

2.5 Double seal valves

Alfa Laval's Mixproof Valve concept offers you customized and modular solutions that exactly fit your applications demands.



Product leaflets

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The Proven Mixproof Range

Alfa Laval SMP-BC Mixproof Valve

2.5

Concept

SMP-BC is a hygienic pneumatic seat valve, designed for safety and leak detection when two different products flow through only one valve. The valve is often used as a part in CIP return lines or other systems not experiencing pressure spikes offering leakage detection for greater safety.

Working principle

SMP-BC is remote-controlled by means of compressed air. The valve is a normally closed (NC) valve. The valve is fitted with two small pneumatic normally open (NO) valves, a detecting valve and a CIP-valve. The valve plug (the upper plug in a change-over valve) has two seals, forming a leakage chamber under atmospheric pressure between them. Leaking product flows into the leakage chamber and is discharged through the detecting valve. SMP-BC can be cleaned by CIP by supplying compressed air to the actuator (see fig. 1). During cleaning of the valve, flow pattern against the closing direction of the valve plug makes SMP-BC insensitive to water hammer.



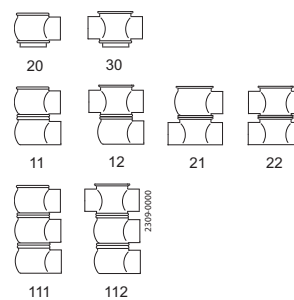
TECHNICAL DATA

Max. product pressure (depending on valve specifications): 1000 kPa (10 bar).
 Min. product pressure: Full vacuum.
 Temperature range: -10°C to +140°C (EPDM).
 Air pressure: 500 to 800 kPa (5 to 8 bar).

PHYSICAL DATA

Product wetted steel parts: 1.4401 (316L).
 External surface finish . . . Semi-bright (blasted)
 Internal surface finish . . . Bright (polished), Ra < 1.6 µm
 Other steel parts: 1.4301 (304).
 Product wetted seals: . . . EPDM.
 Other seals: NBR

Valve body combination



Type 20 and 30 body versions are on request available in following configurations:

- Tee welded on lower port in 0 or 90 deg. version
- Bend welded on lower port in 0, 90, 180 or 270 deg. version

The three body version is on request available in following configurations:

- Type 121, 122, 211, 212, 221 & 222

Standard design

SMP-BC is available in two versions, as a shut-off valve with one valve body or as a change-over valve with three valve bodies (sizes DN125-150 only as shut-off valve).

The valve bodies and the external actuator are clamped together. SMP-BC is fitted with one detecting valve and one CIP-valve. The seals and the lip seal can be serviced after removing the actuator.

It is recommended, due to the valve size and weight, to use supporting equipment, handling and installing the valve. Guidelines are given in the instruction manual (IM70771). Alfa Laval is not able to supply the recommended supporting equipment.

Options

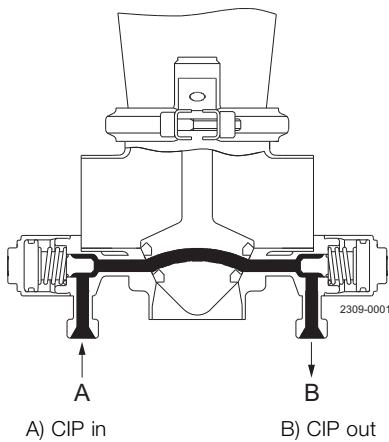
- A. Male parts or clamp liners in accordance with required standard.
- B. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
- C. Actuator with stronger spring.
- D. Larger actuator for valve sizes 38-51 mm/DN40-50.
- E. CIP installation kits.
- F. Other valve body combinations.
- G. Surface roughness, product wetted parts: Ra ≤0.8 µm.
- H. Product wetted seals of NBR or FPM.
- I. Service tools for actuator.
- J. Tool for plug seals (Necessary for changing the seals).

Note!

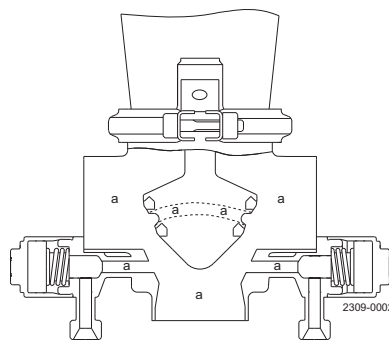
For further details, see also instruction IM 70771.

Size	Air consumption (litres free air) for one stroke			
	38-51 mm DN 40-50	63.5101.6 mm DN 65100	DN 125-150	DN 125-150
Stop valve	0.2 x air pressure (bar)	0.7 x air pressure (bar)	1.5 x air pressure (bar)	2.2 x air pressure (bar)
Actuator function	NC	NC	NC	
Stop valve			3.6 x air pressure (bar)	2.9 x air pressure (bar)
Actuator function			NC (Support air for closing)	(Support air for opening)
Change-over valve	0.2 x air pressure (bar)	0.7 x air pressure (bar)		
Actuator function	NC	NC		

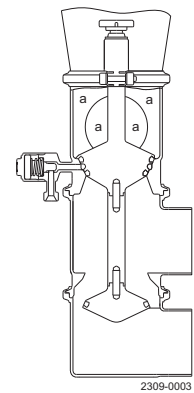
Operation/cleaning



a. Closed shut-off valve:
Cleaning of the leakage chamber.



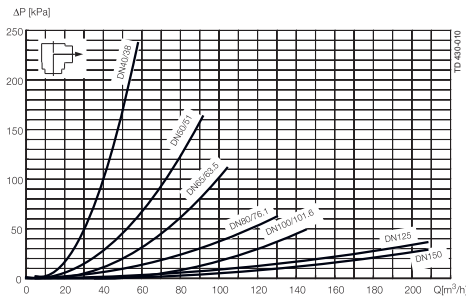
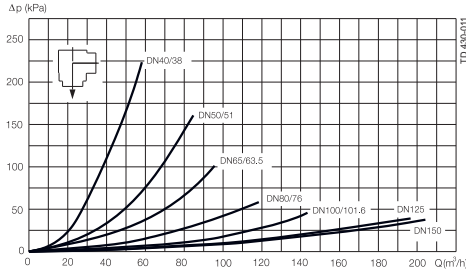
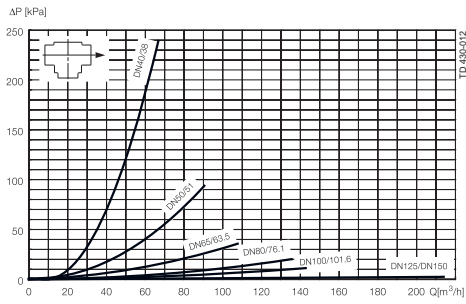
b. Open shut-off valve
a. Cleaning of the valve body and the leakage chamber.



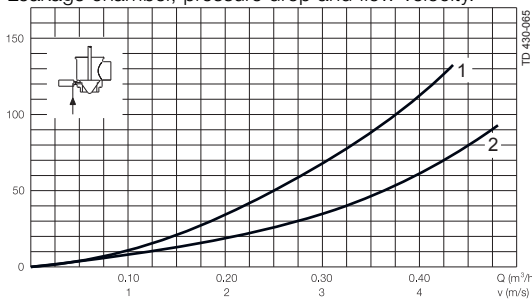
c. Closed change-over valve
a. Cleaning of the upper valve body.

Pressure drop/capacity diagrams

Shut-off valve:

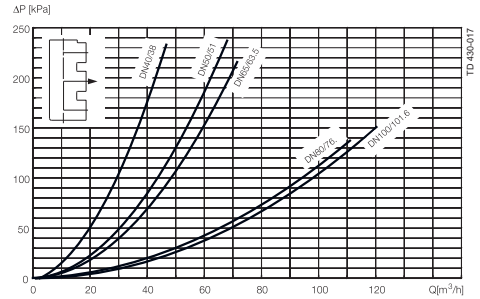
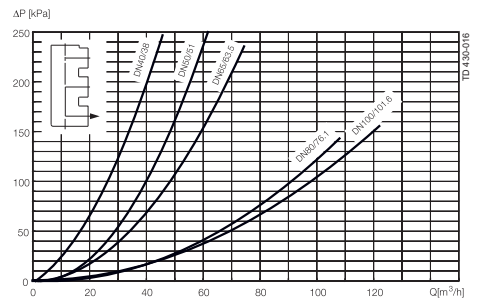
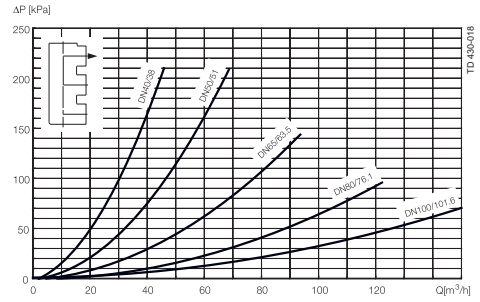
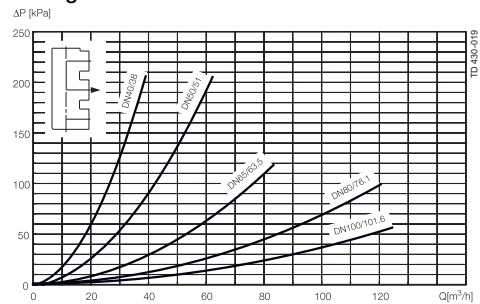


Leakage chamber, pressure drop and flow velocity.



- 1) CIP/detecting valve ø27
- 2) CIP/detecting valve ø32

Change-over valve:



Note! For the diagrams the following applies:
Medium: Water (20°C).

