete assemblies - sold separately)

How to build the model number:



How to build the housing model number:

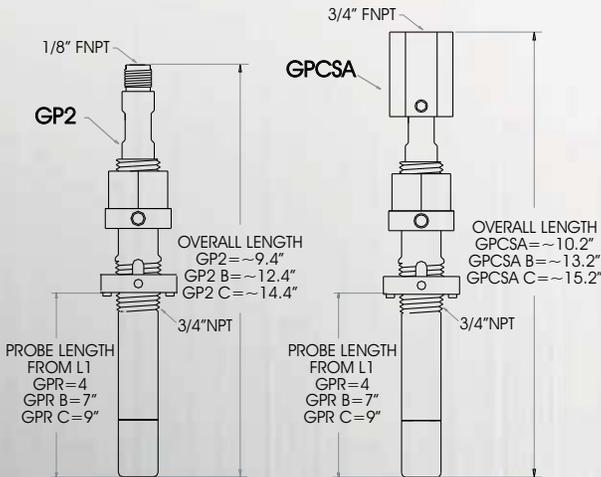


⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

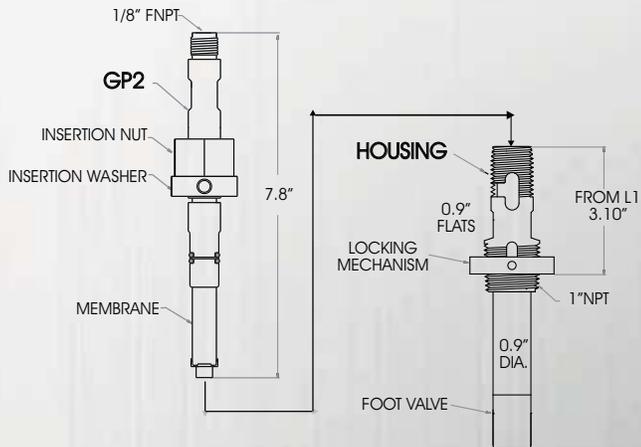
Inserted

3/4" NPT x 0.9" DIAMETER HOUSING SHOWN



Extracted

1" NPT x 0.9" DIAMETER HOUSING SHOWN



Local Distributor

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GENIE® GPSD™

Membrane Probe



The safest and most versatile probes available on the market!

Liquid is the root of many problems when sampling natural gas, either by its condensing out of the sample gas after entering the sample system or carrying over from the pipeline into the probe. Entrained liquid is not always easy to locate. Sometimes it cannot be detected by sight, but, instead, by its impact on analysis or damage to an analyzer. With Genie® Probes & Probe Regulators, a Genie® membrane is inserted directly into a pipeline or vessel which allows for separation of entrained liquids at the prevailing line pressure and temperature conditions. By separating entrained liquids at line pressure and temperature, sample integrity is maintained. Genie® Probes™ also remove all entrained liquids in a gas sample, making them the most effective filters on the market for protection against liquid damage during upset conditions.

The GPSD™ is designed specifically for small diameter 2" or 3" pipelines. The GPSD™ uses proven Genie® Membrane Technology™ to extract a representative gas sample and provide a safety net for protecting gas analyzers against liquid damage. This model's housing is designed to install in a depressurized line. Once installed, the housing includes a foot valve in its base, so the probe can be inserted or retracted with a pressurized line or vessel. The GPSD™ replaces the threaded foot valve (-T) housing option of the GPR™.

Liquid can be forced through any phase separation membrane when the flow rate through the membrane is too high resulting in excessive differential pressure across the membrane. Opening a ball valve downstream of the membrane to purge a sample cylinder during spot or composite sampling can cause this condition to occur. To safeguard against this excessive differential pressure, we offer an optional flow restrictor that limits the flow through the membrane so as not to exceed a 2 psig drop thus preventing liquids from being forced through the membrane. The flow restrictor should be selected when a Genie® Membrane Probe™ is used in spot and composite sampling applications. It is not necessary to use a flow restrictor when sampling from lines that have a very low pressure or when there will be a constant flow through the probe.

Technical Specifications

Maximum pressure rating	3,500 psig
Maximum temperature	185 °F (85 °C)
Internal volume	8.4 cc
Outlet port size	GPSD: 1/8" female NPT; GPSD-R: 1/4" female NPT GPSD-CSA: 3/4" female NPT
Process connection	3/4" male NPT
Thread-o-let requirement	3/4" female NPT* *The inner diameter of all openings in pipe wall and thread-o-let must not be less than 0.910"
Mounting orientation	Vertical (preferred), or 45° maximum angle relative to vertical required
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Foot Valve sealing material: Perfluoroelastomer Standard Probe sealing material: Neoprene rubber Standard Membrane: inert

Product Brief

Applications

- Protection against liquids
 - On-line and portable analyzers
 - GC's, Mass Specs, O₂, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining.
- Extract a representative gas sample
- Gas sample conditioning inside the small diameter pipe or vessel

Benefits

- Helps preserve sample integrity
- Helps improve safety of personnel and equipment
- Protects analyzers
- Reliable
- Economical

Features

- Genie® Membrane Technology™
- Vibration resistant
- No dead volume
- Low internal volume
- J-Slot safety



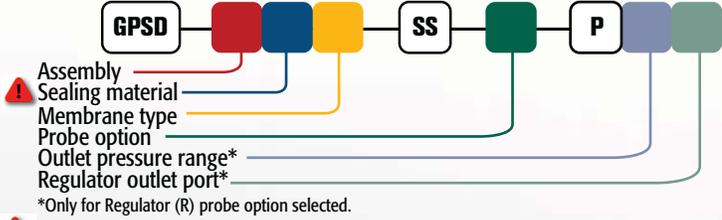
geniefilters.com

Model Numbering & Additional Part Numbers

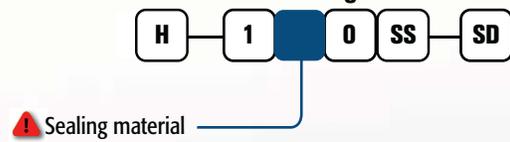
Your model number is determined by your specific needs. Choose options below.

Assembly	1 = Probe without housing	2 = Probe & housing				
Sealing material	0 = Neoprene	(other materials available upon request)				
Membrane type	6 = Type 6/BTU	7 = Hi-Flow Backed				
Probe option	Blank = No option	CSA = Probe w/ adapter for YZ, PGI & Welker Sampler				
	R = Probe w/ regulator option					
Outlet pressure range (psig)	0 = 0-25	1 = 0-50	2 = 0-100	3 = 0-250	4 = 0-500	9 = 0-10
Regulator outlet port*	1 = 1/4" MNPT to 1/8" tube connector		4 = 1/4" FNPT			
Bypass flow restrictor (recommended)	Part # ACC-SS-4-SRA2EA	1/8" MNPT x 1/4" FNPT (sold separately)				
Membrane replacement	Part # GPSD-506	(contains 5 membranes per kit - sold separately)				
	Part # GPSD-CMA-506	(contains 1 complete assembly - sold separately)				

How to build the model number:



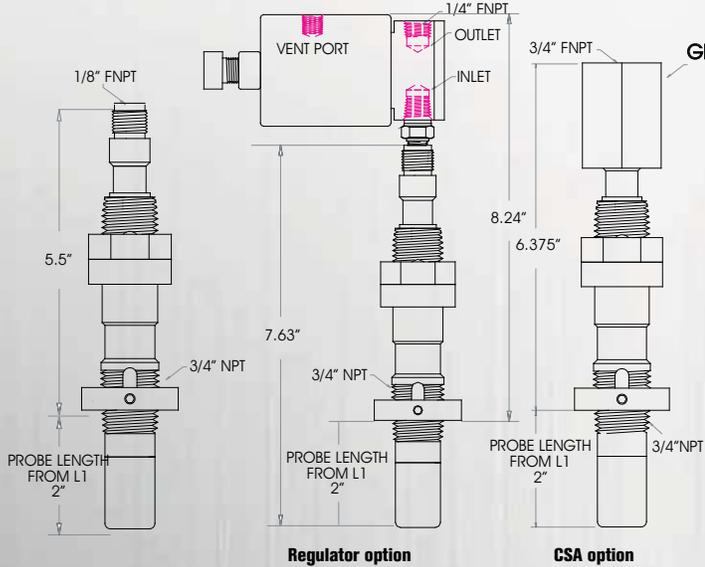
How to build the Genie® housing model number:



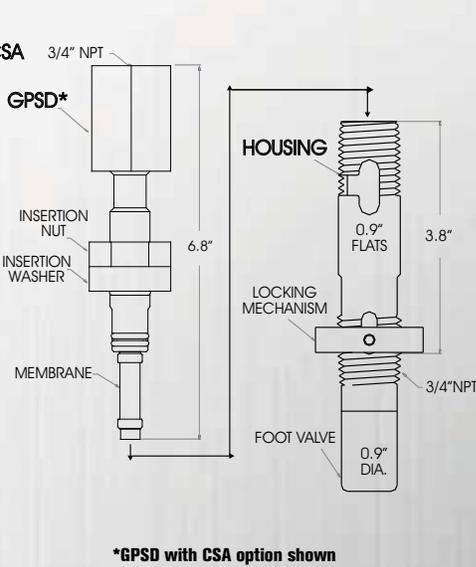
We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Inserted



Extracted



Local Distributor

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The safest and most versatile probes available on the market!

The GPHV™ was designed sampling from high velocity gas streams. The thick walled probe, which is machined from a single piece of stainless steel, has a high natural resonant frequency that allows it to withstand the destructive forces of gases flowing at high velocities. This model must be installed with a depressurized line.



Technical Specifications

Maximum pressure rating	4,500 psig
Maximum temperature	400 °F (204 °C)
Maximum velocity	4" probe: >100 ft/sec 10" probe: 56 ft/sec
Internal volume	4" probe: 3.62 cc 10" probe: 8.44 cc
Port size	Outlet: 1/4" female NPT
Process connection	1/2" male NPT
Thread-o-let requirement	1/2" female NPT* <small>*The inner diameter of all openings in pipe wall and thread-o-let must not be less than 0.690"</small>
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant

Product Brief

Applications

- Extract a gas sample from a pipeline for use in an analyzer
 - On-line and portable analyzers
 - GC's, Mass Specs, O₂, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining
- High velocity gas streams

Benefits

- Helps preserve sample integrity
- Helps improve safety of personnel and equipment
- Reliable
- Durable
- Economical

Features

- Simple design
- Single-piece, machined housing
 - no welding
- Vibration resistant



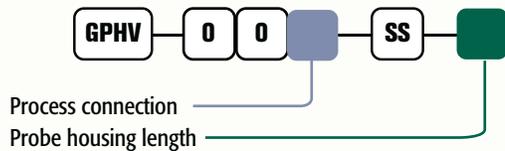
geniefilters.com

Model Numbering & Additional Part Numbers

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

Process connection	0 = 1/2" NPT	
Probe housing length	Blank = 4" insertion length	10 = 10" insertion length

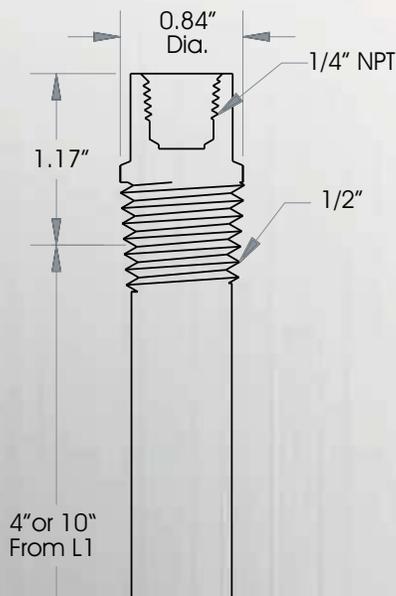
How to build the model number:



! We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Side View



Local Distributor

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GENIE® 701

Portable Insertion Probe™

The safest and most versatile probes available on the market!

Liquid is the root of many problems when sampling natural gas, either by its condensing out of the sample gas after entering the sample system or carrying over from the pipeline into the probe. Entrained liquid is not always easy to locate. Sometimes it cannot be detected by sight, but, instead, by its impact on analysis or damage to an analyzer. With Genie® Probes & Probe Regulators, a Genie® membrane is inserted directly into a pipeline or vessel which allows for separation of entrained liquids at the prevailing line pressure and temperature conditions. By separating entrained liquids at line pressure and temperature, sample integrity is maintained. Genie® Probes™ also remove all entrained liquids in a gas sample, making them the most effective filters on the market for protection against liquid damage during upset conditions.

The PIP™ Model 701 The PIP Model 701 is an adjustable length insertion probe that can be inserted/retracted into a pressurized line through a full opening valve without the use of a special insertion device. It is best suited for use with a portable analyzer or when spot sampling is being performed. The PIP Spot Sampling Manifold is recommended when using the PIP to extract a spot sample as it ensures that the sample path, from the process valve to the cylinder inlet valve, is thoroughly purged.

Liquid can be forced through any phase separation membrane when the flow rate through the membrane is too high resulting in excessive differential pressure across the membrane. Opening a ball valve downstream of the membrane to purge a sample cylinder during spot or composite sampling can cause this condition to occur. To safeguard against this excessive differential pressure, we offer an optional flow restrictor that limits the flow through the membrane so as not to exceed a 2 psig drop thus preventing liquids from being forced through the membrane. The flow restrictor should be selected when a Genie® Membrane Probe™ is used in spot and composite sampling applications. It is not necessary to use a flow restrictor when sampling from lines that have a very low pressure or when there will be a constant flow through the probe. restrictor should be selected when a Genie® Membrane Probe™ is used in spot and composite sampling applications. It is not necessary to use a flow restrictor when sampling from lines that have a very low pressure or when there will be a constant flow through the probe.

Technical Specifications

Maximum pressure rating	3,000 psig
Maximum temperature	225 °F (107 °C) without membrane 185 °F (85 °C) with membrane
Port size	Outlet: 1/4" female NPT
Insertion depth (for greater insertion depths contact the factory)	L: 11"
Installation valve requirement	1/2" or 3/4" NPT full opening valve
Wetted materials	Machined parts: 316/316L stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Dynamic sealing material: Perfluoroelastomer standard Static sealing material: Neoprene rubber standard Gasket seals: PTFE Anti-friction pad: Nylatron



Product Brief

Applications

- Protection against liquids
 - Portable analyzers
 - BTU, H₂S, Moisture, and others
- Spot gas sampling in any process industry including natural gas, petrochemical, and oil refining

Benefits

- Aids in API 14.1 compliance
 - Insertion depth
 - Use of probe
 - Liquid rejection
- Improves personnel safety
- Economical
- Easy to carry and install

Features

- Use as a sample probe with or without membrane
- Easy, quick, safe insertion and extraction from pressurized system
- Rugged
- Simple to use
- Finger tip operation
- Membrane shroud to protect membrane during continuous service



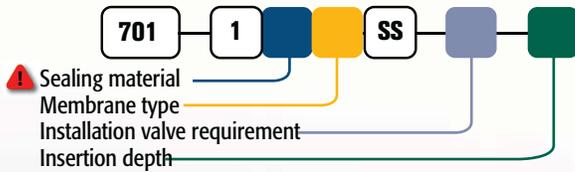
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Model Numbering & Additional Part Numbers

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

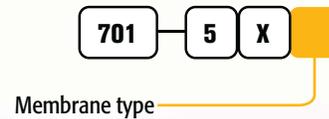
Sealing material ⚠	7 = Neoprene rubber	(other materials available upon request)	
Membrane type	0 = No membrane	6 = Type 6/BTU	7 = Hi-Flow Backed
Installation valve requirement	2 = 1/2" NPT	3 = 3/4" NPT	
Insertion depth (L)	11 = standard	(other insertion depths available upon request)	
Flow restrictor (recommended)	Part # ACC-SS-4-SA-EA	1/4" MNPT x 1/4" FNPT (sold separately)	
Optional manifold (recommended)	Part # 701-ACC-8111		
Membrane replacement	Part # 701-CMA-506	(contains 1 complete assembly) (sold separately)	

How to build the model number:



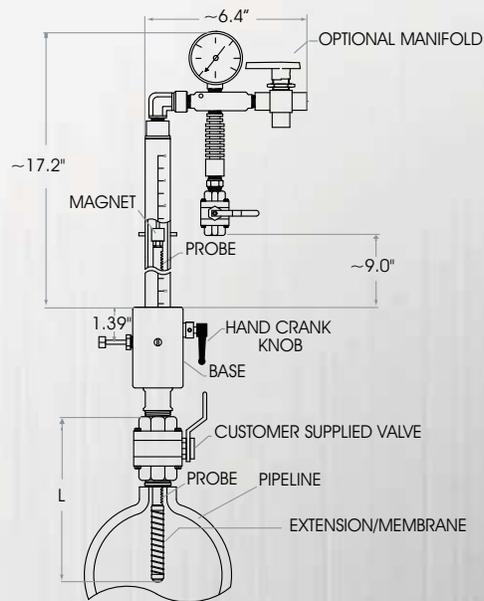
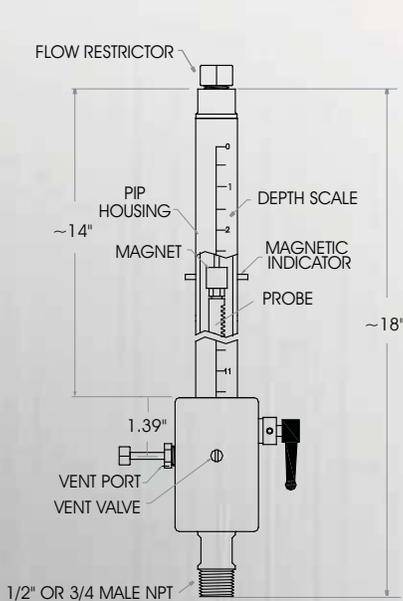
How to build the replacement membrane kit number:

(Five membranes per kit.)



⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions



Local Distributor

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GENIE® 702

Permanent Insertion Probe™



The safest and most versatile probes available on the market!

Many companies have learned the hard way that liquid in the sample conditioning system will cause damage to analyzers and/or lead to inaccurate sample analysis. If the sample does not represent the source, then the whole reason for the analyzer is undermined, and repair or decontamination of an analyzer is time consuming and costly. By applying our Analytically Correct™ designs to your sampling system, you can prevent problems before they begin. We manufacture a wide variety of membrane probes, membrane probe regulators, and filter combinations that offer flexibility regarding installation requirements and can be customized to suit your specific sampling application.

Our patented Genie® Membrane Probes™ and Probe Regulators allow you to insert a Genie® Membrane directly inside the center one-third of the pipeline. We are the only manufacturer that can provide membrane tipped sample probes for insertion inside a pipeline or vessel. This provides the most efficient means for separating entrained liquid at pipeline pressure and temperature conditions. Using insertion probes having a membrane tip is the most practical means for conforming to API 14.1 and GPA 2166 standards when the source gas contains entrained liquids.

The PIP™ Model 702 is a simple, safe and economical solution to extracting a representative vapor phase sample from a source. Compared to the PIP™ Model 701, the Model 702 is designed for sampling at a specific depth in a pressurized pipeline so each length is customized to fit your application. The “PT” option allows for sampling while simultaneously providing pressure and temperature information at the extraction point. The 702 installs using a 3/4” or larger full opening ball valve in a vertical orientation. Our Pressure Balance™ technique effortlessly lowers the 702 probe into a pipeline without the force and bulky equipment associated with pneumatic or hydraulic methods. Once installed, the installation housing can be replaced with a shorter housing to accommodate partial retraction of the probe during pigging operations. The PT version includes a custom length, industrial, hinged top RTD and adapter which allows the RTD to be inserted through a built in thermowell once the probe is installed in the pipeline.

Technical Specifications

Maximum pressure rating	3,500 psig
Maximum temperature	225 °F (107 °C) without membrane 185 °F (85 °C) with membrane
Port sizes	Inlet: 3/4” or 1 1/2” male NPT Outlet: 1/8” female NPT Vent and Gauge: 1/8” female NPT
Insertion depth	Up to 10 feet
Installation valve requirement	3/4” NPT full opening valve
RTD	1/8” diameter
Wetted materials	Machined parts: 316/316L stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Neoprene rubber standard

Product Brief

Applications

- Protection against liquids
- Portable and on-line analyzers
- BTU, H₂S, Moisture, and others
- Spot, composite, or continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining

Benefits

- Full compliance with API 14.1 and GPA 2166 standards
- Installation and maintenance can be performed without depressurizing pipeline
- Helps preserve sample integrity
- Improves safety of personnel
- Protects analyzers
- Reliable
- Durable
- Economical

Features

- Genie® Membrane Technology™
- Analytically Correct™ design
- Pressure Balance™ installation
- Vibration resistant
- Designed for quick purging
- Low internal volume
- No dead volume
- Membrane shroud provides protection from elements inside the pipeline
- Partial retraction housing to accommodate pigging operations



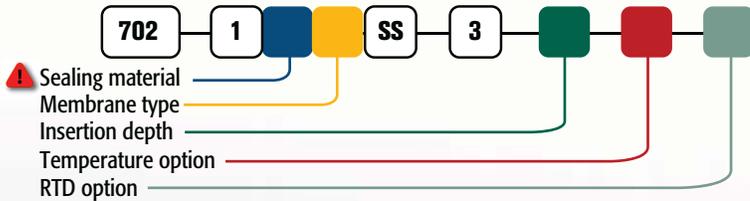
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Model Numbering & Additional Part Numbers

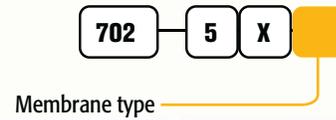
Your model number is determined by your specific needs. Choose options below.

