



# Simply Unique Single Seat

## 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.



### TECHNICAL DATA

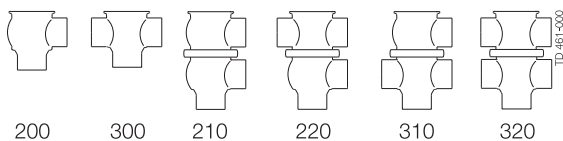
#### Temperature

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 (CAS) for full access to all models and options.

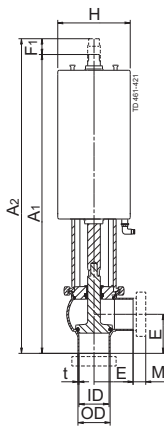
- Reverse acting valve.
- Manually operated valve.
- Tank Outlet valve.
- Tangential valve.

The actuator comes with a 5 years warranty

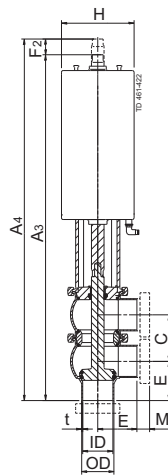
### Dimensions (mm)

Size	Inch tubes DN/OD					DIN tubes DN				
	38	51	63.5	76.1	101.6	40	50	65	80	100
A <sub>1</sub> <sup>1)</sup>	415	422	441	538	591	414	422	439	535	591
A <sub>2</sub> <sup>1)</sup>	440	459	485	596	655	442	461	488	597	657
A <sub>3</sub> <sup>1)</sup>	458	487	532	644	717	456	487	531	641	717
A <sub>4</sub> <sup>1)</sup>	484	526	568	688	776	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	49.5	61	81	86	119	49.5	62	78	87	120
F <sub>1</sub>	25	37	44	58	64	28	39	49	62	66
F <sub>2</sub>	26	39	36	44	59	29	41	41	56	62
H	85	115	115	154	154	85	∅115	∅115	∅155	∅155
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	-	-	-	-	-
<b>Weight (kg)</b>										
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

<sup>1)</sup> For exact A<sub>1</sub> - A<sub>4</sub> dimensions, please refer to informations in CAS.



Shut-off valve.



Change-over valve.

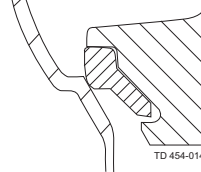
### Please note!

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.



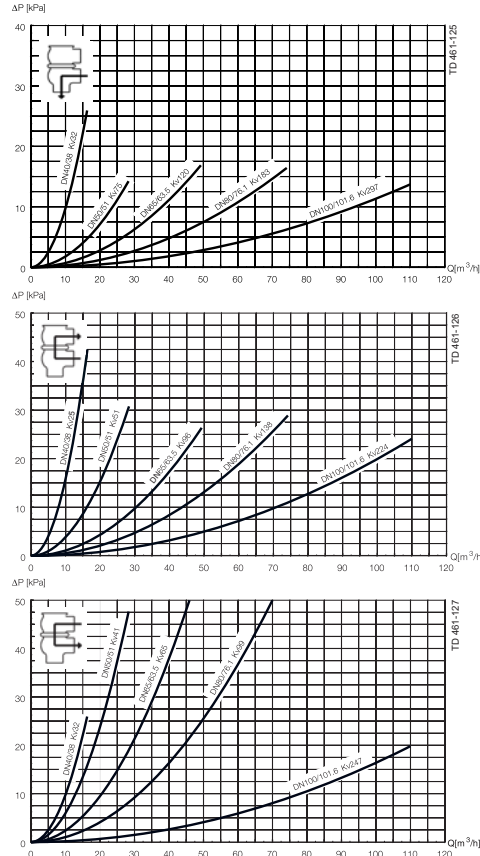
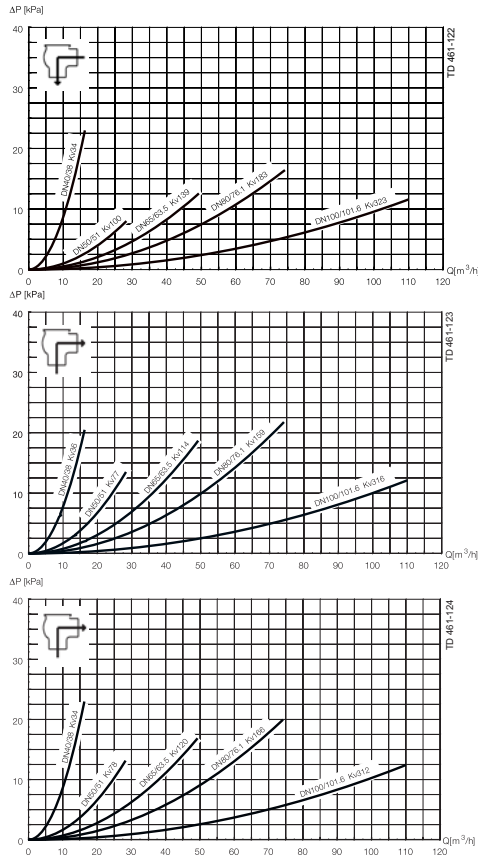
PTFE plug seal (TR2).

