

Simply Unique Single Seat

Alfa Laval Unique SSV Long Stroke

Concept

The Unique Single Seat Long Stroke valve meets the highest demands of your process in terms of hygiene and safety. Built on the well-proven Unique SSV platform it is especially suitable for use with products containing particles and/or suspended solids and also with high-viscosity flows.

Working principle

The valve is a pneumatic seat valve in a hygienic and modular design remote-controlled by means of compressed air. It has few and simple moveable parts which results in a very reliable valve and low maintenance cost.

Standard Design

The valve comes in a one or two body configuration. With its module built structure it is designed for flexibility and easy customization through the electronic configurator. The valve features an optimized life span of the seals through a defined compression design. The actuator is connected to the valve body using a yoke and all components are assembled with clamp rings.



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TECHNICAL DATA

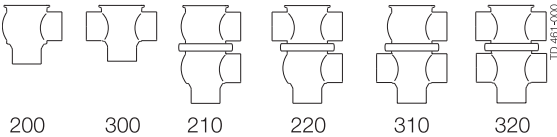
Temperature

Temperature range -10°C to +140°C (EPDM)

Pressure

Max. product pressure 1000 kPa (10 bar)
Min. product pressure Full vacuum
Air pressure 500 to 700 kPa (5 to 7 bar)

Valve body combinations



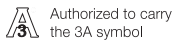
Actuator function

- Pneumatic downward movement, spring return.
- Pneumatic upward movement, spring return.
- Pneumatic upward and downward movement (AA).

PHYSICAL DATA

Materials

Product wetted steel parts: 1.4404 (316L)
Other steel parts: 1.4301 (304)
External surface finish: Semi-bright (blasted)
Internal surface finish: Bright (polished), Ra < 0.8 µm
Product wetted seals: EPDM
Other seals: NBR



Options

- A. Male parts or clamp liners in accordance with required standard
- B. Control and Indication: ThinkTop and ThinkTop Basic
- C. Product wetted seals in HNBR or FPM
- D. TR2 plug (floating PTFE design)
- E. Service tool for plug seals
- F. External surface finish bright

Note!

For further details, see instruction ESE00202.

Other valves in the same basic design

The Unique SSV valve range includes several purpose built valves. Below are some of the valve models available, though please use the Alfa Laval computer aided selection tool (Anytime configurator) for full access to all models and options.

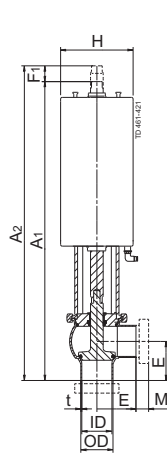
- Reverse acting valve.
- Manually operated valve.
- Tank Outlet valve.
- Tangential valve.

The actuator comes with a 5 years warranty

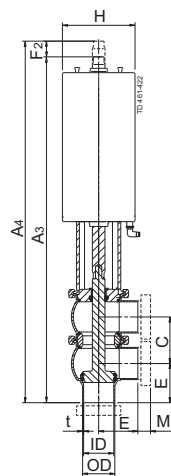
Dimensions (mm)

Size	Inch tubes DN/OD					DIN tubes DN				
	38	51	63.5	76.1	101.6	40	50	65	80	100
A ₁	415	423	442	539	592	414	422	439	535	591
A ₂	440	460	486	597	656	442	461	488	597	657
A ₃	458	488	533	645	718	456	487	531	641	717
A ₄	484	527	569	689	777	485	528	572	697	779
C	60.8	73.8	86.3	98.9	123.6	64	76	92	107	126.4
OD	38	51	63.5	76.1	102	41	53	70	85	104
ID	34.8	47.8	60.3	72.9	97.6	38	50	66	81	100
t	1.6	1.6	1.6	1.6	2	1.5	1.5	2	2	2
E ₁	49.5	61	81	86	119	49.5	61	78	86	120
E ₂	49.5	61	81	86	119	49.5	61	78	86	120
F ₁	25	37	44	58	64	28	39	49	62	66
F ₂	26	39	36	44	59	29	41	41	56	62
H	115	115	115	154	154	115	115	115	154	154
M (ISO clamp)	21	21	21	21	21	-	-	-	-	-
M (DIN clamp)	-	-	-	-	-	21	21	28	28	28
M (DIN male)	-	-	-	-	-	22	23	25	25	30
M (SMS male)	20	20	24	24	35	-	-	-	-	-
Weight (kg)										
Shut-off valve	6.1	6.6	7.5	14.8	17.2	6.2	6.6	7.6	15.3	17.2
Change-over valve	6.8	7.9	9.8	17.9	22.2	7	7.9	10.1	18.8	22.1

For exact high pressure actuator dimension (A and F) - please refer to information in CAS



Shut-off valve.