Sealing material ⚠	7 = Neoprene rubber (other materials available upon request)
Membrane type	0 = No membrane 6 = Type 6/BTU 7 = Hi-Flow Backed
Insertion depth (L)	Custom length (specified in inches): up to a maximum of 10 feet
Temperature option	Blank = No temperature option T = Temperature
RTD option	Blank = No RTD R = RTD
Regulator coupling	ACC-SS-702-1 (recommended when attaching external regulator)
Membrane replacement	Part # 702-CMA-506 (contains 1 complete assembly) (sold separately)

How to build the model number:



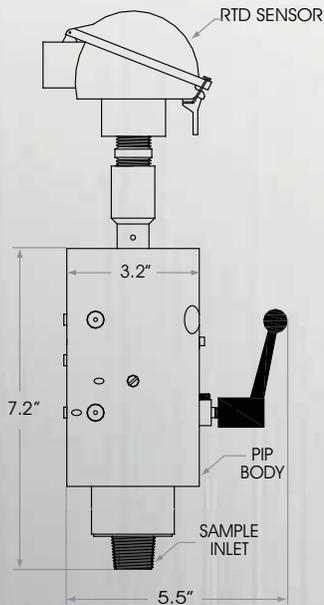
How to build the replacement membrane kit number: (Five membranes per kit.)



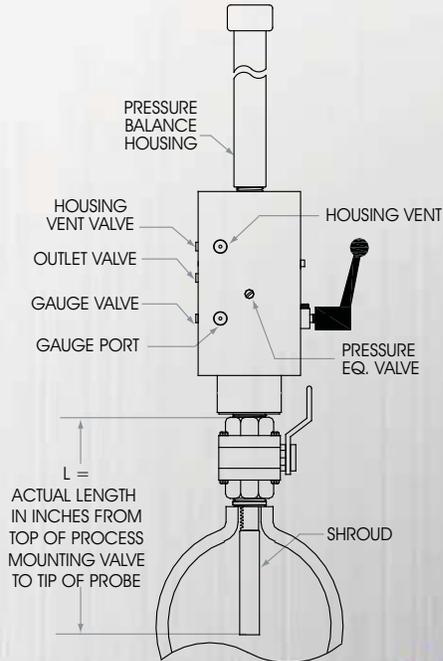
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

702 with Temperature Option



Model 702



Local Distributor

A+ Corporation is the leader in Analytically Correct™ Sample Extraction and Conditioning Systems.

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GENIE[®] 745

Production Gas Sampling System

The best sample extraction and conditioning system for process control sampling of unprocessed, production quality natural gas streams!

The increased production of natural gas from unconventional sources (shale gas formations and deep-water offshore platforms) has created a need for more sampling points closer to the wellhead and gathering sites. Different types of contaminant analyses are being performed (H_2S , CO_2 , O_2 , H_2O) on these gas streams so processing plants can use the analysis data for optimal process control. Large quantities of free liquids are often continuously present at these sample points - hydrocarbons, water, corrosion inhibitors, methanol, and scavengers for example. This poses a challenge for traditional sampling equipment that was designed for transmission quality gas with a minimal amount of liquid entrained in the gas.

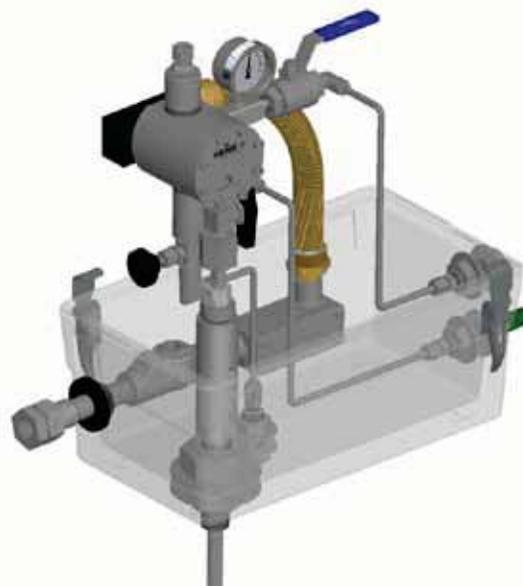
The Production Gas Sampling System (PGSS) is intended for use when analysis for process control is being performed on a natural gas stream having large quantities of free liquids continuously present. The purpose of the PGSS is to provide the analyzer with a liquid free, low pressure sample.

The PGSS consists of a vertically mounted, non-membrane tip Direct-Drive™ probe for sample extraction, Genie® Membrane Separator™, Avenger™ Coalescing Filter for liquid removal, and Genie® Heated Regulator for pressure reduction without JT cooling effects. The membrane separator, coalescing filter and heated regulator have been designed into a compact single unit that mounts on top of the PGSS probe, inside of an insulated enclosure.

Although the gas exiting the PGSS is liquid free and at low pressure, heat trace tubing may be required depending on the dew point temperature of the gas. It is also recommended that a Genie® Membrane Separator™ with Liquid Block™ be installed as close to the analyzer as possible in case of heat trace failure or major process upsets.

Technical Specifications

Maximum pressure rating	2,000 psig (137.9 bar)
Temperature range	-15 °F (-26.1 °C) up to 185 °F (85 °C)
Port sizes	Outlet: 1/4" female NPT ball valve Drain Port: 1/4" male NPT needle valve
Probe lengths	L: 8", 12", 18", 24", 36" A: ~ 23, 27, 33, 39, 51 (refer to L & A dimensions on back) Note: L lengths will be ~2.5" less when mounted in optional enclosure
Outlet pressure range (psig)	0-10 (0-0.7 bar), 0-25 (0-1.7 bar), 0-50 (0-3.4 bar), 0-100 (0-6.9 bar), 0-250 (0-17.2 bar), 0-500 PSIG (34.5 bar)
Maximum recommended flow rate	5,000 cc/min
Conduit connection	1/2" NPT
Process connection requirement	3/4", 1" or 1.5" NPT full opening threaded or flanged valve* *Ball, gate and double block and bleed valves are all suitable for use as long as their inner diameter is not less than 3/4" 1" NPT or larger process connection required for seal welding.
Power requirements	110 to 265 VAC, 80W or 24 VDC, 30W
Heater block electrical approval	American NEC Standard (CSA/NRTL): File # 1655545 (LR43674) Protection Type: Class 1, Division 1, Groups ABCD ATEX/IECEx Standard: IEC Examination Certificate – PTB 02 ATEX 1116 X EC Scheme Certificate – IECEx PTB 07.0055X Protection Type: II 2 G Ex d IIC T4 bzw. T3
Wetted materials (for exotic materials of construction or Silcotek™ coatings, contact the factory)	Machined parts: 316 stainless steel /NACE compliant Kevlar® threaded bushing All other metal parts: stainless steel / NACE compliant Regulator seat material: PFA Sealing material: PTFE/fluoroelastomer Membrane: Type 6/BTU- Inert Filter element: 0.1 micron coalescer



Product Brief

Applications

- Continuous sampling of natural gas for contaminant analysis (H_2S , CO_2 , O_2 , H_2O) when large quantities of free liquids (hydrocarbons, water, corrosion inhibitors, methanol, scavengers) are continuously present

Note: This product is not intended for use at custody transfer points.

Benefits

- Allows contaminant analyses to be performed on natural gas streams where traditional sampling equipment cannot be used
- Protects the analyzer from liquid contamination, minimizing analyzer down time and maintenance
- No need to depressurize line for PGSS probe insertion/retraction
- Prevents regulator freeze-ups
- No cutting, drilling or additional mounting hardware required
- Directly mounts on pipeline
- Fits between pipe taps with 7" center to center spacing that are commonly found on meter runs

Features

- Patented Genie® Membrane Technology™
- Direct Drive™ style adjustable length insertion probe
- Heated pressure regulator
- Plug and Play compact design



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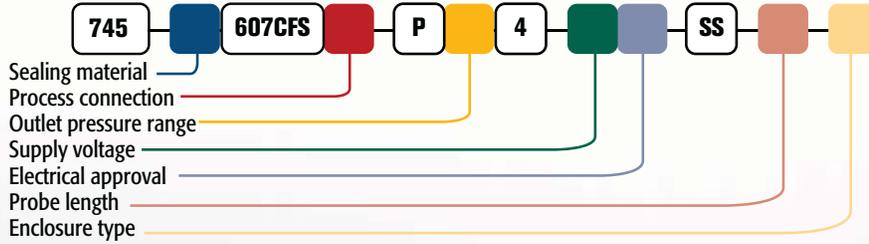
Model Numbering & Additional Part Numbers

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

Sealing material	0 = PTFE/Fluoroelastomer	(other materials available upon request)				
Process connection	3 = 3/4" NPT	4 = 1" NPT	6 = 1.5" NPT	(contact factory for flanged options)		
Outlet pressure range (psig)	0 = 0-25	1 = 0-50	2 = 0-100	3 = 0-250	4 = 0-500	9 = 0-10
Supply voltage	1 = 110 to 265 VAC, 80W		2 = 24 VDC, 30W			
Electrical approval	C = CSA/NRTL (Cl.1, Div 1, Grp. ABCD)			A = ATEX/IECEx (II 2 G Exd IIC T4 bzw T3)		
Probe length (L)	8, 12, 18, 24, 36 inches					
Enclosure type	1 = KOZY flexible insulated jacket		2 = GRP rigid insulated enclosure*			

*recommended when the minimum ambient temperature will be at or below 45°F for extended periods of time

How to build the model number:



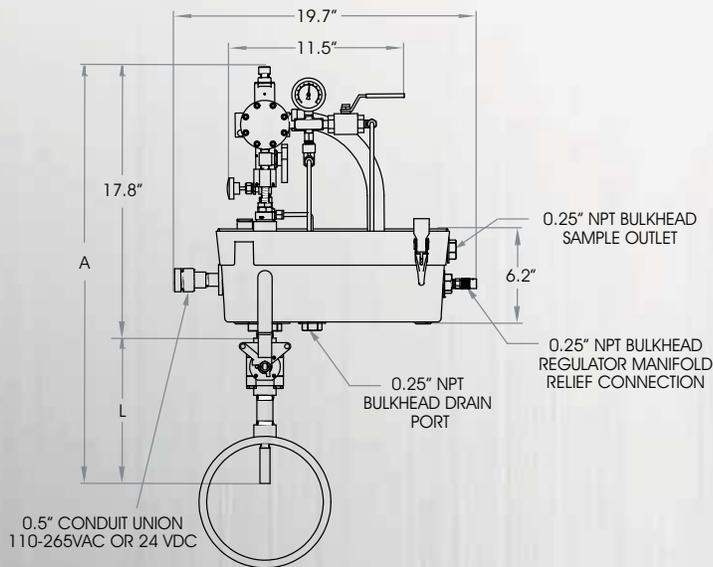
Spare Parts & Accessories (sold separately)

- Probe sealing material replacement - Part # 745-570 (standard seals)
- Membrane, membrane o-ring kit, and filter element kit Part #745-506-07CFS

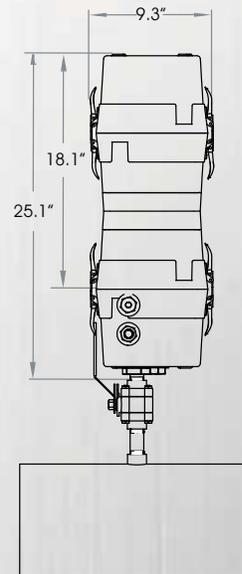
⚠ The sealing mechanism for this probe is a packing gland. Just like the packing gland on a valve, it may be required to tighten the sealing nut occasionally as the sealing material wears. When sampling gases containing toxic levels of H₂S or any other types of toxic gases, the technician should follow OSHA, state and local safety regulations while maintaining the packing gland seal and performing other maintenance on the probe.

Dimensions

Side View



Front View



Local Distributor

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GENIE® 750

Direct Drive Probe™

The safest and most versatile membrane tip probes available on the market!

Liquid carryover from the pipeline into the sample system should be prevented when sampling natural gas as it can directly impact the analysis and damage the analyzer. Industry standards state that the equipment used to remove the liquid from the sample must be operated at flowing temperature and pressure conditions. Genie® Probes™ provide a means to insert Genie® Membrane Technology™ directly into a pipeline for the purpose of separating unwanted liquid and particulate from the gas sample at flowing conditions.

The Model 750 is an adjustable length, membrane tip probe designed to sample transmission quality natural gas. It can be inserted and extracted from a pressurized line through a full opening valve without the use of a special insertion device. This probe is offered with both threaded and flanged process connections, many different exotic materials of construction (Duplex SS 205, Hastelloy C276, Inconel 625, & Monel 400), and optional coatings from Silcotek™. The Model 750™ can be mounted vertically or horizontally, and its installation process is simple and straightforward.

A+ Corporation also offers a complete line of upstream and midstream gas and liquid sampling products. Contact the factory for more information.



Product Brief

Applications

- Continuous and composite gas sampling of transmission quality natural gas
- Sampling of various types of gases in the refinery & petrochemical industries

Note: This product is not recommended for sample streams containing Hydrogen in concentrations above the lower explosive limit (LEL).

Benefits

- Genie® Membrane Technology™
- Easy, quick, and safe insertion and extraction from pressurized systems without a special insertion device
- Horizontal or vertical mounting
- Velocity tested by CEESI flow lab up to 200 ft/sec
- API, GPA & ISO standard compliance

Features

- Unique, one piece body with Genie® Membrane Technology™
- Analytically Correct™ design
- Adjustable length with threaded or flanged process connection
- Proprietary antifriction coating with internal thread die
- Optional speed wrench for faster installation
- Optional hex adapter with 1/4" female NPT outlet and integrated outlet shut-off valve

Technical Specifications

Maximum pressure rating	3,750 psig (258 Bar)
Temperature ranges (for temperatures above 185°F, contact the factory)	Up to 300°F (148.9°C) with non-standard seals and hi-flow backed membrane -35 °F (-37.2 °C) to 185 °F (85 °C) with Type 6/BTU membrane
Port sizes	Standard Outlet: 1/8" female NPT with factory installed adapter Hex Adapter: 1/4" female NPT outlet with integrated outlet shut-off valve Composite Sample Adapter: 3/4" female NPT outlet Auxiliary: 1/8" female NPT (plugged from factory)
Probe lengths (for other lengths contact the factory)	L: 8", 12", 18", 24", 36" A: ~ 16", 20", 26", 32", 44" (refer to L & A dimensions on back)
Process connection requirements	3/4", 1", or 1.5" NPT full opening threaded *Ball, gate, and double block and bleed valves are all suitable for use as long as their inner diameter is not less than 3/4". 1" NPT or larger process connection required for seal welding.
Wetted materials (for exotic materials of construction or Silcotek™ coatings, contact the factory)	Machined parts: 316 stainless steel /NACE compliant and Kevlar® threaded bushing All other metal parts: stainless steel / NACE compliant Sealing material: PTFE/Neoprene rubber standard Membrane: Inert



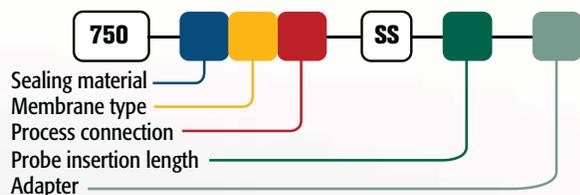
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Model Numbering & Additional Part Numbers

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

Sealing material	0 = PTFE/Neoprene rubber (other materials available upon request)		
Membrane type	6 = Type 6/BTU	7 = Hi-flow Backed	
Process connection	3 = 3/4" NPT	4 = 1" NPT	6 = 1.5" NPT (contact factory for flanged options)
Probe insertion length	8, 12, 18, 24, 36 inches (36 inch probe not available in exotic materials)		
Adapter	Blank = Factory installed adapter with 1/8" NPT outlet A = Hex Adapter with 1/4" NPT outlet and integrated outlet shut-off valve CSA = Composite Sample Adapter with 3/4" NPT outlet		
Sealing material replacement	Part # 75X-570 (standard seals, sold separately)		
Membrane replacement	Part # 75X-CMA-506 (contains 1 complete assembly- sold separately)		
Speed wrench	Part # ACC-SW (sold separately)		
Optional gauge	Part # ACC-Q14KC (0-4,000 PSIG, sold separately)		

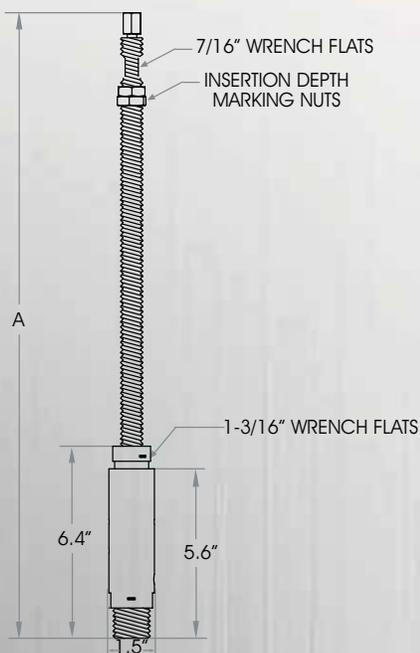
How to build the model number:



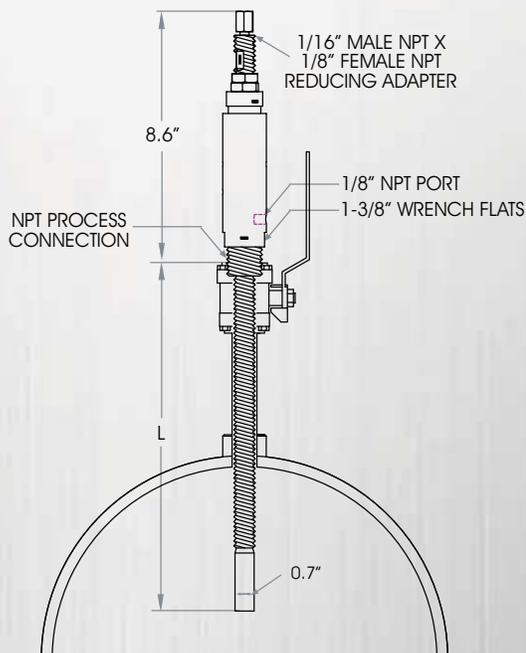
! The sealing mechanism for this probe is a packing gland. Just like the packing gland on a valve, it may be required to tighten the sealing nut occasionally as the sealing material wears. When sampling gases containing toxic levels of H₂S or any other types of toxic gases, the technician should follow OSHA, state and local safety regulations while maintaining the packing gland seal and performing maintenance on the probe.

Dimensions

Uninstalled



Installed



Local Distributor

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GENIE® 755

Direct Drive Probe™



The safest and most versatile membrane tip probe regulator available on the market!

Liquid carryover from the pipeline into the sample system should be prevented when sampling natural gas as it can directly impact the analysis and damage the analyzer. Industry standards state that the equipment used to remove the liquid from the sample must be operated at flowing temperature and pressure conditions. Genie® Probes™ provide a means to insert Genie® Membrane Technology™ directly into a pipeline for the purpose of separating unwanted liquid and particulate from the gas sample at flowing conditions.

The Model 755™ is an adjustable length, membrane tip probe regulator designed to sample transmission quality natural gas. The pressure regulator is built into the probe immediately downstream of the membrane, inside of the pipeline. Heat is transferred from the flowing pipeline gas to the regulator to prevent excessive Joule-Thomson cooling, helping to prevent condensation during pressure letdown.

The Model 755™ can be inserted and extracted from a pressurized line through a full opening valve without the use of a special insertion device. It is offered with threaded or flanged process connections, and optional coatings from Silcotek™. It can be mounted vertically or horizontally, and its installation process is simple and straight forward.

It is important to note that some applications will require additional heat to be applied before pressure regulation, and possibly multiple stages of pressure reduction. For assistance in determining heating and pressure regulation requirements and for more information on our complete line of upstream and midstream gas and liquid sampling products, please contact A+ Corporation or your local distributor.

