



Simply Unique

Unique Single Seat Valve

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 Valve is an air-operated seat valve in a hygienic and flexible design giving a wide field of applications, e.g. as a Shut-off valve with two or three ports or as a Change-over valve with three to five 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.

Standard design

The Unique Single Seat Valve consists of one or two bodies, which are clamped together. To ensure a high degree of flexibility the valve seat between the two bodies in the Change-over version is loose. To reduce the wear of sealings there is a controlled compression of seals by metal to metal contact. The actuator comes with a 5 years warranty. The actuator is connected to the valve body using a yoke and all components are assembled with clamp rings. 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 Valve range covers the sizes from DN25 to DN100 and DN/OD 25 mm to 101.6 mm.

Other valves in the same basic design

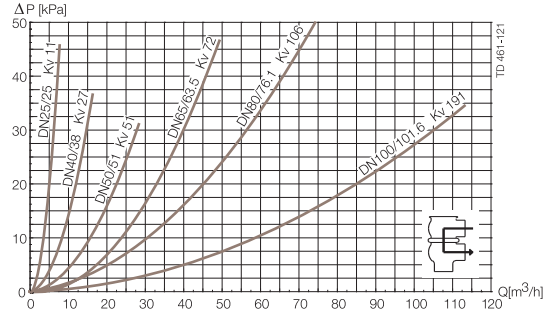
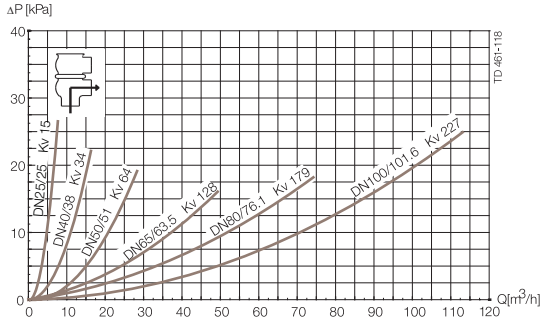
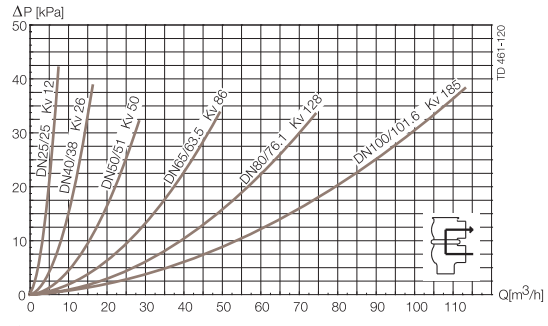
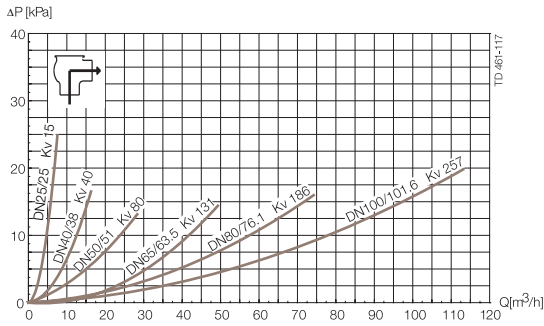
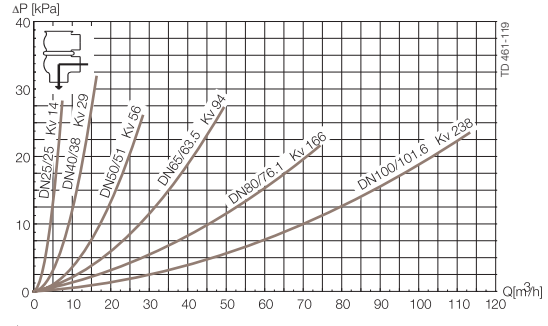
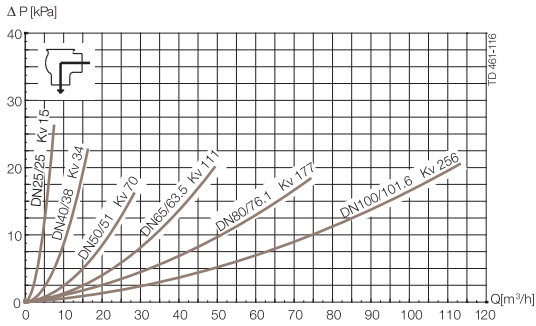
- Reverse acting valve.
- Long stroke valve.
- Manually operated valve.