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	DN80-100
	DN/OD 38-63.5 mm	DN/OD 76.1-101.6 mm
NO and NC	0.8 x air pressure [bar]	2 x air pressure [bar]
A/A	1.4 x air pressure [bar]	3.9 x air pressure [bar]

**Pressure drop/capacity diagrams**



**Note!**

For the diagrams the following applies:

Medium: Water (20°C)

Measurement: In accordance with VDI 2173

Pressure drop can also be calculated in CAS.

Pressure drop can also be calculated with the following formula:

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

Where

Q = Flow in m<sup>3</sup>/h.

K<sub>v</sub> = m<sup>3</sup>/h at a pressure drop of 1 bar (see table above).

Δ p = Pressure drop in bar over the valve.

How to calculate the pressure drop for an ISO 2.5" shut-off valve if the flow is 40 m<sup>3</sup>/h

2.5" shut-off valve, where K<sub>v</sub> = 111 (See table above).

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

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

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

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

Pressure data for Unique Single Seat Valve Long Stroke

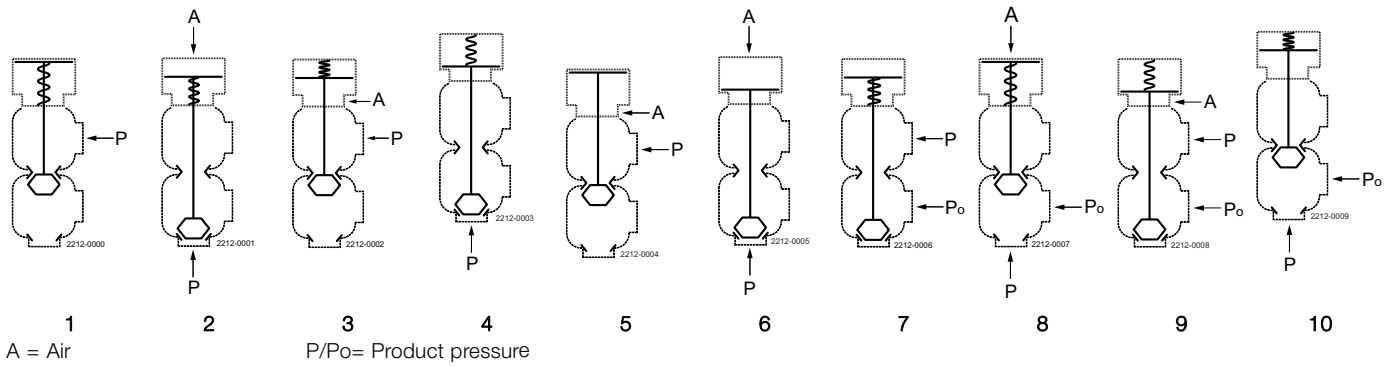


Table 1 - Shut-off and Change-over valves

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 DN/OD	DN50 DN/OD	DN 65 DN/OD	DN 80 DN/OD	DN 100 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 DN/OD	DN50 DN/OD	DN 65 DN/OD	DN 80 DN/OD	DN 100 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

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