Technical Specifications

Maximum pressure rating	3,750 psig (258.6 bar)
Temperature ranges (for temperatures above 185°F, contact the factory)	Up to 270°F (132.2°C) with non-standard seals and Hi-Flow Backed membrane -35 °F (-37.2 °C) up to 185 °F (85 °C) with standard seals and Type6/BTU membrane
Port sizes	Outlet: 1/4" female NPT Auxillary: 1/8" female NPT (plugged from factory)
Probe lengths	L: 8", 12", 18", 24", 36" A: ~ 20", 24", 30", 36", 48" (refer to L & A dimensions on back)
Outlet pressure range (psig)	0-10 (0-0.7 bar), 0-25 (0-1.7 bar), 0-50 (0-3.4 bar), 0-100 (0-6.9 bar), 0-250 (0-17.2 bar)
Process connection requirement	3/4", 1" or 1.5" NPT full opening threaded or flanged valve* *Ball, gate and double block and bleed valves are all suitable for use as long as their inner diameter is not less than 3/4" 1" NPT or larger process connection required for seal welding.
Wetted materials	Machined parts: 316 stainless steel /NACE compliant and Kevlar® threaded bushng All other metal parts: stainless steel / NACE compliant Sealing material: PTFE/Neoprene rubber standard Regulator seat material: PFA Membrane: inert

Product Brief

Applications

- Gas sampling and pressure regulation of transmission quality natural gas and various types of refinery and petrochemical gases

Note: This product is not recommended for sample streams containing Hydrogen in concentrations above the lower explosive limit (LEL).

Benefits

- Protection of the sample system from liquid and particulate contaminants while maintaining sample integrity
- Flowing pipeline gas helps to offset temperature changes at regulation point
- Easy, quick, and safe insertion and extraction from pressurized systems without a special insertion device
- Horizontal or vertical mounting
- Velocity tested by CEESI flow lab up to 200 ft/sec
- API, GPA & ISO standard compliance

Features

- Unique, one piece body with Genie® Membrane Technology™
- Analytically Correct™ design
- Adjustable length with threaded or flanged process connection
- Proprietary antifriction coating with internal thread die
- Optional speed wrench for faster installation



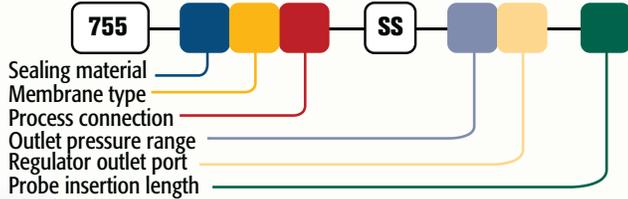
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Model Numbering & Additional Part Numbers

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

Sealing material	0 = PTFE/Neoprene rubber	(other materials available upon request)			
Membrane type	6 = Type 6/BTU	7 = Hi-flow Backed			
Process connection	3 = 3/4" NPT	4 = 1" NPT	6 = 1.5" NPT	(contact factory for flanged options)	
Outlet pressure range (psig)	00 = 0-25	01 = 0-50	02 = 0-100	03 = 0-250	09 = 0-10
Regulator outlet port	1 = 1/4" MNPT to 1/8" tube connector			4 = 1/4" FNPT (standard)	
Probe insertion length (L)	8, 12, 18, 24, 36 inches				

How to build the model number:



Spare Parts & Accessories (sold separately)

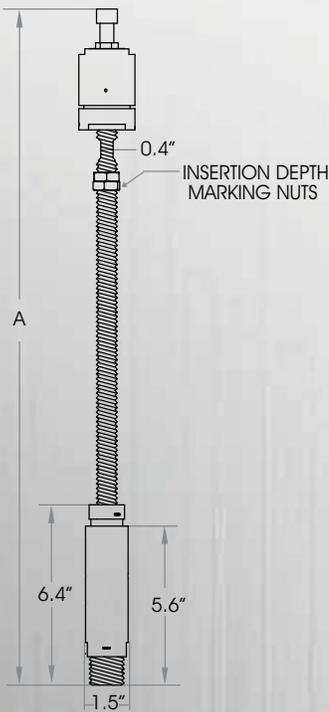
- Sealing material replacement* - Part # 75X-570
- Complete membrane assembly replacement*
Part # 75X-CMA-506 (contains 1 complete assembly)
- Regulator seat cartridge assembly replacement* - Part # 755-771SS
- Speed Wrench for faster installation- Part # ACC-SW
- Manifold with pressure gauge, ball valve, and relief valve - for ordering information, refer to the Genie Probe Regulator Accessory Manifold product sheet
- KOZY insulated probe and valve covers- for ordering information, refer to the KOZY Assemblies product sheet
- Threaded flange or Process connection valve-
Contact factory for your specific requirements

*These parts contain standard seal materials. Contact the factory if non-standard seal materials are needed.

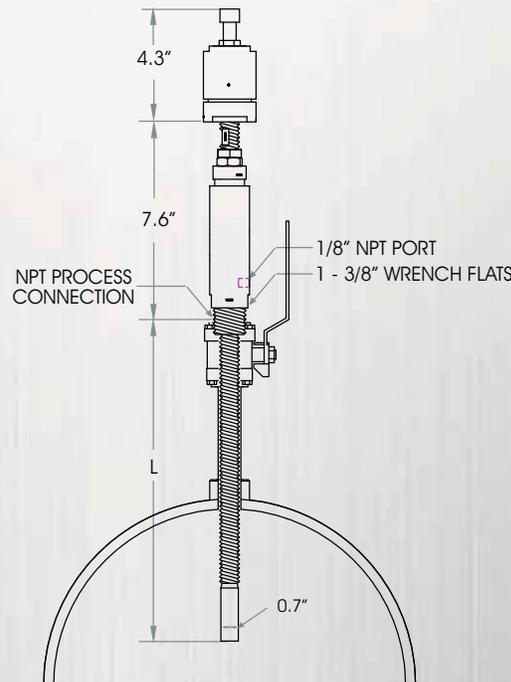
! The sealing mechanism for this probe is a packing gland. Just like the packing gland on a valve, it may be required to tighten the sealing nut occasionally as the sealing material wears. When sampling gases containing toxic levels of H₂S or any other types of toxic gases, the technician should follow OSHA, state and local safety regulations while maintaining the packing gland seal and performing other maintenance on the probe.

Dimensions

Uninstalled



Installed



Local Distributor

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The safest and most versatile probes available on the market!

The Direct Drive Model 751™ coupon holder allows a corrosion coupon to be inserted and extracted from a pressurized system through a full opening valve. This is accomplished without the use of a special insertion device or the force and bulky equipment associated with pneumatic or hydraulic methods. The coupon insertion depth is adjustable to permit coupon positioning at precisely the desired depth within the pipeline or process. All coupon holders are supplied with the necessary mounting hardware to attach the standard coupon type to the probe.



Product Brief

Applications

- Corrosion coupon insertion and extraction from a pressurized system

Benefits

- API 14.1, GPA 2166 and ISO 10715 probe compliance
- Easy, quick, safe, insertion and extraction from a pressurized system
- Does not require special insertion device
- Horizontal or vertical mounting

Features

- Adjustable length
- Vibration resistant
- High pressure rating
- Stainless steel construction
- Field serviceable packing material

Technical Specifications

Maximum pressure rating	3,750 psig
Maximum temperature	225 °F (107 °C)
Probe lengths (for other lengths contact the factory)	L: 8", 12", 24" 36" A: ~ 16", 20", 32", 44" (refer to L & A dimensions on back)
Installation valve requirement	3/4", 1" or 1.5" NPT full opening valve (others available upon request)
Wetted materials	Machined parts: 316 stainless steel / NACE compliant and Perfluoroelastomer threaded bushing All other metal parts: stainless steel / NACE compliant Sealing material: PTFE / Neoprene rubber standard
Coupon type	1/16" thick flat coupon (Refer to dimensions on back) (Customer supplied coupon - not included)



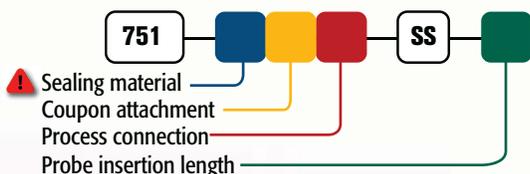
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Model Numbering & Additional Part Numbers

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

Sealing material ⚠	0 = PTFE/Neoprene rubber	(other materials available upon request)
Coupon attachment	1 = Standard 1/16" flat coupon	(other coupon connections available upon request)
Process connection	3 = 3/4" NPT	4 = 1" NPT 6 = 1.5" NPT
Probe insertion length	8, 12, 18, 24, 36 inches	
Sealing material replacement	Part # 75X-570	(sold separately - contains Teflon®/Neoprene seals)
Coupon mounting replacement	Part # 751-TI-1	(sold separately - contains 10/32 mounting screws & Teflon® inserts)
Speed wrench	Part # ACC-SW	(sold separately)

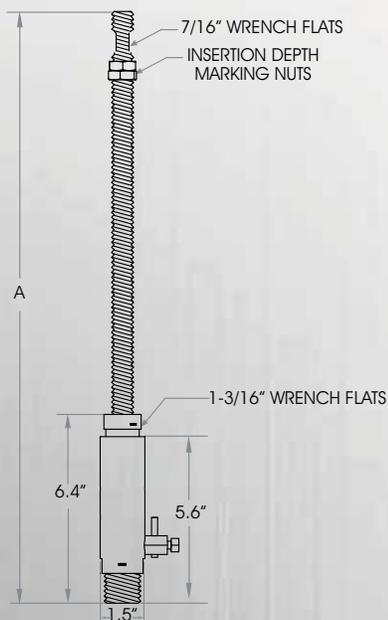
How to build the model number:



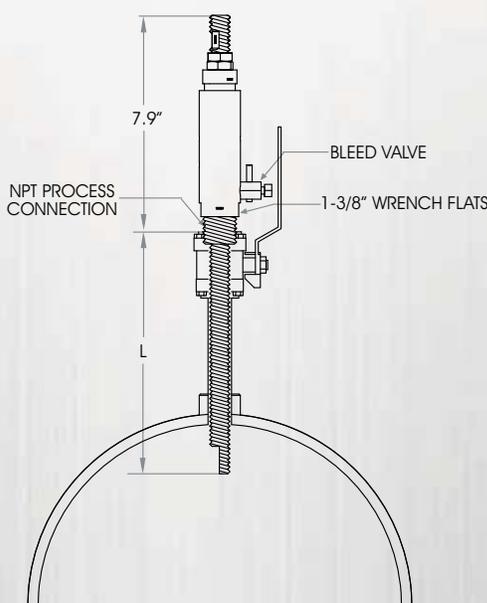
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

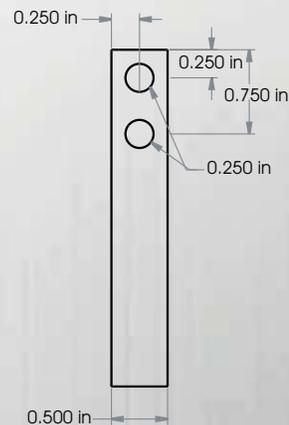
Uninstalled



Installed



Corrosion Coupon



Local Distributor

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Contact us for expert product application assistance.

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The safest and most versatile probes available on the market!

The Direct Drive Model 752™ thermowell probe allows a resistance temperature detector (RTD) to be inserted and extracted from a pressurized system through a full opening valve. This is accomplished without the use of a special insertion device or the force and bulky equipment associated with pneumatic or hydraulic methods. The probe depth is adjustable to permit positioning at precisely the desired point within the pipeline or process.

Technical Specifications

Maximum pressure rating	3,750 psig
Maximum temperature	225 °F (107 °C)
Port sizes	Auxiliary: 1/8" female NPT with vent valve installed from factory
Probe lengths (for other lengths contact the factory)	L: 8", 12", 24" 36" A: ~ 20", 24", 36", 48" (refer to L & A dimensions on back)
Installation valve requirement	3/4", 1" or 1.5" NPT full opening valve (others available upon request)
Wetted materials	Machined parts: 316 stainless steel / NACE compliant and Perfluoroelastomer threaded bushing All other metal parts: stainless steel / NACE compliant Sealing material: PTFE /Neoprene rubber standard

Product Brief

Applications

- RTD insertion and extraction under pressure

Benefits

- API 14.1, GPA 2166 and ISO 10715 probe compliance
- Easy, quick, safe insertion and extraction from a pressurized system
- Does not require special insertion device or hydraulic fluid
- Horizontal or vertical mounting

Features

- Adjustable length
- Vibration resistant
- High pressure rating
- Stainless steel construction
- Field serviceable packing material



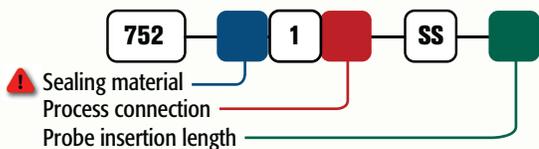
geniefilters.com

Model Numbering & Additional Part Numbers

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

Sealing material ⚠	0 = PTFE/Neoprene rubber	(other materials available upon request)	
Process connection	3 = 3/4" NPT	4 = 1" NPT	6 = 1.5" NPT
Probe insertion length (L)	8, 12, 18, 24, 36 inches		
Sealing material replacement	Part # 75X-570	(sold separately)	
Speed wrench	Part # ACC-SW	(sold separately)	

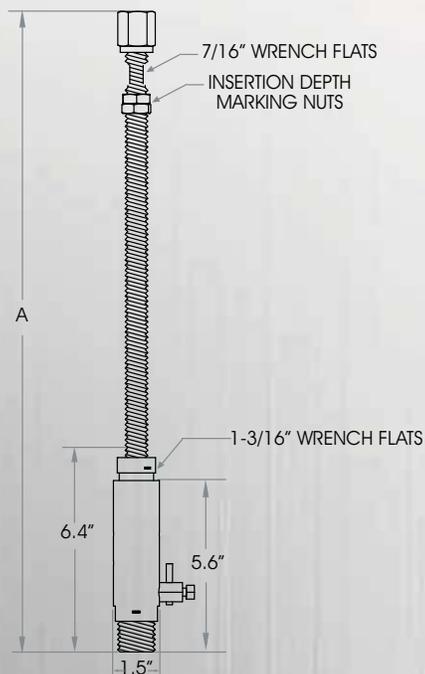
How to build the model number:



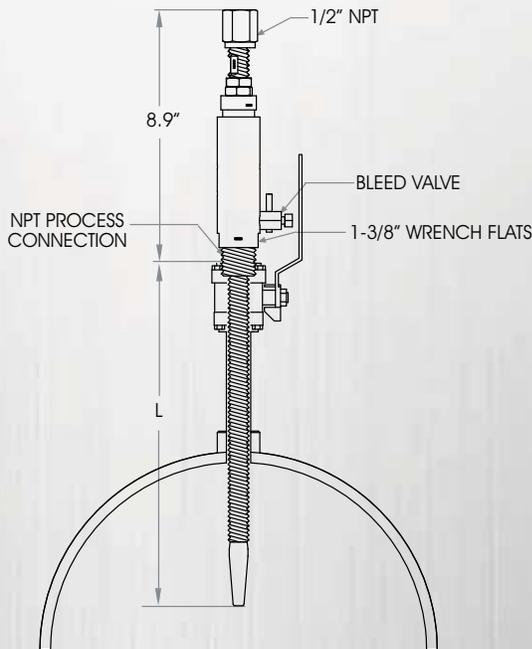
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Uninstalled



Installed



Local Distributor

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GENIE[®] 760

Direct Drive Probe™

The safest and most versatile non-membrane tip probes available on the market!

The Direct Drive™ Model 760 is an adjustable length probe without a membrane tip. It can be used to sample liquids, gases that do not require a membrane or contain more entrained liquid than a membrane can handle, and high temperature gases. The 760 can be safely inserted into pressurized sources up to 3750 PSIG. Unlike other competitive insertion probes that require brute physical force or hydraulics applied to the backside of the probe for insertion, this probe is easily installed through a full port valve using either an open end or speed wrench.

The 760 probe is offered with both threaded and flanged process connections, many different exotic materials of construction (Duplex SS 205, Hastelloy C276, Inconel 625, & Monel 400), and optional coatings from Silcotek™. The Model 760 can be mounted vertically or horizontally, and its installation process is simple and straight forward. Many features of the 760 combine to make it the safest, most durable probe available on the market. It's unique, one-piece body design with double mechanical safety interlocks to prevent the probe from self-retracting under any failure scenario. A proprietary anti-friction coating provides smooth insertion of the probe without galling or cross threading. A thread die cleans the probe's threads to ensure proper engagement with mating parts, providing for a smooth retraction even after extended periods of service.



Flanged Option

Technical Specifications

Maximum pressure rating	3,750 psig (258.6 Bar)
Temperature ranges (for temperatures above 225°F, contact the factory)	Up to 300 °F (148.9°C) with non-standard seals -35 °F (-37.2 °C) to 225 °F (107.2 °C)
Port sizes	Standard Outlet: Hex socket adapter with 1/4" female NPT ball valve Auxiliary: 1/8" female NPT (plugged from factory)
Probe lengths (for other lengths contact the factory)	L: 8", 12", 18", 24", 36" A: ~ 16", 20", 26", 32", 44" (refer to L & A dimensions on back)
Process connection requirements	3/4", 1", or 1.5" NPT full opening threaded or flanged valve* *Ball, gate, and double block and bleed valves are all suitable for use as long as inner diameter is not less than 3/4". 1" NPT or larger process connection required for welding.
Wetted materials (for exotic materials of construction or Silcotek™ coatings, contact the factory)	Machined parts: 316 stainless steel /NACE compliant and Kevlar® threaded bushing All other metal parts: stainless steel / NACE compliant Sealing material: PTFE/Neoprene rubber standard

Product Brief

Applications

- Liquid sampling from a pressurized source
 - Light liquid hydrocarbons
 - Filtered crude oil
 - Various petrochemical and refinery liquids (consult factory)
- Gas sampling in the natural gas, refinery, and petrochemical industries

Note: This product is not recommended for sample streams containing Hydrogen in concentrations above the lower explosive limit (LEL).

Benefits

- Easy, quick, and safe insertion/extraction from pressurized systems without a special insertion device
- Horizontal or vertical mounting
- Probe design prevents harmonic oscillations from occurring
- Long service life
- Easy maintenance in the field

Features

- Unique, one piece body design with threaded or flanged connections
- Adjustable length
- Proprietary antifriction coating and thread die
- Non-rigid probe connection/seal provides mechanical dampening between probe and probe base
- Speed wrench for faster installation



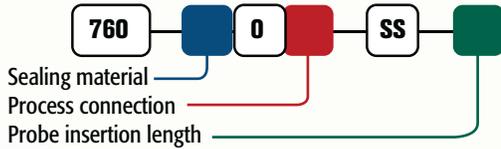
geniefilters.com

Model Numbering & Additional Part Numbers

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

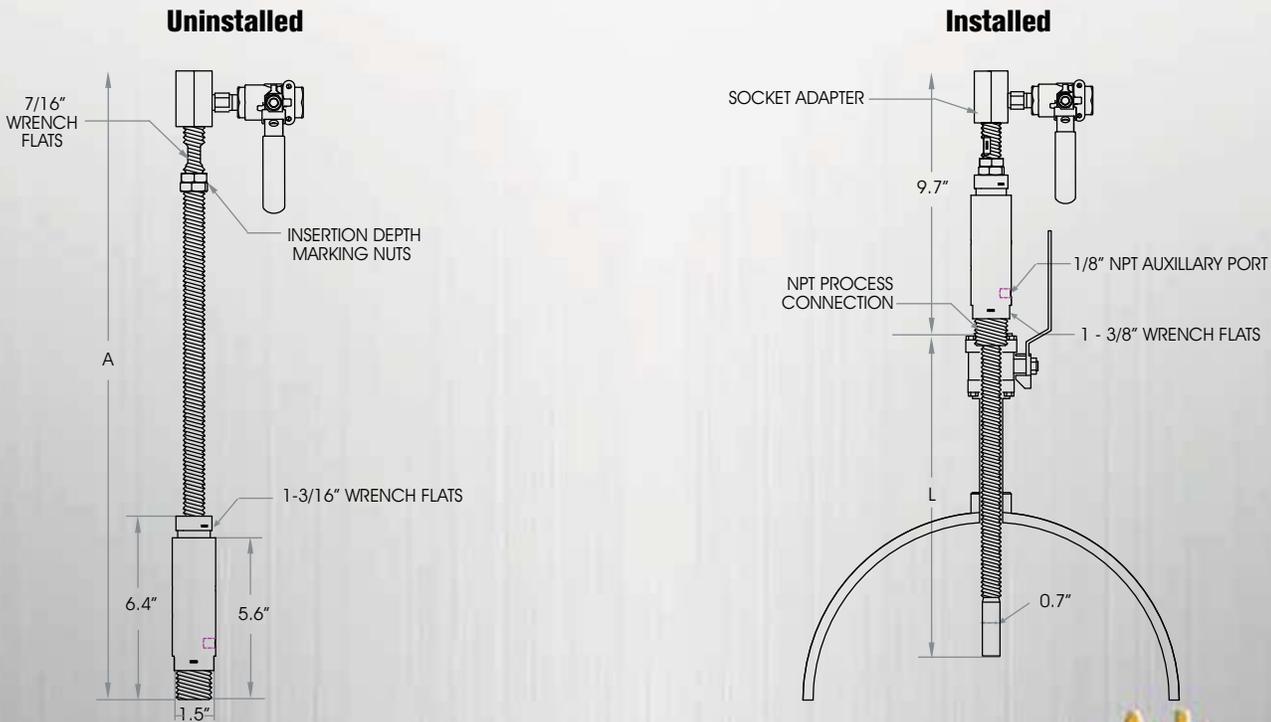
Sealing material	0 = PTFE/Neoprene rubber	(other materials available upon request)	
Process connection	3 = 3/4" NPT	4 = 1" NPT	6 = 1.5" NPT (contact factory for flanged options)
Probe insertion length	8, 12, 18, 24, 36 inches (36 inch not available in exotic materials)		
Sealing material replacement	Part # 760-570	(standard seals, sold separately)	
Speed wrench	Part # ACC-SW	(sold separately)	
Optional gauge	Part # ACC-Q14KC	(0-4,000 psig) (sold separately)	

How to build the model number:



! The sealing mechanism for this probe is a packing gland. Just like the packing gland on a valve, it may be required to tighten the sealing nut occasionally as the sealing material wears. When sampling gases containing toxic levels of H₂S or any other types of toxic gases, the technician should follow OSHA, state and local safety regulations while maintaining the packing gland seal and performing maintenance on the probe.