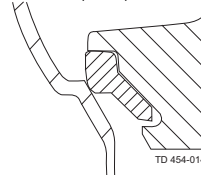
Change-over valve.

Please note!**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.

Air Connections Compressed air:

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



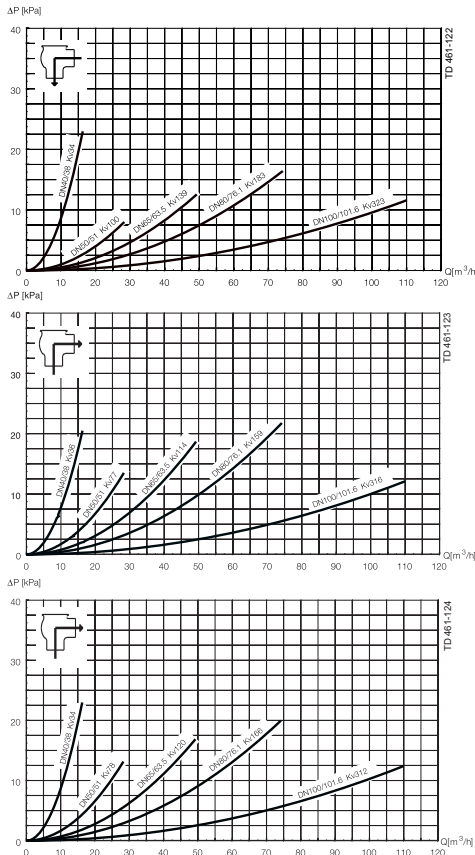
PTFE plug seal (TR2).

Max. size of solids (mm)	Valve size (DN/OD)				
	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm
Shut-off valve	21	32	40	54	58
Change-over valve (plug up/lower body)	22	35	32	43	54
Change-over valve (plug down)	12	15	23	30	40

Max. size of solids (mm)	Valve size (DN/OD)				
	DN40	DN50	DN65	DN80	DN100
Shut-off valve	24	34	45	62	61
Change-over valve (plug up/lower body)	25	37	37	52	57
Change-over valve (plug down)	12	15	23	30	40

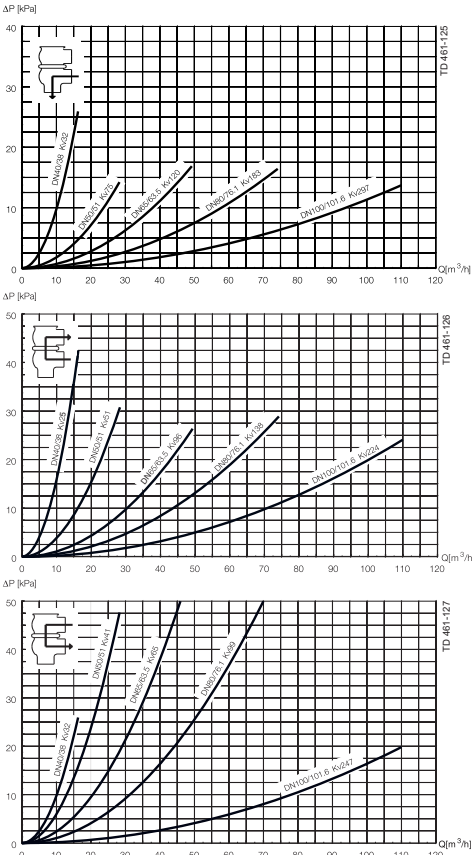
Air consumption (litres free air) for one stroke		
Size	DN40-65	DN80100
	DN/OD 38-63.5 mm	DN/OD 76.1101.6 mm
	NO and NC A/A	0.8 x air pressure [bar] 2 x air pressure [bar] 1.4 x air pressure [bar] 3.9 x air pressure [bar]

Pressure drop/capacity diagrams



Notel

For the diagrams the following applies:
Medium: Water (20°C)
Measurement: In accordance with VDI 2173
Pressure drop can also be calculated in Anytime configurator.
Pressure drop can also be calculated with the following formula:
 $Q = Kv \times \sqrt{\Delta p}$
Where
Q = Flow in m³/h.
Kv = m³/h at a pressure drop of 1 bar (see table above).
 Δp = Pressure drop in bar over the valve.