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



Unique Single Seat Change-over and Shut-off valve

Pressure drop/capacity diagrams



Note!

For the diagrams the following applies:

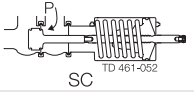
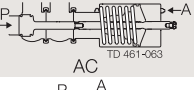
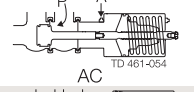
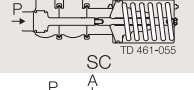
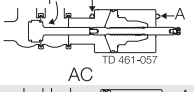
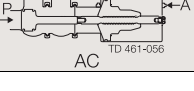
Medium: Water (20° C)

Measurement: In accordance with VDI2173

Pressure data for Unique Single Seat Valve

Table 1 - Shut-off and Change-over valves

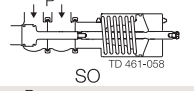
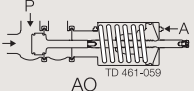
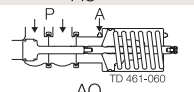
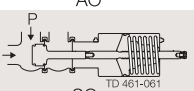
Max. pressure in bar without leakage at the valve seat

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			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
 SC TD 461-052		NO	10.0	8.2	8.4	4.5	6.8	4.4
 AC TD 461-053	6	NO	10.0	7.6	9.6	5.6	7.2	4.8
 AC TD 461-054	6	NC	10.0	9.8	10.0	6.1	7.7	5.0
 SC TD 461-055		NC	10.0	6.3	7.2	4.2	6.4	4.2
 AC TD 461-057	6	A/A	10.0	10.0	10.0	10.0	10.0	10.0
 AC TD 461-056	6	A/A	10.0	10.0	10.0	10.0	10.0	10.0

A = Air
P = Product pressure
AC = Air closes
SC = Spring closes

Table 2 - Shut-off and Change-over valves

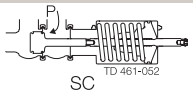
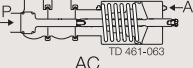
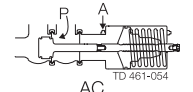
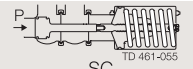
Max. pressure in bar against which the valve can open.

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			DN 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
 SO TD 461-058		NO	10.0	10.0	10.0	7.4	9.7	6.3
 AO TD 461-059	6	NO	10.0	10.0	10.0	8.3	9.9	6.6
 AO TD 461-060	6	NC	10.0	10.0	10.0	9.0	10.0	6.9
 SO TD 461-061		NC	10.0	9.7	10.0	6.8	9.1	6.1

A = Air
P = Product pressure
AO = Air opens
SO = Spring opens

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

Max. pressure in bar without leakage at the valve seat

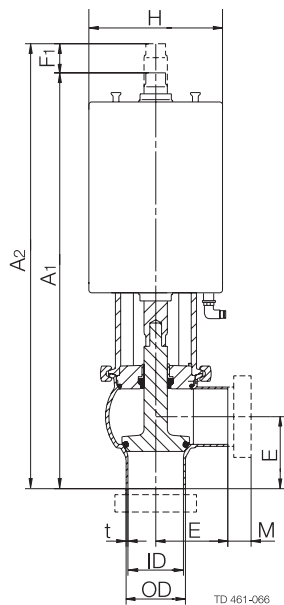
Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	Valve size					
			DN 25 DN/OD 25 mm	DN 40 DN/OD 38 mm	DN50 DN/OD 51 mm	DN 65 DN/OD 63.5 mm	DN 80 DN/OD 76.1 mm	DN 100 DN/OD 101.6 mm
			 TD 461-062 SC		NO	10.0	10.0	10.0
 TD 461-063 AC	6	NO	10.0	10.0	10.0	10.0	-	-
 TD 461-064 AC	6	NC	10.0	10.0	10.0	10.0	5.0	3.0
 TD 461-065 SC		NC	10.0	10.0	10.0	9.6	10.0	7.0

