Alfa Laval Unique Mixproof CIP

Double Seat valves

Introduction

The Alfa Laval Unique Mixproof CIP valve is a double block-and-bleed valve that enables the simultaneous flow of two fluids through the same valve without the risk of cross-contamination. Purpose-built for routing cleaning media, this versatile, lightweight CIP valve safely directs CIP media. The Unique Mixproof CIP can distribute pressurized CIP media toward the area that requires cleaning or direct cleaning media through the top of a tank cleaning device into the tank. Based on the proven Unique Single Seat valves, it easily adapts to process requirements while meeting hygiene standards.

Applications

The Alfa Laval Unique Mixproof CIP provides continuous flow management and CIP safety towards hygienic processes where product safety is high on the agenda, such as in the dairy, food, beverage, and many other industries.

Benefits

- Get the product safety you need by eliminating the risk of cross-contamination
- Enhance the reliability and flexibility of your process and CIP setup when operating
- Minimize the risk of unplanned downtime and time and resources spent on routine maintenance
- Improve sustainability and limit environmental impact by reducing water and CIP media use
- Lower the total cost of ownership with a proven, cost-efficient mixproof valve for routing cleaning media

Standard design

A series of base components, including a valve body, seals, a maintenance-free actuator, and an optimized plug design to minimize spillage, comprises the Alfa Laval Unique Mixproof CIP valve. Leakage detection holes enable visual inspection without requiring valve disassembly, alerting operators of the need for wear parts replacement.

Few straightforward, moveable parts contribute to reliable operation and reduced maintenance costs.



The valve can be fitted with Alfa Laval ThinkTop V-series for sensing and control of the valve. See ThinkTop datasheets for further details.

Working principle

The Alfa Laval Unique Mixproof CIP valve is a normally closed (NC) valve controlled remotely using compressed air. The valve has two independent plugs and a three-seal design to separate the two media from each other; the space between the seals forms a leakage chamber at atmospheric pressure under all operating conditions. Leakage rarely occurs, but if it should, the fluid flows into the leakage chamber and drains at the outlet for easy detection. When the valve is open, the leakage chamber is closed. The fluid then flows from one line to the other. The valve's three-seal design minimizes spillage and ensures the water and CIP media pass through and flush the leakage chamber.

The valve primarily handles cleaning media. Its balanced design ensures complete flow control and eliminates water hammer. Mounting upside down is possible.

Certificates

Authorized to carry the 3A symbol

Techical Data

Pressure		
Max. product pressure:		1000 kPa (10 bar) / 145 psi
Min. product pressure:		Full Vacuum
Holding pressure (lower plug):		600 kPa (6 bar) / 87 psi
Air pressure range:		600-800 kPa (6-8 bar) / 87-116 psi

Temperature		
Temperature range:	EPDM	-5 °C to +140 °C / 23 °F to 284 °F
	HNBR	-5 °C to +125 °C / 23 °F to 257 °F

ATEX	
Classification:	II 2 G D[1]

[1] 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

Materials	
Product-wetted steel parts	1.4404 (316L)
Other steel parts:	1.4301 (304)

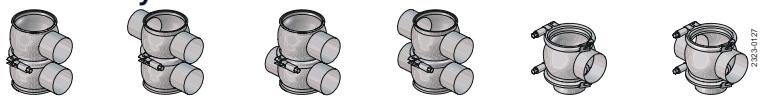
Surface finish	
External (semi-bright):	Ra< 1.6 µm / Ra< 64 µi
Internal (polished):	Ra< 0.8 µm / Ra< 32 µi

Note! The Ra values are only for the internal surface.