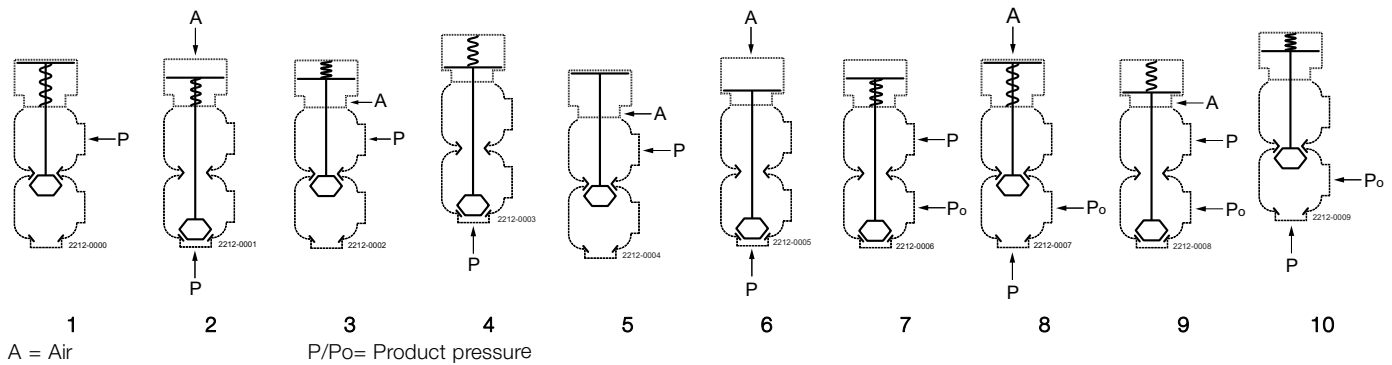
2.5" shut-off valve, where Kv = 111 (See table above).

$Q = Kv \times \sqrt{\Delta p}$
 $40 = 111 \times \sqrt{\Delta p}$

$\Delta p = \left(\frac{40}{111}\right)^2 = 0.13 \text{ bar}$

(This is approx. the same pressure drop by reading the y-axis above)

Pressure data for Unique Single Seat Valve Long Stroke



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Table 1 - Shut-off and Change-over valves Max. pressure in bar without leakage at the valve seat

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size				
			DN 40	DN50	DN 65	DN 80	DN 100
			DN/OD	DN/OD	DN/OD	DN/OD	DN/OD
			38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm
1		NO	10.0	8.9	4.8	7.1	4.6
2	6	NO	10.0	8.6	5.0	6.8	4.4
3	6	NC	10.0	9.9	5.4	7.2	4.6
4		NC	10.0	7.6	4.4	6.7	4.4
5	6	A/A	10.0	10.0	10.0	10.0	10.0
6	6	A/A	10.0	10.0	10.0	10.0	10.0

Table 2 Shut-off and Change-over valves Max. pressure in bar against which the valve can open

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size				
			DN 40	DN50	DN 65	DN 80	DN 100
			DN/OD	DN/OD	DN/OD	DN/OD	DN/OD
			38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm
7		NO	10.0	10.0	8.1	10.0	6.7
8	6	NO	10.0	10.0	8.0	9.7	6.5
9	6	NC	10.0	10.0	8.7	10.0	6.7
10		NC	10.0	10.0	7.5	9.6	6.4