- A = Air
- P = Product pressure
- AC = Air closes
- SC = Spring closes

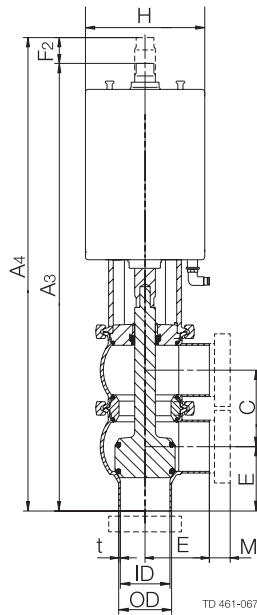
Dimensions (mm)

Nominal size	Inch tubes DN/OD						DIN tubes DN					
	25	38	51	63.5	76.1	101.6	25	40	50	65	80	100
A ₁	313	314	364	390	423	468	315	315	365	389	427	470
A ₂	328	334	389	415	453	498	330	335	390	414	457	500
A ₃	360*	374	437	476	522	592	367*	379	440.6	481	534	596
A ₄	372*	391	459	498	549	619	379*	396	463	503	561	623
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	50	49.5	62	82	87	120	50	49.5	62	78	87	120
F ₁	15	20	25	25	30	30	15	20	25	25	30	30
F ₂	12*	17	22	22	27	27	12*	17	22	22	27	27
H	85	85	114.9	114.9	154.3	154.3	85	85	114.9	114.9	154.3	154.3
H (high pressure)	85	114.9	154.3	154.3	154.3	154.3	85	114.9	154.3	154.3	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	3.4	3.6	6.0	7.0	12.5	14.9	3.5	3.7	6.0	7.1	13.0	14.8
Change-over valve	4.2	4.5	7.7	9.1	15.2	19.2	4.4	4.8	7.7	9.3	16.2	19.1

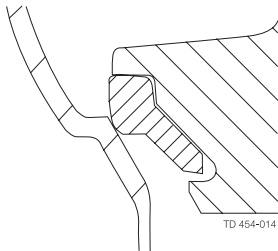
* = only available with replaceable elastomer plug seal.



Shut-off valve



Change-over valve



PTFE plug seal (TR2)

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.

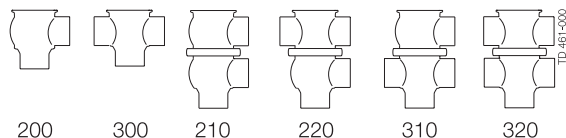
Air Connections Compressed air:

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

Technical Data

Max. product pressure (depending on valve specifications)1000 kPa (10 bar).
 Min. product pressureFull vacuum.
 Temperature range-10°C to +140°C (EPDM).
 Air pressure500 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 (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) (internal Ra < 0.8 µm)
 Other steel parts1.4301 (304)
 Plug seal:EPDM
 Optional plug seal:PTFE (TR2)
 Other product wetted seals:EPDM (standard)
 Optional product wetted seals:HNBR and FPM
 Other sealsNBR

Options

- a. Male parts or clamp liners in accordance with required standard.
- b. Control and Indication: IndiTop, ThinkTop and ThinkTop Basic.
- c. Product wetted seals in HNBR or FPM
- d. TR2 plug (floating PTFE design)
- e. High pressure actuator
- f. Maintainable actuator
- g. External surface finish 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 ESE00202.

ESE00172EN 0608

The information contained herein is correct at the time of issue,
but may be subject to change without prior notice.

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