Dimensions



Local Distributor

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Pressure Regulators

TeamGENIE: Alan Martin, Director of Manufacturing, updates the *KANBAN* component card system employed in the production of GENIE® products.



Pressure
Regulators

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An ISO 9001:2000 certified company.



Behind-the-Scenes: A+Corporation employs state-of-the-art production techniques, systems, and processes to promote efficiency on its production lines, ensuring industry leading value for customers.

Pressure
Regulators



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An Analytically Correct™ single stage pressure regulator specifically designed for gas sampling applications!

The Model GR™ Genie® Pressure Regulator is a single stage pressure regulator designed specifically for use in gas analyzer sample conditioning systems. Its stainless steel housing contains a piston style sensing element, increasing reliability and eliminating the chance for diaphragm rupture. Additionally, the low internal volume and unique interior design allow it to purge quickly.

It is important to note that some applications will require additional heat to be applied before pressure regulation, and possibly multiple stages of pressure reduction. For assistance in determining heating and pressure regulation requirements, please contact A+ Corporation or your local A+ distributor.

Note: A retrofit heater upgrade kit is available for the GR if it is determined that heat needs to be applied to a standard GR regulator after it has been installed in the field. If you know that your application needs heat when your order is placed, then you should order the Model GHR.



Product Brief

Applications

- Gas analyzer sample systems in any process industry requiring pressure regulation
- Second stage for probe regulator

Benefits

- No chance of diaphragm rupture
- Easy to mount in small enclosures or tightly spaced cabinets
- Economical

Features

- Small, compact stainless steel housing
- Piston style sensing element
- CRN approved
- Heater upgrade retrofit kit available

Technical Specifications

Maximum pressure rating	6000 psig (414 bar)
Temperature range	-15 °F (-26 °C) to 300 °F (149 °C)
Port sizes	1/4" female NPT
C_v coefficient	0.06
Outlet pressure range (psig)	0-10 psig (0-0.7 bar), 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar), 0-250 psig (0-17.2 bar), 0-500 psig (34.5 bar)
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Regulator seat material: PFA Sealing material: Fluoroelastomer standard



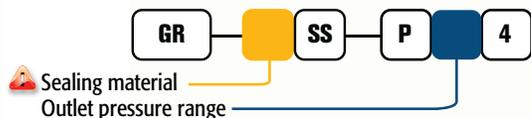
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Model Numbering & Additional Part Numbers

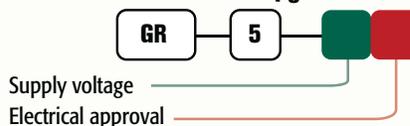
Your model number is determined by your specific needs. Choose options below.

Sealing material 	0 = Fluoroelastomer JW = James Walker® Elast-O-Lion® 101 <i>(other materials available upon request)</i>
Outlet pressure range (psig)	0 = 0-25 1 = 0-50 2 = 0-100 3 = 0-250 4 = 0-500 9 = 0-10
Supply voltage	1 = 110 To 265 VAC, 80W, 1/2" NPT conduit connection <i>(other supply voltages available upon request)</i>
Electrical approval	C = CSA/NRTL (Cl. 1, Div. 1, Grp ABCD) A = ATEX/IECEx (II 2 G Ex d IIC T4 bzw. T3) <i>(other electrical approvals available upon request)</i>

How to build the model number:



How to build the heater upgrade retrofit kit part number



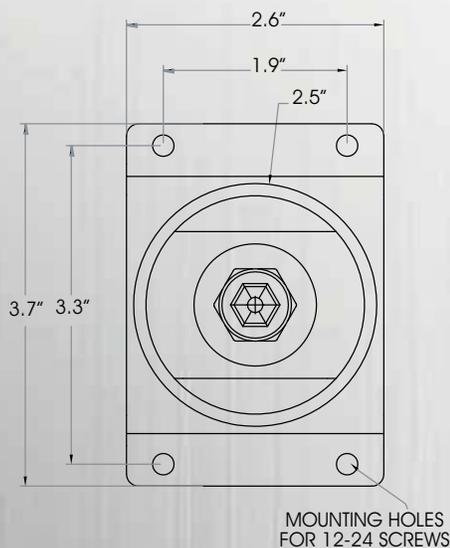
Spare Parts & Accessories (sold separately)

- Model GR Mounting Bracket - Part # GR-509-SS
(only for use with standard regulator without heater)

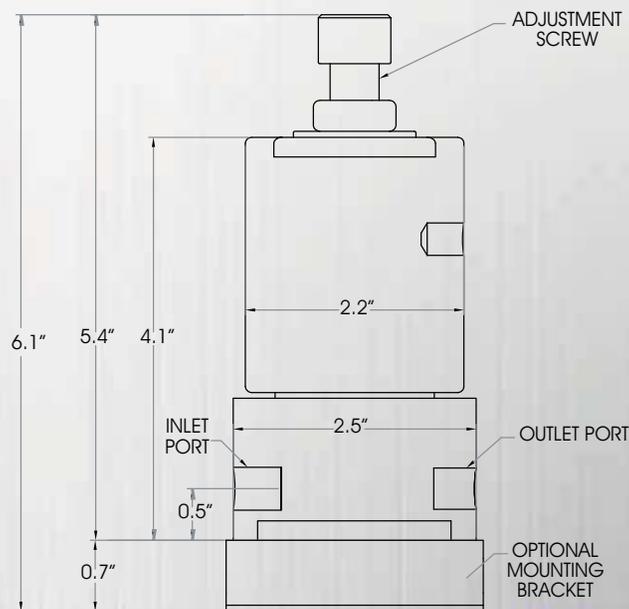
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Dimensions

Top View



Side View



Local Distributor

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An Analytically Correct™ single stage pressure regulator with robust heat transfer technology specifically designed for gas analytical systems!

The Model GHR™ Genie® Heated Pressure Regulator is a single stage pressure regulator with a self-limiting block heater designed specifically for use in gas analyzer sample conditioning systems. Its stainless steel housing contains a piston style sensing element, increasing reliability and eliminating the chance for diaphragm rupture.

The self-limiting block heater is powered utilizing a direct power connection and prevents condensation from occurring during the pressure reduction stage as a result of Joule-Thomson cooling or low operating/ambient temperature conditions. Preventing condensation of the sample gas during pressure reduction has many benefits such as reducing regulator freeze-ups, preserving sample integrity, and minimizing analyzer down time and maintenance costs. Since the heater does not require a controller or a specific mounting orientation, the GHR™ can be easily mounted in compact enclosures.

Competitive heated or vaporizing regulators rarely preheat the sample gas. If they do, the heat transfer is often insufficient. The GHR™ provides two stages of heating (pre & post pressure reduction) to ensure sufficient heat transfer throughout the pressure reduction process. This makes the GHR™ the most effective regulator on the market for preventing condensation during pressure reduction. Additionally, the GHR regulator is also capable of vaporization and pressure control of a typical Natural Gas Liquid (NGL) stream when the flow rate for the vaporized sample is low. For example, it can supply up to 3 liters/minute of vaporized propane to an analytical device. Additionally, the GHR regulator is also capable of vaporization and pressure control of a typical Natural Gas Liquid (NGL) stream when the flow rate for the vaporized sample is low. For example, it can supply up to 3 liters/minute of vaporized propane to an analytical device.

Technical Specifications

Maximum pressure rating	6000 psig (414 bar)
Temperature range	-15 °F (-26 °C) to 300 °F (149 °C)
Outlet pressure range	0-10 psig (0-0.7 bar), 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar), 0-250 psig (0-17.2 bar), 0-500 psig (34.5 bar)
Port sizes	1/4" female NPT
Conduit connection	1/2" NPT
Power requirements	110 to 265 VAC, 80W 24VDC, 30W
Heater block electrical approval	American NEC Standard (CSA/NRTL): File # 1655545 (LR43674) Protection Type: Class 1, Division 1, Groups ABCD ATEX/IECEX Standard: EC Examination Certificate - PTB 02 ATEX 1116 X IEC Scheme Certificate - IECEX PTB 07.0055X Protection Type: II 2 G Ex d IIC T4 BZW. T3
Cv Coefficient	0.06
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Regulator seat material : PFA Seals : PTFE /Fluoroelastomer (other materials available upon request)

Product Brief

Applications

- Pressure regulation of gas sample streams having one or more of the following:
 - High BTU value
 - High dew point (moisture, hydrocarbon, etc)
 - Low operating temperature or ambient conditions
- Natural Gas Liquid (NGL) vaporizing regulator when vaporized sample flow rate is low

Benefits

- Prevents condensation of the sample gas, preserving sample integrity
- Reduces regulator freeze-ups
- Minimizes analyzer down time and maintenance cost
- Self-limiting heater prevents temperature overload
- Easy to install and mount in compact enclosures

Features

- 316 Stainless Steel housing
- Piston style sensor element
- Two stage heating technology providing highly efficient heat transfer
- CRN approved
- Heater can be supplied to meet:
 - American NEC standard (CSA/NRTL)
 - IEC, ATEX standard



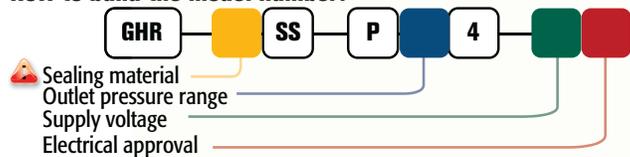
geniefilters.com

Model Numbering & Additional Part Numbers

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

Sealing material 	0 = Fluoroelastomer	JW = James Walker® Elast-O-Lion® 101	(other materials available upon request)			
Outlet pressure range (psig)	0 = 0-25	1 = 0-50	2 = 0-100	3 = 0-250	4 = 0-500	9 = 1-10
Supply voltage	1 = 110 To 265 VAC, 80W		2 = 24VDC, 30W			
Electrical approval	C = CSA/NRTL (Cl. 1, Div. 1, Grp ABCD) A = ATEX/IECEX (II 2 G Ex d IIC T4 bZw. T3) (other electrical approvals available upon request)					

How to build the model number:



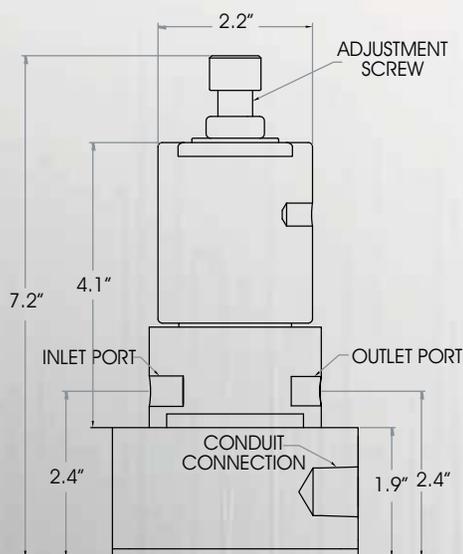
How to build the heater block replacement model number:



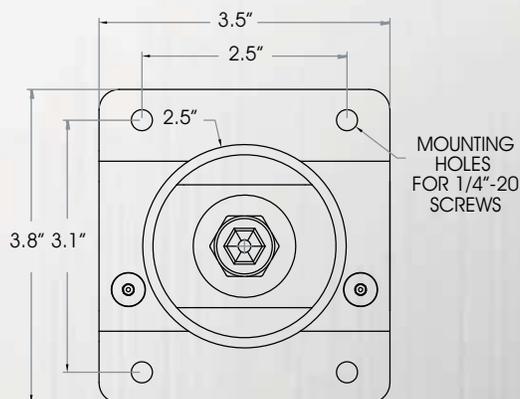
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Dimensions

Side View



Top View



Local Distributor

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GENIE® JTR

Joule-Thomson Regulator



A four stage pressure regulator designed to provide a stable outlet pressure, even through large swings in inlet pressure!

The Genie® Model JTR™ is a revolutionary product containing four stages of pressure regulation in one stainless steel housing, specifically designed for gas analytical systems. Gone are the days of having to purchase multiple pressure regulators and manifold them together in series!

The pressure regulation stages of the JTR™ employ a multi-piston design. The first three stages are ratio controlled and the fourth stage is user adjustable. The advantage of the ratio controlled piston design is that it ensures the first three stages are always functional, even when the inlet supply pressure fluctuates. No more headaches of having to constantly readjust the set pressure of each stage.

Having multiple stages of pressure regulation helps to prevent condensation of the sample gas by compensating for the large amount of Joule-Thomson cooling that is experienced with a single stage regulator. Preventing condensation of the sample gas has many benefits such as reducing regulator freeze-ups, preserving sample integrity, and minimizing analyzer down time and maintenance cost.

Unlike traditional single stage regulators, the JTR™ has the ability to autocorrect the outlet pressure during inlet pressure swings up to 5700 PSI. Inlet pressure swings commonly occur at natural gas storage facilities and during the use of calibration gas cylinders, making the JTR™ the regulator of choice for these applications.

It is important to note that some applications will require additional heat to be applied before pressure regulation. For assistance in determining heating and pressure regulation requirements, please contact A+ Corporation or your local A+ distributor.

Note: A retrofit heater upgrade kit is available for the JTR if it is determined that heat needs to be applied to a standard JTR regulator after it has been installed in the field. If you know that your application needs heat when your order is placed, then you should order the Model JTR-H.

Technical Specifications

Operating pressure range	300 psig (21 bar) to 6,000 psig (414 bar)
Temperature range	-15°F (- 26 °C) to 300 °F (149 °C)
Port sizes	1/4" female NPT
Outlet pressure range	0-10 psig (0-0.7 bar), 0-25 psig (0-1.7 bar) 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar), 0-250 psig (0-17.2 bar), 0-500 psig (34.5 bar)
C_v coefficient	0.06
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Regulator Seat material: PFA Seals: PTFE / Fluoroelastomer (other materials available upon request)

Product Brief

Applications

- Multi-stage pressure regulation for gas analytical systems in any process industry
- High pressure sources
- Natural gas storage facilities
- Calibration gas cylinders

Benefits

- Eliminates the need for multiple regulators in series - reducing cost, space, and set up time
- No need to constantly adjust the set pressure of each stage
- Minimizes the chance of condensation thereby reducing regulator freeze-ups, preserving sample integrity, and minimizing analyzer down time and maintenance cost
- Auto-corrects outlet pressure during inlet pressure swings of up to 5700 PSI

Features

- Four stages of pressure regulation in one stainless steel housing
- First three pressure stages are ratio controlled
- User adjustable fourth stage
- Piston pressure sensing elements
- Heater upgrade retrofit kit available



geniefilters.com

Model Numbering & Additional Part Numbers

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

Sealing material 	0 = Fluoroelastomer JW = James Walker® Elast-O-Lion® 101 <i>(other materials available upon request)</i>
Outlet pressure range (psig)	0 = 0-25 1 = 0-50 2 = 0-100 3 = 0-250 4 = 0-500 9 = 0-10
Supply voltage	1 = 110 To 265 VAC, 80W, 1/2" NPT conduit connection <i>(other supply voltages available upon request)</i>
Electrical approval	C = CSA/NRTL (Cl. 1, Div. 1, Grp ABCD) A = ATEX/IECEx (II 2 G Ex d IIC T4 bzw. T3) <i>(others available upon request)</i>

How to build the model number:



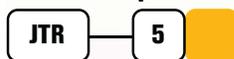
 Sealing material
Outlet pressure range

How to build the heater upgrade retrofit kit part number:



Supply voltage
Electrical approval

How to build the seal replacement model number:



 Sealing material

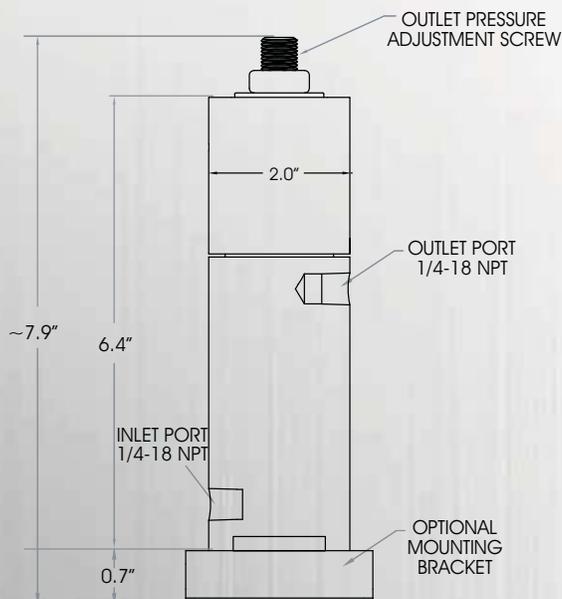
Spare Parts & Accessories (sold separately)

- Optional Mounting Bracket - Part # JTR-509SS
(only for use with standard regulator without heater)

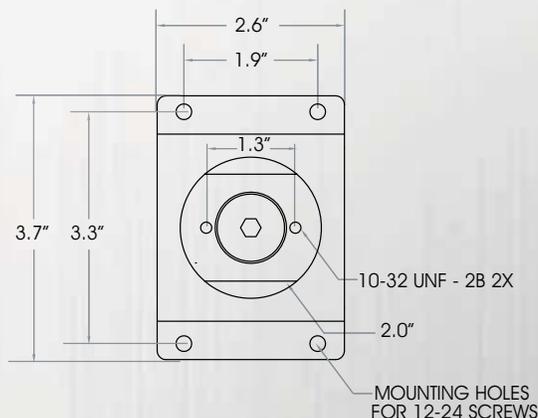
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Dimensions

Side View



Top View



Local Distributor

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GENIE® JTR-H

Joule-Thomson Heated Regulator

Offsets Joule-Thomson cooling, prevents regulator “freeze up”, and provides stable output pressure even through large swings in inlet pressure!

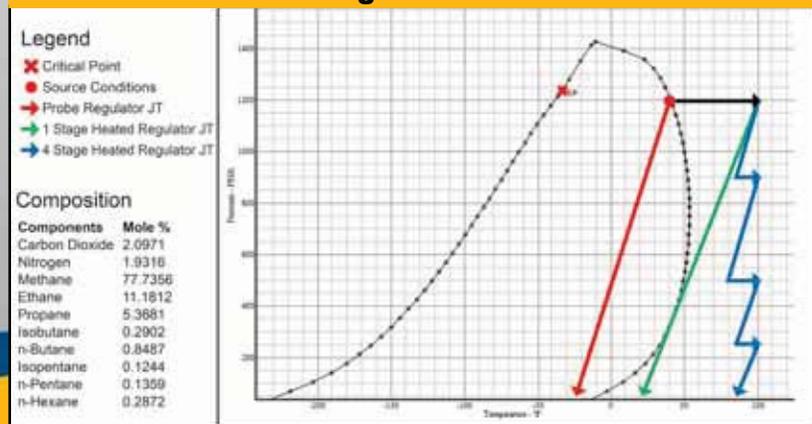
The Genie® Joule-Thomson Heated Regulator Model JTR-H™ is a four stage pressure regulator with a self-limiting block heater designed to prevent condensation from occurring during pressure regulation of high pressure gas sources and natural gas having a high moisture or hydrocarbon dew point. Unlike traditional single stage heated regulators, the JTR-H™ has the ability to autocorrect the outlet pressure during inlet pressure swings up to 5700 PSI. Inlet pressure swings commonly occur at natural gas storage facilities and during the use of calibration gas cylinders, making the JTR-H™ the regulator of choice for these applications.

When dropping the pressure of a natural gas stream whose operating pressure is higher and operating temperature is at, near or below its cricondentem temperature (highest dew point temperature on the natural gas phase diagram), it sometimes becomes necessary to use multi-stage pressure regulation to prevent the sample from condensing during the pressure reduction process. If the gas composition is very rich (high BTU) or wet (high moisture), the ambient temperature is low, or the pressure is high enough to where there will be substantial Joule-Thomson cooling then it may be required to provide additional heat even when reducing the pressure in multiple stages to ensure that there will be sufficient heat transfer during the pressure reduction process to prevent condensation from occurring.

The need for this type of regulator is best illustrated by referencing a natural gas phase diagram (see below). For this particular gas composition, it can be observed that the only regulator that is able to maintain the sample in a vapor state AND comply with the requirement from API 14.1 of maintaining the sample 30°F above the hydrocarbon dew point at all times is this four stage heated regulator.

Note: Although the example above was specific to natural gas, this regulator can be used with other types of gases. For assistance in determining heating and pressure regulation requirements, please contact A+ Corporation or your local A+ distributor.

