



Simply Unique Single Seat

Unique SSV Aseptic

General Information

The new generation that meets the highest demands of your process in terms of hygiene and safety. Unique Single Seat Valves are built on a well-proven, platform from an installed base of more than one million valves.

Application

Unique Single Seat Aseptic Valve is a seat valve with a one-piece diaphragm to ensure hermetic sealing towards the atmosphere. The valve is designed for aseptic processing and it is available 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 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.

The valve is based on the modular platform of the Unique Single Seat Valve. Sterile stem sealing towards the atmosphere is ensured by a special designed PTFE/elastomer diaphragm.

Standard Design

The Unique Single Seat Aseptic Valve comes in a one or two body configuration. To ensure a high degree of flexibility the valve seat between the two bodies in the Change-over version is loose. 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. An integrated valve plug/diaphragm secures aseptic operation.

To facilitate installation the valve is only partly assembled when delivered. The valve has welding ends as standard and is available with fittings as option.

The Unique Single Seat Aseptic Valve range covers the sizes from DN25 to DN100 and DN/OD 25 mm to 101.6 mm.

The actuator comes with a 5 years warranty.

Other valves in the same basic design

The Unique SSV valve range includes several purpose built valves. Below listed 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.


- Manually operated valve.
- Two Step valve.
- Tangential valve.
- Tank Outlet valve.

Unique Single Seat Valve - Aseptic is designed, tested and approved according to EHEDG guidelines.

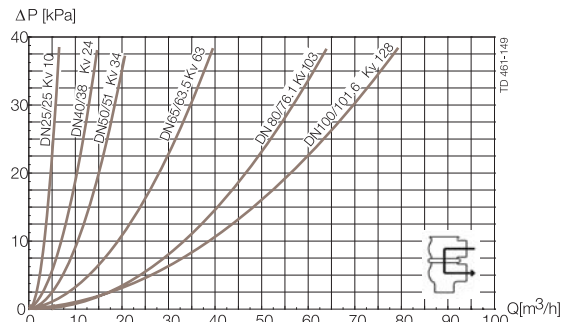
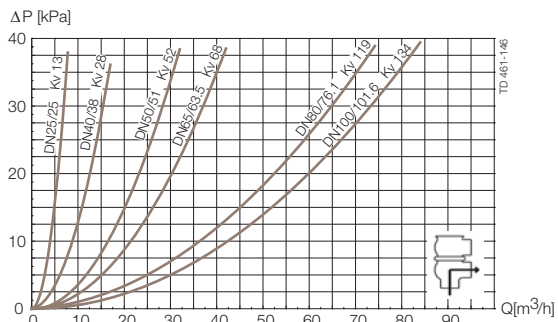
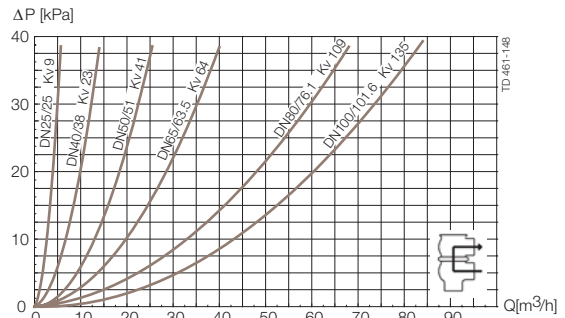
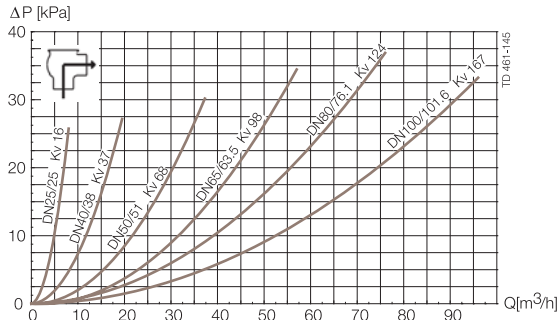
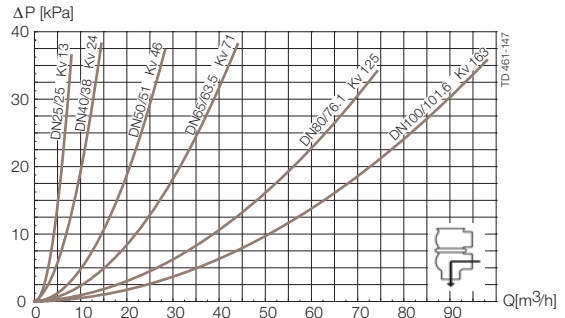
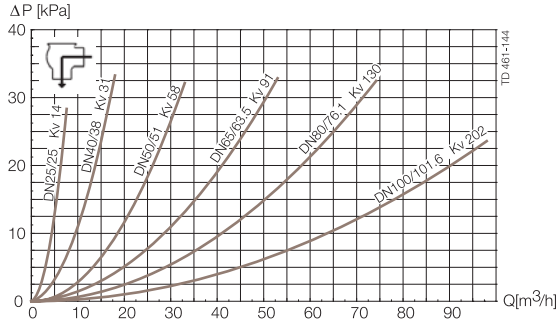


Unique Single Seat Aseptic Change-over and Shut-off Valve



 Authorized to carry the 3A symbol

Pressure drop/capacity diagrams



Note!