Product wetted seals	
Sealing material:	EPDM, FPM, HNBR

Other Seals	
Actuator seals:	NBR
Guide Strip:	PTFE

Valve body combination



11 12 21 22 20 30

Valve body combinations, example: type 11

1 Number of ports - lower valve body

1 Number of ports - upper valve body

Note!
Standard: Inter-body clamped

Pressure drop/capacity diagrams

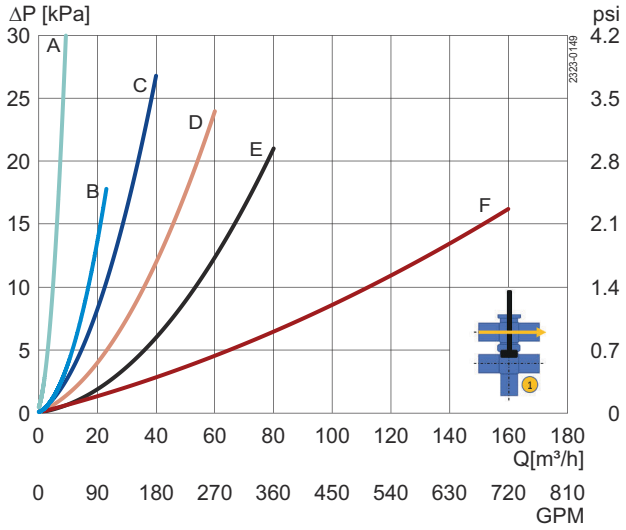


Figure 1. Pressure drop/capacity diagram, upper body

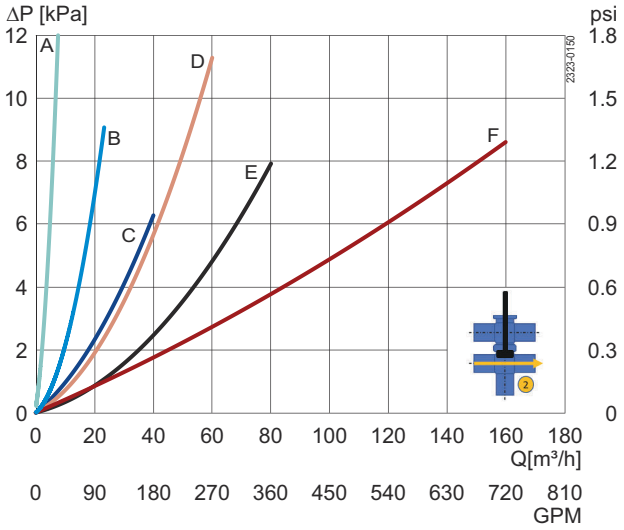


Figure 2. Pressure drop/capacity diagram, lower body

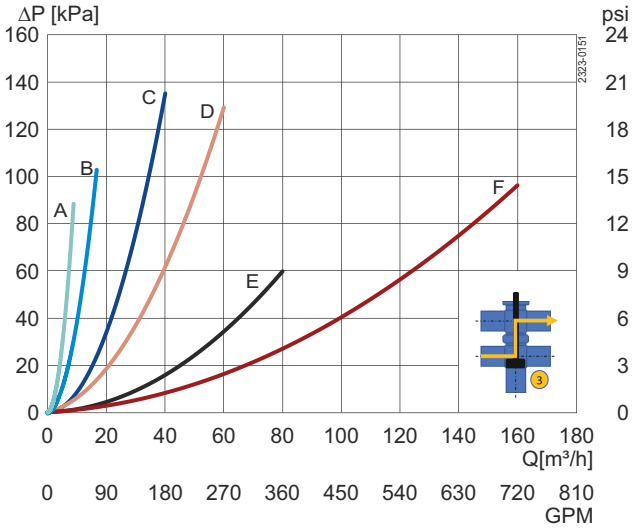


Figure 3. Pressure drop/capacity diagram, between bodies

A = DN25 / ISO 25 / 1"
B = DN40 / ISO 38 / 1½"
C = DN50 / ISO 51 / 2"
D = DN65 / ISO 63.5 / 2½"
E = DN80 / ISO 76.1 / 3"
F = DN100 / ISO 101.6 / 4"

Air consumption

Size		DN/OD						DN					
ISO/DIN		25 mm / 1"	38 mm / 1½"	51 mm / 2"	63.5 mm / 2½"	76.1 mm / 3"	101.6 mm / 4"	25	42	50	65	80	100
Kv-value	[m³/h]	9.3	16.2	34.4	52.2	104.3	163.3	9.3	16.2	34.4	52.2	104.3	163.3
Cv-value	[GPM/psi]	10.8	18.7	39.8	60.4	120.5	188.8						

Size		DN/OD						DN					
ISO/DIN		25 mm / 1"	38 mm / 1½"	51 mm / 2"	63.5 mm / 2½"	76.1 mm / 3"	101.6 mm / 4"	25	42	50	65	80	100
Main Movement	[L]	0.64	0.64	0.64	0.64	1.48	1.48	0.64	0.64	0.64	0.64	1.48	1.48
	[in³]	38.84	38.84	38.84	38.84	90.48	90.48						