Natural Gas Phase Diagram



Product Brief

Applications

- Heated, multi-stage pressure regulation for gas analytical systems in any process industry:
 - High pressure sources
 - Natural gas having a high hydrocarbon or moisture dewpoint
 - Natural gas storage facilities
- Calibration gas cylinders

Benefits

- Provides a steady output pressure, even when its inlet supply pressure changes over time
- No need to constantly adjust set pressure for each stage
- Prevents condensation during pressure reduction—reducing regulator freeze ups, preserving sample integrity, and minimizing analyzer down time and maintenance cost
- Eliminates the need for multiple regulators in series reducing cost, space, and set up time
- Auto-corrects outlet pressure during inlet pressure swings of up to 5700 PSI
- Easy to mount in small enclosures or densely populated cabinets

Features

- Four (4) stages of pressure regulation in one stainless steel housing
 - First three pressure stages are ratio controlled
 - User-adjustable fourth stage
- Piston pressure sensing elements
- Self-limiting heater prevents temperature overload
- Heater can be supplied to meet:
 - American NEC standard (CSA/NRTL/FM/UL)
 - IEC, ATEX and GOST standard



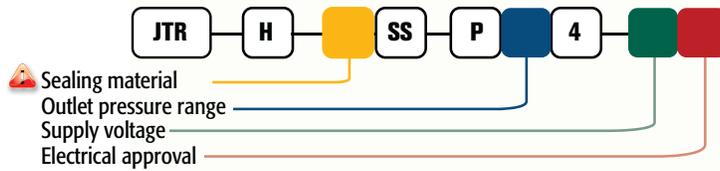
geniefilters.com

Model Numbering & Additional Part Numbers

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

Sealing material	0 = Fluoroelastomer JW = James Walker® Elast-O-Lion® 101 (other materials available upon request)
Outlet pressure range (psig)	0 = 0-25 1 = 0-50 2 = 0-100 3 = 0-250 4 = 0-500 9 = 0-10
Supply voltage	1 = 110 To 265 VAC, 80W 2 = 24VDC, 30W
Electrical approval	C = CSA/NRTL (Cl. 1, Div. 1, Grp ABCD) A = ATEX/IECEX (II 2 G Ex d IIC T4 bZw. T3) (other electrical approvals available upon request)

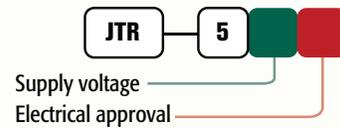
How to build the model number:



How to build the seal replacement model number:

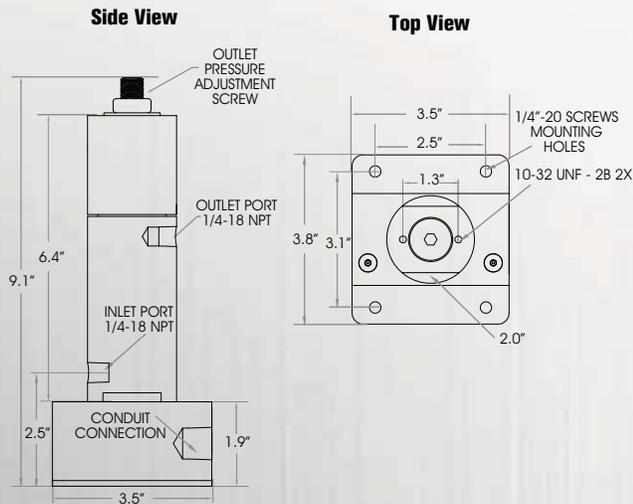


How to build the heater replacement kit part number:



We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions



Technical Specifications

Operating pressure range	300 PSIG (21 bar) to 6,000 psig (414 bar)
Temperature range	-15°F (-26 °C) to 300 °F (149 °C)
Port sizes	1/4" female NPT
Outlet pressure range	0-10 psig (0-0.7 bar), 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar), 0-250 psig (0-17.2 bar), 0-500 psig (34.5 bar)
C_v coefficient	0.06
Conduit connection	1/2" NPT
Power requirements	110 to 265 VAC, 80W 24 VDC, 30W
Heater block electrical approval	American NEC Standard (CSA/NRTL): File # 1655545 (LR43674) Protection Type: Class 1, Division 1, Groups ABCD ATEX/IECEX Standard: EC Examination Certificate - PTB 02 ATEX 1116 X IEC Scheme Certificate - IECEX PTB 07.0055X Protection Type: II 2 G Ex d IIC T4 BZW. T3
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Regulator seat material: Teflon® PFA Seals: Teflon®/Viton® (other materials available upon request)



Local Distributor

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Particulate & Coalescing Filters

TeamGENIE: Dawn Chifici conducts the first of three stages of inspections on the GENIE® Probe Regulator™ to assure it meets A+Corporation standards of precision and perfection.



www.geniefilters.com



An ISO 9001:2000 certified company.



Behind-the-Scenes: GENIE® products are inspected at each stage of the production process to ensure that precise tolerances are achieved at all times.



www.geniefilters.com



AVENGER™ 33

Particulate & Coalescing Filter

High performance filters providing the utmost flexibility for coalescing/particulate filtration needs!

The Avenger™ 30 Series Filters provide sample conditioning and analyzer protection by using a disposable filter element to remove solids and liquid droplets from gas sample streams. Genie® Membrane Technology™ with Liquid Block™ can be added as an option to the 30 Series filters, in addition to the disposable filter element. The use of Genie® Membrane Technology™ in these filters will remove 100% of entrained liquid, including aerosols, from the sample stream. The Liquid Block™ will completely valve off flow through the membrane to prevent liquid break-through from occurring in the presence of excess liquid. The Avenger™ 30 Series sample filters are easy to install and maintain, especially in heated, densely populated cabinets. The uniquely designed filter housing allows service to the filter element/membrane by simply removing the bowl without disassembly of the fittings.

The Avenger™ Model 33 is the same size as the Model 33M. Unlike the Model 33M, the Model 33 does not include Genie® Membrane Technology™ or Liquid Block™. If either of these features are desired, the Model 33M should be selected. When compared to the Models 38 and 38M, the Model 33 is larger in size and internal volume, making it better suited for applications requiring higher flow rates or containing larger amounts of contaminants than the Models 38 and 38M can handle. In addition to gas sampling applications, the Model 33 can also be used as a particulate filter in liquid sampling applications.

Technical Specifications

Maximum pressure rating	1,000 psig
Maximum recommended supply pressure	Lowest possible pressure consistent with application
Maximum temperature	302°F (150°C) for 0.1 micron coalescer fluorocarbon element 450°F (232°C) for 10 micron stainless steel element
Flow coefficients, Liquid C _v	Without element 1.9
Element size	Outside Diameter: ~ 1.4" Inside Diameter: ~ 1.0" Length: ~ 2.5"
Port sizes	Inlet, Outlet, & Bypass: 1/2" female NPT Gauge: 1/4" female NPT
Number of ports	5
Internal volume	200 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard



Product Brief

Applications

- Continuous sampling in any process industry including natural gas, petrochemical, and oil refining
- Coalescing liquid droplets
- Particulate removal from gas and liquid sample streams

Benefits

- Analyzer protection against liquid droplets and micron/ submicron size particles
- Quick and easy installation and maintenance
- Multiple porting configurations

Features

- 5 ports
- Horizontal mounting
- All primary connection ports on filter head



geniefilters.com

Model Numbering & Additional Part Numbers

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

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

How to build the model number:



⚠ Sealing material
Element type

How to build the replacement o-ring kit number:



⚠ Sealing material

How to build the replacement filter element number:

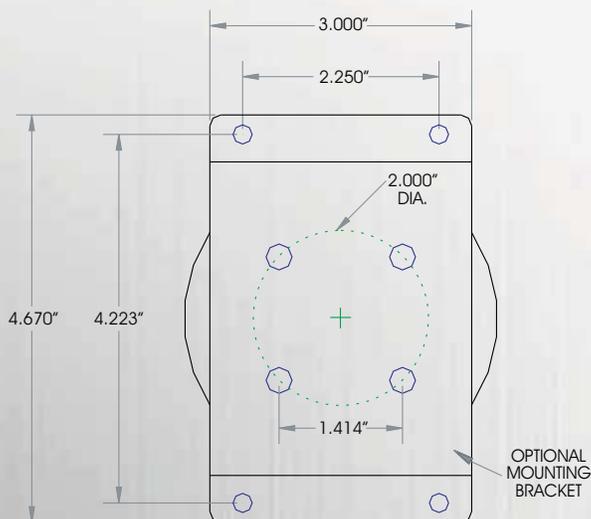


Element type

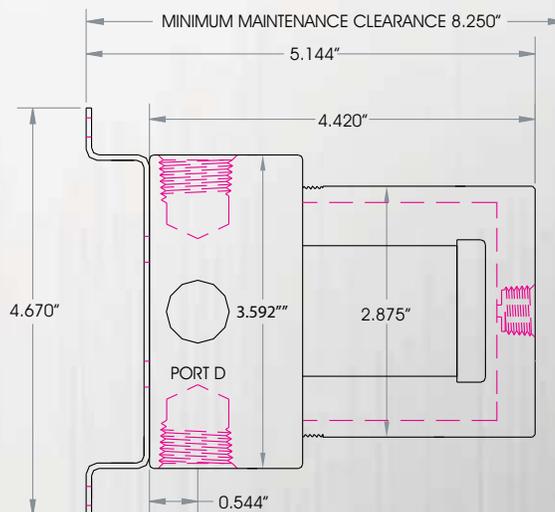
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Back View



Side View



Local Distributor

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AVENGER™ 33M

Particulate & Coalescing Filter

High performance filters providing the utmost flexibility for coalescing/particulate filtration needs!

The Avenger™ 30M Series Filters provide sample conditioning and analyzer protection by using a disposable filter element to remove solids and liquid droplets from gas sample streams. Genie® Membrane Technology™ with Liquid Block™ can be added as an option to the 30 Series filters, in addition to the disposable filter element. The use of Genie® Membrane Technology™ in these filters will remove 100% of entrained liquid, including aerosols, from the sample stream. The Liquid Block™ will completely valve off flow through the membrane to prevent liquid break-through from occurring in the presence of excess liquid. The Avenger™ 30 Series sample filters are easy to install and maintain, especially in heated, densely populated cabinets. The uniquely designed filter housing allows service to the filter element/membrane by simply removing the bowl without disassembly of the fittings.

The Avenger™ Model 33M is the same size as the Model 33, and contains Genie® Membrane Technology™. The Liquid Block™ is an option for this model. When compared to the Models 38 and 38M, the Model 33M is larger in size and internal volume, making it better suited for applications requiring higher flow rates or containing larger amounts of contaminants than the Models 38 and 38M can handle.



Product Brief

Applications

- Continuous sampling in any process industry including natural gas, petrochemical, and oil refining
- Coalescing liquid droplets
- Particulate removal from gas sample streams

Benefits

- Analyzer protection against liquid droplets and micron/ submicron size particles
- Quick and easy installation and maintenance
- Multiple porting configurations

Features

- Genie® Membrane Technology™
- Liquid Block™
- 5 ports
- Horizontal mounting
- All primary connection ports on filter head

Technical Specifications

Maximum pressure rating	1,000 psig
Maximum recommended supply pressure	Lowest possible pressure consistent with application
Maximum Liquid Block™ valve auto-reset pressure	85 psig* *Slowly open the supply pressure so that the minimum differential pressure required to shut off the Liquid Block™ is not met or exceeded
Maximum temperature	185°F (85°C) for Type 5 membrane 302°F (150°C) for Hi-Flow Backed membrane
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	4,000 cc/min for Type 5 membrane 18,000 cc/min for Hi-Flow Backed membrane *Maximum flow results in approximately 2 psi membrane differential pressure
Element size	Outside Diameter: ~ 1.4" Inside Diameter: ~ 1.0" Length: ~ 2.5"
Port sizes	Inlet, Outlet, & Bypass: 1/2" female NPT Gauge: 1/4" female NPT
Number of ports	5
Internal volume	200 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard Membrane: inert



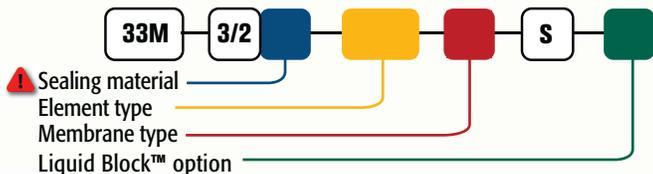
geniefilters.com

Model Numbering & Additional Part Numbers

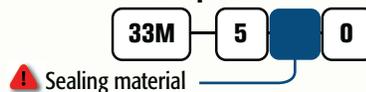
Your model number is determined by your specific needs. Choose options below.

Sealing material ⚠	0 = Fluoroelastomer	1 = Perfluoroelastomer	(other materials available upon request)
Element type	07CFS = 0.1 micron coalescer fluorocarbon	SS10 = 10 micron stainless steel	
Membrane type	5 = Type 5	7 = Hi-Flow Backed	
Liquid Block™	Blank = No Liquid Block™	L = Liquid Block™	
Mounting bracket accessory	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:



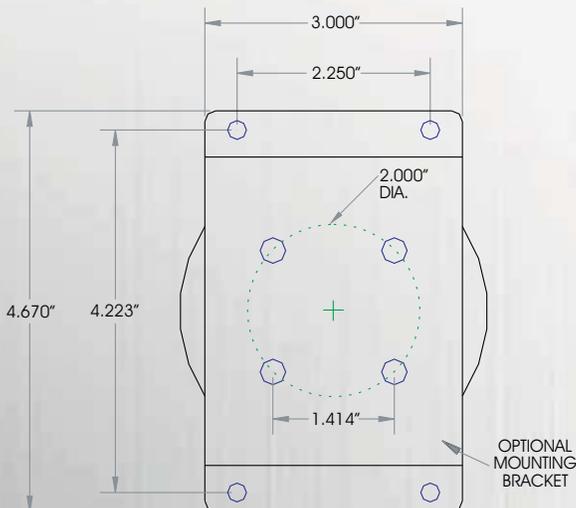
How to build the replacement membrane kit number:



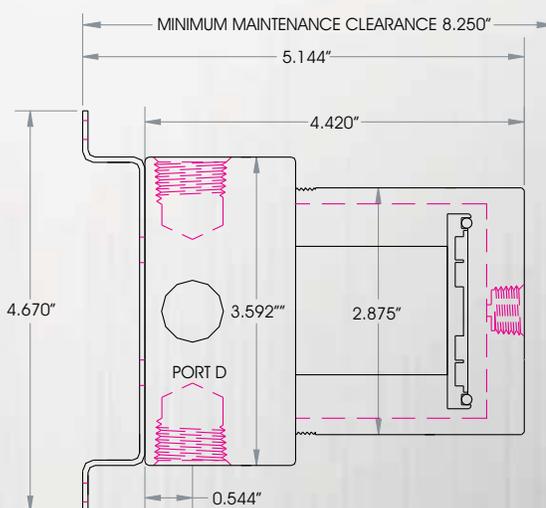
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Back View



Side View



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AVENGER™ 38

Particulate & Coalescing Filter

High performance filters providing the utmost flexibility for coalescing/particulate filtration needs!

The Avenger™ 30 Series Filters provide sample conditioning and analyzer protection by using a disposable filter element to remove solids and liquid droplets from gas sample streams. Genie® Membrane Technology™ with Liquid Block™ can be added as an option to the 30 Series filters, in addition to the disposable filter element. The use of Genie® Membrane Technology™ in these filters will remove 100% of entrained liquid, including aerosols, from the sample stream. The Liquid Block™ will completely valve off flow through the membrane to prevent liquid break-through from occurring in the presence of excess liquid. The Avenger™ 30 Series sample filters are easy to install and maintain, especially in heated, densely populated cabinets. The uniquely designed filter housing allows service to the filter element/membrane by simply removing the bowl without disassembly of the fittings.

The Avenger™ Model 38 is the same size as the Model 38M. Unlike the Model 38M, the Model 38 does not include Genie® Membrane Technology™ or Liquid Block™. If either of these features are desired, the Model 38M should be selected. When compared to the Models 33 and 33M, the Model 38 is smaller in size and internal volume making it better suited for lower flow applications.



Product Brief

Applications

- Continuous sampling in any process industry including natural gas, petrochemical, and oil refining
- Coalescing liquid droplets
- Particulate removal from gas sample streams

Benefits

- Analyzer protection against liquid droplets and micron/ submicron size particles
- Quick and easy installation and maintenance
- Multiple porting configurations

Features

- 5 ports
- Horizontal mounting
- All primary connection ports on filter head

Technical Specifications

Maximum pressure rating	2,000 psig
Maximum recommended supply pressure	Lowest possible pressure consistent with application
Maximum temperature	302°F (150°C) for 0.1 micron coalescer fluorocarbon element 450°F (232°C) for 10 micron stainless steel element
Flow coefficients, Liquid C_v	Without element: 0.8
Element size	Outside Diameter: ~ 1.4" Inside Diameter: ~ 1.0" Length: ~ 2.5"
Port sizes	1/4" female NPT
Number of ports	5
Internal volume	50 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard



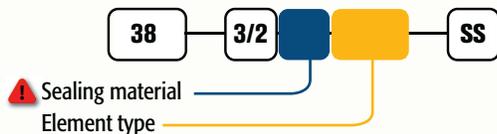
geniefilters.com

Model Numbering & Additional Part Numbers

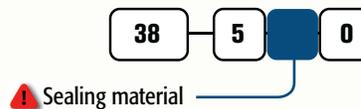
Your model number is determined by your specific needs. Choose options below.

Sealing material ⚠	0 = Fluoroelastomer	1 = Perfluoroelastomer	(other materials available upon request)
Element type	07CFS = 0.1 micron coalescer fluorocarbon	SS10 = 10 micron stainless steel	
Mounting bracket accessory	Part # 38-509SS (sold separately)		

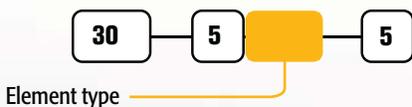
How to build the model number:



How to build the replacement o-ring kit number:



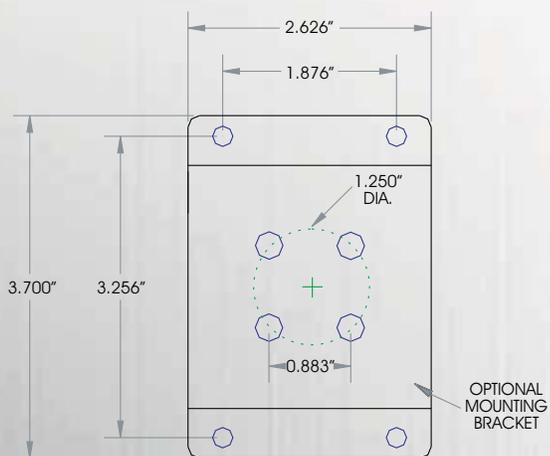
How to build the replacement filter element number:



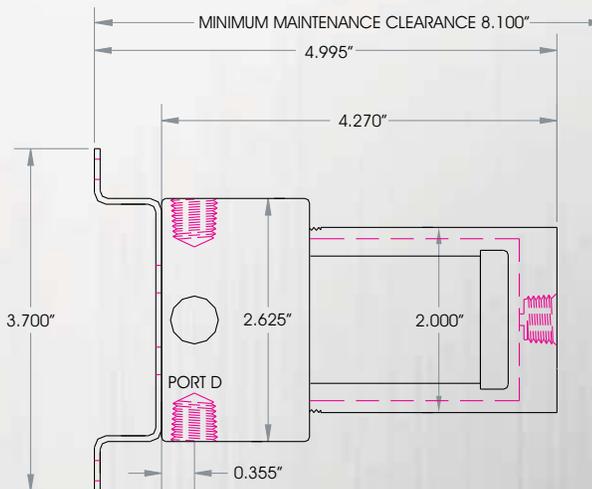
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Back View



Side View



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AVENGER™ 38M

Particulate & Coalescing Filter

High performance filters providing the utmost flexibility for coalescing/particulate filtration needs!

The Avenger™ 30M Series Filters provide sample conditioning and analyzer protection by using a disposable filter element to remove solids and liquid droplets from gas sample streams. Genie® Membrane Technology™ with Liquid Block™ can be added as an option to the 30 Series filters, in addition to the disposable filter element. The use of Genie® Membrane Technology™ in these filters will remove 100% of entrained liquid, including aerosols, from the sample stream. The Liquid Block™ will completely valve off flow through the membrane to prevent liquid break-through from occurring in the presence of excess liquid. The Avenger™ 30 Series sample filters are easy to install and maintain, especially in heated, densely populated cabinets. The uniquely designed filter housing allows service to the filter element/membrane by simply removing the bowl without disassembly of the fittings.

The Avenger™ Model 38M is the same size as the Model 38, and contains Genie® Membrane Technology™. The Liquid Block™ is an option for this model. When compared to the Models 33 and 33M, the Model 38M is smaller in size and internal volume making it better suited for lower flow applications.



