



Alfa Laval Aseptic Mixproof

Double seat valves

Introduction

The Alfa Laval Aseptic Mixproof Valve is an advanced double block-and-bleed mixproof valve for use in hygienic and aseptic processes that demand a contaminant-free environment. The valve enables the simultaneous flow of two different products or fluids through the same valve without the risk of cross-contamination. Its one-piece diaphragm ensures hermetic sealing and prevents intrusion from the atmosphere, even during unwanted pressure spikes.

With a flexible, modular design, the Aseptic Mixproof Valve is easy to configure in Alfa Laval Anytime to meet virtually any process requirement. Choose from a broad range of components, including seat lift, temperature sensor or transmitter. Plus its design makes maintenance quick and easy, thereby reducing the total cost of ownership to the lowest level possible compared to other aseptic valves.

Application

This aseptic double-seat mixproof valve is designed for use in aseptic process applications across the dairy, food, beverage, and many other industries.

Benefits

- Exceptional hygiene for maximum product safety and minimal product loss
- Outstanding flexibility and modularity to meet virtually any requirement
- More uptime due to exceptional cleanability
- Up to 45% lower total cost of ownership compared to other aseptic valves
- Ease of maintenance and parts replacement

Standard design

The Alfa Laval Aseptic Mixproof Valve is a normally closed (NC) valve controlled from a remote location by means of compressed air. An integrated valve plug/diaphragm ensures aseptic operation. There is a total of four valves: two main product valves, which are normally closed (NC), and two small leakage detection valves, which are either normally open/normally open (NO/NO) or normally closed/normally open (NC/NO). The valve can also be fitted with the Alfa Laval ThinkTop V50 and V70 for sensing and control of the valve.



Working principle

The Alfa Laval Aseptic Mixproof Valve is comprised of a series of base components, including valve body, valve plug/diaphragm, actuator, and cleaning options and accessories that support a wide range of aseptic applications. Composed of a PTFE face and reinforced EPDM backing, the diaphragm creates a hermetic seal to ensure aseptic processing conditions. Leakage detection holes enable visual inspection without requiring valve disassembly and provide advanced notification of parts wear. Few straightforward moveable parts contribute to reliable operation and reduced maintenance costs.

When main actuation takes place, all four valves operate simultaneously. The two product valves open and the two leakage detection valves close to prevent product spillage. Please observe the maximum allowable working pressure for diaphragms on the product valves.

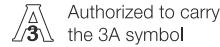
The product lines are separated by two individual plugs (two normally closed valves) and a sterile leakage chamber that acts

as a barrier to prevent product mixing and to provide immediate indication of any leakage from either of the two plug seals.

Two small leakage detection valves (NO/NO or NC/NO) control the flow of steam into and out of the leakage chamber; these must be kept clean and sterile when the main valves are closed. As an option, one of the two leakage detection valves can be supplied as a changeover valve to maintain the flow of steam, ensuring a continuous steam barrier in both leakage detection valves during the main actuation of the product valves.

A changeover valve may be used to control the steam flow in order to bypass the leakage chamber. On the steam-forward line, you can add an additional aseptic SSV valve to build up a condensate reservoir in order to flush the leakage chamber after main activation.

Certificates



TECHNICAL DATA

Temperature	
Temperature range:	14 °F to +284 °F (EPDM)
"Max. sterilization temperature (<1 min):	302 °F/380 kPa (55 PSI)
Pressure	
Pressure range:	0-116 PSI (0-8 bar)
Air pressure:	72.5-101.5 PSI (5-7 bar)
Pressure range, support air:	0-43 PSI (0-3 bar)



Note! Vacuum is not recommended in aseptic applications.

PHYSICAL DATA

Materials	
Product wetted steel parts:	1.4404 (316L)
Other steel parts:	1.4301 (304)
Surface finish	
External surface finish:	Semi-bright (blasted)
Internal surface finish:	Bright (polished), Ra <32 µin
Seals	
Product wetted seals:	EPDM
Optional product wetted seals:	HNBR
Other seals:	NBR
Diaphragm:	PTFE (Product wetted side) / EPDM
Option	
Temperature sensor (PT100):	with or without transmitter
Steam valve	Hygienic or Aseptic
Sizes	
Main valve ISO:	2", 2.5", 3"