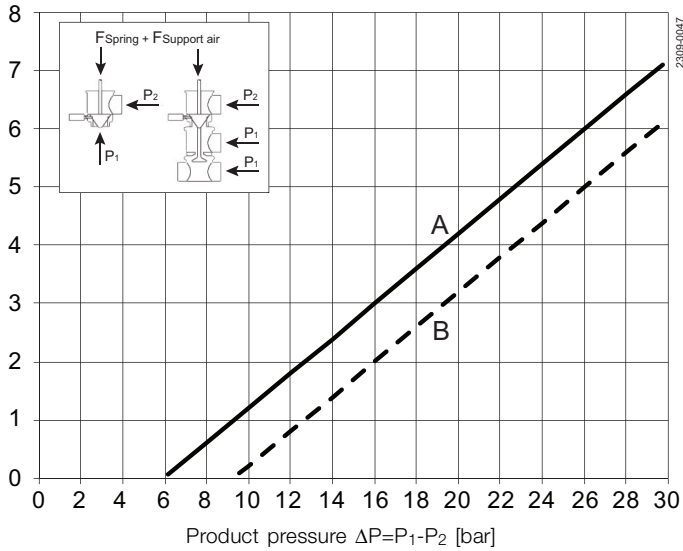
Measurement: In accordance with VDI 2173.

Max pressure difference/support air pressure diagrams

Upper plug max. product pressure without leakage, as a function of support air:

ø89 Actuator

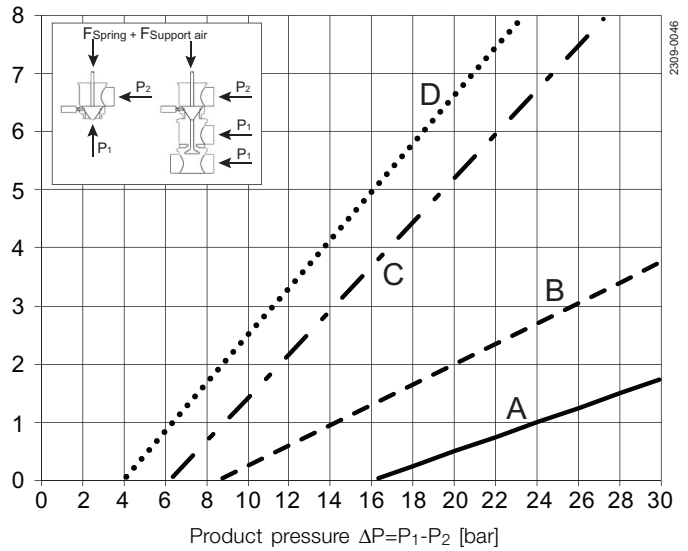
Support air P_{air} [bar]



- A. ø89 std. spring; DN40/DN50; ISO38/ISO51
- B. ø89 strong. spring; DN40/DN50; ISO38/ISO51

ø133 actuator with standard spring

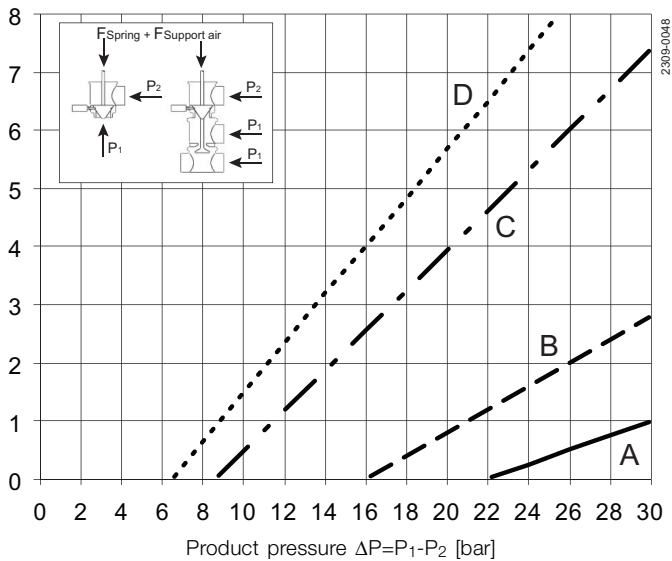
Support air P_{air} [bar]



- A. DN40/DN50; ISO38/ISO51
- B. DN65; ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

ø133 actuator with strong spring

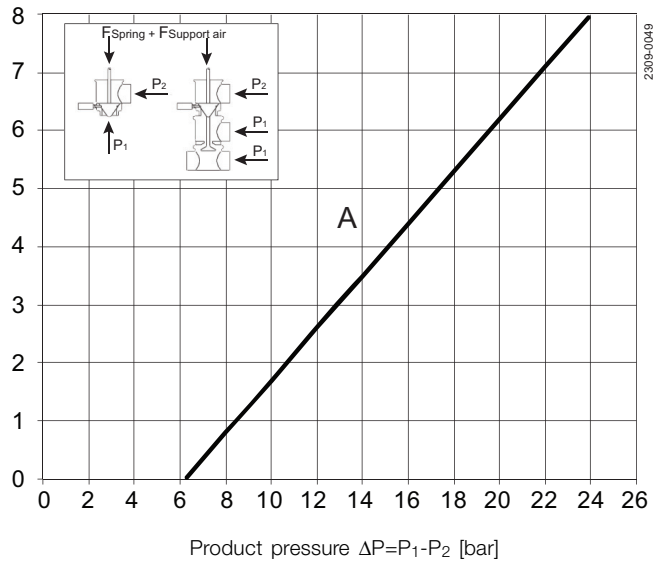
Support air P_{air} [bar]



- A. DN40/DN50; ISO38/ISO51
- B. DN65; ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

ø199 actuator

Support air P_{air} [bar]

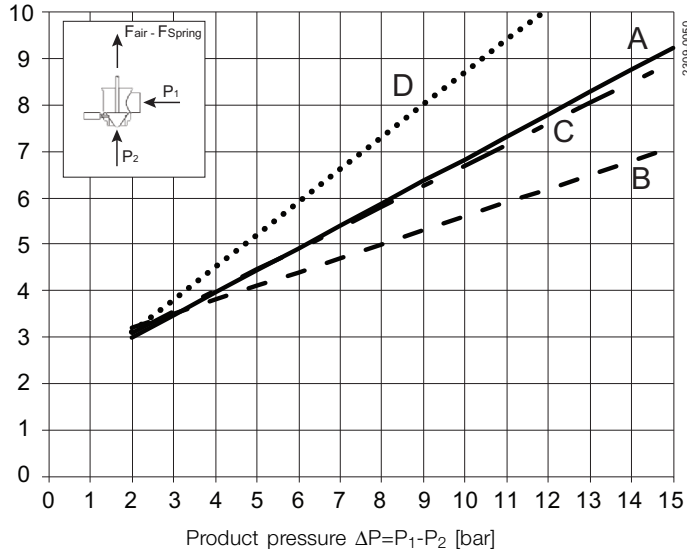


- A. DN125; DN150

Upper plug max. product pressure against which the valve can open, as a function of air pressure:

ø89 Actuator with standard spring

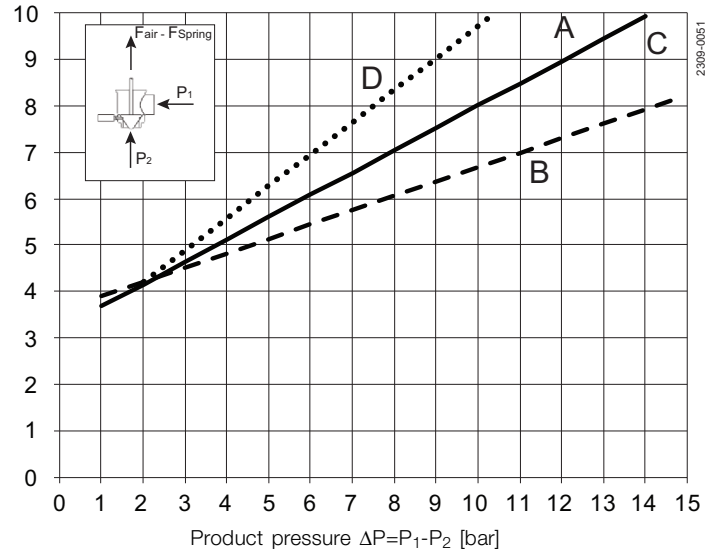
Air Pressure P_{air} [bar]



- A. DN40/DN50/DN80; ISO38/ISO51/76.1
- B. DN65; ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

ø89 actuator with strong spring

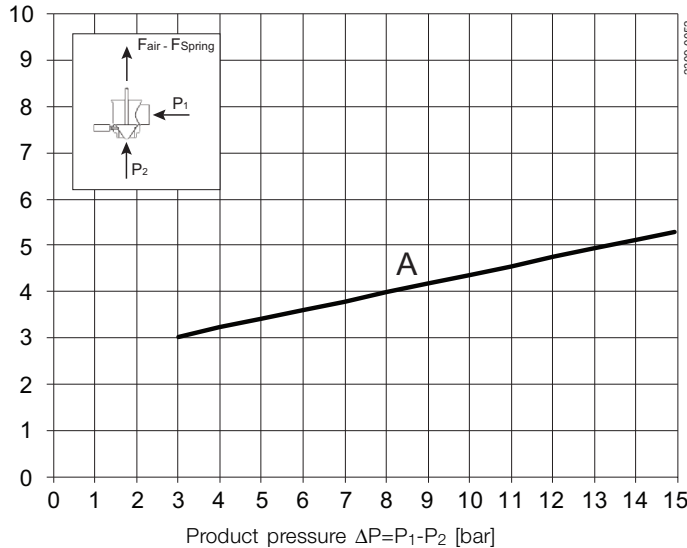
Air Pressure P_{air} [bar]



