



Simply Unique Single Seat

Alfa Laval Unique SSV Tangential

Concept

The Unique Single Seat Tangential valve meets the highest demands of your process in terms of hygiene and safety. Built on the well-proven Unique SSV platform it offers complete drainability of the valve body on horizontally mounted valves. It can be configured as a shut-off valve with two (2) or three (3) ports or as a change-over valve with three (3) to five (5) ports.

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 Tangential 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)

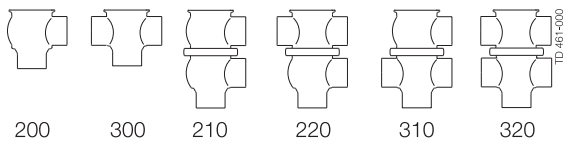
Pressure

Max. product pressure 1000 kPa (10 bar)

Min. product pressure: Full vacuum

Air pressure: 500 to 700 kPa (5-7 bar)

Valve Body Combinations



Actuator function

- Pneumatic downward movement, spring return.
- Pneumatic upward movement, spring return.
- Pneumatic upward and downward movement (A/A).
- Actuator for intermediate position of the valve plug (optional)

PHYSICAL DATA

Materials

Product wetted steel parts: 1.4404 (316L)

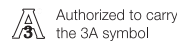
Other steel parts: 1.4301 (304)

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. Weld ends or connection types other than Tri-Clamp.
- B. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
- C. Product wetted seals in HNBR or FPM.
- D. Plug seal HNBR, FPM or TR2 (floating PTFE design).
- E. High pressure actuator.
- F. NO or A/A actuator.
- G. Maintainable actuator.
- H. External surface finish bright.

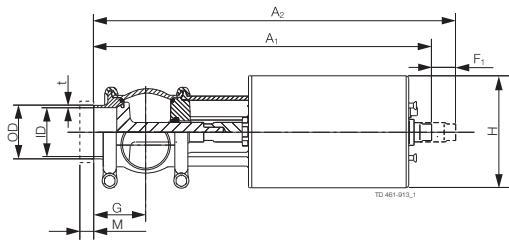
Note!

For further details, see instruction ESE00609.

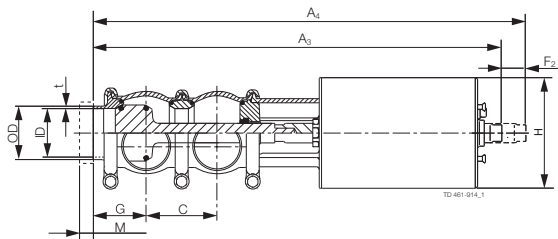
Dimensions

	Nominal Size			
	DN/OD 51 mm	DN/OD 63.5 mm	DN/OD 76.1 mm	DN/OD 101.6 mm
A ₁ ¹⁾	361	374	409	433
A ₂ ¹⁾	386	399	439	463
A ₃ ¹⁾	435	460	507	557
A ₄ ¹⁾	457	482	534	584
C	73.8	86.3	98.9	123.6
OD	51	63.5	76.1	101.6
ID	47.8	60.3	72.9	97.6
t	1.6	1.6	1.6	2
E	61	81	86	119
G	59.9	66.2	72.5	84.8
F ₁	25	25	30	30
F ₂	22	22	27	27
H	114.9	114.9	154.3	154.3
N	14.3	17.9	21.5	25
M/ISO Clamp	21	21	21	21
M/SMS male	20	24	24	35
Weight (kg)				
Shut-off valve	5.8	6.8	11.7	14.1
Change-over valve	7.4	9	14.5	18.8

¹⁾ For exact A₁ - A₄ dimensions, please refer to informations in Anytime configurator.



Shut-off valve



Change-over valve

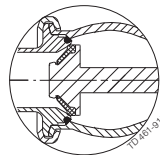
Please note!

Opening/closing time will be effected by the following:

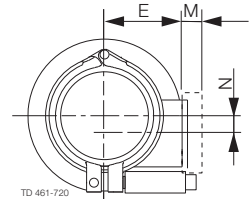
- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

Air Connections Compressed air:

R 1/8" (BSP). Internal thread.



PTFE plug seal (TR2)



Air Consumption (Litres free air) for one stroke

Size	DN/OD 51 - 63.5 mm	DN/OD 76.1 - 101.6 mm
NO and NC	0.15 x air pressure [bar]	1.3 x air pressure [bar]
A/A	1.1 x air pressure [bar]	2.7 x air pressure [bar]

