

High Purity Diaphragm Valves, the Leading Standard

To comply with today's strict standards Fluid Line Technology has developed a diaphragm valve that meets the most challenging specifications. Our goal has been to set new ground to manufacture a true clean product. An extensive, multi-year engineering program has developed a state of the art product line to meet our customer's requirements.

The Product Range

Fluid Line Technology makes available to our clients a diverse group of arrangements, starting with the most basic of styles: **Two Way Valves**, Two way valve configurations such as **GMP and Sterile Access Assemblies**.

Fluid Line Technology provides a full range of both: **Zero Static " T " configurations and Zero Static Points of Use**.

Multiple **Divert Valve Styles** are available in a variety of port sizes and number of valve arrangements. This group is available in both horizontal and vertical placement configurations.

Fluid Line Technology provides the complete product range with manual and pneumatic actuated bonnets. All the valve bodies are produced mainly from 316L SS, and also from most of the exotic materials required for the more corrosive environments.

The complete product range is offered in "Clamp Style" end connection as well as the "Orbital Weld" end connection. As custom featured end connections, our customers have the option to special order "Compression Ends" as well as "VCO Ends" (Face seal end connections).

Basic Operating Specifications

	1/4"	3/8"	1/2"	3/4"	1.0"	1.5"	2.0"	2.5"	3.0"	4.0"
Working Pressure Max (Bar)	10	10	10	10	10	10	10	10	10	10
Optimum Drain Angle (Degrees)	41	30	25	18	30	25	23	20	25	21
Flow coefficient (CV @ 20% open)	0.56	0.78	1	1.89	2.2	9.28	16.56			
Flow coefficient (CV @ 50% open)			1.92	4.77	8.84	22.25	35.68			
Flow coefficient (CV @ 100% open)			3	6.82	17.29	43.59	66.2			

Custom Fabrications

For almost 30 years, Fluid Line Technology has manufactured custom fabrications that meet the ASME-BPE Spec's. All of the special manufacturing procedures and expertise has been extended for the use in all the customizable arrangements that are required by our clients.

Documentation and Traceability

Fluid Line Technology has been providing full material documentation, traceable to the source of manufacturing, long before this had become a standard practice. Also available are full documentation certificates for Surface Finish, Electropolish, Passivation, Weld Maps & Logs.

Product Details

Bonnets

All bonnets provided for the use in the Ultraclean industry (Bio-Pharma-Food-Dairy-Beverage & Cosmetic) are manufactured from Stainless Steel components. This approach provides the user with a near lifelong use without the need of additional costly spare parts inventory. The additional benefit to the user is the assurance of reliable service without shut downs or unscheduled maintenance cycles due to the failure of a "plastic bonnet".

There are two options available: Standard Bonnets with a size range of 1/4" - 6.0", and the Sealed Washdown Bonnet that allows for system wash down without wetting any of the internal components of the bonnet, also available in sizes 1/4" - 6.0".

		Bio Tech Foot Print	Bio Tech Foot Print Sealed	Standard Foot Print	Standard Foot Print Sealed
Din 8	1/4"	X	X		
Din 10	3/8"	X	X		
Din 15	1/2"	X	X		
Din 15	1/2"			X	X
Din 20	3/4"			X	X
Din 25	1.0"			X	X
Din 40	1.5"			X	X
Din 50	2.0"			X	X
Din 65	2.5"			X	X
Din 80	3.0"			X	X
Din 100	4.0"			X	X



Diaphragms

The diaphragms used in the **AcquaSeal** valve are designed for extended use while maintaining an excellent seal. The patented bonnet technology ensures that a complete seal is made without overstressing the diaphragm material. Under proper operating conditions, our Kaltraz® diaphragms can last upwards of 150 SIP cycles (in accordance with BPE 2016 section J-1.2.1) before a replacement is needed.

The diaphragms come in a variety of materials to withstand even the harshest chemical environments and operating conditions. All seal materials are USP Class VI compliant with additional materials available upon request.

Diaphragm Material	Temperature °F (°C)	Chemical Rating			Temperature Rating			Steam Cycle Performance		
		Fair	Good	Excellent	Fair	Good	Excellent	Fair	Good	Excellent
EPDM	-22 – 203 (-30 – 95)	●				●		●		
VITON®	-2 – 392 (-18 – 200)			●		●		●		
Clear Silicone	-80 – 400 (-62 – 204)	●					●		●	
KALTRAZ®	54 – 347 (12 – 175)			●			●			●
PTFE-TFM/EPDM Bonded	-40 – 294 (-40 – 145)			●		●		●		

Viton® is a registered trademark of DuPont Performance Elastomers.

Kaltraz® is a registered trademark of Advant O Seal.