- A. DN40/DN50; ISO38/ISO51
- B. DN65; ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

ø133 actuator with standard spring

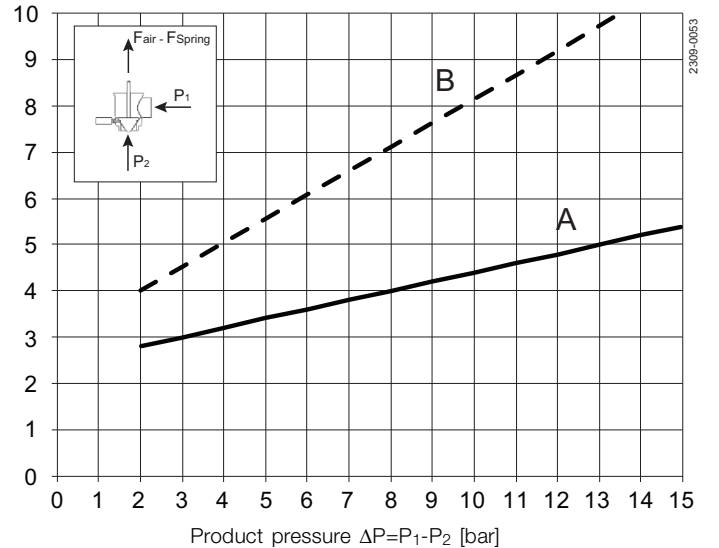
Air Pressure P_{air} [bar]



- A. DN40/DN50; ISO38/ISO51

ø133 actuator with strong spring

Air Pressure P_{air} [bar]



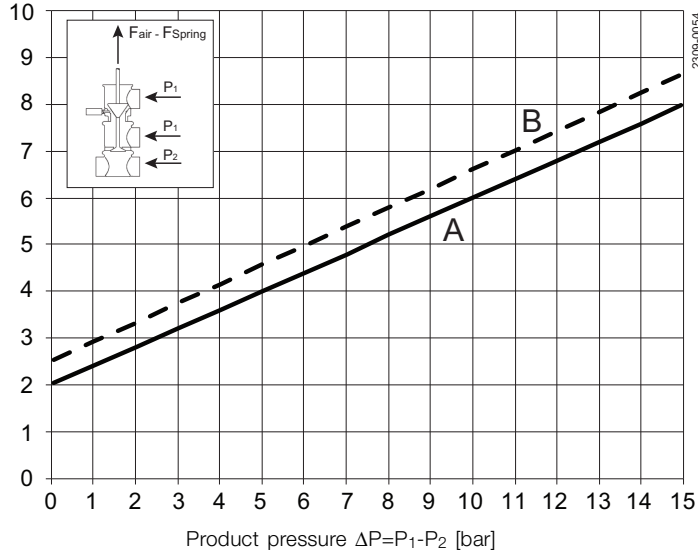
- A. DN40/DN50; ISO38/ISO51
- B. DN125; DN150

Note! If actuator is supported by air on spring side; max allowable pressure is 300 kPa (3 bar)

Upper plug (change over). Max. product pressure against which the valve can open, as a function of air pressure:

ø89 Actuator with standard spring

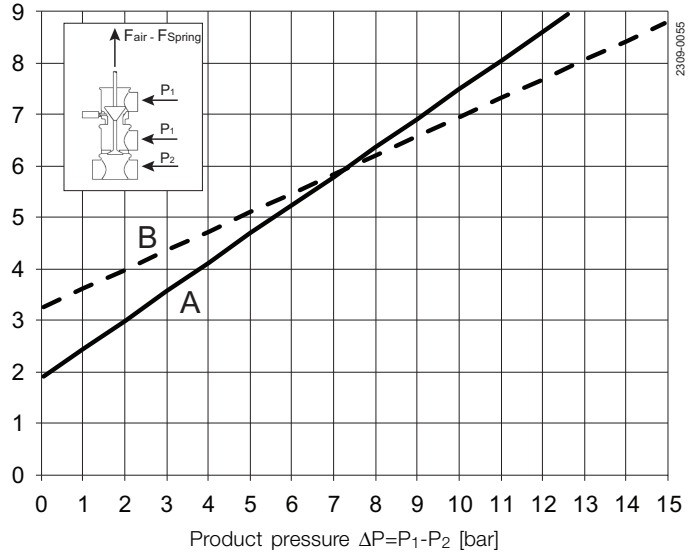
Air pressure P_{air} [bar]



- A. DN40; ISO38
- B. DN50; ISO51

ø89 actuator with strong spring

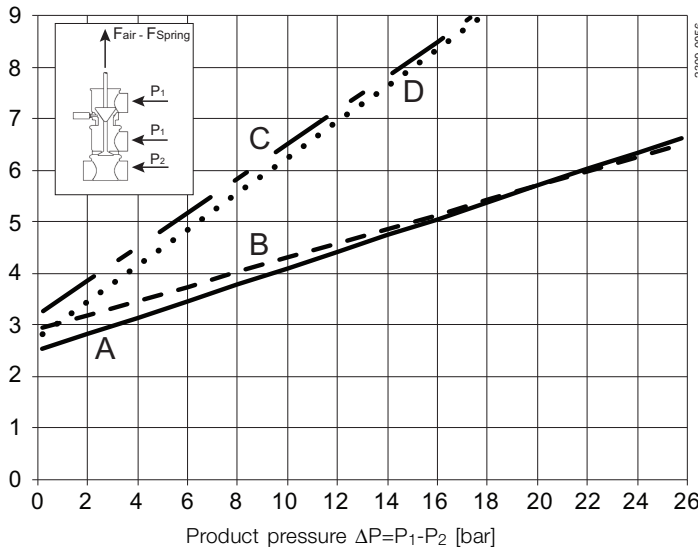
Air pressure P_{air} [bar]



- A. DN40; ISO38
- B. DN50; ISO51

ø133 actuator with standard spring

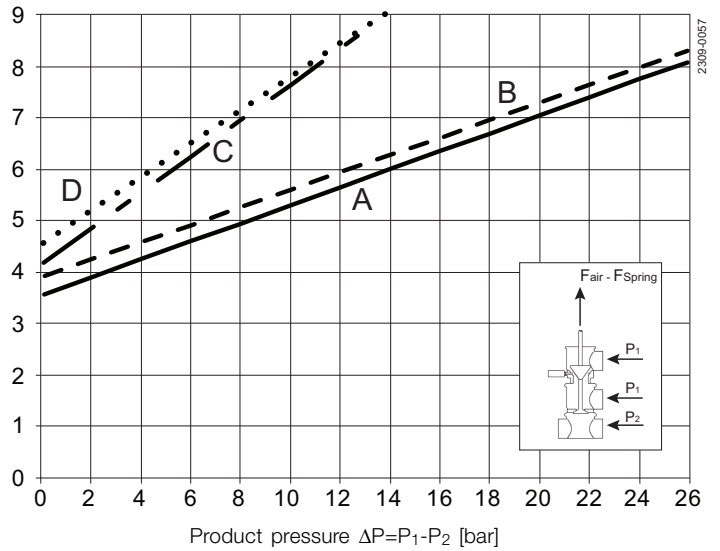
Air pressure P_{air} [bar]



- A. DN40; ISO38
- B. DN50/65; ISO51/ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

ø133 actuator with strong spring

Air pressure P_{air} [bar]

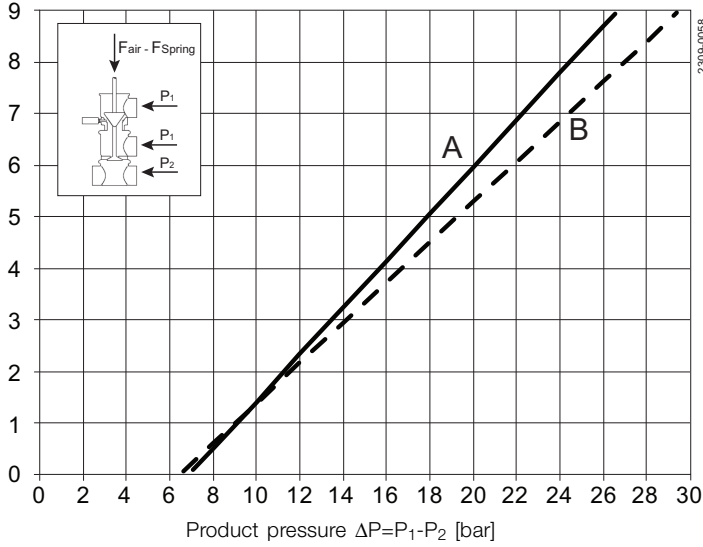


- A. DN40; ISO38
- B. DN50/65; ISO51/ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

Upper plug (change over). Max. product pressure against which the valve can open, as a function of support air:

ø89 Actuator with standard spring

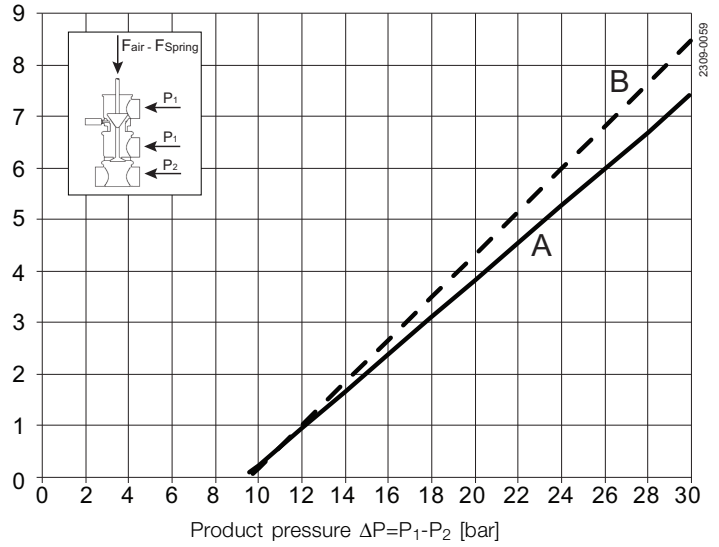
Support air P_{air} [bar]



- A. DN40; ISO38
- B. DN50; ISO51

ø89 actuator with strong spring

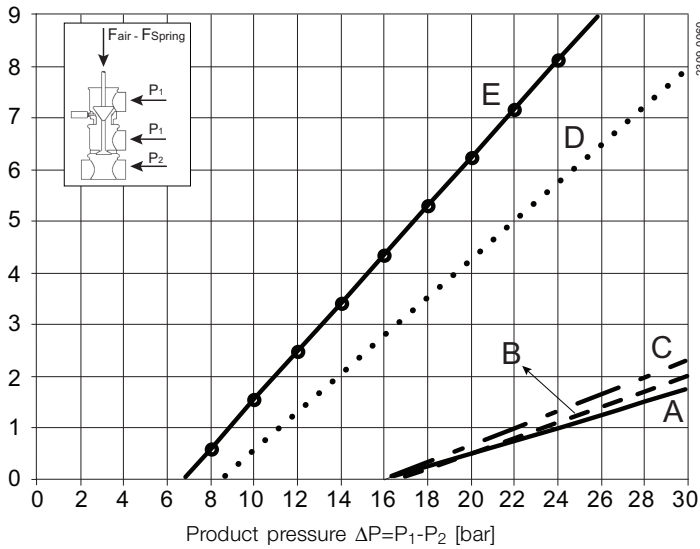
Support air P_{air} [bar]



- A. DN40; ISO38
- B. DN50; ISO51

ø133 actuator with standard spring

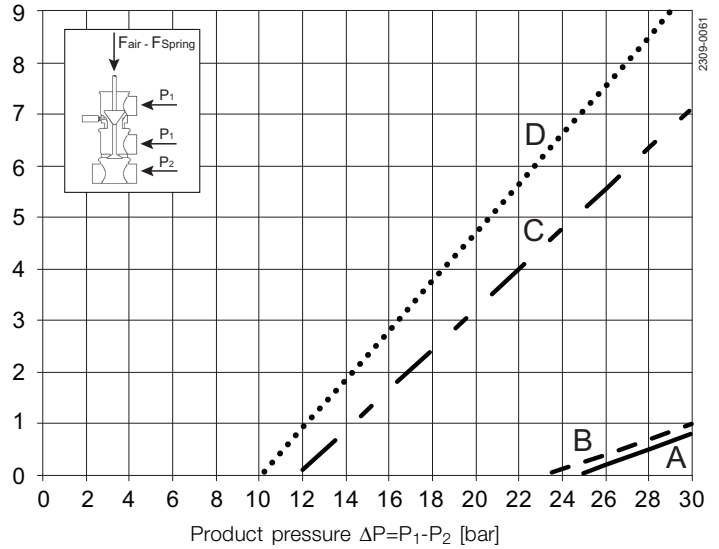
Support air P_{air} [bar]



- A. DN40; ISO38
- B. DN50; ISO51
- C. DN65; ISO63.5
- D. DN80; ISO76.1
- E. DN100; ISO101.6

ø133 actuator with strong spring

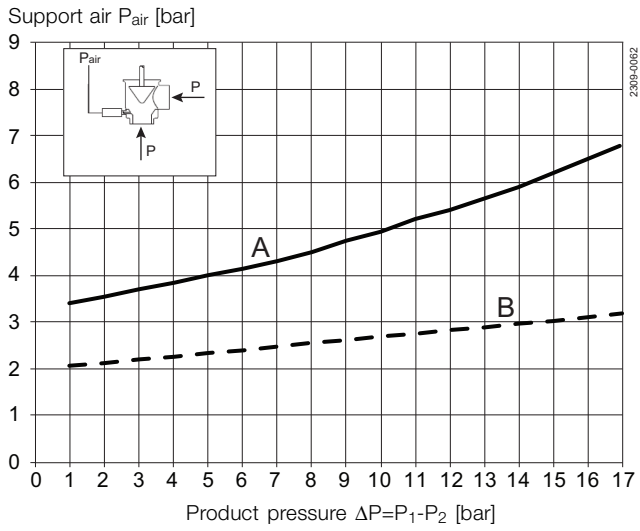
Support air P_{air} [bar]



- A. DN40/DN50; ISO38/ISO51
- B. DN65; ISO63.5
- C. DN80; ISO76.1
- D. DN100; ISO101.6

Note! If actuator is supported by air on spring side; max allowable pressure is 300 kPa (3 bar)

CIP/detecting valves. Max. product pressure without leakage, as a function of air pressure:

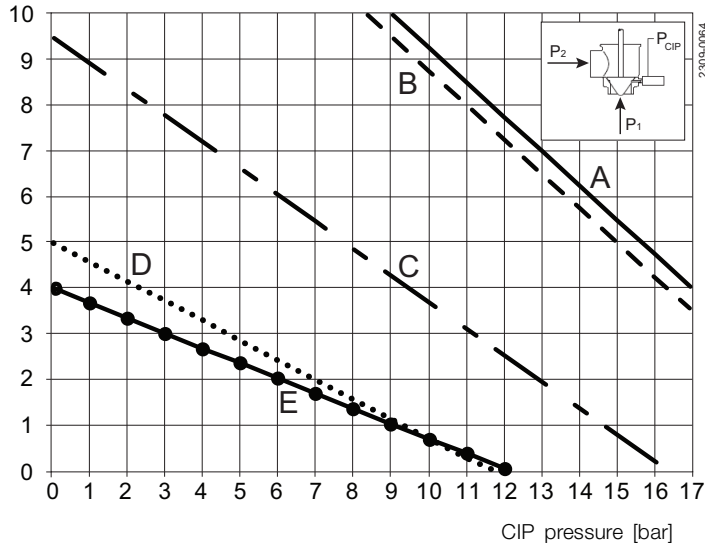


- A. CIP valve $\phi 27$
- B. CIP valve $\phi 32$

Max. CIP pressure in leakage chamber without leakage to product area, as a function of product pressure.

ø89 Actuator with standard spring

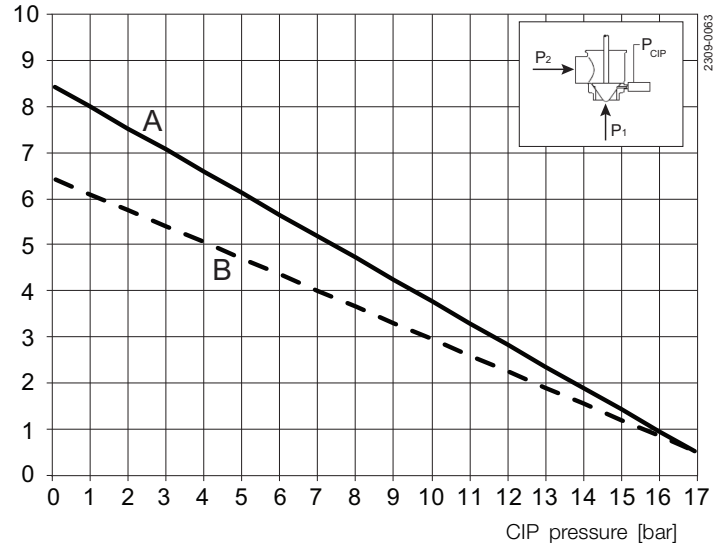
Product pressure $\Delta P = P_1 - P_2$ [bar]



- A. DN40; ISO38
- B. DN50; ISO51
- C. DN65; ISO63.5
- D. DN80; ISO76.1
- E. DN100; ISO101.6

ø89 actuator with strong spring

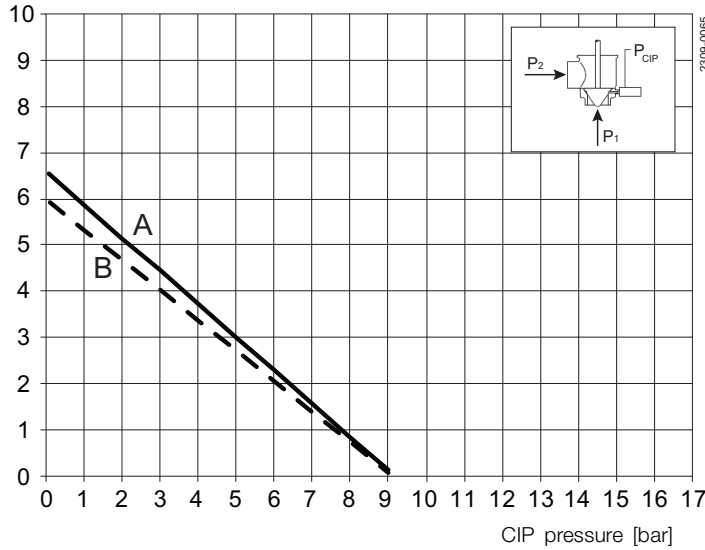
Product pressure $\Delta P = P_1 - P_2$ [bar]



