

# Alfa Laval Unique Sampling Valve - Double Seat Valve

## Sampling valves

### Introduction

The Alfa Laval Unique Sampling Valve (Double Seat) is a double-seat sampling valve that enables representative sampling in hygienic processes under sterile conditions. It provides the high accuracy, exceptional repeatability and excellent reliability required for high-quality, cost-effective sampling. Either the ergonomically designed handle or the actuator ensures exceptional control during the sampling operation. It is possible to sterilize the entire seat between sampling, thereby eliminating the risk of cross-contamination.

### Application

This double-seat sampling valve is specially designed for use in hygienic applications across the dairy, food, beverage, brewery, pharmaceutical, personal care and many other industries.

### Benefits

- Safe, hygienic and contamination-free sampling
- Highly reliable operation
- Easy to operate and maintain
- Double seat with enhanced cleanability
- Modular design and easy to upgrade
- Sterilization possible

### Standard design

The Alfa Laval Unique Sampling Valve (Double Seat) consists of a valve body made of a single piece of stainless steel, either an actuator for automatic operation or a handle for manual operation, and a rubber membrane seal placed on the stem of the actuator, which acts as a stretchable plug.

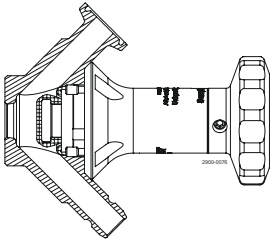
The valve is available in three sizes: Type 4, Type 10 and Type 25. A collared pipe, tank or Tri-Clamp connection is available. The valve handles and actuators are interchangeable (see page 2).



Working principle

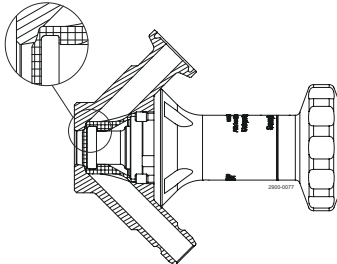
The Alfa Laval Unique Sampling Valve (Double Seat), with its patented technology, is designed for truly sterile sampling and ensures higher cleanability and sterilization of the valve seat and pipe connections. The double-seat sampling valve has three positions: open, shut and sterilization. It can be operated manually or automatically using a pneumatic actuator.

- **Open position: To start the sampling process**



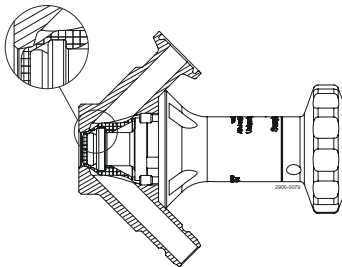
Manual valve: rotate the handle in a counterclockwise direction to open the valve. Pneumatic valve: open the valve by activating the actuator. This retracts the valve stem and membrane seal, which enables the product to flow freely through the open valve.

- **Shut position: To stop the sampling process**



Manual valve: rotate the handle in a clockwise direction to close the valve. Pneumatic valve: shut the air supply to stop the flow of product from the valve. In closed position, the valve body is now ready for sterilization. If steam is used for Sterilization-in-Place, the use of an optional pressure relief valve on the outlet is recommended to ensure proper steam temperature in the valve.

- **Sterilization position**



Manual valve: rotate the handle clockwise to the steam position. Pneumatic valve: apply air to the steam connection. This extends the inner spindle of the valve head into the inner seat and stops product flow in the valve port. At the same time, the outer spindle of the valve retracts and lifts the membrane seal away from its normal seat. Now it is possible to access the hard-to-reach areas on the seat surface, ensuring thorough sterilization and making the Unique Sampling Valve (Double Seat) a solid and reliable choice to achieve 100% representative sampling.

If steam is used for Sterilization-in-Place, the use of an optional pressure relief valve on the outlet is recommended to ensure proper steam temperature in the valve.

TECHNICAL DATA

Temperature	
Temperature range:	33.8°F - 266°F
Max. sterilisation temperature, dry steam (29 PSI):	249.8°F

Steam must be dry, since condensate will damage the membrane seal. It is recommended that the membrane seal is changed every 500 samples/sterilisations or in accordance with working conditions or experience.

<b>Pressure</b>	
Max. working pressure:	600 kPa (87 PSI)
Min. working pressure:	0 kPa (0 PSI)

<b>ATEX</b>	
Classification	II 2 G D <sup>1</sup>

<sup>1</sup> This equipment is outside the scope of the directive 2014/34/EU and must not carry a separate CE marking according to the directive as the equipment has no own ignition source.