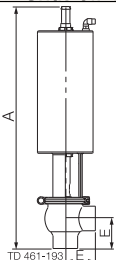
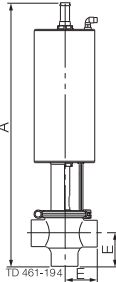
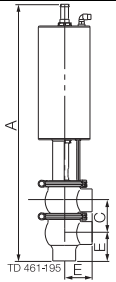
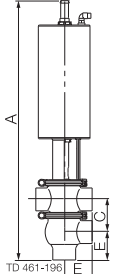
Unique SSV Long Stroke

Single Seat Valves

Product code: 5233
Inch Tubes

Material: 1.4404 (316L)
Connection: ISO Welding ends
Seals: EPDM
Inside surface finish: $Ra \leq 0.8 \mu m$
Outside surface finish: Blasted
Actuation: Pneumatic NO

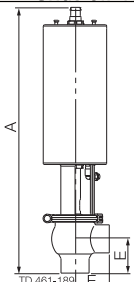
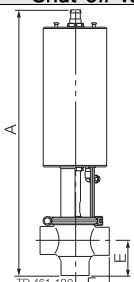
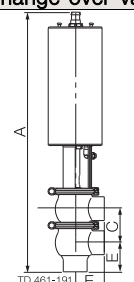
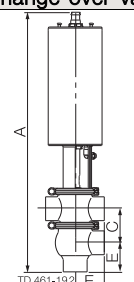
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Item No.	PPL	Size	Dimension (mm)			Body combination
	EUR	DN/OD (mm)	A	C	E	
						Shut-off valve 200
9613360117	2000	38.0	440		49.5	
9613360118	2242	51.0	459		61.0	
9613360119	2447	63.5	485		81.0	
9613360120	3297	76.1	596		86.0	
9613360121	4050	101.6	655		119.0	
						Shut-off valve 300
9613360141	2061	38.0	440		49.5	
9613360142	2317	51.0	459		61.0	
9613360143	2529	63.5	485		81.0	
9613360144	3401	76.1	596		86.0	
9613360145	4169	101.6	655		119.0	
						Change-over valve 210
9613360165	2493	38.0	484	60.8	49.5	
9613360166	2813	51.0	526	73.8	61.0	
9613360167	2995	63.5	568	86.3	81.0	
9613360168	4055	76.1	688	98.9	86.0	
9613360169	5449	101.6	776	124.0	119.0	
						Change-over valve 220
9613360189	2553	38.0	484	60.8	49.5	
9613360190	2888	51.0	526	73.8	61.0	
9613360191	3077	63.5	568	86.3	81.0	
9613360192	4159	76.1	688	98.9	86.0	
9613360193	5570	101.6	776	124.0	119.0	

NOTE! Other body combinations - on request.

Product code: 5233
Inch Tubes

Material: 1.4404 (316L)
Connection: ISO Welding ends
Seals: EPDM
Inside surface finish: $Ra \leq 0.8 \mu m$
Outside surface finish: Blasted
Actuation: Pneumatic NC

Item No.	PPL	Size	Dimension (mm)			Body combination
	EUR	DN/OD	A	C	E	
						Shut-off valve 200
9613360105	2000	38.0	415		49.5	
9613360106	2242	51.0	422		61.0	
9613360107	2447	63.5	441		81.0	
9613360108	3297	76.1	538		86.0	
9613360109	4050	101.6	591		119.0	
						Shut-off valve 300
9613360129	2061	38.0	415		49.5	
9613360130	2317	51.0	422		61.0	
9613360131	2529	63.5	441		81.0	
9613360132	3401	76.1	538		86.0	
9613360133	4169	101.6	591		119.0	
						Change-over valve 210
9613360153	2493	38.0	458	60.8	49.5	
9613360154	2813	51.0	487	73.8	61.0	
9613360155	2995	63.5	532	86.3	81.0	
9613360156	4055	76.1	644	98.9	86.0	
9613360157	5449	101.6	717	123.6	119.0	
						Change-over valve 220
9613360177	2553	38.0	458	60.8	49.5	
9613360178	2888	51.0	487	73.8	61.0	
9613360179	3077	63.5	532	86.3	81.0	
9613360180	4159	76.1	644	98.9	86.0	
9613360181	5570	101.6	717	123.6	119.0	

NOTE! Other body combinations - on request.