- A. DN80; ISO76.1
- B. DN100; ISO101.6

ø133 actuator with standard spring

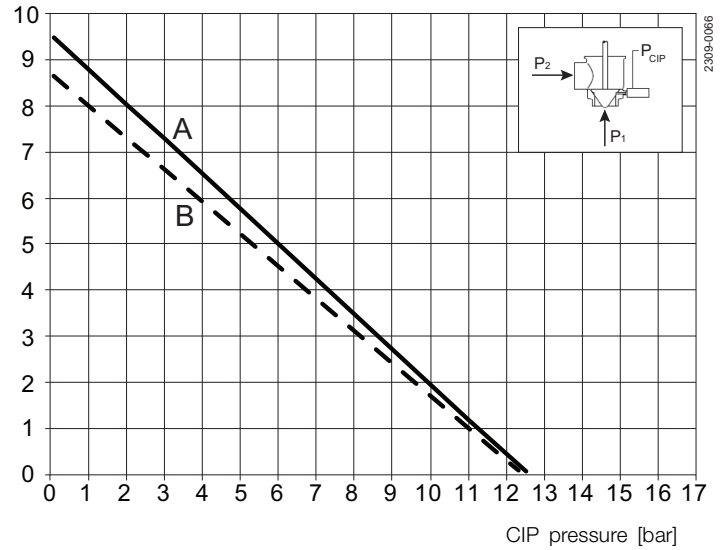
Product pressure $\Delta P = P_1 - P_2$ [bar]



- A. DN40; ISO38
- B. DN50; ISO51

ø133 actuator with strong spring

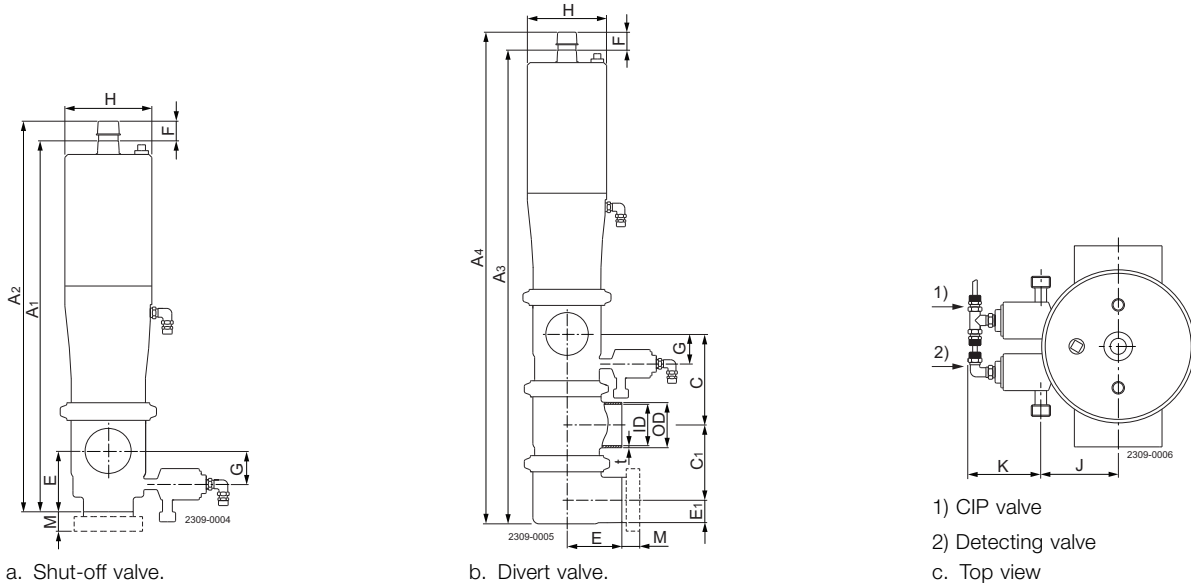
Product pressure $\Delta P = P_1 - P_2$ [bar]



- A. DN40; ISO38
- B. DN50; ISO51

Note! If actuator is supported by air on spring side; max allowable pressure is 300 kPa (3 bar)

Dimensions



Dimensions (mm)

Size	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm	40 DN	50 DN	65 DN	80 DN	100 DN	125 DN	150 DN
A ₁	345	355	433	455	527	343	354	430	456	526	535	584
A ₂	370	380	458	487	559	368	379	455	488	558	580	629
A ₃	485.8	505.8	616.2	651.1	751.8	485	506	616	667	752		
A ₄	510.8	530.8	648.2	683.1	783.8	510	531	641	699	784		
C	90	102	124	129	157	90	102	124	134	157		
C ₁	80	84	108	115	150	80	84	108	120.5	150		
OD	38.1	50.8	63.5	76.1	101.6	41	53	70	85	104	129	154
ID	34.9	47.6	60.3	72.1	97.6	38	50	66	81	100	125	150
t	1.6	1.6	1.6	2.0	2.0	1.5	1.5	2.0	2.0	2.0	2.0	2.0
E	49.5	61.5	82.3	87.3	133.5	49.5	61.5	82.3	87.3	133.5	150	150
E ₁	20.5	26.8	33.2	39.1	51.8	22	28	36	43.5	53		
F	25	25	32	32	32	25	25	32	32	32	49	49
G	27	33.3	39.7	45.6	58.3	28.5	34.5	42.5	50	59.5	72	84.5
H	89	89	133	133	133	89	89	133	133	133	199	199
J	46.7	46.7	57	66.6	84.3	46.7	46.7	57	66.6	84.3	99.5	99.5
K	63	63	63	63	63	63	63	63	63	63	58.5	58.5
M/ISO clamp	21	21	21	21	21							
M/ISO male	21	21	21	21	21							
M/DIN male						22	23	25	25	30	46	50
M/SMS male	20	20	24	24	35							
M/BS male	22	22	22	22	27							
Weight (kg)												
Stop valve	6.0	6.3	12.8	13.3	16.6	6.0	6.3	12.8	14.0	16.6	43.4	44.5
Weight (kg)												
Change-over valve	7.7	8.1	15.0	17.0	23.0	7.7	8.1	15.0	18.0	23.0		

Air Connections Compressed air:

R 1/8" (BSP), internal thread.

CIP connection:

R 3/8" (BSP), external thread.

Leakage connection:

R 3/8" (BSP), external thread.

Caution, opening/closing time:

Opening/closing time will be affected by the following:

- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

The Proven Mixproof Range

Alfa Laval SMP-BCA Mixproof Valve with PTFE Diaphragm

Concept

SMP-BCA is an aseptic double seat valve with PTFE diaphragm. It is available as a stop- or divert valve. The valve is suited for aseptic operating conditions such as high sterilisation temperatures. SMP-BCA is specially designed for aseptic applications with the highest hygienic demands.

Working principle

SMP-BCA is operated by means of compressed air. The valve is a normally closed (NC) valve. Sterile stem sealing towards the atmosphere is ensured by a special designed PTFE/rubber diaphragm unit. The PTFE diaphragm does not allow product residues to build up on the product contact surface. The product lines are separated by two sealings and a sterile barrier chamber to avoid mixing of product and to ensure immediate indication in case of a leak from one of the plug seals. Two small pneumatic normally open (NO) valves control flow to and from the sterile barrier chamber. The barrier chamber must be clean and sterile when the main valve is closed. The lower product lines on change over valves are separated by a single seal plug, without sterile barrier chamber.



TECHNICAL DATA

Pressure range: 0-800 kPa (0-8 bar).
 Temperature range: -10°C to 140°C (EPDM).
 Optimum process conditions: >50 kPa (0.5 bar), >20°C.
 Max. sterilization temperature (steam - short time) 150°C - 380 kPa (3.8 bar).
 Air pressure: 500-800 kPa (5-8 bar).

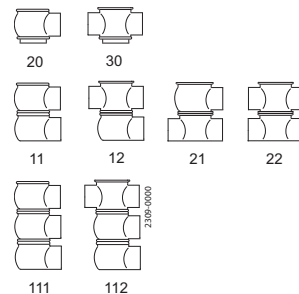
Note!

Vacuum is not recommended in aseptic applications.

PHYSICAL DATA

Product wetted steel parts: 1.4404 (316L).
 External surface finish Semi-bright (blasted)
 Internal surface finish Bright (polished), Ra < 1.6 µm
 Other steel parts: 1.4301 (304).
 Product wetted seals: EPDM and PTFE.
 Other seals: NBR, EPDM.

Valve body combination



Type 20 and 30 body versions are on request available in following configurations:

- Tee welded on lower port in 0 or 90 deg. version
- Bend welded on lower port in 0, 90, 180 or 270 deg. version

The three body version is on request available in following configurations:

- Type 121, 122, 211, 212, 221 & 222

Standard design

SMP-BCA is based on the SMP-BC valve design. It consists of actuator, bonnet, stem with diaphragm unit and valve bodies. The divert version is a three body design.

The valve is assembled by means of clamp rings and a stem clip system for easy maintenance.

Options

- A. Male parts or clamp ends in accordance with required standard.
- B. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
- C. Larger actuator for valve sizes 38-51 mm/DN 40-50.
- D. CIP installation kits.
- E. Other valve body combinations.
- F. Surface roughness, product wetted parts: $Ra \leq 0.8 \mu\text{m}$.
- G. Product wetted seals of NBR and PTFE or FPM and PTFE.
- H. Service tool for actuator.
- I. Tool for plug seals (Necessary for changing the seals).

Note!

For further details, see also ESE01563 and instruction IM 70811.

