Simply Unique Single Seat

Alfa Laval Unique SSV Tank Outlet

Concept

The Unique Single Seat Tank Outlet valve meets the highest demands of your process in terms of hygiene and safety. Built on the well-proven Unique SSV platform it is suitable for a wide field of applications, e.g. as a shut-off version closing up against the tank or as a reverse acting valve opening into the tank.

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 Unique SSV Tank Outlet valve comes in a one body configuration, which can be delivered with or without a tank flange. 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. The body can be turned in any position if the clamps are slightly loosened. The tank flange is welded directly into the tank.

TECHNICAL DATA

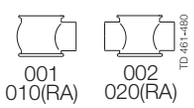
Temperature

Max. product pressure in tank: 1000 kPa (10 bar) if max. 20°C
. . . . . 850 kPa (8.5 bar) if max. 100°C
. . . . . 750 kPa (7.5 bar) if max. 150°C
Temperature range: . . . . . -10°C to +140°C (EPDM)

Pressure

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

Valve Body Combinations



001 010(RA) 002 020(RA)

Authorized to carry the 3A symbol

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
Other product wetted seals: . . . . . EPDM
Other seals . . . . . NBR

Options

A. Male parts or clamp liners in accordance with required standard.
B. Weld ends or connection types other than Tri-Clamp
C. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
D. Product wetted seals in HNBR or FPM.
E. Plug seals HNBR, FPM or TR2 plug (floating PTFE design).
F. High pressure actuator.
G. Long stroke actuator (not available for Reverse Acting version).
H. Maintainable actuator.
I. External surface finish bright.

Note!

For further details, see instruction ESE00305.

Other valves in the same basic design

The 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.
- Long stroke valve.
- Manually operated valve.
- Aseptic valve.
- Tangential valve.

The actuator comes with a 5 years warranty

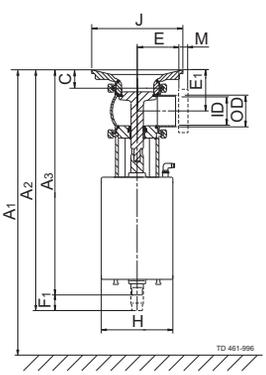
Dimensions (mm)

2.11

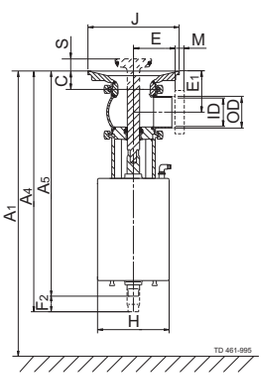
Size	51 mm	63.5 mm	76.1 mm	101.6 mm	DN 50	DN 65	DN 80	DN 100
A_1	426	439	479	503	429	445	487	506
A_2	393	406	446	470	396	412	454	473
A_3	368	381	416	440	371	387	424	443
A_4	390	403	443	467	393	409	451	470
A_5	364	377	412	436	367	383	420	439
C	30	30	30	30	30	30	30	30
OD	51	63.5	76.1	101.6	53	70	85	104
ID	47.8	60.3	72.9	97.6	50	66	81	100
t	1.6	1.6	1.6	2	1.5	2	2	2
E	61	81	86	119	62	82	87	120
E_1	67	73	79	92	68	76	84	93
F_1	25	25	30	30	25	25	30	30
F_2	26	26	31	31	26	26	31	31
H	114.9	114.9	154.3	154.3	114.9	114.9	154.3	154.3
J	148	163	178	198	148	163	178	198
S	16	16	21	21	16	16	21	21
M/ISO clamp	21	21	21	21	-	-	-	-
M/DIN clamp	-	-	-	-	21	28	28	28
M/DIN male	-	-	-	-	23	25	25	30
M/SMS male	20	24	24	35	-	-	-	-
Weight (kg)								
Standard	7.1	8.3	13.3	15.9	7.1	8.5	13.8	15.9
Reverse Acting	7.2	8.4	13.5	16.1	7.2	8.6	14	16

A1= min. Installation measure to allow that valve can be lifted out of the tank flange / valve body (if Indication Unit is mounted, height must be added)

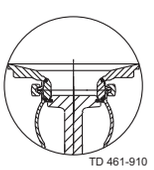
[1] For exact A_1 - A_4 dimensions, please refer to informations in Anytime configurator.