Dimensions

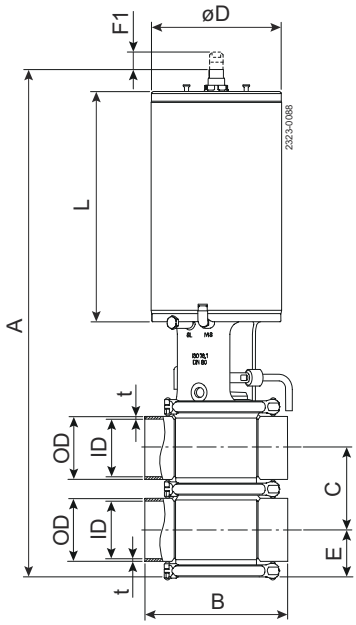


Figure 4. Unique Mixproof CIP

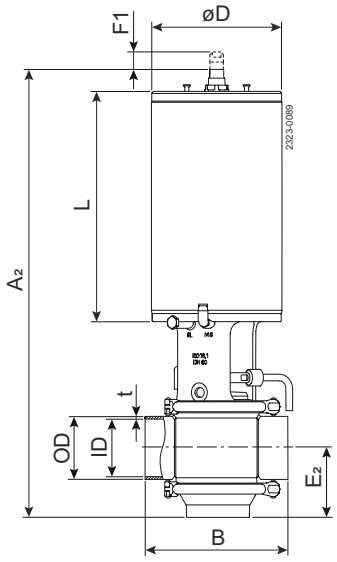


Figure 5. Unique Mixproof CIP Type 30

(mm)

Size	DN/OD						DN					
ISO/DIN	**25**	**38**	**51**	**63.5**	**76.1**	**101.6**	**25**	**40**	**50**	**65**	**80**	**100**
A	422	450	471	496	612	661	430.4	456.4	476	508	628	666
A_2	440	460	513	536	660	702	449	466.4	516	545	666	706
B	100	99	122	162	172	238	100	99	122	162	172	240
C	47.8	60.8	73.8	86.3	98.9	123.6	52	64	76	92	107	126
OD	25	38	51	63.5	76.1	101.6	26	41	53	70	85	104
ID	21.8	34.8	47.8	60.3	72.9	97.6	29	38	50	66	81	100
t	1.6	1.6	1.6	1.6	1.6	2	1.5	1.5	1.5	2	2	2
E	33	40.6	44	50	51	69	35	43	45	53	61	70
E_2	50	50	85	90	99	110	50	50	85	90	99	110
F1	30.5	30.5	30.5	30.5	43	43	30.5	30.5	30.5	30.5	43	43
ØD	115	115	115	115	157	157	115	115	115	115	157	157
L	205	205	205	205	278	278	205	205	205	205	278	278
Weight, Type 22 (kg)	8.9	9.1	10.7	12.9	22.2	25.0	9.1	9.3	10.8	13.2	22.7	25.1
Weight, Type 30 (kg)	8.3	8.5	9.9	11.5	20.3	21.8	8.5	8.7	9.9	11.7	20.6	21.9

(inch)

Size	OD					
ISO/DIN	**1"**	**1½"**	**2"**	**2½"**	**3"**	**4"**
A	16.61	17.72	18.56	19.54	24.08	26.03
A_2	17.32	18.11	20.20	21.10	25.98	27.64
B	3.94	0.39	4.80	6.38	6.77	9.37
C	1.88	2.39	2.91	3.40	3.89	4.87
OD	1.00	1.50	2.00	2.50	3.00	4.00
ID	0.86	1.37	1.88	2.37	2.87	3.84
t	0.06	0.06	0.06	0.06	0.06	0.08
E	1.30	1.60	1.71	1.98	2.00	2.72
E_2	1.97	1.97	3.35	3.54	3.90	4.33
F1	1.20	1.20	1.20	1.20	1.69	1.69
ØD	4.53	4.53	4.54	4.54	6.20	6.20
L	8.07	8.07	8.06	8.06	10.94	10.93
Weight, Type 22 (lb)	19.78	20.22	23.6	28.4	49.0	55.1
Weight, Type 30 (lb)	18.44	18.89	21.8	25.4	44.8	48.1

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