Product Brief

Applications

- Continuous sampling in any process industry including natural gas, petrochemical, and oil refining
- Coalescing liquid droplets
- Particulate removal from gas sample streams

Benefits

- Analyzer protection against liquid droplets and micron/ submicron size particles
- Quick and easy installation and maintenance
- Multiple porting configurations

Features

- Genie® Membrane Technology™
- Liquid Block™
- 5 ports
- Horizontal mounting
- All primary connection ports on filter head

Technical Specifications

Maximum pressure rating	2,000 psig
Maximum recommended supply pressure	Lowest possible pressure consistent with application
Maximum Liquid Block™ valve auto-reset pressure	35 psig* *Slowly open the supply pressure so that the minimum differential pressure required to shut off the Liquid Block™ is not met or exceeded.
Maximum temperature	185°F (85°C) for Type 5 membrane 302°F (150°C) for Hi-Flow Backed membrane
Maximum recommended membrane flow rate (For higher flow rates contact the factory)	1,000 cc/min for Type 5 & BTU membrane 3,600 cc/min for Hi-Flow Backed membrane *Maximum flow results in approximately 2 psi membrane differential pressure
Element size	Outside Diameter: ~ 1.4" Inside Diameter: ~ 1.0" Length: ~ 2.5"
Port sizes	1/4" female NPT
Number of ports	5
Internal volume	50 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard Membrane: inert



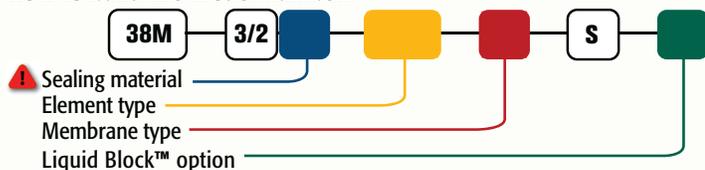
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Model Numbering & Additional Part Numbers

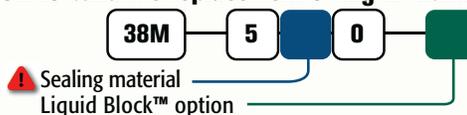
Your model number is determined by your specific needs. Choose options below.

Sealing material ⚠	0 = Fluoroelastomer	1 = Perfluoroelastomer	(other materials available upon request)
Element type	07CFS = 0.1 micron coalescer fluorocarbon	SS10 = 10 micron stainless steel	
Membrane type	5 = Type 5	7 = Hi-Flow Backed	(substitute Type 2 for Liquid Block™ applications)
Liquid Block™	Blank = No Liquid Block™	L = Liquid Block™	
Mounting bracket accessory	Part # 38-509SS (sold separately)		

How to build the model number:



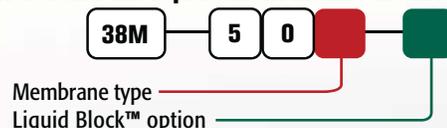
How to build the replacement o-ring kit number:



How to build the replacement filter element number:



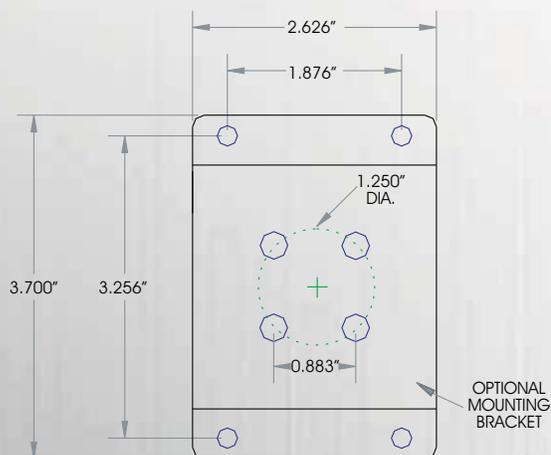
How to build the replacement membrane kit number:



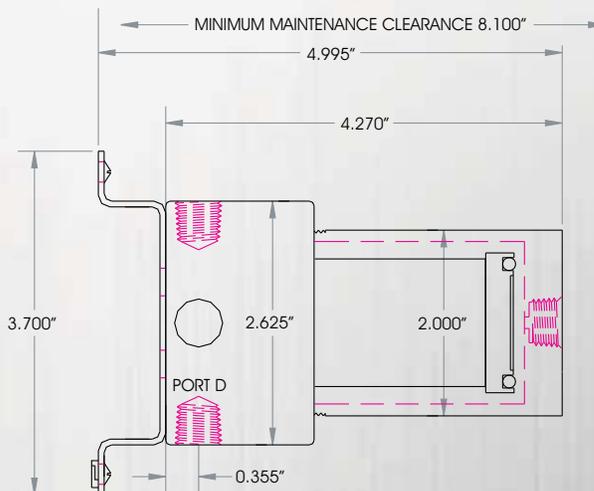
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Back View



Side View



Local Distributor

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AVENGER™ 91

Particulate & Coalescing Filter

High performance filters providing the utmost flexibility for coalescing/particulate filtration needs!

The Avenger™ 90 Series Filters provide the utmost in flexibility for your coalescing and particulate filtration needs. The conventional 3-port model is a direct replacement for competitive vertically mounted sample filters. However, the 5-port model, with its two different porting configurations allows for greater mounting and application flexibility. These filters were specifically designed for analyzer sample conditioning applications by analyzer sample conditioning specialists.

The Avenger™ Model 91 has a larger annulus than the Model 95, making it better suited for coalescing applications. The walls of the bowl are thinner than the Model 95 giving it a slightly larger internal volume. Additional information such as Application Notes is available.



Technical Specifications

Maximum pressure rating	3,750 psig
Maximum recommended supply pressure	Lowest possible pressure consistent with application
Element maximum temperature	302°F (150°C) for 07CFS 302°F (150°C) for 07PF 450°F (232°C) for 07PI 450°F (232°C) SS10A 450°F (232°C) SS100A
Element size	Outside Diameter: ~ 0.85" Inside Diameter: ~ 0.5" Length: ~ 2.3"
Element types	07CFS = coalescer fluorocarbon (99.97%*) 07PI = particulate inorganic (99.97%*) 07PF = particulate fluorocarbon (99.97%*) 11PF = particulate fluorocarbon (95.0%*) SS10A = sintered stainless steel (10 micron) SS100A = sintered stainless steel (100 micron) *% of 0.1 micron particles retained
Port sizes	1/4" female NPT
Number of ports	3 or 5
Internal volume	27 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer standard

Product Brief

Applications

- Continuous sampling in any process industry including natural gas, petrochemical, and oil refining.
- Analyzer protection against micron and sub-micron particles

Benefits

- Helps preserve sample integrity
- Analyzer protection
- Quick and easy to install and maintain
- Quick and easy element inspection
- Economical
- Flexible installation configuration

Features

- 3 or 5 port configuration
- Can be mounted horizontally or vertically
- All primary connection ports on the head



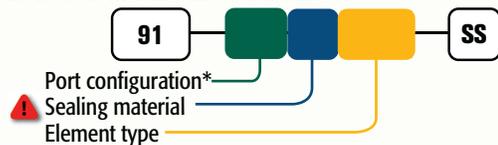
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Model Numbering & Additional Part Numbers

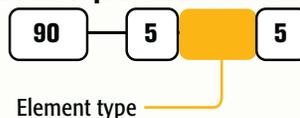
Your model number is determined by your specific needs. Choose options below.

Port configuration*	2/1 = 3 port (2 outer, 1 center)	4/1 = 5 port (4 outer, 1 center)	3/2 = 5 port (3 outer, 2 center)
Sealing material 	0 = Fluoroelastomer	1 = Perfluoroelastomer	(other materials available upon request)
Element type	07CFS = 0.1 micron coalescer fluorocarbon	SS10A = 10 micron stainless steel	SS100A = 100 micron stainless steel
	07PI = 0.1 micron particulate inorganic	XX = no element	
	07PF = 0.1 micron particulate fluorocarbon		
	11PF = 0.1 micron particulate fluorocarbon		
Mounting bracket accessory	Vertical part # = 90-509-SS-V	Horizontal part # = 90-509-SS-H	

How to build the model number:

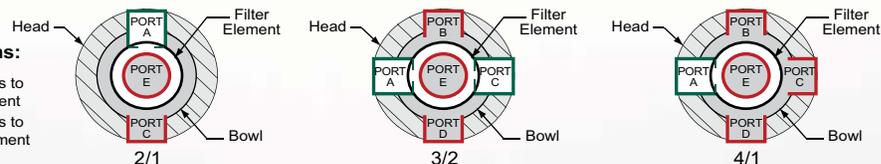


How to build the replacement filter element number:



*Port Configurations:

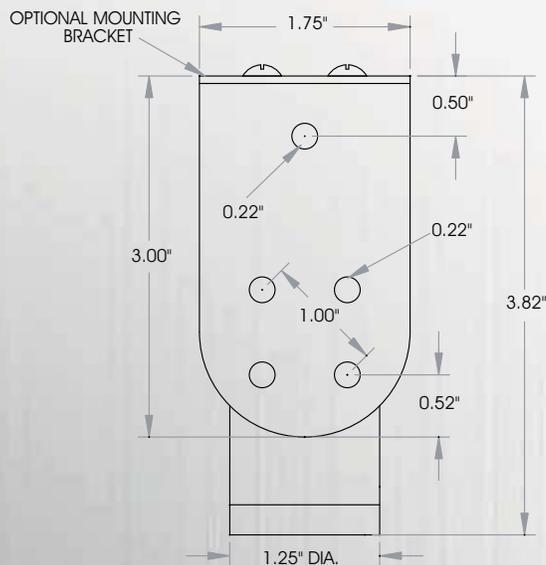
-  Communicates to inside of element
-  Communicates to outside of element



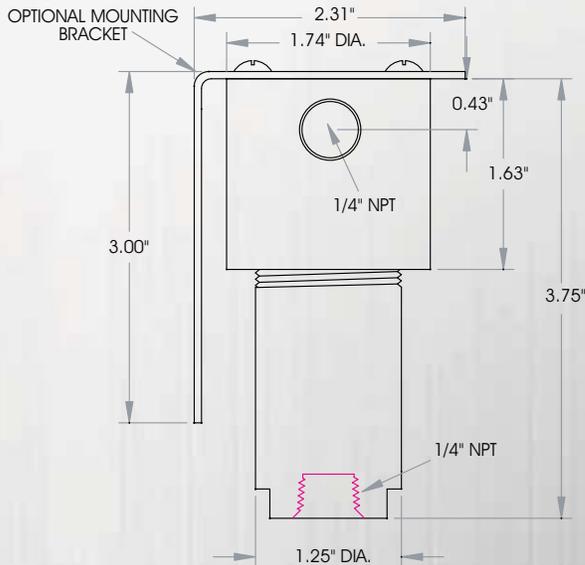
 We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Back View



Side View



Local Distributor

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Moisture & Corrosion Control

TeamGENIE: Lindsey Bourgeois and Kayla Biggs measure and seal *Humidisorb™* active ingredients before shipping worldwide.



www.geniefilters.com



An ISO 9001:2000 certified company.



Behind-the-Scenes: *Humidisorb™* is A+Corporation's innovative, professional, high-performance humidity control product. Because it can absorb many times its weight in water vapor, it controls relative humidity in enclosed cabinets and cases, eliminating mold and corrosion.



www.geniefilters.com



Providing superior protection for enclosures and equipment against damage from relative humidity!

Moisture and Corrosion Control Packets provide the best protection against damage from relative humidity and corrosion for any enclosure or piece of equipment that is operating, in transit, or in storage. The contents of each packet will not affect or damage non-metal material and can withstand maximum temperatures of 176°F (80°C) and contact with bulk liquid water without impacting their effectiveness. All packets come with self-adhesive mounting tape, which allows for easy installation into any enclosure, even if the enclosure is frequently opened. They are constructed of a heat-sealed, semi-permeable membrane material filled with Humidisorb, X-Corrode, or Humidisorb Plus X-Corrode, depending on your application needs.

Humidisorb Packets are filled with a self-regenerating desiccant that can absorb and release enormous quantities of moisture from surrounding air without becoming saturated. When first placed in service, a packet of granules will begin rapid absorption of moisture. The packet will absorb at least five to ten times more moisture than the conventional desiccant before coming to equilibrium with the relative humidity (RH) of surrounding air. This will usually take several weeks to occur, even in very humid environments. During periods when the enclosure RH is lower than its long-term average the packet releases moisture in vapor form. The moisture desorption process cannot wet the air above its average RH level. When enclosure RH tends to rise above its average level, the packet absorbs moisture. By absorbing moisture when the RH rises, and releasing some of the vapor phase moisture (regenerating) when the RH drops, the packet maintains a constant RH within the enclosure that is equal to the long-term average humidity.

Normally, these packets do not require replacement. During cycles of absorption and desorption the packet may change back and forth between putty-like and hard states. The packet may become putty-like as the granules absorb moisture and stick together. The granules, having once been putty-like, continue to stick together during periods of desorption; therefore, the packet may feel hard. This is a normal occurrence and will not alter the product's effectiveness.

Humidisorb packets are perfect for use in a typical electrical/electronic enclosure because with the ambient temperature changes inside each enclosure throughout the day, very large swings of RH can occur. Enclosure RH can spike to very high levels for short periods, especially early in the morning when temperatures are generally at their minimum. As the air inside the enclosure cools and contracts, moist external air is drawn into the enclosure. Moisture adsorbs on the cooler surfaces inside the enclosure. When the ambient temperature rises, air within the enclosure expands and is forced out, leaving behind some of the adsorbed moisture. Most of the corrosion and stray electrical currents that occur in enclosures result from daily RH spikes. Humidisorb packets are designed to control the spikes by maintaining a constant, low level of humidity in an enclosure over long periods of time.



Product Brief

Applications

- Electronic and mechanical enclosures
- Transmitter housings
- Equipment cases
- Field mounted equipment
- Stored equipment
- Goods during shipment
- Moisture sensitive products
- Computers
- Paper goods

Benefits

- Economical
- Easy installation
- Helps improve safety of personnel and equipment

Features

- Self-regenerating
- Five to ten times greater moisture absorbing capacity than ordinary desiccants such as silica gel
- Effective in frequently opened enclosures
- Backed with self-adhesive mounting tape
- High dielectric strength
- Non-toxic



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Model Numbering & Additional Part Numbers

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

Part number	Packet size	Volume protected
HST 2x2 ¹	2" x 2"	200 cubic inches
HST 4x4 ¹	4" x 4"	2 cubic feet
HST 7x13 ²	7" x 13"	25 cubic feet

- 2" x 2" and 4" x 4" packets are shipped standard in quantities of 10 units (packets) per poly-zip shipping bag. As an option, packets are available in individual, heat-sealed, poly shipping bags. To order this option, simply add "I" to the end of the part number, (i.e. HST 4x4-I). These are available in multiples of 10 units (packets) only. Prices reflect cost per individual unit (packet).
- These are available in multiples of 5 units (packets) only. Prices reflect cost per individual unit (packet).

Packets are supplied with self-adhesive tape unless specified otherwise.

Choosing the Correct Packet

When choosing the correct packet for your particular application, there are two factors you should consider before making a decision. First, you need to calculate the volume of the enclosure for which you intend to protect by multiplying its length, width, and height. Different sized packets have a direct relationship to the size of the intended enclosure; thus, the bigger the enclosure, the bigger the packet is needed to protect it. Second, you should determine whether the enclosure will be opened frequently or remain closed for the most part.

Once you have the volume of the enclosure, you must find the correct Packet Capacity Ratio (PCR) for that particular volume in the table below. Please note that you should always use the largest value that is closest to the volume of your enclosure. For example, if the volume of your enclosure is 3 ft³ (or 5,184 in³), you would look under the column for 4 ft³ (or 6,912 in³).

The numbers listed under each column refer to the Packet Capacity Ratio, which is the relative measure of the packet's capacity as compared to the amount of water vapor in an enclosure at 70°F with a 50% Relative Humidity level—the ratio of moisture in the air to the moisture capacity of air at a given temperature.

Choose a packet size and quantity based on the PCR numbers associated with the enclosure volume. The higher the PCR number, the more effective the packet size will be for a given enclosure. Keep in mind that frequently opened enclosures or enclosures that are susceptible to rapid changes in RH conditions require a higher PCR number, typically 10 or above. Enclosures that are always stored indoors and/or infrequently opened require a lower PCR number of 5 to 9.5. For example, if you look under the column for 1 ft³ (or 1,728 in³), the best protection for an enclosure with that volume would be from two 4" x 4" packets because it has the highest PCR number associated.

Packet Capacity Ratio (PCR)^A Table

Packet Size	Packet Quantity	Packet Capacity ^B	Packet Capacity Ratio (PCR) Number							
			200 in ³	1 ft ³	2 ft ³	5 ft ³	10 ft ³	15 ft ³	30 ft ³	45 ft ³
2" x 2"	1	0.3	9.5	1.0	-	-	-	-	-	-
2" x 2"	2	0.6	19.0	2.0	-	-	-	-	-	-
4" x 4"	1	5.8	191.0	22.0	11	4.5	-	-	-	-
4" x 4"	2	11.6	382	44	22	9.0	-	-	-	-
7" x 13"	1	43.2	-	-	83	33.0	16.5	11.0	5.5	4.0
7" x 13"	2	86.4	-	-	165.5	66.0	33.0	22.0	11.0	8.0
Total Water Vapor ^C			0.0302	0.260928	.521856	1.30464	2.60928	3.91392	7.82784	11.74176

A. PCR is derived by dividing Humidisorb's capacity at 50%RH level by the grams of water vapor in an enclosure at the 50% RH level.

B. Packet's capacity in grams of water vapor.

C. Total amount of water vapor in the indicated size enclosure at 50% RH and 70°F



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Providing protection for enclosures and equipment against damage from relative humidity and corrosion!

Moisture and Corrosion Control Packets provide the best protection against damage from relative humidity and corrosion for any enclosure or piece of equipment that is operating, in transit, or in storage. The contents of each packet will not affect or damage non-metal material and can withstand maximum temperatures of 176°F (80°C) and contact with bulk liquid water without impacting their effectiveness. All packets come with self-adhesive mounting tape, which allows for easy installation into any enclosure, even if the enclosure is frequently opened. They are constructed of a heat-sealed, semi-permeable membrane material filled with Humidisorb, X-Corrode, or Humidisorb Plus X-Corrode, depending on your application needs. Humidisorb Plus X-Corrode Packets provide moisture and corrosion control in electrical and electronic enclosures.

Humidisorb is a self-regenerating desiccant that can absorb and release enormous quantities of moisture from surrounding air without becoming saturated. When first placed in service, a packet of granules will begin rapid absorption of moisture. The packet will absorb at least five to ten times more moisture than the conventional desiccant before coming to equilibrium with the relative humidity (RH) of surrounding air. This will usually take several weeks to occur, even in very humid environments. During periods when the enclosure RH is lower than its long-term average the packet releases moisture in vapor form. The moisture desorption process cannot wet the air above its average RH level. When enclosure RH tends to rise above its average level, the packet absorbs moisture. By absorbing moisture when the RH rises, and releasing some of the vapor phase moisture (regenerating) when the RH drops, the packet maintains a constant RH within the enclosure that is equal to the long-term average humidity.

X-Corrode provides protection against airborne contaminants that cause corrosion, such as Hydrogen Sulfide (H₂S), Chlorine (Cl₂), and salts. The X-Corrode formula provides a durable passivation on the surface of circuit component metals; other metals, such as aluminum and steel that may be present in an enclosure, are also passivated, but to a smaller degree. Tests have shown that once a metal surface was initially passivated by X-Corrode, the packet could be removed with corrosion protection remaining for weeks after. This means that frequently opened enclosures are also well protected by the X-Corrode packet.

The mixture of the desiccant and corrosion inhibitor has three distinct advantages over use of the individual Humidisorb and X-Corrode packets. First, it is easier to stock and install a single packet instead of two. Second, it costs less than the combined cost of a Humidisorb packet and X-Corrode packet. And third, its life span is substantially longer than that of the X-Corrode packet alone. The Humidisorb granule portion of the mixture does not need to be replaced. The life span of the X-Corrode granules is greatly extended (from typically two years to approximately 10 years) due to its encapsulation by the Humidisorb granules after the packet has been exposed to moisture.



Product Brief

Applications

- Electronic and mechanical enclosures
- Transmitter housings
- Equipment cases
- Field mounted equipment
- Stored equipment
- Goods during shipment
- Moisture sensitive products
- Computers
- Paper goods

Benefits

- Economical
- Easy installation
- Helps improve safety of personnel and equipment

Features

- Self-regenerating
- Five to ten times greater moisture absorbing capacity than ordinary desiccants such as silica gel
- Effective in frequently opened enclosures
- Backed with self-adhesive mounting tape
- High dielectric strength
- Non-toxic



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Model Numbering & Additional Part Numbers

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

Part number	Packet size	Volume protected
HXC 2x2¹	2" x 2"	200 cubic inches
HXC 4x4¹	4" x 4"	2 cubic feet
HXC 7x13²	7" x 13"	25 cubic feet

- 2" x 2" and 4" x 4" packets are shipped standard in quantities of 10 units (packets) per poly-zip shipping bag. As an option, packets are available in individual, heat-sealed, poly shipping bags. To order this option, simply add "I" to the end of the part number, (i.e. HST 4x4-I). These are available in multiples of 10 units (packets) only. Prices reflect cost per individual unit (packet).
- These are available in multiples of 5 units (packets) only. Prices reflect cost per individual unit (packet).