For the diagrams the following applies:

Medium: Water (20° C)

Measurement: In accordance with VDI2173

$K_v = m^3/h$ at a pressure drop of 1 bar.

For other pressure drops than 1 bar the flow can be calculated with the following formula:

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

Where

Q = Flow in m^3/h .

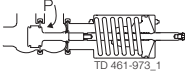
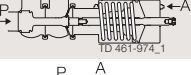
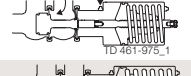
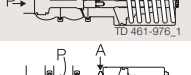
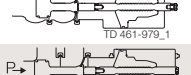

K_v = See above.

Δp = Pressure drop in bar over the valve.

Pressure data for Unique Single Seat Valve Aseptic

Table 1

Seal fully closed. Max. static pressure without leakage

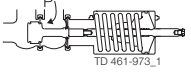
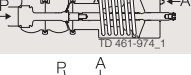
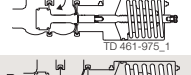
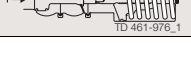
Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			DN 25 DN/OD 25 mm	DN 40 DN/OD 38 mm	DN50 DN/OD 51 mm	DN 65 DN/OD 63.5 mm	DN 80 DN/OD 76.1 mm	DN 100 DN/OD 101.6 mm
 TD 461-973_1		NO	8	6	8	4.4	7.5	5.5
 TD 461-974_1	6	NO	8	7.6	8	5.6	7.2	4.8
 TD 461-975_1	6	NC	8	8	8	6.8	7.5	5
 TD 461-976_1		NC	8	6.3	7.2	4.2	6.4	4.2
 TD 461-979_1	6	A/A	8	8	8	8	8	8
 TD 461-980_1	6	A/A	8	8	8	8	8	8

A = Air

P = Product pressure

Table 2

Seat fully closed. Options with high pressure actuator - Max. static pressure without leakage

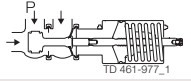
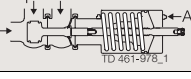
Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			DN 25 DN/OD 25 mm	DN 40 DN/OD 38 mm	DN50 DN/OD 51 mm	DN 65 DN/OD 63.5 mm	DN 80 DN/OD 76.1 mm	DN 100 DN/OD 101.6 mm
 TD 461-973_1		NO	8	8	8	8	-	-
 TD 461-974_1	6	NO	8	8	8	8	-	-
 TD 461-975_1	6	NC	8	8	8	8	8	4.1
 TD 461-976_1		NC	8	8	8	8	8	7

A = Air

P = Product pressure

Table 3

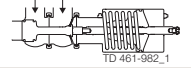
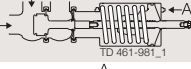
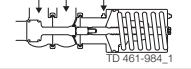
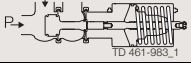
Valve is closing. Approximately max. pressure in bar at which the valve can close by means of the spring or air pressure

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			DN 25 DN/OD 25 mm	DN 40 DN/OD 38 mm	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
		NC	6.5	6.5	8	8	7.3	7.6
	6	NO	8	8	8	8	7.9	8

A = Air
P = Product pressure

Table 4

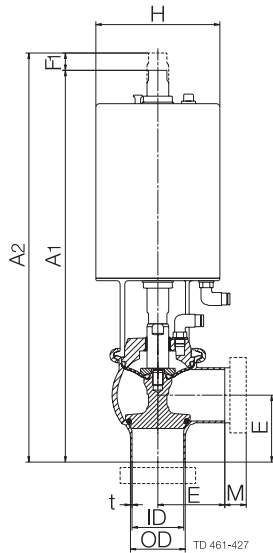
Seat fully closed - Standard valve - Approximately pressure in bar, at which the valve plug can change positions by the spring or air pressure

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			DN 25 DN/OD 25 mm	DN 40 DN/OD 38 mm	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
		NO	8	8	8	8	8	8
	6	NO	8	8	8	8	8	8
		NC	8	8	8	8	8	8
	6	NC	8	8	8	5.7	8	5.4