Shut fully closed. Max. static pressure without leakage

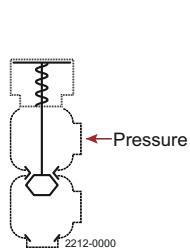


Figure 1. 1

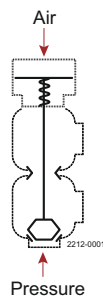


Figure 2. 2

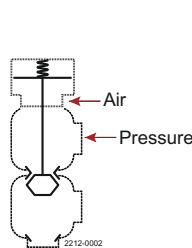


Figure 3. 3

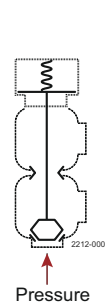


Figure 4. 4

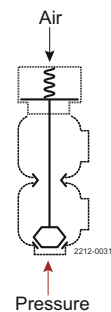
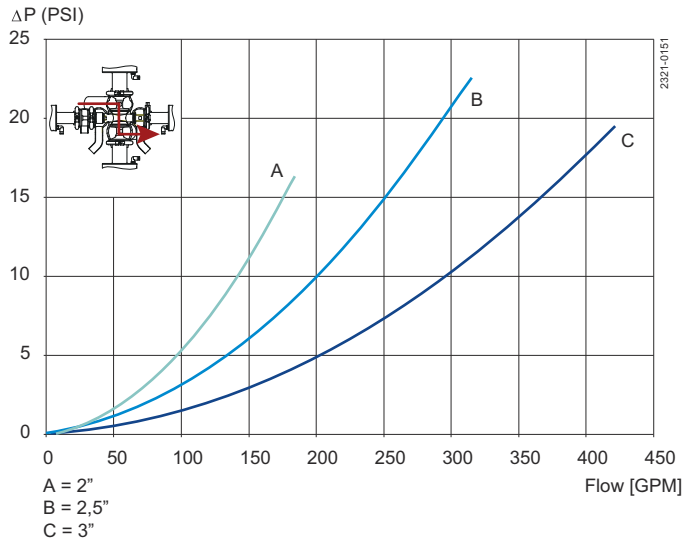


Figure 5. 5

Actuator / Valve body combination and direction of pressure	Air pressure (PSI)	Plug position	Valve size			Leakage detection valve
			Main valve			
			2"	2.5"	3"	
Figure 1. 1		NO				116.0 PSI
Figure 2. 2	87	NO				116.0 PSI
Figure 3. 3	87	NC				116.0 PSI
Figure 4. 4		NC	108.8 PSI	65.3 PSI	101.5 PSI	116.0 PSI
Figure 5. 5 ¹	43	NC	116.0 PSI	116.0 PSI	116.0 PSI	116.0 PSI