Packets are supplied with self-adhesive tape unless specified otherwise.

Choosing the Correct Packet

When choosing the correct packet for your particular application, there are two factors you should consider before making a decision. First, you need to calculate the volume of the enclosure for which you intend to protect by multiplying its length, width, and height. Different sized packets have a direct relationship to the size of the intended enclosure; thus, the bigger the enclosure, the bigger the packet is needed to protect it. Second, you should determine whether the enclosure will be opened frequently or remain closed for the most part.

Once you have the volume of the enclosure, you must find the correct Packet Capacity Ratio (PCR) for that particular volume in the table below. Please note that you should always use the largest value that is closest to the volume of your enclosure. For example, if the volume of your enclosure is 3 ft³ (or 5,184 in³), you would look under the column for 4 ft³ (or 6,912 in³).

The numbers listed under each column refer to the Packet Capacity Ratio, which is the relative measure of the packet's capacity as compared to the amount of water vapor in an enclosure at 70°F with a 50% Relative Humidity level—the ratio of moisture in the air to the moisture capacity of air at a given temperature.

Choose a packet size and quantity based on the PCR numbers associated with the enclosure volume. The higher the PCR number, the more effective the packet size will be for a given enclosure. Keep in mind that frequently opened enclosures or enclosures that are susceptible to rapid changes in RH conditions require a higher PCR number, typically 10 or above. Enclosures that are always stored indoors and/or infrequently opened require a lower PCR number of 5 to 9.5. For example, if you look under the column for 1 ft³ (or 1,728 in³), the best protection for an enclosure with that volume would be from two 4" x 4" packets because it has the highest PCR number associated.

Packet Capacity Ratio (PCR)^A Table

Packet Size	Packet Quantity	Packet Capacity ^B	Packet Capacity Ratio (PCR) Number							
			200 in ³	1 ft ³	2 ft ³	5 ft ³	10 ft ³	15 ft ³	30 ft ³	45 ft ³
2" x 2"	1	0.3	9.5	1.0	-	-	-	-	-	-
2" x 2"	2	0.6	19.0	2.0	-	-	-	-	-	-
4" x 4"	1	5.8	191.0	22.0	11	4.5	-	-	-	-
4" x 4"	2	11.6	382	44	22	9.0	-	-	-	-
7" x 13"	1	43.2	-	-	83	33.0	16.5	11.0	5.5	4.0
7" x 13"	2	86.4	-	-	165.5	66.0	33.0	22.0	11.0	8.0
Total Water Vapor ^C			0.0302	0.260928	.521856	1.30464	2.60928	3.91392	7.82784	11.74176

A. PCR is derived by dividing Humidisorb's capacity at 50%RH level by the grams of water vapor in an enclosure at the 50% RH level.

B. Packet's capacity in grams of water vapor.

C. Total amount of water vapor in the indicated size enclosure at 50% RH and 70°F



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Providing protection for enclosures and equipment against damage from corrosion!

Moisture and Corrosion Control Packets provide the best protection against damage from relative humidity and corrosion for any enclosure or piece of equipment that is operating, in transit, or in storage. The contents of each packet will not affect or damage non-metal material and can withstand maximum temperatures of 176°F (80°C) and contact with bulk liquid water without impacting their effectiveness. All packets come with self-adhesive mounting tape, which allows for easy installation into any enclosure, even if the enclosure is frequently opened. They are constructed of a heat-sealed, semi-permeable membrane material filled with Humidisorb, X-Corrode, or Humidisorb Plus X-Corrode, depending on your application needs.

X-Corrode Packets provide protection against airborne contaminants that cause corrosion, such as Hydrogen Sulfide (H₂S), Chlorine (Cl₂), and salts. The X-Corrode formula provides a durable passivation of the surface of circuit component metals; other metals, such as aluminum and steel that may be present in an enclosure, are also passivated, but to a smaller degree. Tests have shown that once a metal surface was initially passivated by X-Corrode, the packet could be removed with corrosion protection remaining for weeks after. This means that frequently opened enclosures are also well protected by the X-Corrode packet.

When a packet is removed from its shipping bag and placed in an enclosure, the granules begin to slowly vaporize. The vapors diffuse through the packet material into the surrounding air space. Metal surfaces contacted by the vapor become passivated against corrosion by airborne contaminants. Metals commonly associated with electrical and electronic components receive maximum protection. These may include copper, copper alloys, tin, lead, zinc, chromate passivated iron, silver, cadmium and nickel chrome plate. Most other metals, including iron and aluminum, are also passivated, but not to the extent of protection afforded to copper and its alloys. Non-metal surfaces are not affected by the vapor. Vapors are carried throughout the enclosure by diffusion and thermal convection. As the air within the enclosure becomes saturated with X-Corrode vapors, vaporization of the inhibitor compound diminishes to the minimum rate required for replenishing lost vapor. The vapor concentration is typically in the lower parts per million range and, therefore, does not present any flammable or explosive hazard.

Typically, these packets last up to two years. X-Corrode packets are frequently used in conjunction with Humidisorb packets. Together they provide long-term moisture and corrosion control.



Product Brief

Applications

- Electronic and mechanical enclosures
- Transmitter housings
- Equipment cases
- Field mounted equipment
- Stored equipment
- Goods during shipment
- Moisture sensitive products
- Computers
- Paper goods

Benefits

- Economical
- Easy installation
- Helps improve safety of personnel and equipment

Features

- Effective in frequently opened enclosures
- Backed with self-adhesive mounting tape
- High dielectric strength
- Non-toxic



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Model Numbering & Additional Part Numbers

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

Part number	Packet size	Volume protected
XC - 1¹	2" x 2"	1 cubic inches
XC - 5¹	4" x 4"	5 cubic feet
XC - 40¹	7" x 13"	40 cubic feet

1. 2" x 2" and 4" x 4" packets are shipped standard in quantities of 10 units (packets) per poly-zip shipping bag. As an option, packets are available in individual, heat-sealed, poly shipping bags. To order this option, simply add "I" to the end of the part number, (i.e. HST 4x4-I). These are available in multiples of 10 units (packets) only. Prices reflect cost per individual unit (packet).

Packets are supplied with self-adhesive tape unless specified otherwise.

Choosing the Correct Packet

When choosing the correct packet for your particular application, the volume of the enclosure for which you intend to protect must first be calculated by multiplying its length, width, and height (LxWxH). Different sized packets have a direct relationship to the size of the intended enclosure; thus, the bigger the enclosure, the bigger the packet is needed to protect it.

Once the volume of the enclosure is calculated, use the part number chart above to determine what size packet is needed. Multiple packets may be necessary to properly protect your enclosure.



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Modular Sample System Components

TeamGENIE: Sean Templet is in the A+Corporation lab building a specialized jig for GENIE® Probe Regulator™ production.



Modular Sample System Components

www.geniefilters.com



An ISO 9001:2000 certified company.



Behind-the-Scenes: GENIE® products have revolutionized the science of natural gas sample conditioning and set new industry standards.

Modular Sample
System Components



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AVENGER™ MA

Modular Particulate & Coalescing Filter

High performance filters providing the utmost flexibility for coalescing/particulate filtration needs!

The Modular Avenger™ Filter Model MA is designed for mounting on an ANSI/ISA 76.00.02, 1.5" base compliant sampling system substrate and uses a combination coalescing/particulate element to remove entrained liquids and sub-micron size particles in gas samples. It features a head and bowl design to provide safe and quick access to the filter element. Since filter element sealing is independent of the bowl, the element can be inspected without loss of element seal. The cylindrical filter design provides a large filter area while maintaining a small footprint. The Modular Avenger™ design is similar to the time proven Avenger™ 90 Series filter designs.



Technical Specifications

Maximum pressure rating	2,000 psig for component (substrate may differ) 100 psig for Poly Carbonate bowl
Maximum temperature	300 °F (149 °C)
Port options	Two port: Inlet & Outlet Three port: Inlet, Outlet & Bypass
Port sizes	1/4" NPT on bowl end for gauge, drain, or external bypass
Internal volume	20 cc
Mounting	Compliant with ANSI/ISA 76.00.02 1.5" base
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: fluoroelastomer standard

Product Brief

Applications

- Analyzer protection against micron and sub-micron particles
- Continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining

Benefits

- Interchangeable with other ANSI/ISA 76.00.02 1.5" base compliant filter/separator components
- Superior analyzer protection
- Proven technology minimizes risk of failures
- Quick and easy element inspection

Features

- Compliant with ANSI/ISA 76.00.02 1.5" base sampling system substrates
- Utilizes proven 90 series Avenger™ filter technology
- Combination particle/coalescing element
- Large filter area with small footprint
- Low volume head and bowl design



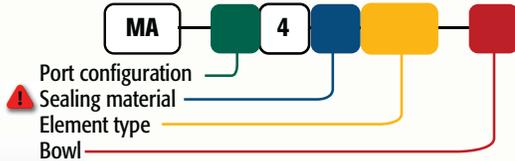
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Model Numbering & Additional Part Numbers

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

Port configuration	2 = 2 port (Inlet & Outlet)	3 = 3 port (Inlet, Outlet & Bypass)		
Sealing material 	0 = fluoroelastomer	1 = perfluoroelastomer	7 = Neoprene rubber	(other materials available upon request)
Element type	07CFS = 0.1 micron coalescer fluorocarbon	SS10 = 10 micron stainless steel		
	07PI = 0.1 micron particulate inorganic	SS100 = 100 micron stainless steel		
	07PF = 0.1 micron particulate fluorocarbon	XX = no element		
	11PF = 0.1 micron particulate fluorocarbon			
Bowl type	SS = Stainless Steel	PC = Poly Carbonate		

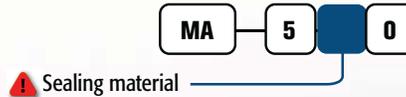
How to build the model number:



How to build the replacement filter element number:



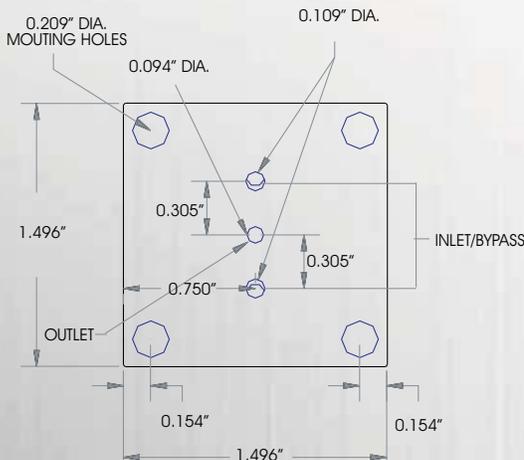
How to build the replacement o-ring kit number:



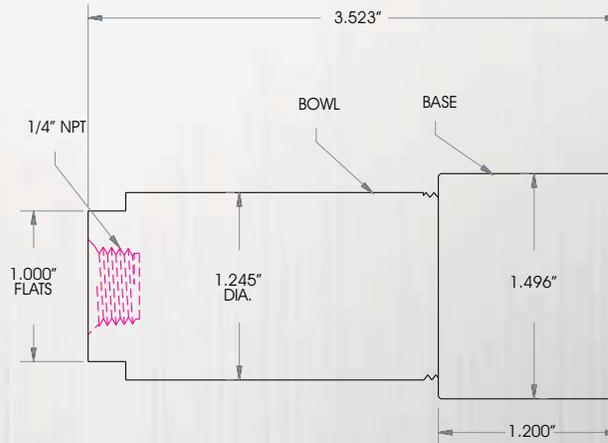
 We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Bottom View



Side View



* 3 PORT OPTION SHOWN. ON THE 2 PORT OPTION, ONE OF THE OUTSIDE PORTS IS REMOVED.
10/32 MOUNTING SCREWS INCLUDED



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Modular Membrane Separator

The original brand known for sample conditioning and analyzer protection!

The Modular Series 100 Genie[®] Membrane Separators[™] are designed for mounting on an ANSI/ISA 76.00.02, 1.5" base compliant sampling system substrate and use the same phase separating membrane that has been used successfully for many years in other Genie[®] products to remove 100% of entrained liquid and particulate in gas samples, allowing only gas sample to exit the outlet. This action protects analyzers and other sample system components against liquid damage.

The Model MG features a cylindrical membrane structure which provides a large membrane area while maintaining a small footprint. It is ideal for removing continuous liquid slugs from gas samples, and should be selected when the sample flow rate requirement is higher than the Genie[®] Modular 120 can accommodate (higher than 1,440 cc/min for Type 5 & BTU membrane and 5,000cc/min for Hi-flow Backed membrane).



Technical Specifications

Maximum pressure rating	2,000 psig for component (substrate may differ)
Maximum temperature	185°F (85 °C)
Maximum recommended flow rate (For higher flow rates contact the factory)	6 L/min for Type 5 & BTU membrane* 18 L/min fir Hi-Flow Backed membrane* *Maximum flow results in approximately 2 psi membrane differential pressure
Port options	Two port: Inlet & Outlet Three port: Inlet, Outlet & Bypass
Port sizes	1/4" NPT on bowl end for gauge, drain, or external bypass
Internal volume	30 cc
Mounting	Compliant with ANSI/ISA 76.00.02 1.5"base
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: fluoroelastomer o-ring with Neoprene rubber and PTFE gaskets standard

Product Brief

Applications

- Protection against liquids
 - On-line and portable analyzers
 - GC's, Mass Spec's, O₂, H₂S, Moisture, and others
- Continuous gas sampling in any process industry including natural gas, petrochemical, and oil refining

Benefits

- Interchangeable with other ANSI/ISA 76.00.02 1.5" base compliant filter/separator components
- Proven membrane technology
- Access to tech support saves time and reduces cost
- Quick and easy membrane inspection
- Superior analyzer protection
- Improves analyzer reliability
- Reduces analyzer maintenance

Features

- Compliant with ANSI/ISA 76.00.02 1.5" base sampling system substrates
- Genie[®] Membrane Technology[™]
- Low volume head and bowl design



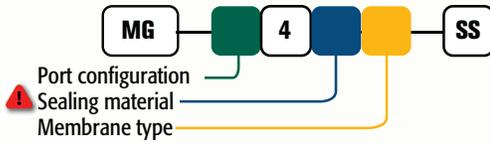
geniefilters.com

Model Numbering & Additional Part Numbers

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

Port configuration	2 = 2 port (Inlet & Outlet)	3 = 3 port (Inlet, Outlet & Bypass)
Sealing material ⚠	0 = fluoroelastomer 1 = perfluoroelastomer	7 = Neoprene rubber (other materials available upon request)
Membrane type	5 = Type 5	6 = BTU 7 = Hi-Flow Backed

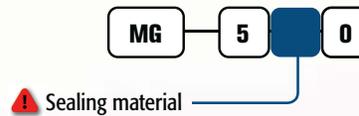
How to build the model number:



How to build the replacement membrane kit number: (Standard kit comes with Neoprene and Teflon gaskets)



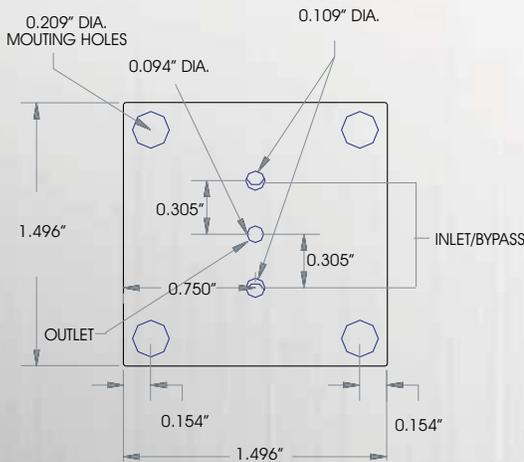
How to build the replacement o-ring kit number:



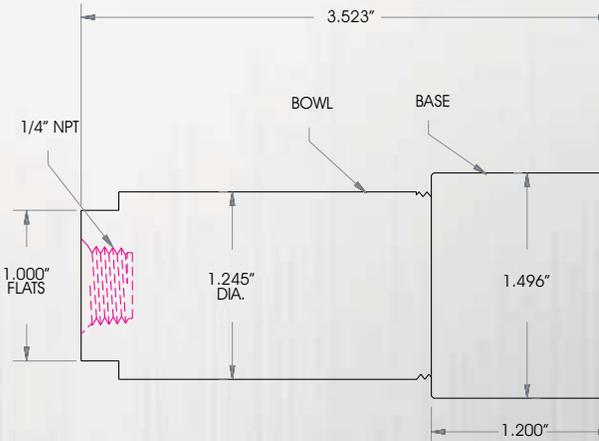
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Bottom View



Side View



* 3 PORT OPTION SHOWN. ON THE 2 PORT OPTION, ONE OF THE OUTSIDE PORTS IS REMOVED.
10/32 MOUNTING SCREWS INCLUDED



Local Distributor

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DAVINCI™ ADP

Analyzer Distribution Panel

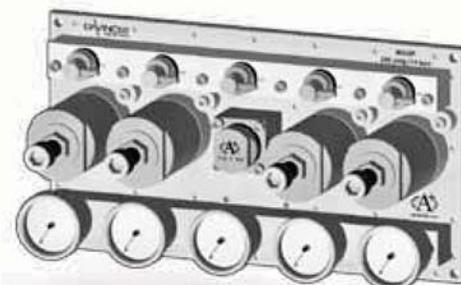
One gas sample stream in and four low pressure gas streams out!

The DaVinci™ Modular Analyzer Distribution Panel (ADP) is a pre-packaged solution that makes it possible to supply up to four different analyzers with low pressure gas samples from a single source, eliminating the need to establish multiple sample points and reducing the cost of required sampling hardware.

The ADP consists of a single modular board with built in purge loop, inlet filter and gauge, integral stream isolation valves, and pressure regulators with their respective gauges. The standard ADP is supplied with one regulator and pressure gauge. Up to three additional regulators with respective gauges can be added and assembled on the board at the time of order or later in the field by the technician.

The Analytically Correct™ design of the ADP's purge loop ensures that a representative sample is always present at the inlet of each individual sample stream. The individual sample streams are independent of one another, eliminating the chance of active streams being affected by other streams coming on or off line. The compact modular design of the ADP makes it easy to install, maintain, and troubleshoot. A regulator kit is offered for easy replacement of regulators in the field.

It is important to note that when sampling gases near their dew point, it may be necessary to install the ADP in a heated area or heated insulated enclosure. For assistance in determining heating requirements, please contact A+ Corporation or your local A+ distributor.



Technical Specifications

Maximum pressure rating	200 psig (14 bar)
Temperature range	-35 °F (-37 °C) to 225 °F (107°C) Contact the factory regarding other temperature ratings
Port Sizes	1/8" female NPT inlet, bypass & outlet ports 1/4" female NPT gauge ports
Outlet pressure range	0-10 psig (0-0.7 bar), 0-25 psig (0-1.7 bar), 0-50 psig (0-3.4 bar), 0-100 psig (0-6.9 bar)
Wetted Material	Machined parts: 316 stainless steel /NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Neoprene

Product Brief

Applications

- For use in any process industry to supply up to four different analyzers with low pressure gas samples from a single source

Benefits

- Eliminates the need to establish multiple sample points
- Reduces the cost of required sampling hardware
- Pre-packaged solution eliminates technician assembly
- Space saving , compact modular design
- Easy to add or replace regulators in the field

Features

- Analytically Correct™ purge loop
- Inlet filter & gauge
- Up to four (4) pressure regulators with respective gauges
- Integral valving
- Regulator kit



geniefilters.com

Model Numbering & Additional Part Numbers

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

Sealing material ⚠	7 = Neoprene rubber (other materials available upon request)				
Outlet pressure range (psig)	0 = 0-25	1 = 0-50	2 = 0-100	9 = 0-10	X = No regulator & No gauge

Make sure to indicate the appropriate position for each regulator on the board by filling in the corresponding blank when completing the part number below. Each pressure regulator includes a pressure gauge. Reference the dimensional drawing for regulator positioning.

How to build the model number:



- ⚠ Sealing material
- Regulator position #1 outlet pressure range
- Regulator position #2 outlet pressure range
- Regulator position #3 outlet pressure range
- Regulator position #4 outlet pressure range

Regulator kit part number

(includes regulator, mounting clips, and appropriate gauge)

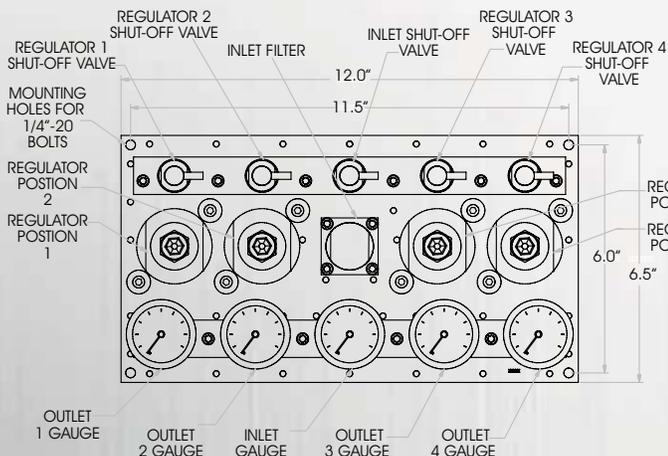


- ⚠ Sealing material
- Outlet pressure range

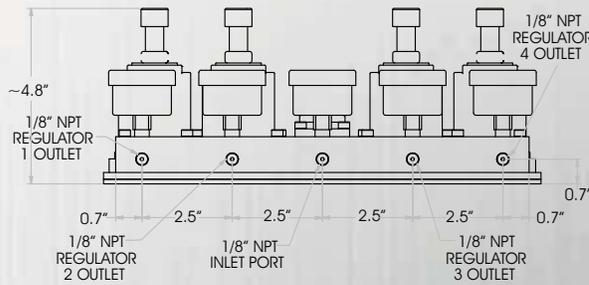
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

Front View



Bottom View



Local Distributor

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Other Products

TeamGENIE: A+Corporation Founder Donald Mayeaux is actively involved in the research, development, and hands-on testing of new GENIE® products.



www.geniefilters.com



An ISO 9001:2000 certified company.