Standard



Reverse Acting



PTFE plug seal (TR2)

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.

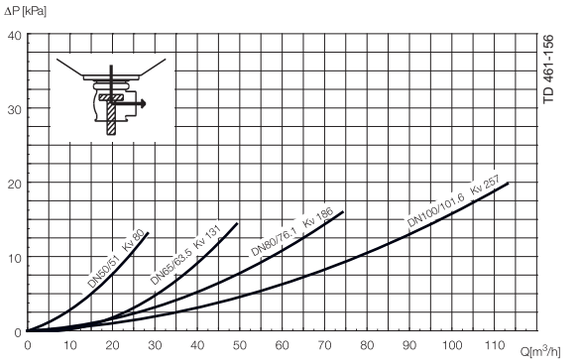
Air Connections Compressed air:

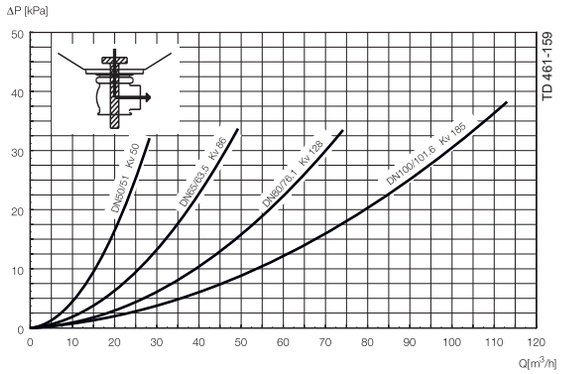
R 1/8" (BSP), internal thread.

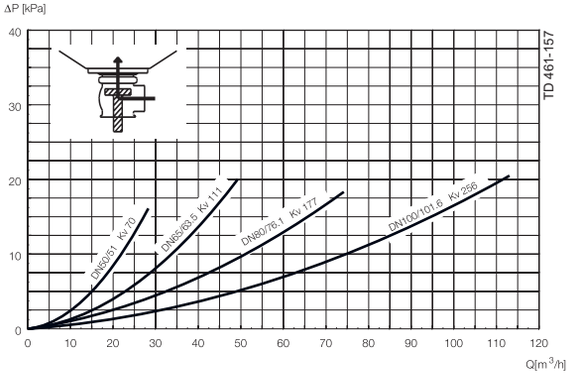
Actuator function

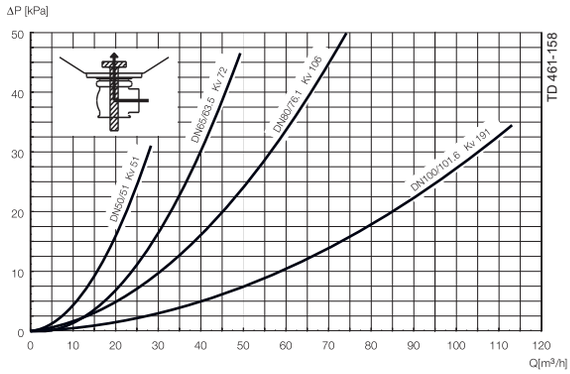
Air consumption (litres free air) for one stroke	
DN50-65 DN/ OD 51-63.5 mm	**DN80100 DN/ OD 76.1101.6 mm**
0.5 x air pressure [bar]	1.3 x air pressure [bar]

Pressure drop/capacity diagrams









Note!

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

Measurement: In accordance with VDI2173

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 m^3/h.
Kv = m^3/h at a pressure drop of 1 bar (see table above).
Δ p = Pressure drop in bar over the valve.

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Kv = m^3/h at a pressure drop of 1 bar (see table above).
Δ p = Pressure drop in bar over the valve.
2.5" shut-off valve, where Kv = 111 (See table above).

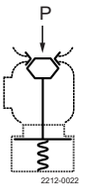
$Q = Kv \times \sqrt{\Delta p}$

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

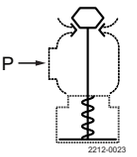
$$\Delta p = \left(\frac{40}{111}\right)^2 = 0.13 \text{ bar}$$

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

Pressure data for Unique Single Seat Valve Tank Outlet



1



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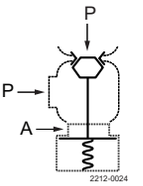

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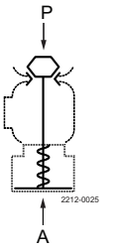

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A = Air

P= Product pressure

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Table 1 - Shut fully closed.