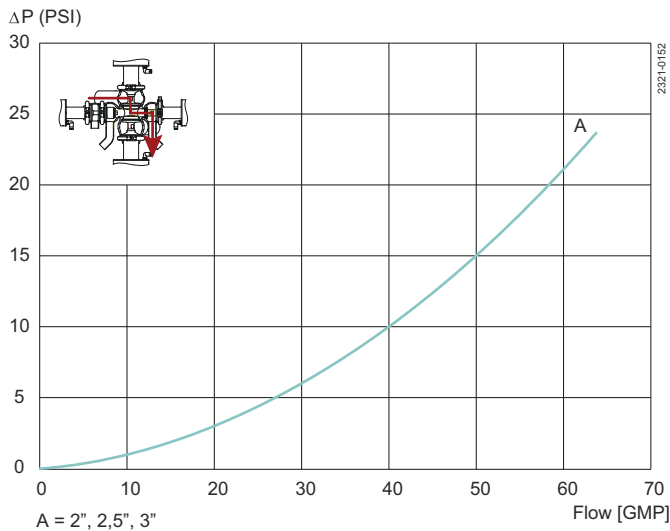
¹ support air

Pressure drop/capacity diagrams



Seat lift

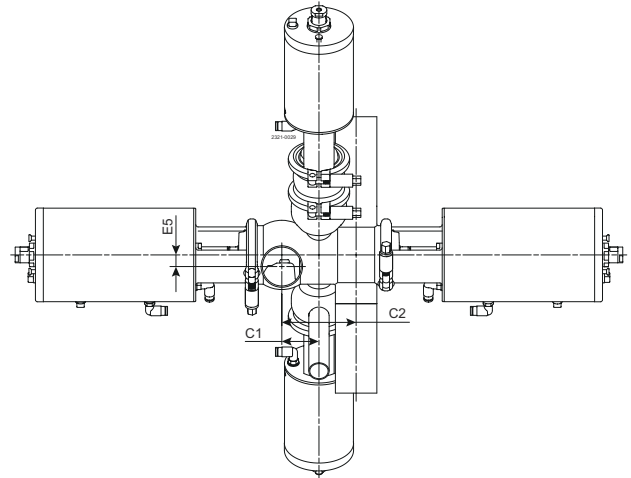
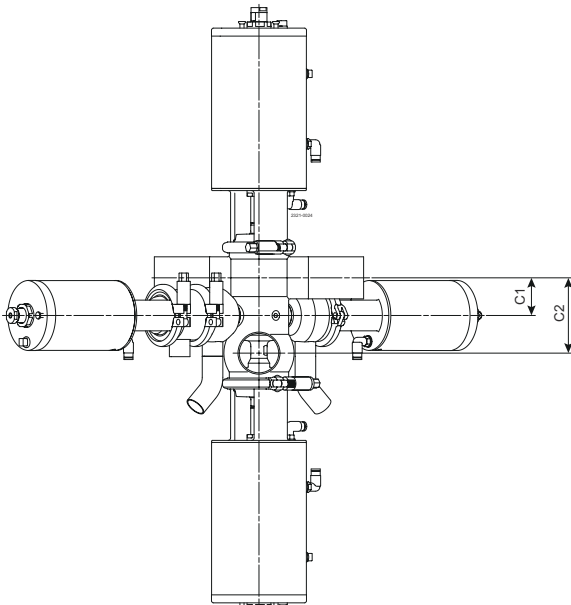
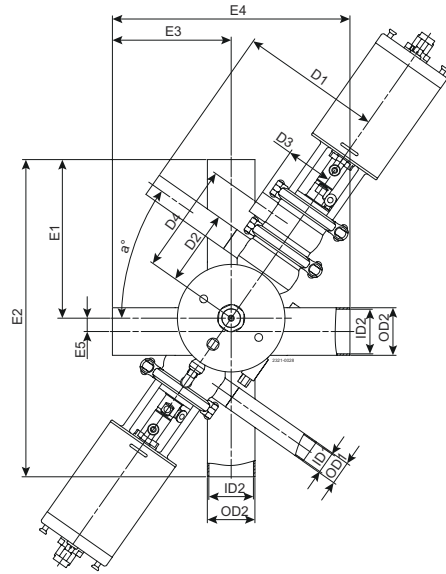
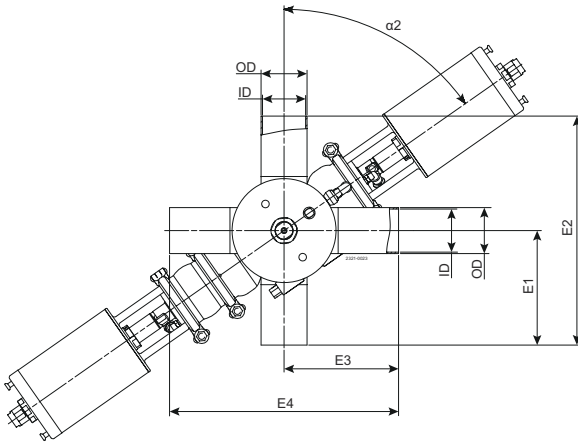
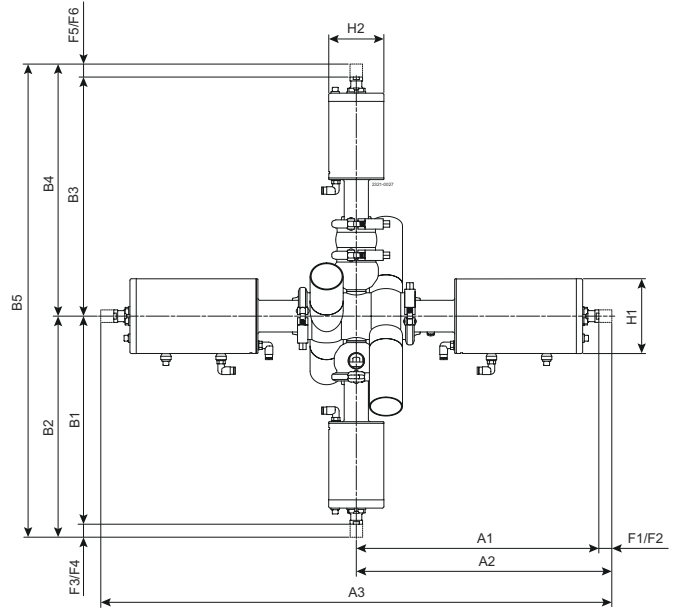
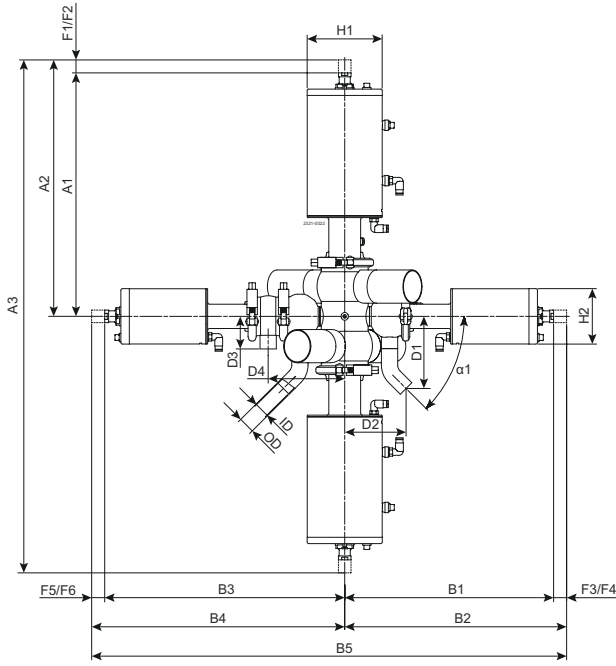
	Cv-Value
2"	3.6 GPM
2½"	4.2 GPM
3"	4.7 GPM