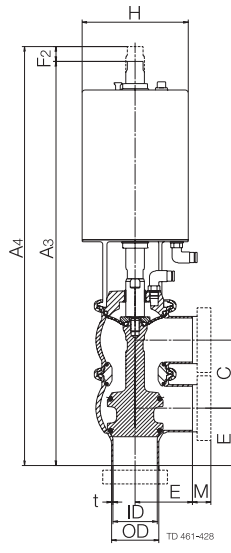
A = Air
P = Product pressure

Dimensions (mm)

Nominal size	DN/OD						DIN					
	25	38	51	63.5	76.1	101.6	25	40	50	65	80	100
A ₁	308	314	367	394	432	482	312	316	369	397	436	484
A ₂	319	325	382	409	451	501	323	327	384	412	455	503
A ₃	356	375	441	480	531	606	364	380	444,5	489	543	610
A ₄	364	384	454	493	547	622	372	389	458	502	559	626
C	47.8	60.8	73.8	86.3	98.9	123.6	52	64	76	92	107	126
OD	25	38	51	63.5	76.1	101.6	29	41	53	70	85	104
ID	21.8	34.8	47.8	60.3	72.9	97.6	26	38	50	66	81	100
t	1.6	1.6	1.6	1.6	1.6	2	1,5	1,5	1,5	2	2	2
E ₁	50	49.5	62	82	87	120	50	49,5	62	78	87	120
E ₂	50	49.5	62	82	87	120	50	49,5	62	78	87	120
F ₁	11	11	14	15	17	17	11	11	14	15	17	17
F ₂	8	9	12	13	15	15	8	9	12	13	15	15
H	85	85	114.9	114.9	154.3	154.3	85	85	114.9	114.9	154.3	154.3
M/ISO clamp	21	21	21	21	21	21	-	-	-	-	-	-
M/DIN clamp	-	-	-	-	-	-	21	21	21	28	28	28
M/DIN male	-	-	-	-	-	-	22	22	23	25	25	30
M/SMS male	20	20	20	24	24	35	-	-	-	-	-	-
Weight (kg)												
Shut off valve	3.1	3.3	5.6	6.6	11.5	14	3.2	3.4	5.6	6.8	11.9	13.9
Change-over valve	3.9	4.2	7.2	8.7	14.2	18.4	4.1	4.5	7.1	9	15.1	18.3



Shut-off valve



Change-over valve

Caution, opening/closing time:

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:

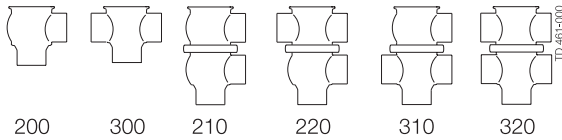
R 1/8" (BSP), internal thread.

Technical data

Pressure range: 0-800 kPa (0-8 bar).
 Temperature range: -10°C to +140°C (EPDM).
 Max. sterilization temperature (steam - short time): 150°C/380 kPa (3.8 bar).
 Air pressure: 500-700 kPa (5-7 bar).

Note! Vacuum is not recommended in aseptic applications.

Valve body combinations



Actuator function

- Pneumatic downward movement, spring return (NO).
- Pneumatic upward movement, spring return (NC).
- Pneumatic upward and downward movement (A/A).

Size	Air consumption (litres free air) for one stroke		
	DN25-40 DN/OD 25-38 mm	DN50-65 DN/OD 51-63.5 mm	DN80-100 DN/OD 76.1-101.6 mm
NO and NC	0.2 x air pressure [bar]	0.5 x air pressure [bar]	1.3 x air pressure [bar]
A/A	0.5 x air pressure [bar]	1.1 x air pressure [bar]	2.7 x air pressure [bar]

Materials

Product wetted steel parts: 1.4404 (316L)
 Other steel parts: 1.4301 (304)
 Internal surface finish: Ra 0.8 µ m
 External surface finish: Blasted
 Plug seal EPDM
 Other product wetted seals: EPDM (standard)
 Diaphragm PTFE (Product wetted side) / EPDM
 Other seals: NBR

Options

- A. Male parts or clamp liners in accordance with required standard.
- B. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
- C. Product wetted seals in HNBR or FPM.
- D. Low pressure actuator.
- E. High product pressure actuator.
- F. Maintainable actuator.
- G. 2 step / 3 position actuator (not for DN/OD 25 / DN 25).
- H. External surface bright.

Ordering

Please state the following when ordering:

- Size.
- Connections if not welding ends.
- Valve body combination.
- NC, NO or A/A.
- Options.

Note!

For further details, see instruction ESE00529.

How to contact Alfa Laval

Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.com to
access the information direct.