Alfa Laval Unique Sampling Valve - Double Seat

The next level in sampling

Concept
The Unique Sampling valve is specially designed for the food, pharmaceutical and biotechnological industries. The valve is equipped with a double seat which makes it possible to sterilise the entire seat between sampling, thereby eliminating the risk of cross contamination.

Working principle
The patented double seat ensures representative sampling as the seat area is accessible for sterilisation. The inner spindle pushes the membrane seal down onto the inner seat, closing off the product. Once the inner spindle is in place, the outer spindle is retracted, moving the membrane seal away from the outer seat making it possible to remove any remaining product and sterilise the outer seat.

Standard design
The Unique Sampling valve consists of three parts, a valve body, an actuator and a membrane seal. The rubber membrane seal is placed on the stem of the actuator and works as a stretchable plug. The valve bodies and actuators are interchangeable.

TECHNICAL DATA

Temperature
Temperature range: . . . . . 1°C - 130°C
Max. sterilisation temperature,
dry steam (2 bar): . . . . . 121°C

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.

Pressure
Max. working pressure: . . . . . 600 kPa (6 bar)
Min. working pressure: . . . . . 0 kPa (0 bar)

Authorized to carry the 3A symbol

PHYSICAL DATA

Materials
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) 0100. Max. particle size: 2,5mm (0.098 in)
Size 10 for high-viscosity products such as fruit yoghurt, syrup and ice cream. Viscosity: (cP) 01000. Max. particle size: 7mm (0.276 in)
Size 25 is for products with very high viscosity such as jam. Max. particle size: 20mm (0.787 in)

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

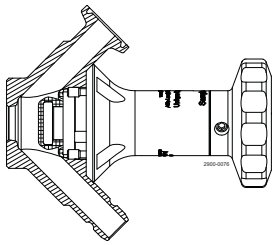
Optional:
- Varivent

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

Accessories:
- See ordering leaflet

Operating principles
A new level of accuracy with patented new technology.
The design of single-seat technology poses challenges for complete sterilisation. In closed position, the membrane seal comes into contact with the valve seat. These points of contact are virtually impossible to clean due to tight surface compression and therefore may harbour product residue and microorganisms. For that extra level of security to ensure a more representative sample, Alfa Laval recommends double seat technology.
Unique double seat sampling valves designed for truly sterile sampling, the double seat sampling valve has three positions: open, closed and sterilisation.

Open position:

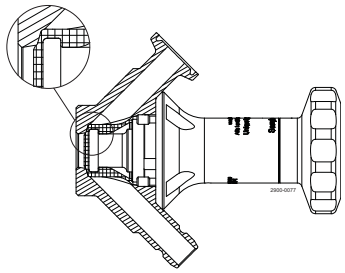


To begin the sampling process:
Manual valve: rotate the handle in a counter-clockwise direction to open the valve.

Pneumatic valve: supply air to the open connection.

This retracts the valve stem and membrane seal and enables the product to flow freely through the open valve.

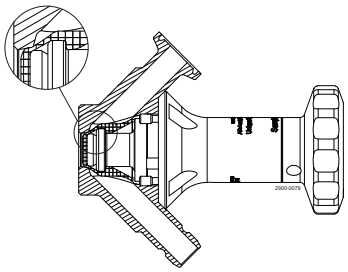
Closed position:



To stop the sampling process:
Manual valve: Rotate the handle in a clockwise direction.
Pneumatic valve: Shut off the supplied air to the open connection.

This is the default position. The pneumatic actuator is normally closed (NC).

Sterilisation position:

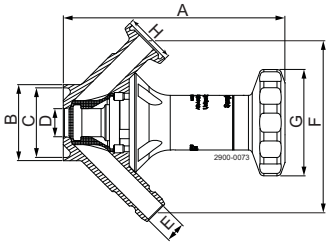


To set the valve in sterilisation position;
Manual valve: rotate the handle clockwise to the steam position.
Pneumatic valve: apply air to the steam connection.

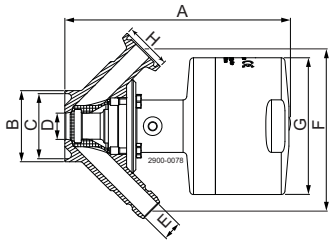
This extends the valve head´s inner spindle into the inner seat and stop product flow in the valve port. At the same time, the valve head´s outer spindle retracts and lifts the membrane seal away from its normal seat. Now it is possible to access the hard-to-reach areas on the seat surface, ensuring thorough sterilisation and making the Unique double seat sampling valve a solid and reliable choice to achieve 100% representative sampling.

Dimensions

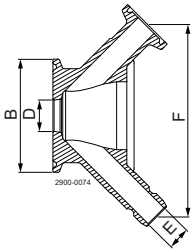
Handle with valve body: Collared pipe welding



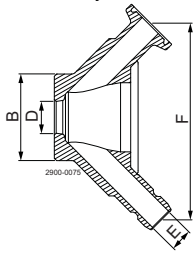
Pneumatic with valve body: Collared pipe welding



Valve body: Clamp



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	87.9	87.6	87.6	87.6	87.6	87.6	87.6	87.6	141.4	141.1	141.1	141.1	141.1	141.1	141.1	141.1
B	29	50.5	25	38	51	29	41	53	29	50.5	25	38	51	29	41	53
C	-	-	21.8	34.8	47.8	26	38	50	-	-	21.8	34.8	47.8	26	38	50
D	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
E	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
F	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7	78.7
G	46	46	46	46	46	46	46	46	54	54	54	54	54	54	54	54
H	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Weigth (kg)	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7

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	111.4	110.9	112.6	110.6	110.6	110.6	110.6	110.6	179.9	179.4	180.1	179.1	179.1	179.1	179.1	179.1
B	38	50.5	25	38	51	29	41	53	38	50.5	25	38	51	29	41	53
C	-	-	21.8	34.8	47.8	26	38	50	-	-	21.8	34.8	47.8	26	38	50
D	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
E	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
F	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8	85.8
G	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	73.1	73.1	73.1	73.1	73.1	73.1	73.1	73.1
H	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Weigth (kg)	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3

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	363.9	363.9	367.9	366.9	367.9	365.9
B	70	77.5	51	63.5	53	70
C	-	-	47.8	60.3	50	66
D	25	25	25	25	25	25
E	25	25	25	25	25	25
F	143	143	143	143	143	143
G	127	127	127	127	127	127
H	50.5	50.5	50.5	50.5	50.5	50.5
Weigth (kg)	13.5	13.5	13.5	13.5	13.5	13.5

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