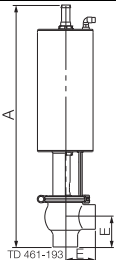
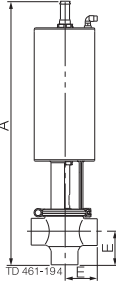
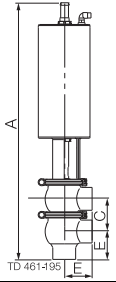
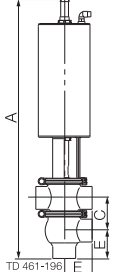
Unique SSV Long Stroke

Single Seat Valves

Product code: 5233
DIN tubes

Material: 1.4404 (316L)
Connection: DIN Welding ends
Seals: EPDM
Inside surface finish: Ra ≤ 0.8 µm
Outside surface finish: Blasted
Actuation: Pneumatic NO

2.11

Item No.	PPL EUR	Size DIN	A	Dimension (mm) C	E	Body combination
Shut-off valve 200						
9613360123	2000	DN40	442		49.5	
9613360124	2242	DN50	461		62.0	
9613360125	2447	DN65	488		78.0	
9613360126	3297	DN80	597		87.0	
9613360127	4050	DN100	657		120.0	
Shut-off valve 300						
9613360147	2061	DN40	442		49.5	
9613360148	2317	DN50	461		62.0	
9613360149	2529	DN65	488		78.0	
9613360150	3401	DN80	597		87.0	
9613360151	4169	DN100	657		120.0	
Change-over valve 210						
9613360171	2493	DN40	485	64.0	49.5	
9613360172	2813	DN50	528	76.0	62.0	
9613360173	2995	DN65	572	92.0	78.0	
9613360174	4055	DN80	697	107.0	87.0	
9613360175	5449	DN100	779	126.4	120.0	
Change-over valve 220						
9613360195	2553	DN40	485	64.0	49.5	
9613360196	2888	DN50	528	76.0	62.0	
9613360197	3077	DN65	572	92.0	78.0	
9613360198	4159	DN80	697	107.0	87.0	
9613360199	5570	DN100	779	126.4	120.0	

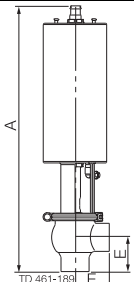
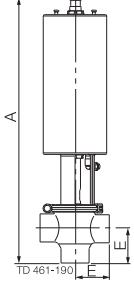
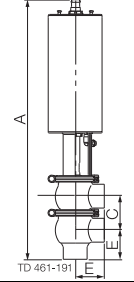
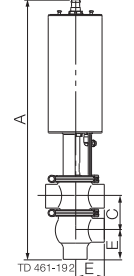
NOTE! Other body combinations - on request.

Single Seat Valves

Unique SSV Long Stroke

Product code: 5233
DIN tubes

Material: 1.4404 (316L)
Connection: DIN Welding ends
Seals: EPDM
Inside surface finish: $Ra \leq 0.8 \mu m$
Outside surface finish: Blasted
Actuation: Pneumatic NC

Item No.	PPL	Size	Dimension (mm)			Body combination
	EUR	DIN	A	C	E	
Shut-off valve 200						
9613360111	2000	DN40	414		49.5	
9613360112	2242	DN50	422		62.0	
9613360113	2447	DN65	439		78.0	
9613360114	3297	DN80	535		87.0	
9613360115	4050	DN100	591		120.0	
Shut-off valve 300						
9613360135	2061	DN40	414		49.5	
9613360136	2317	DN50	422		62.0	
9613360137	2529	DN65	439		78.0	
9613360138	3401	DN80	535		87.0	
9613360139	4169	DN100	591		120.0	
Change-over valve 210						
9613360159	2493	DN40	456	64.0	49.5	
9613360160	2813	DN50	487	76.0	62.0	
9613360161	2995	DN65	531	92.0	78.0	
9613360162	4055	DN80	641	107.0	87.0	
9613360163	5449	DN100	717	126.4	120.0	
Change-over valve 220						
9613360183	2553	DN40	456	64.0	49.5	
9613360184	2888	DN50	487	76.0	62.0	
9613360185	3077	DN65	531	92.0	78.0	
9613360186	4159	DN80	641	107.0	87.0	
9613360187	5570	DN100	717	126.4	120.0	

NOTE! Other body combinations - on request.

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