Size	Air consumption (litres free air)	
	38 mm, 51 mm/DN40,50 Actuator $\varnothing 89$	63.5, 76.1, 101.6 mm/DN 65, 80, 100 Actuator $\varnothing 133$
Stop valve/Divert valve	0.2 x Air pressure (bar)	0.7 x Air pressure (bar)

Expected lifetime of diaphragm unit under normal conditions:
(no pressure shocks or cavitation).

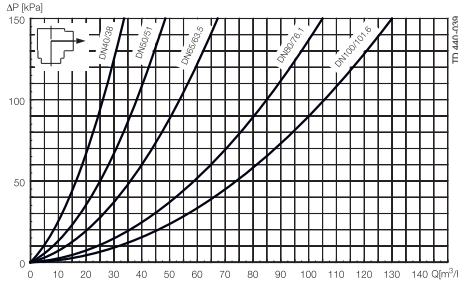
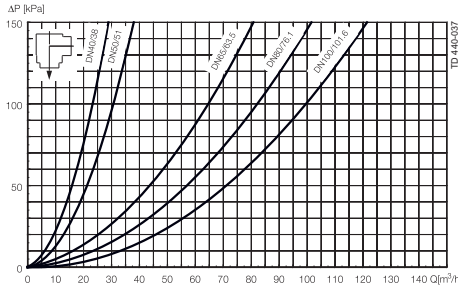
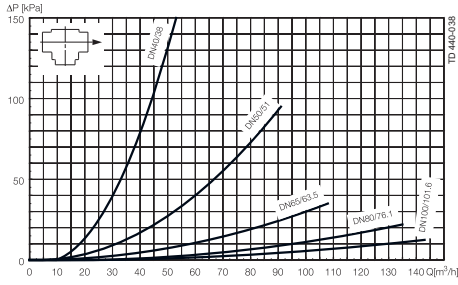
Size/Type	Stop valve activations	Divert valve activations
38mm/DN40	12.000	10.000
51mm/DN50	12.000	10.000
63.5mm/DN65	12.000	5.000
76.1mm/DN80	5.000	5.000
101.6mm/DN100	5.000	5.000

Note! Activating the valve without internal product pressure reduces lifetime of diaphragm unit.

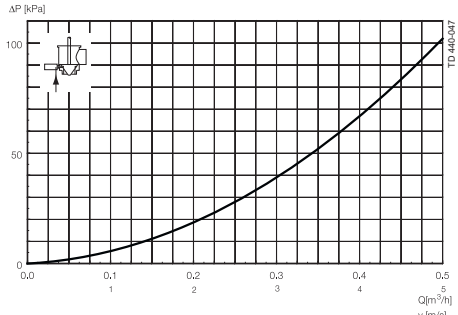
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Pressure drop/capacity diagrams

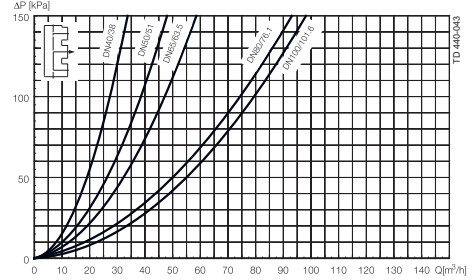
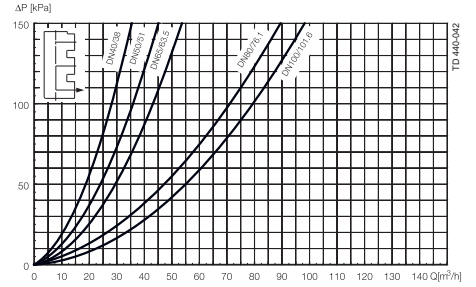
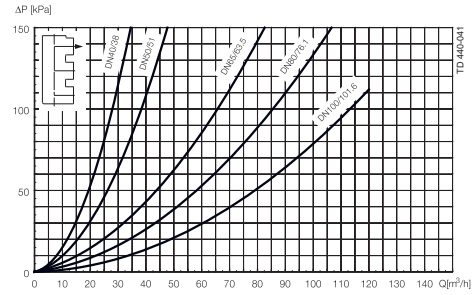
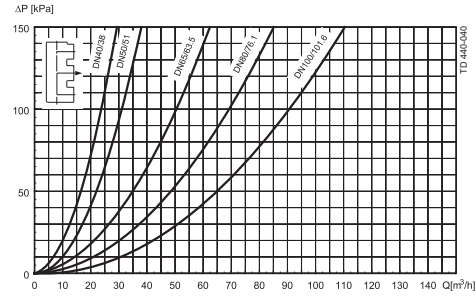
Stop valve:



CIP chamber:



Divert valve:

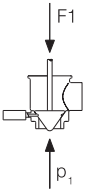
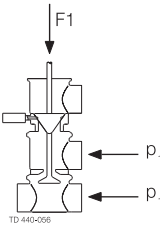


NOTE! For the diagrams the following applies:
Medium: Water (20°C).

Measurement: In accordance with VDI 2173.

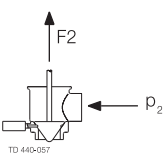
Pressure data for SMP-BCA

1. Upper plug. Max. product pressure P_1 without leakage due to pressure shocks, as a function of support air pressure.

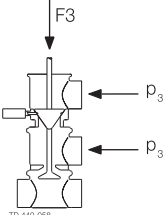
Direction of pressure	Valve size	Actuator size	Spring type	Support air pressure (bar)				
				0	3	5	6	7
	38mm/	ø89	Normal	6.0	16.0	22.5	26.2	29.5
	DN40	ø89	Strong	9.6	19.5	26.3	30.0	30.0
		ø133	Normal	16.0	30.0	30.0	30.0	30.0
		ø133	Strong	22.0	30.0	30.0	30.0	30.0
	51mm/	ø89	Normal	6.0	16.0	22.5	26.2	29.5
	DN50	ø89	Strong	9.6	19.5	26.3	30.0	30.0
		ø133	Normal	16.0	30.0	30.0	30.0	30.0
		ø133	Strong	22.0	30.0	30.0	30.0	30.0
	63.5mm/	ø133	Normal	9.6	25.5	30.0	30.0	30.0
	DN65	ø133	Strong	16.0	30.0	30.0	30.0	30.0
	76.1mm/	ø133	Normal	6.5	14.5	19.5	22.4	26.8
	DN80	ø133	Strong	9.2	17.5	23.5	26.2	29.5
	101.6mm/	ø133	Normal	4.0	11.0	16.0	18.4	20.6
	DN100	ø133	Strong	6.5	14.4	19.6	22.2	25.0

F1 = Spring + support Air

2. Upper plug. Max. product pressure P_2 against which the valve can open, as a function of air pressure.

Direction of pressure	Valve size	Actuator size	Spring type	Support air pressure (bar)				
				3	4	5	6	7
	38mm/	ø89	Normal	8.0	8.0	8.0	8.0	8.0
	DN40	ø89	Strong	-	8.0	8.0	8.0	8.0
		ø133	Normal	8.0	8.0	8.0	8.0	8.0
		ø133	Strong	-	8.0	8.0	8.0	8.0
	51mm/	ø89	Normal	8.0	8.0	8.0	8.0	8.0
	DN50	ø89	Strong	-	8.0	8.0	8.0	8.0
		ø133	Normal	8.0	8.0	8.0	8.0	8.0
		ø133	Strong	-	8.0	8.0	8.0	8.0
	63.5mm/	ø133	Normal	4.0	8.0	8.0	8.0	8.0
	DN65	ø133	Strong	-	1.4	8.0	8.0	8.0
	76.1mm/	ø133	Normal	2.8	7.0	8.0	8.0	8.0
	DN80	ø133	Strong	-	2.0	5.4	8.0	8.0
	101.6mm/	ø133	Normal	2.2	4.6	7.2	8.0	8.0
	DN100	ø133	Strong	-	1.6	4.2	6.6	8.0

3. Upper valve. Max. product pressure P_3 in upper valve body at which the valve can close.

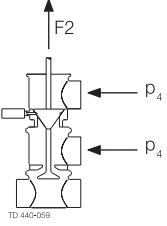
Direction of pressure	Valve size	Actuator size, spring type			
		ø89, Normal	ø89, Strong	ø133, Normal	ø133, Strong
	38mm/DN40	2.7	4.5	8.0	8.0
	51mm/DN50	2.4	4.0	6.0	8.0
	63.5mm/DN65	-	-	7.0	8.0
	76.1mm/DN80	-	-	7.0	8.0
	101.6mm/DN100	-	-	5.0	8.0

F2 = Air - spring

F3 = Spring

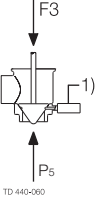
Pressure data for SMP-BCA

4. Lower valve, change-over. Max. product pressure P_4 without leakage, as a function of air pressure.

Direction of pressure	Valve size	Actuator size	Spring size	Air pressure (bar)				
				3	4	5	6	7
	38mm/ DN40	$\varnothing 89$	Normal	*	8.0	8.0	8.0	8.0
		$\varnothing 89$	Strong	*	*	8.0	8.0	8.0
		$\varnothing 133$	Normal	8.6	8.0	8.0	8.0	8.0
		$\varnothing 133$	Strong	*	*	8.0	8.0	8.0
	51mm/ DN50	$\varnothing 89$	Normal	*	8.0	8.0	8.0	8.0
		$\varnothing 89$	Strong	*	8.0	8.0	8.0	8.0
		$\varnothing 133$	Normal	8.6	8.0	8.0	8.0	8.0
		$\varnothing 133$	Strong	*	*	8.0	8.0	8.0
	63.5mm/ DN65	$\varnothing 133$	Normal	3.4	8.0	8.0	8.0	8.0
		$\varnothing 133$	Strong	*	*	8.0	8.0	8.0
76.1mm/ DN80	$\varnothing 133$	Normal	*	7.6	8.0	8.0	8.0	
	$\varnothing 133$	Strong	*	*	5.6	8.0	8.0	
101.6mm/ DN100	$\varnothing 133$	Normal	*	4.6	9.2	8.0	8.0	
	$\varnothing 133$	Strong	*	*	3.8	7.2	8.0	