Dimensions (inch)



Note! Choose the version that is fully drainable in your installation setup.



Size	2 inch	2.5 inch	3 inch	2 inch	2.5 inch	3 inch
	Vertical mount			Horizontal mount		
A1	14.7	15.2	17.3	14.7	15.2	17.3
A2	15.3	15.8	18.0	15.3	15.8	18.0
A3	30.5	31.5	36.0	30.5	31.5	36.0
B1	13.2	13.5	13.8	13.2	13.5	13.8
B2	13.8	14.1	14.4	13.8	14.1	14.4
B3	15.0	15.3	15.6	15.0	15.3	15.6
B4	15.4	15.7	16.0	15.4	15.7	16.0
B5	29.2	29.8	30.4	29.2	29.8	30.4
C1	1.80	2.05	2.29	1.80	2.05	2.29
C2	3.60	4.09	4.59	3.60	4.09	4.59
D1	4.36	4.36	4.36	6.79	6.79	6.79
D2	3.71	4.02	4.32	2.71	3.02	3.32
D3	1.97	1.97	1.97	1.97	1.97	1.97
D4	4.63	4.94	5.24	4.63	4.94	5.24
E1	5.00	5.24	5.47	6.69	6.50	6.90
E2	10.00	10.47	10.94	13.39	17.01	17.80
E3	5.00	5.24	5.47	5.00	5.24	5.47
E4	10.00	10.47	10.94	10.00	10.47	10.94
E5	-	-	-	0.6	0.7	0.8
α 1	45°	45°	45°	-	-	-
α 2	55°	55°	55°	55°	55°	55°
F1	0.56	0.56	0.66	0.56	0.56	0.66
F2	0.08	0.08	0.08	0.08	0.08	0.08
F3	0.38	0.38	0.38	0.38	0.38	0.38
F4	0.59	0.59	0.59	0.59	0.59	0.59
F5	0.31	0.31	0.31	0.31	0.31	0.31
F6	0.47	0.47	0.47	0.47	0.47	0.47
H1	4.53	4.53	6.20	4.53	4.53	6.20
H2	3.35	3.35	3.35	3.35	3.35	3.35
t1	0.05	0.05	0.05	0.05	0.05	0.05
t2	0.06	0.06	0.06	0.06	0.06	0.06
ID1	0.89	0.89	0.89	0.89	0.89	0.89
ID2	1.88	2.37	2.87	1.88	2.37	2.87
OD1	0.98	0.98	0.98	0.98	0.98	0.98
OD2	2.01	2.50	3.00	2.01	2.50	3.00
Weight (lb)	64	66	99	64	66	99

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