Pneumatic Actuator

After extensive engineering and attention to detail, the full range of Air Actuators allow this mechanical assembly to be used in the most challenging applications. The bonnet component of the air actuator is manufactured of stainless steel construction as well as the compressor and stem. This approach facilitates heat dissipation through the bonnet "distant piece" to allow the reduction of heat transfer to the PAS actuator body or housing.

As an ongoing commitment to enhance the life of the diaphragm, when this complete assembly is in service, the air actuators internal mechanism is fitted with a number of devices to control the stroke of the unit in order to maintain, within a controlled range, the compression that the diaphragm is exposed to.

	Bio Tech Foot Print		Standard Foot Print
Din 8	1/4"	X	
Din 10	3/8"	X	
Din 15	1/2"	X	
Din 15	1/2"		X
Din 20	3/4"		X
Din 25	1.0"		X
Din 40	1.5"		X
Din 50	2.0"		X
Din 65	2.5"		X
Din 80	3.0"		X
Din 100	4.0"		X



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Valve Body

Fluid Line Technology, by means of our **AcquaSeal** diaphragm valves, has addressed the need of high level quality required in today's manufacturing plants.

By providing low sulfur Stainless Steel type 316L/1.4435 material, Fluid Line Technology not only complies with ASME-BPE welding criteria, but also provides a more homogenous material, resulting in an internal body surface with less imperfections.

The orbital welding process of 316L is greatly affected by the sulfur content of the mating fitting or component, therefore a big disparity in the sulfur content of such piece can significantly damage the integrity of the weld joint. By controlling the valve body's sulfur content to a chemistry of similar range than that required for ASME-BPE tube and fittings, the welding problems due to material chemistry differences are greatly reduced.

The full range of Orbital Weld end valve bodies are intentionally provided with a proportional tube end length required to meet squareness and ovality criteria under ASME-BPE. Therefore the valve assembly does not require to be disassembled to prep for welding.

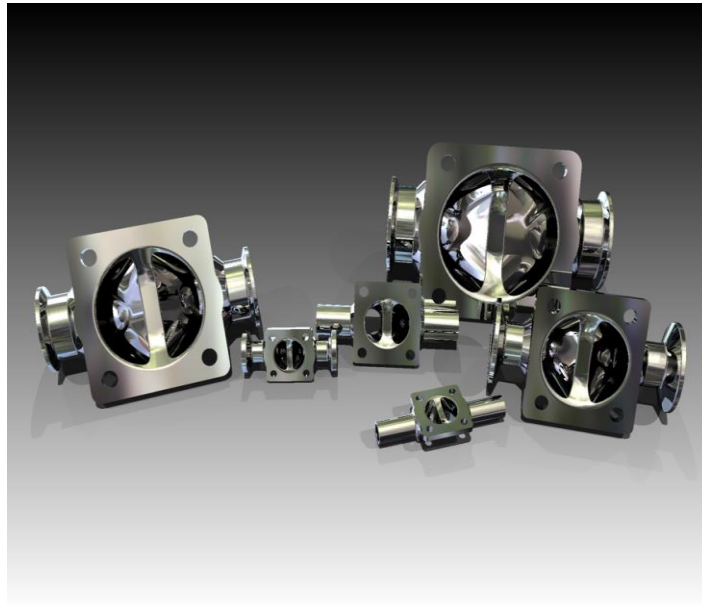
The complete line of valve configurations are provided not only in 316L Stainless Steel, but also are available in a number of exotic material types to meet the more corrosive environments as may be required in particular applications.

Fluid Line Technology produces the **AcquaSeal** product line to meet the following ASME-BPE specifications:

Surface Finish

Standard Marking Requirements

Certificates of Compliance to specifications



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Materials of Construction

One of the main concerns in the development of the **AcquaSeal** diaphragm valve was to build a robust manual actuator that would require minimum customer maintenance of the bonnet assembly.

Bonnet

The **AcquaSeal** bonnet component is manufactured of Stainless Steel billet or from a casting blank that is fully machined to a very precise level of tolerance.

Compressor

The **AcquaSeal** compressor component is machined to very tight tolerances from Stainless Steel billet or casting materials.

Stem

The **AcquaSeal** full range of stem sizes are manufactured of solid Stainless Steel billet material.

Hardware Components

All of the fasteners and related components used in the assembly of the **AcquaSeal** diaphragm valve are of Stainless Steel construction.

Handle

A high grade thermoplastic material is used for the construction of the handle allowing for a wide range of chemical compatibility and the ability of use in high temperature environments.

Valve Body

The material of construction of the **AcquaSeal** diaphragm valve body complies with the material requirements of ASME-BPE. These bodies are machined from Stainless Steel solid billet materials and are also available in high grade 316L casting for the use in other industry requirements.

Conclusion

By carefully selecting the best materials available, each component of the **AcquaSeal** diaphragm valve has been engineered for compatibility. The result of this effort is a very precise mechanical assembly that offers years of service with minimal, if any, downtime.