* = Valve cannot close

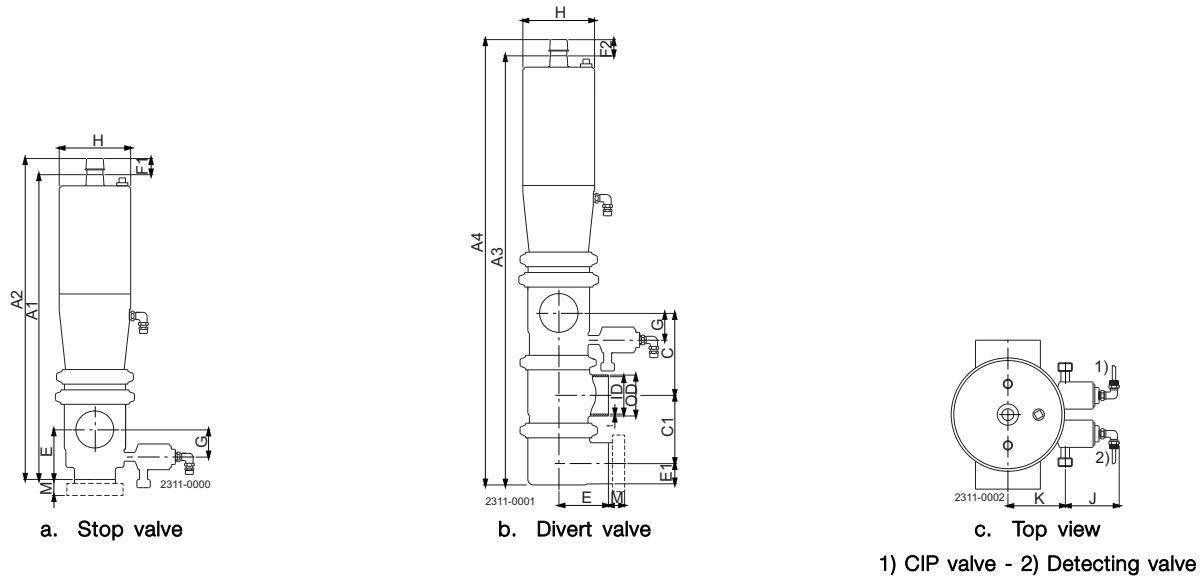
5. Upper valve. Max. CIP pressure P_{CIP} without leakage to product area as a function of product pressure below plug.

Direction of pressure	Valve size	Actuator size	Spring size	Product pressure P_5 below plug (bar)				
				0	2	4	6	7
	38mm/ DN40	$\varnothing 89$	Normal	9.0	6.3	3.5	0.8	-
		$\varnothing 89$	Strong	10.0	9.9	7.2	4.6	2.0
		$\varnothing 133$	Normal	10.0	10.0	10.0	10.0	10.0
		$\varnothing 133$	Strong	10.0	10.0	10.0	10.0	10.0
	51mm/ DN50	$\varnothing 89$	Normal	9.0	6.3	3.5	0.8	-
		$\varnothing 89$	Strong	10.0	9.6	6.7	3.8	1.0
		$\varnothing 133$	Normal	10.0	10.0	10.0	10.0	10.0
		$\varnothing 133$	Strong	10.0	10.0	10.0	10.0	10.0
	63.5mm/ DN65	$\varnothing 133$	Normal	10.0	10.0	9.3	5.8	2.5
		$\varnothing 133$	Strong	10.0	10.0	10.0	10.0	10.0
76.1mm/ DN80	$\varnothing 133$	Normal	10.0	10.0	8.5	4.7	1.0	
	$\varnothing 133$	Strong	10.0	6.8	2.3	-	-	
101.6mm/ DN100	$\varnothing 133$	Normal	10.0	6.0	-	-	-	
	$\varnothing 133$	Strong	10.0	10.0	6.5	1.4	-	

F2 = Air - spring

F3 = Spring

NOTE! Max. recommended CIP pressure = 100 kPa (1 bar).



Dimensions (mm)

Size	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm	40 DN	50 DN	65 DN	80 DN	100 DN
A ₁	371	381	459	481	553	369	379	456	482	552
A ₂	385	395	473	501	573	383	393	470	502	572
A ₃	511	532	642	677	778	511	532	642	693	778
A ₄	525	546	662	697	798	525	546	662	713	798
C	90	102	124	129	157	90	102	124	134	157
C ₁	80	84	108	115	150	80	84	108	120.5	150
OD	38	50.8	63.5	76.1	101.6	41	53	70	85	104
ID	34.9	47.6	60.3	72.1	97.6	38	50	66	81	100
t	1.6	1.6	1.6	2.0	2.0	1.5	1.5	2.0	2.0	2.0
E	49.5	61.5	82.3	87.3	133.5	49.5	61.5	82.3	87.3	133.5
E ₁	20.5	26.8	33.2	39.1	51.8	22	28	36	43.5	53
F ₁	14	14	14	20	20	14	14	14	20	20
F ₂	14	14	20	20	20	14	14	20	20	20
G	27	33.3	39.7	45.6	58.3	28.5	34.5	42.5	50	59.5
H	89	89	89	133	133	89	89	89	133	133
J	46.7	46.7	57	66.6	84.3	46.7	46.7	57	66.6	84.3
K	63	63	63	63	63	63	63	63	63	63
M/ISO clamp	21	21	21	21	21					
M/ISO male	21	21	21	21	21					
M/DIN male						22	23	25	25	30
M/SMS male		20	20	24	24	35				
M/BS male	22	22	22	22	27					
Weight (kg): Stop valve	6.5	6.8	13.3	14.9	18.2	6.5	6.8	13.3	15.6	18.2
Divert valve	8.2	8.6	15.5	18.6	24.6	8.2	8.6	15.5	19.6	24.6

Air Connections Compressed air:
R 1/8" (BSP), internal thread.

CIP connection:
R 3/8" (BSP), external thread.

Leakage connection:
R 3/8" (BSP), external thread.

Caution, opening/closing time:
Opening/closing time will be affected by the following:

- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

SMP-BC Mixproof

Double seal valves

Air-operated valves
 Product code: 5252

Material: 1.4404 (316L)
 Connection: ISO/DIN Welding ends
 Seals: EPDM
 Inside surface finish: Ra ≤ 1.6 µm
 Outside surface finish: Blasted
 Actuation: Pneumatic NC

2.5

Item No.	PPL EUR	Item No.	PPL EUR	Size		Dimension (mm)			Body combination
				Inch	DIN	A ₁		E	
Inch tube		DIN tube				Inch	DIN		20
9612364801	2454	9612364806	2454	38	40	345	343	49.5	
9612364802	2707	9612364807	2707	51	50	355	354	61.5	
9612364803	3229	9612364808	3229	63.5	65	433	430	82.3	
9612364804	4114			76.1		455		87.3	
		9612364809	4114		80		456	87.3	
9612364805	5474	9612364810	5474	101.6	100	527	526	133.5	
		9612465601	8396		125		567	150	
		9612465603	9952		150		580	150	
9612364811	2499	9612364816	2499	38	40	345	343	49.5	
9612364812	2782	9612364817	2782	51	50	355	354	61.5	
9612364813	3291	9612364818	3291	63.5	65	433	430	82.3	
9612364814	4203			76.1		455		87.3	
		9612364819	4203		80		456	87.3	
9612364815	5579	9612364820	5579	101.6	100	527	526	133.5	
		9612465602	8579		125		567	150	
		9612465604	10119		150		580	150	

NOTE! Other body combinations - on request.

The drawings shown are for sizes 38/101.6 mm/DN40/100.

Options - please see later this chapter.

For further information - please see PD-sheet.

Air-operated valves
Product code: 5252

Material: 1.4404 (316L)
Connection: ISO/DIN Welding ends
Seals: EPDM
Inside surface finish: Ra ≤ 1.6 µm
Outside surface finish: Blasted
Actuation: Pneumatic NC

Item No.	PPL EUR	Item No.	PPL EUR	Size		Dimension (mm)				Body combination
						A ₂		E	C	
						Inch	DIN			
11										
9612928401	3189	9612928421	3252	38	40	413.5	413.0	49.5	101.6	
9612928402	3411	9612928422	3411	51	50	421.8	422.0	61.5	102.0	
9612928403	4075	9612928423	4075	63.5	65	508.2	508.0	82.3	124.1	
9612928404	5092			76.1		536.1		87.3	128.6	
9612928405	7192	9612928424 9612928425	5092 7171	101.6	100	610.5	631.2	87.3 133.5	134.1 166.0	
12										
9612928406	3395	9612928426	3333	38	40	413.5	413.0	49.5	101.6	
9612928407	3546	9612928427	3547	51	50	421.8	422.0	61.5	102.0	
9612928408	4059	9612928428	4059	63.5	65	508.2	508.0	82.3	124.1	
9612928409	5188			76.1		536.1		87.3	128.6	
9612928410	7122	9612928429 9612928430	5188 7122	101.6	100	610.5	631.2	87.3 133.5	134.1 166.0	
21										
9612928411	3395	9612928431	3333	38	40	413.5	413.0	49.5	101.6	
9612928412	3547	9612928432	3546	51	50	421.8	422.0	61.5	102.0	
9612928413	4059	9612928433	4059	63.5	65	508.2	508.0	82.3	124.1	
9612928414	5188			76.1		536.1		87.3	128.6	
9612928415	7122	9612928434 9612928435	5188 7122	101.6	100	610.5	631.2	87.3 133.5	134.1 166.0	
22										
9612928416	3391	9612928436	3391	38	40	413.5	413.0	49.5	101.6	
9612928417	3616	9612928437	3616	51	50	421.8	422.0	61.5	102.0	
9612928418	4128	9612928438	4128	63.5	65	508.2	508.0	82.3	124.1	
9612928419	5207			76.1		536.1		87.3	128.6	
9612928420	7242	9612928439 9612928440	5207 7242	101.6	100	610.5	631.2	87.3 133.5	134.1 166.0	

NOTE! Other body combinations - on request.