Max. pressure in bar without leakage at the valve seat

Actuator / Valve body combination and direction of pressure	Valve size DN50 DN/OD 51 mm	DN 65 DN/OD 63.5 mm	DN 80 DN/OD 76.1 mm	DN 100 DN/OD 101.6 mm
1	7.2	4.2	6.4	4.2
2	8.4	4.5	6.8	4.4

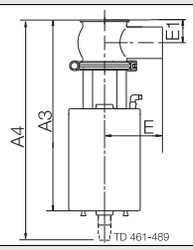
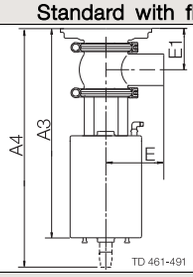
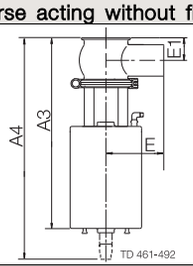
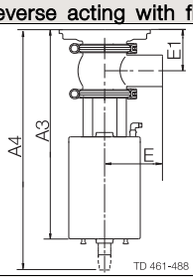
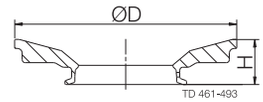
Table 2

Max. pressure in bar against which the valve can open

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Valve size DN50 DN/OD 51 mm	DN 65 DN/OD 63.5 mm	DN 80 DN/OD 76.1 mm	DN 100 DN/OD 101.6 mm
3	6	10.0	9.0	10.0	6.9
4	6	10.0	8.3	9.9	6.6

Product code: 5250

Material: 1.4404 (316L)
Connection: ISO/DIN Welding ends
Seals: EPDM
Inside surface finish: Ra ≤ 0.8 µm
Outside surface finish: Blasted
Actuation: Pneumatic NC

Item No.	PPL EUR	Item No.	PPL EUR	Size		Dimension (mm)							
						A3		A4			E1		
Inch Tube		DIN		DN/OD	DIN	DN/OD	DIN	DN/OD	DIN	E	DN/OD	DIN	Standard without flange
9613361110	**2237**	9613361114	**2237**	51.0	DN50	338	341	363	366	61	67	68	
9613361111	**2443**	9613361115	**2443**	63.5	DN65	351	357	376	382	81	73	76	
9613361112	**2990**	9613361116	**2990**	76.1	DN80	376	394	416	424	86	79	84	
9613361113	**4072**	9613361117	**4072**	101.6	DN100	410	413	440	443	119	92	93	
													Standard with flange
9613361174	**2730**	9613361178	**2730**	51.0	DN50	368	371	393	396	61	67	68	
9613361175	**3036**	9613361179	**3036**	63.5	DN65	381	387	406	412	81	73	76	
9613361176	**3615**	9613361180	**3615**	76.1	DN80	416	424	446	454	86	79	84	
9613361177	**4730**	9613361181	**4730**	101.6	DN100	440	443	470	473	119	92	93	
													Reverse acting without flange
9613321638	**2281**	9613323228	**2281**	51.0	DN50	334	337	360	363	61	67	68	
9613323225	**2443**	9613323229	**2443**	63.5	DN65	347	353	373	379	81	73	76	
9613323226	**2990**	9613323230	**2990**	76.1	DN80	382	390	413	421	86	79	84	
9613323227	**4072**	9613323231	**4072**	101.6	DN100	406	409	437	440	119	92	93	
													Reverse acting with flange
*		*		51.0	DN50	364	367	390	393	61	67	68	
*		*		63.5	DN65	377	383	403	409	81	73	76	
*		*		76.1	DN80	412	420	443	451	86	79	84	
*		*		101.6	DN100	436	439	467	470	119	92	93	
						øD	**H**						**Tank flange**
9634069901	**475**	9634069901	**475**	51.0	DN50	148	30						
9634070001	**572**	9634070001	**572**	63.5	DN65	163	30						
9634070101	**603**	9634070101	**603**	76.1	DN80	178	30						
9634070201	**634**	9634070201	**634**	101.6	DN100	198	30						

* For prices please contact customer support.