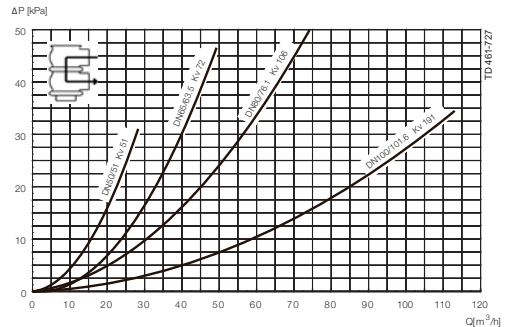
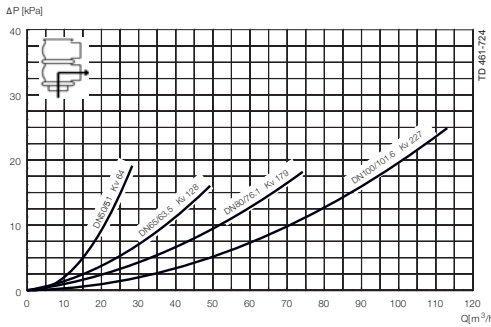
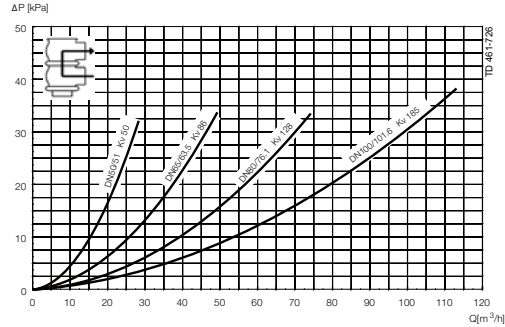
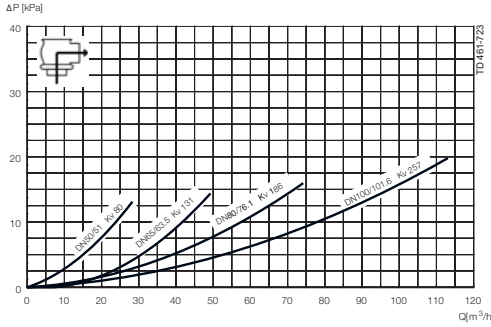
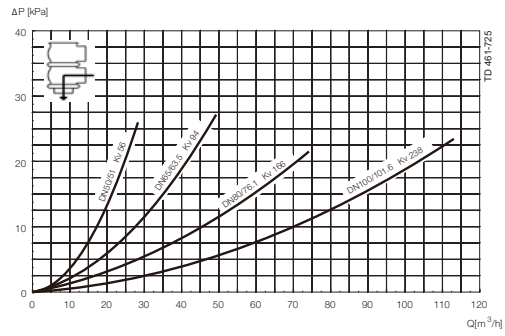
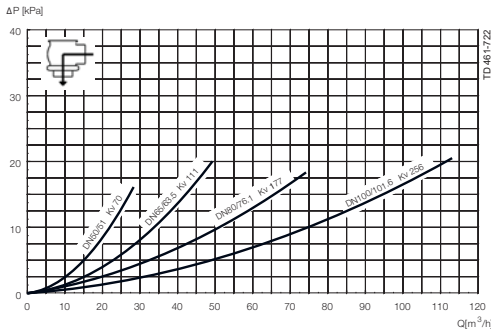
Other valves in the same basic design

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.

The actuator comes with a 5 years warranty

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:

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

Where

Q = Flow in m³/h.

K_v = m³/h at a pressure drop of 1 bar (see table above).

Δ p = Pressure drop in bar over the valve.

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K_v = m³/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 K_v = 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 Tangential body/Tank valve

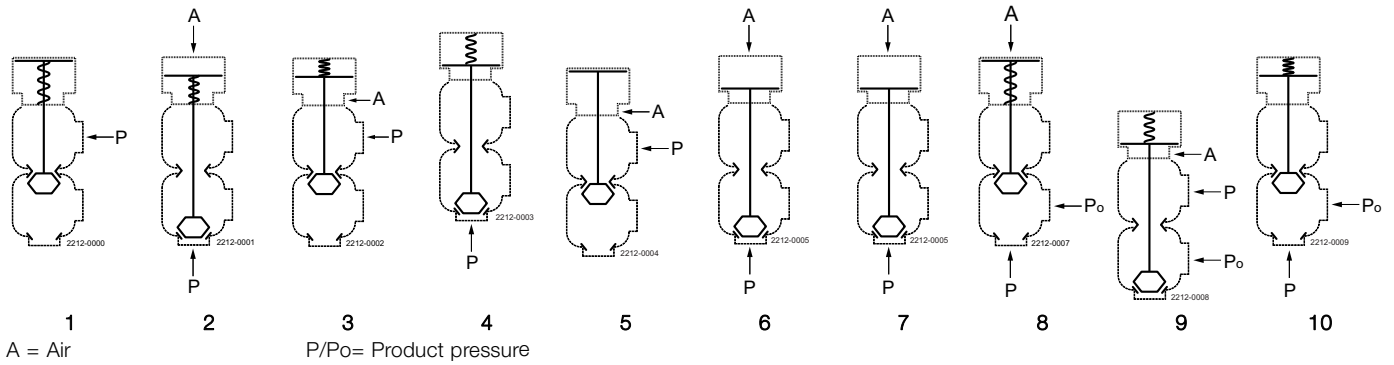


Table 1 - Shut-off and change-over valves

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			
			DN50 DN/OD	DN 65 DN/OD	DN 80 DN/OD	DN 100 DN/OD
			51 mm	63.5 mm	76.1 mm	101.6 mm
1		NO	8.4	4.5	6.8	4.4
2	6	NO	9.6	5.6	7.2	4.8
3	6	NC	10.0	6.1	7.7	5.0
4		NC	7.2	4.2	6.4	4.2
5	6	A/A	10.0	10.0	10.0	10.0
6	6	A/A	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			
			DN50 DN/OD	DN 65 DN/OD	DN 80 DN/OD	DN 100 DN/OD
			51 mm	63.5 mm	76.1 mm	101.6 mm
7		NO	10.0	7.7	9.7	6.3
8	6	NO	10.0	6.3	9.9	6.6
9	6	NC	10.0	9.0	10.0	6.9
10		NC	10.0	6.8	9.1	6.1

Table 3- Shut-off and change-over valves with high pressure actuator option

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			
			DN50 DN/OD	DN 65 DN/OD	DN 80 DN/OD	DN 100 DN/OD
			51 mm	63.5 mm	76.1 mm	101.6 mm
1		NO	10.0	10.0	-	-
2	6	NO	10.0	10.0	-	-
3	6	NC	10.0	10.0	5.0	3.0
4		NC	10.0	10.0	10.0	7.0

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