Options - please see later this chapter.

For further information - please see PD-sheet.

SMP-BC Mixproof

Double seal valves

Air-operated valves
 Product code: 5252

Material: 1.4404 (316L)
 Connection: ISO/DIN Welding ends
 Seals: EPDM
 Inside surface finish: Ra ≤ 1.6 µm
 Outside surface finish: Blasted
 Actuation: Pneumatic NC

2.5

Item No.	PPL EUR	Item No.	PPL EUR	Size		Dimension (mm)					Body combination
						A		C	C ₁	E	
						Inch	DIN				
111											
9612364901	7390	9612364906	7390	38	40	486	486	90	80	49.5	
9612364902	8063	9612364907	8063	51	50	506	506	102	84	61.5	
9612364903	9318	9612364908	9318	63.5	65	616	616	124	108	82.3	
9612364904	12267			76.1		651		129	115	87.3	
9612364905	16125	9612364909	12267		80		667	129	120.5	87.3	
		9612364910	16125	101.6	100	752	752	157	150	133.5	
112											
9612364911	7525	9612364916	7525	38	40	4856	486	90	80	49.5	
9612364912	8196	9612364917	8196	51	50	506	506	102	84	61.5	
9612364913	9453	9612364918	9453	63.5	65	616	616	124	108	82.3	
9612364914	12492			76.1		651		129	115	87.3	
		9612364919	12492		80		667	129	120.5	87.3	
9612364915	16350	9612364920	16350	101.6	100	752	752	157	150	133.5	

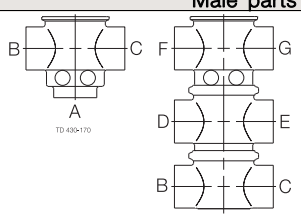
NOTE! Other body combinations - on request.

Options - please see later this chapter.

The drawings shown are for sizes 38/101.6 mm/DN40/100.

For further information - please see PD-sheet.

The air-operated valves not mentioned in the code number sheets, should be ordered as below:
 Product code: 5252, 5249, 5267

Item No.	PPL EUR	Size			Options
		mm	in	DN	
					Male parts
	50	38	1.5	40	Male part standards (included in the price) SMS, ISO/IDF, DS, BS, DIN, ISO clamp.
	63	51	2	50	
	93	63.5	2.5	65	
	107	76.1	3	80	
	186	101.6	4	100	
	356	125	4.9		
	490	150	5.9		
					 <p>Please state which type of male part you want and to which outlet it should be connected.</p>
					Seals
	0				Replacement to seals of Nitrile (NBR).
	143				Replacement to seals of Fluorinated rubber (FPM).
					Actuator
	24	38-51	1.5-2	40-50	Replacement to stronger spring.
	42	63.5-101.6	2.5-4	65-100	Replacement to stronger spring.
	267	38-51	1.5-2	40-50	Replacement to larger actuator.
		38-101.6	1.5-4	40-100	Other body combinations - on request.
					Tools
Product code: 5249					
3135302191	57	38-101.6	1.5-4	40-100	Spanner.
9612454001	95			125-150	Spanner.
3135308001	333	38-101.6	1.5-4	40-100	Service tool.

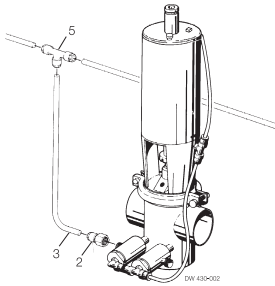
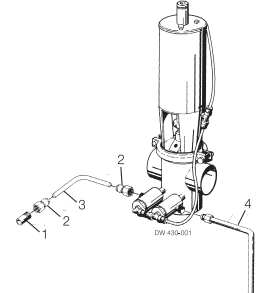
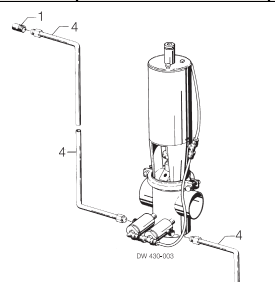
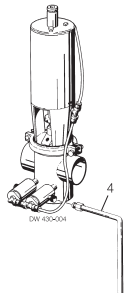
* = On request

NOTE! Other options on request.

2.5

Size			Body combination	PPL
Inch		DN		EUR
mm	in			
38	1.5	40	20/30	266
51	2	50	20/30	276
63.5	2.5	65	20/30	287
76.1	3	80	20/30	330
101.6	4	100	20/30	452
		125	20/30	541
		150	20/30	625
38	1.5	40	11/12	533
51	2	50	11/12	550
63.5	2.5	65	11/12	572
76.1	3	80	11/12	662
101.6	4	100	11/12	908
38	1.5	40	111/112	797
51	2	50	111/112	827
63.5	2.5	65	111/112	861
76.1	3	80	111/112	989
101.6	4	100	111/112	1360

CIP installation kits
 Product code: 5716

Item No.	PPL EUR	Valve type	Options	
Installation kit A for CIP and leakage connections for parallel valve (PVDF tubes)				
9612417701	485	SMP-BC	Contents: 1 x Pos. 2 Fitting PVDF female 1 x Pos. 3 Tube PVDF OD/ID = 10/8, l = 1000 1 x Pos. 5 Fitting PVDF	
Installation kit B for single connection of CIP (PVDF/stainless steel tubes)				
9612417601	532	SMP-BC	Contents: 1 x Pos. 1 Welding male part 2 x Pos. 2 Fitting PVDF female 1 x Pos. 3 Tube PVDF OD/ID = 10/8, l = 1000 1 x Pos. 4 Leakage tube AISI 316L OD/ID = 12/10	
Installation kit C for CIP and leakage connection of a single valve (stainless steel tube)				
9612417801	619	SMP-BC	Contents: 1 x Pos. 1 Welding male part 3 x Pos. 4 CIP leakage tube AISI 316L OD/ID = 12/10	
Installation kit D for leakage connection (stainless steel tube)				
3135710013	182	SMP-BC	Contents: 1 x Pos. 4 Leakage tube AISI 316L OD/ID = 12/10	

SMP-BCA Mixproof

Double seal valves

Aseptic air-operated valve
 Product code: 5253

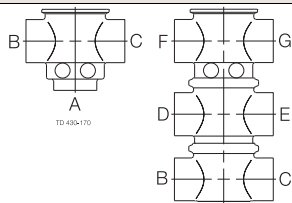
Material: 1.4404 (316L)
 Connection: ISO/DIN Welding ends
 Seals: PTFE/EPDM
 Inside surface finish: $Ra \leq 1.6 \mu m$
 Outside surface finish: Blasted
 Actuation: Pneumatic NC

2.5

Item No.	PPL EUR	Item No.	PPL EUR	Size		Dimension (mm)			Body combination	
				Inch	DN	A ₁		E		
Inch tube		DIN tube				Inch	DIN		20	
9612502501	3689	9612502506	3689	38	40	371	371	49.5		
9612502502	3994	9612502507	3994	51	50	381	381	61.5		
9612502503	4538	9612502508	4538	63.5	65	459	459	82.3		
9612502504	4968			76.1		481		87.3		
		9612502509	4968		80		482	87.3		
9612502505	6516	9612502510	6516	101.6	100	553	553	133.5		
30										
9612502511	3771	9612502516	3771	38	40	371	371	49.5		
9612502512	4057	9612502517	4057	51	50	381	381	61.5		
9612502513	4602	9612502518	4602	63.5	65	459	459	82.3		
9612502514	5096			76.1		481		87.3		
		9612502519	5096		80		482	87.3		
9612502515	6615	9612502520	6615	101.6	100	553	553	133.5		

NOTE! Other body combinations - on request.
 Options - please see later this chapter.
 For further information - please see PD-sheet.

The aseptic air-operated valves not mentioned in the code number sheets, should be ordered as below:
 Product code: 5253

Item No.	PPL EUR	Size			Options	
		Inch		DN		Male parts
		mm	in			
	52 64 95 109 191	38 51 63.5 76.1 101.6	1.5 2 2.5 3 4	40 50 65 80 100	Male part standards (included in the price) SMS, ISO/IDF, DS, BS, DIN, ISO clamp.	
					 <p>Please state which type of male part you want and to which outlet it should be connected.</p>	
					Seals	
	0 146				Replacement to seals of Nitrile (NBR). Replacement to seals of Fluorinated rubber (FPM).	
					Actuator	
	24 43 272	38-51 63.5-101.6 38-51	1.5-2 2.5-4 1.5-2	40-50 65-100 40-50	Replacement to stronger spring. Replacement to stronger spring. Replacement to larger actuator.	
		38-101.6	1.5-4	40-100	Other body combinations - on request.	

* = On request

NOTE! Other options on request.

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