Behind-the-Scenes: As the dean of natural gas sample conditioning, Donald Mayeaux produces a stream of new concepts, products, and standards, constantly expanding the GENIE® line.



www.geniefilters.com

Other Products



Q² 310 Sample Cylinder

Eliminates analytical error due to cylinder purging techniques, unclean cylinders, or leaking valves!



The Q² Sample Cylinder™ is an innovative DOT-3E 1800 sample cylinder specifically designed to sample natural gas at or near its dew point or in low ambient temperature conditions. The cylinder has undergone rigorous testing sponsored by the Pipeline Research Council International (PRCI). The sampling test protocol was according to API 14.1, Appendix F and the conditions of the test were such that both the ambient temperature conditions and the sampling equipment's temperature were below the hydrocarbon dew point of the source gas. The tests concluded that the Q², Cylinder Manifold, and "Line Purge and Cylinder Fill" sample method satisfied API's repeatability and reproducibility criteria. As such, the Q² conforms to the API 14.1 industry standard.

The Q²'s most unique features, the integral recessed valves and cylinder bag, combine to eliminate common sample distortion problems associated with conventional cylinders resulting from damaged valves or cylinders that have not been properly cleaned, purged, or prepared. The disposable bag is an inert barrier that can be easily collapsed to eliminate cylinder purging, the most common source of error in spot and composite sampling, and reduce sampling time. Only the bag and a small, easily accessible area inside of the cylinder head come in contact with the sample, saving cleaning time and removing the risk of sample distortion due to residuals. The cylinder's valves are recessed and integrated into the head to minimize the volume of the sample path and to prevent them from being damaged during transportation.

The Line Purge and Cylinder Fill method is preferred for use with this cylinder; however, the constant pressure method can also be used. A cylinder manifold is recommended for use with the Q² cylinder to minimize and easily purge the sample path volume between the process valve and the Q². Use of the manifold ensures that the sample path is purged all the way up to the ball of the cylinder inlet valve. The 1/16" diameter passageway of the cylinder manifold is purged quickly and prevents any liquids from accumulating as they will be swept through the passageway and exit out through the manifold purge valve, which is out of the sample flow path. After the sample path has been purged, the Q² can then be filled with a representative sample in a one fill cycle.

Technical Specifications

Maximum pressure rating	1,800 psig
Maximum sustained temperature	225°F (107°C) with cylinder bag
Minimum sustained temperature	-15°F (-26°C) with Viton o-ring
Port sizes	Inlet and Outlet: 1/4" female NPT
Internal volume	300 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Cylinder bag: Tedlar® Sealing material: Fluoroelastomer standard

Product Brief

Applications

- Spot & Composite sampling of natural gas
- Direct replacement for constant pressure cylinders used for collecting, storing, and transporting natural gas samples
- Sampling low pressure or atmospheric pressure sources

Benefits

- No special permit documentation required for transport
- No cylinder purging required (with Constant Pressure or Line Purge and Cylinder Fill methods)
- No external cylinder valves required
- Minimizes chance of valve damage
- Quick and easy internal inspection
- One time cylinder fill reduces sampling time
- Minimizes emissions
- Saves on shipping cost

Features

- DOT-3E-1800 and API 14.1 approved
- Head and bowl design
- Integral recessed, screwdriver operated valves
- Inert, disposable Tedlar® bag
- Shorter and weighs less than most 300cc constant pressure cylinders
- Optional low volume, Cylinder Manifold



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Model Numbering & Additional Part Numbers

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

Sealing material ⚠	0 = Fluoroelastomer (other materials available upon request)
Accessory manifold	Part # 310-ACC-M7 (0-2000 gauge included - other gauges available upon request) (sold separately)
Sample cylinder case	Part # 310-CASE (sold separately)
Cylinder bag replacement	Part # 310-5X1 (5 bags per kit) (sold separately)
O-ring replacement	Part # 310-500 (sold separately)

How to build the model number:

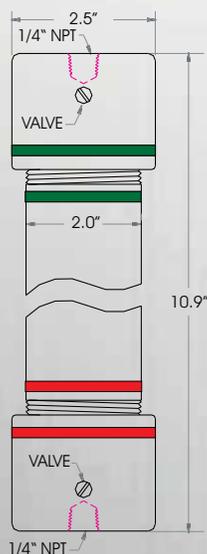


⚠ Sealing material

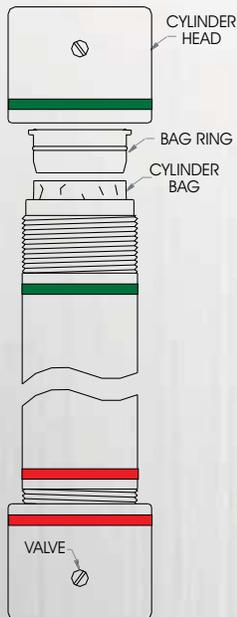
⚠ We cannot recommend specific sealing materials due to the complex nature of sample stream compositions. Temperature and pressure also may be factors. Unless specified otherwise, the product will ship with our standard sealing materials and materials of construction stated in the technical specifications section of the corresponding Product Sheet. Please refer to www.dupontelastomers.com for sealing material recommendations and advice. It is the user's responsibility to specify the sealing materials of construction for their application.

Dimensions

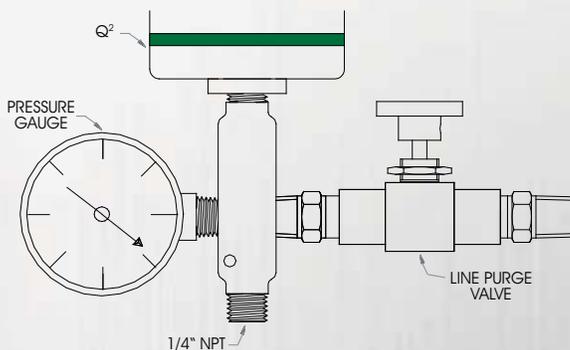
Assembled



Disassembled



Manifold View



Local Distributor

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Highly efficient, self-cleaning liquid bypass filters!

The Tornado Model 602 is a continuously self-cleaning filter that protects analyzers from particulate in liquid samples. In normal operation, components of interest flow through the Tornado's element to the analyzer. Contaminants are shed by the element and removed through the Bypass port. The G.U.T.S.™ (Genie® Ultimate Thermoplastic Seal) gasket is an excellent alternative to expensive elastomers. It withstands radical temperature cycles without leaks due to its ability to maintain a bubble-tight seal even when thermocycled repeatedly from 0-300 °F. The multi-layer filter media consists of the support screen and flow screen. This results in more efficiency and easier installation and handling. The elements are self-cleaned by the flow of sample across them.



Technical Specifications

Maximum pressure rating	1,500 psig
Maximum recommended supply pressure	Lowest possible pressure consistent with application* *Must not exceed "Pressure rating" listed above
Maximum temperature	300 °F (173 °C)
Minimum Bypass flow rate	1.5 gal/min
Port sizes	Inlet, Outlet, & Bypass 1/2" female NPT
Internal volume	70 cc
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Kynar®

Product Brief

Applications

- Continuous liquid sampling in any process industry including natural gas, petrochemical, and oil refining
- Analyzer protection against particulate
- Liquid sample pre-conditioning

Benefits

- Helps preserve sample integrity
- Analyzer protection
- Quick and easy to install and maintain
- Quick and easy element inspection
- Economical

Features

- Self-cleaning tornado action
- Single element, multi-layer stainless steel filter media
- All connection ports on the housing
- Sample ports located at 90° angles
- G.U.T.S.™ seal
- Back mounting



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Model Numbering & Additional Part Numbers

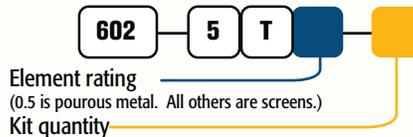
Your model number is determined by your specific needs. Choose options below.

Element rating	0.5 = 0.5 micron	2 = 2 micron	10 = 10 micron	25 = 25 micron	50 = 50 micron
Kit quantity	Blank = Kit of 5	1 = Kit of 1			
Mounting bracket accessory	Part # 602-509-SS (sold separately)				

How to build the model number:

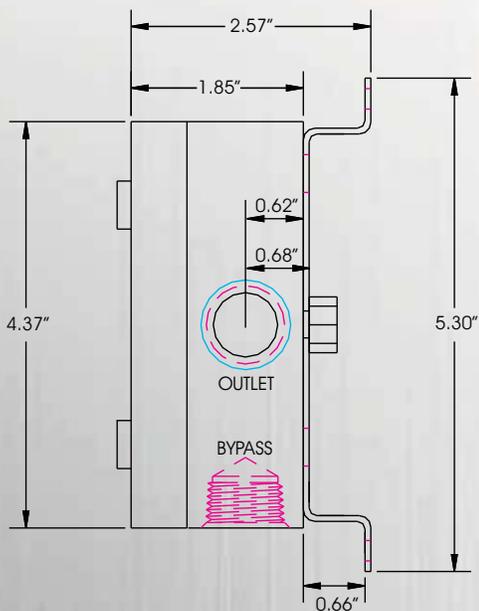


How to build the replacement filter element assembly and seal kit part number:

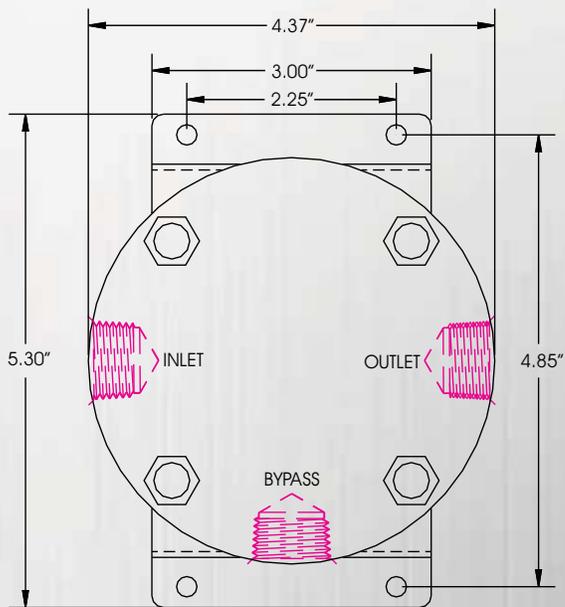


Dimensions

Side View



Front View



Local Distributor

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KOZY™ Insulators

Minimizes ambient temperature effects on your sample system!

Ambient temperature changes can create numerous problems for your sample system. Daytime and nighttime temperature cycling can cause erratic gas analysis due to adsorption/desorption effects. Low ambient temperatures can cool a sample below its dew point, causing condensation. Condensed liquid can result in unstable pressure regulation or regulator “freeze up”, inaccurate sample analysis, and analyzer damage. Insulating the pipeline, associated piping/valving, and other components of the sample system will help to minimize the effects of daytime/nighttime temperature cycling on the sample system and prevent condensation of the gas sample by helping to maintain the sample at a consistent temperature.

Kozy™ Insulators are designed to insulate the area around the sample tap as well as valves, sample probes, pressure regulators and other types of sampling equipment located directly at the sample point. A special high temperature liner is offered for use when a Kozy™ will be in direct contact with sampling equipment that may exceed the normal 250°F (121.1°C) temperature rating. It is important to note that Kozy™ Insulators work best when the minimum ambient temperature does not reach below 45°F (7.2°C) for extended periods of time. A+ Corporation offers alternative heating and insulating options for colder climates.



Technical Specifications

Material construction	Standard Inner & Outer Shell: 100% woven polyester with acrylic coating Optional High Temperature Inner Shell: Vermiculite-coated fiberglass fabric Thread: 100% polyester #16/92 (4 ply) Straps: 1" nylon webbing with stainless steel d-rings
Maximum temperature	Standard Inner & Outer Shell: 250°F (148.9°C) Optional High Temperature Inner Shell: Inside contact temperature of 400°F (204.4°C)
Minimum temperature	Materials of construction can withstand -58°F (-50°C) temperatures; however, the insulating capabilities will be greatly diminished at these extreme temperatures. Alternative insulating options are recommended when the minimum ambient temperature is below 45°F for extended periods of time.
Calculated R value	1.7R @ 1/2"
Environmentally friendly	Dust, Fiber, and CFC free Ozone depletion potential of zero

Product Brief

Applications

- Insulating area of pipe around sample extraction point
- Insulating valves
- Insulating Genie® Probes and Probe Regulators
- Insulating Genie® Regulators

Benefits

- Minimize adsorption/desorption effects
- Prevent condensation
- Preserve sample integrity
- More economical option than a rigid GRP or Stainless Steel insulated enclosure

Features

- Adjustable pipe blanket strap to accommodate pipe diameters up to 36"
- Velcro ends on pipe blanket, probe and regulator jackets, and extension pieces for easy assembly
- Velcro/D-ring closure on valve extension ensures a snug fit
- Optional high temperature liner



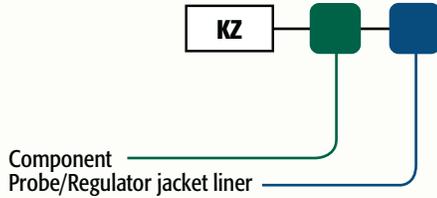
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Model Numbering & Additional Part Numbers

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

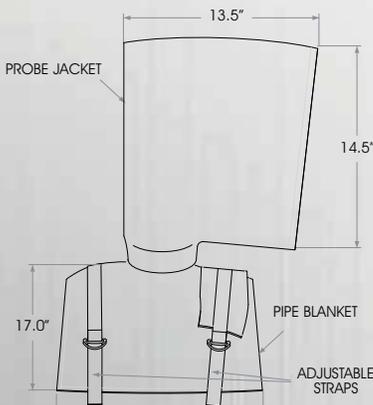
Component	1 = Probe/Regulator Jacket	2 = Pipe Blanket	3 = 6" Transition piece
	4 = 12" Transition piece	5 = Valve Cover Extension Assembly (Adjustable)	
Probe/Regulator jacket liner	Blank = Standard inner shell	L = High temperature liner	

How to build the model number:

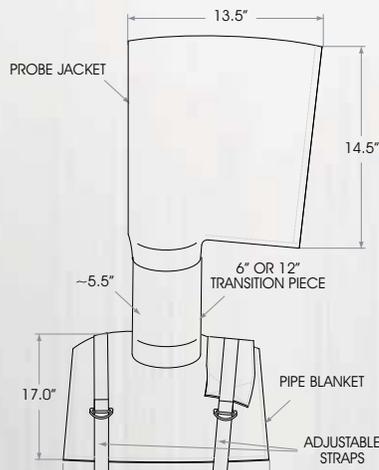


Dimensions

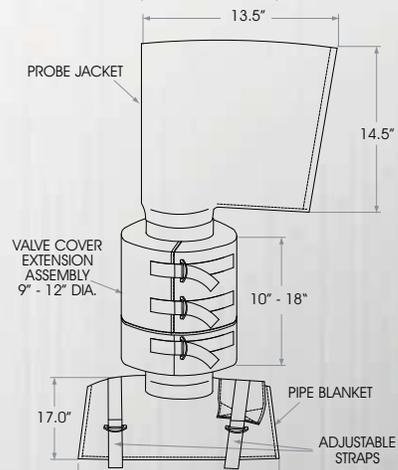
Standard Assembly (GPR, GP2, GR, GHR, JTR-H)



Transition Piece Assembly (750, 755, 760, GR, GHR, JTR-H) (701 & 702 -use 12" transition piece)



Valve Cover Assembly (750, 755, 760-through flanged valve or uibody flanged model) (702-with flanged valve)



Local Distributor

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GENIE® GV

Vaporizer

The Model GV vaporizer has five times more heat transfer capacity than vaporizing regulators!

Typical vaporizing pressure regulators do not provide the conditions required for proper liquid sample vaporization when a high volume or flow of vaporized sample is required. This is due to their lack of flash vaporization capability and insufficient heat exchange capacity. The Model GV Genie® Vaporizer has five times more heat transfer capacity than current vaporizing regulators and is designed for instantaneous flash vaporization of liquid sample streams that require more heat transfer capacity than conventional vaporizing regulators can supply. For example, the GV can provide up to 23 liters per minute of vaporized propane at 110 VAC and much greater than that at 220 VAC.

The design of the vaporizer allows liquid sample to be maintained below its bubble point pressure and temperature until it enters the flash chamber where it is instantaneously vaporized. Heat for vaporization is transferred from an electrical cartridge heater to a low volume flash chamber having a very large heat transfer surface area. The flash chamber is designed to maintain a homogenous vaporized sample. Heat is distributed evenly throughout the flash chamber, resulting in longer heater life and efficient vaporization without partial fractionation of the sample components. The net result is a uniform, homogenous vaporized sample that is representative of the liquid sample composition.



Technical Specifications

Maximum pressure rating	3,500 psig (241.3 Bar)
Proportional temperature control range	95-200 °F (35-94 °C) The vaporizer temperature is factory set at 200°F (94°C). The USB cable and software required to adjust the temperature to a lower temperature setting can be purchased.
Over temperature shutdown	Opens at 230°F (110°C)
Internal volume	40cc
Port sizes	1/4" female NPT
Conduit connection	3/4" female NPT
Electrical enclosure classification	Class 1 Div 1 & 2 Groups B, C and D
Power requirements	80-265 VAC, 50-400 W
Power output	375 W @ 110 VAC 1,500 W @ 220 VAC
Wetted materials	Machined parts: 316 stainless steel / NACE compliant All other metal parts: stainless steel / NACE compliant Sealing material: Fluoroelastomer (other materials available upon request)

Product Brief

Applications

- Vaporizing liquid sample streams in any process industry when a high volume or flow of vaporized sample is required
 - Petrochemical plants
 - Refineries
 - Natural Gas- LNG & NGLs

Benefits

- Delivers a homogenous vaporized flow rate representative of the liquid sample
- Excellent temperature control
- No premature flashing or partial fractionation
- Installation flexibility
- Fail-safe with max temperature of 230°F

Features

- High capacity electrical cartridge heater- (375 Watts @110VAC & 1500 Watts @ 220 VAC)
- Proportional temperature control with independent over temperature shutdown
- Discrete hot and cold zones
- Continuous liquid bypass
- Versatile conduit and bypass connections
- Integral heater and controller



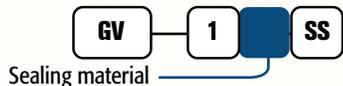
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Model Numbering & Additional Part Numbers

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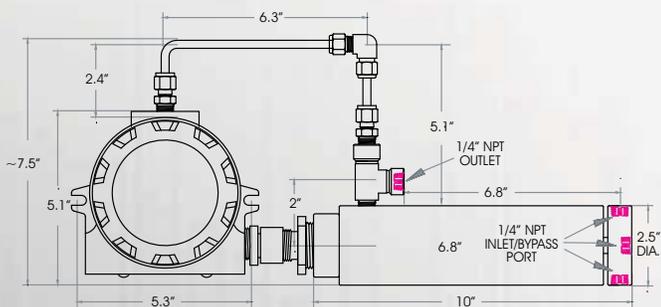
Sealing material	0 = Fluoroelastomer	1 = Perfluoroelastomer	(other materials available upon request)
Set point temperature software & cables	Part # GV-Cables (required to adjust temperature set point)		

How to build the model number:

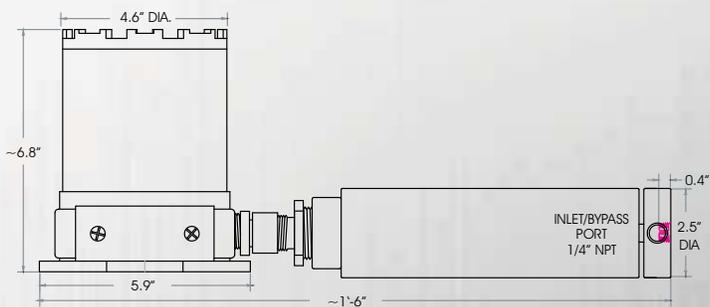


Dimensions

Front View



Bottom View



Local Distributor

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*Analyzer Sampling Solutions
Moisture & Corrosion Control
Knowledgeware*