PHYSICAL DATA

<b>Materials</b>	
Valve body:	1.4404 (316L) with 3.1 cert
Actuator:	1.4301 (304), 1.4404 (316L)
Membrane seal:	EPDM, silicone

- The valve is available in three sizes:
- **Size 4** for low-viscosity products such as water, beer, wine and liquid milk. Viscosity: (cP) 0-100. Max. particle size: 2,5 mm (0.098 in).
  - **Size 10** for high-viscosity products such as fruit yoghurt, syrup and ice cream. Viscosity: (cP) 0-1000. Max. particle size: 7 mm (0.276 in).
  - **Size 25** is for products with very high viscosity such as jam. Max. particle size: 20 mm (0.787 in).

- Valve bodies:
- Tank (welding)
  - Collared tube (welding)
  - Clamp

- Valve heads:
- Handle
  - Pneumatic actuator (air supply 5-8 bar)

Accessories:  
See Unique Sampling Valve - Accessories ordering leaflet.

Dimensions (inch)

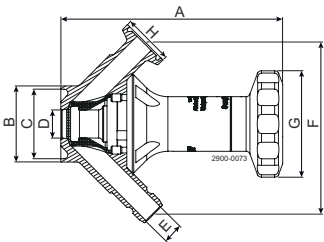


Figure 1. Handle with valve body: Collared pipe welding

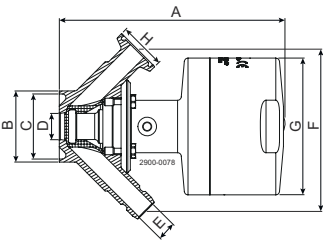


Figure 2. Pneumatic with valve body: Collared pipe welding

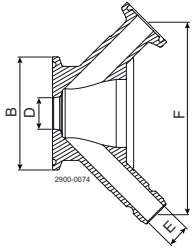


Figure 3. Valve body: Clamp

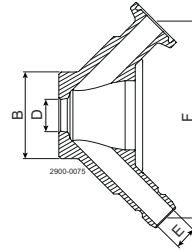


Figure 4. Valve body: Tank welding

Valve size		Size 4														
Valve Head		Handle Double Seat							Pneumatic Double seat							
Valve body	Tank	Tri-clamp	Collarded pipe					Tank	Tri-clamp	Collarded pipe						
Nominal size			ISO 25	ISO 38	ISO 51	DIN 25	DIN 40	DIN 50			ISO 25	ISO 38	ISO 51	DIN 25	DIN 40	DIN 50
A	3.46	3.45	3.45	3.45	3.45	3.45	3.45	3.45	5.57	5.57	5.57	5.57	5.57	5.57	5.57	5.57
B	1.14	1.99	0.98	1.50	2.01	1.14	1.61	2.09	1.14	1.99	0.98	1.50	2.01	1.14	1.61	2.09
C	-	-	0.86	1.37	1.88	1.02	1.50	1.97	-	-	0.86	1.37	1.88	1.02	1.50	1.97
D	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
E	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
F	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10	3.10
G	1.81	1.81	1.81	1.81	1.81	1.81	1.81	1.81	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13
H	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Weight (lb)	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.54	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75

Valve size		Size 10														
Valve Head		Handle Double Seat							Pneumatic Double Seat							
Valve body	Tank	Tri-clamp	Collarded pipe					Tank	Tri-clamp	Collarded pipe						
Nominal size			ISO 25	ISO 38	ISO 51	DIN 25	DIN 40	DIN 50			ISO 25	ISO 38	ISO 51	DIN 25	DIN 40	DIN 50
A	4.39	4.37	4.43	4.35	4.35	4.35	4.35	4.35	7.08	7.06	7.09	7.05	7.05	7.05	7.05	7.05
B	1.50	1.99	0.98	1.50	2.01	1.14	1.61	2.09	1.50	1.99	0.98	1.50	2.01	1.14	1.61	2.09
C	-	-	0.86	1.37	1.88	1.02	1.50	1.97	-	-	0.86	1.37	1.88	1.02	1.50	1.97
D	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
E	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39	0.39
F	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38	3.38
G	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.09	2.88	2.88	2.88	2.88	2.88	2.88	2.88	2.88
H	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Weight (lb)	2.43	2.43	2.43	2.43	2.43	2.43	2.43	2.43	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28

Valve size			Size 25			
Valve Head			Pneumatic Double Seat			
Valve body	Tank	Tri-clamp	Collarded pipe			
Nominal size			ISO 51	ISO 63.5	DIN 50	DIN 65
A	14.33	14.33	14.48	14.45	14.48	14.41
B	2.76	3.05	2.01	2.50	2.09	2.76
C	-	-	1.88	2.37	1.97	2.60
D	0.98	0.98	0.98	0.98	0.98	0.98
E	0.98	0.98	0.98	0.98	0.98	0.98
F	5.63	5.63	5.63	5.63	5.63	5.63
G	5.00	5.00	5.00	5.00	5.00	5.00
H	1.99	1.99	1.99	1.99	1.99	1.99
Weight (lb)	29.76	29.76	29.76	29.76	29.76	29.76

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200003966-3-EN-US

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