



Small Single Seat Valve

Unique 7000 Small Single Seat Valve

Concept

The Small Single Seat Valve with its sanitary and flexible design is applicable for a wide range of tasks either as a stop valve with two or three ports or as a change-over valve with three to five ports. The valve is suitable for use in food, beverage, dairy and pharmaceutical industries.

Working principle

The valve can be manually or pneumatically actuated. The SSSV maintains a simple design with only a few moving parts, making it a reliable component in any flow system.

Standard Design

The SSSV is available in 1/2" and 3/4" OD tube. The design is comprised of an actuator, lip seal, plug, and one or two valve bodies. The unique plug design is made from PVDF and the valve body interior has a 20 µinch Ra surface finish for high cleanability. The valve maintains an open yoke design and is authorized to carry the 3A Symbol. Valve bodies and actuators are connected via a clamp connection. The piston and valve plug maintain a threaded connection. Tri-Clamp or weld connections are standard.



TECHNICAL DATA

Temperature

Temperature range: 14°F to + 284°F (EPDM)

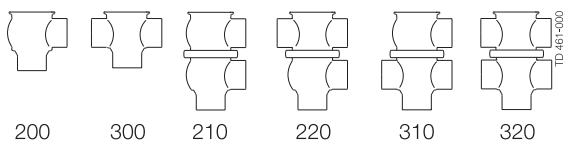
Pressure

Max. product pressure: 145 psi (10 bar)

Min. product pressure: Full vacuum

Air pressure: 14.5 to 101.5 psi (1 to 7 bar)

Valve Body Combinations



Actuator function

- Pneumatic downward movement, spring return (NO).
- Pneumatic upward movement, spring return (NC).
- Manually operated.

Air consumption (litres free air) for one stroke	
Size	1/2" and 3/4"
Stop valve/Divert valve	0.004 x Air pressure (PSI)
Actuator function	NO and NC

PHYSICAL DATA

Product wetted steel parts: Acid-resistant steel AISI 316L (1.4404)

Other steel parts: Stainless steel AISI 304L (1.4307)

Finish outside: Semi bright

Finish inside: ≤ 20 µinch Ra

Product wetted seals: EPDM

Other seals: NBR

Alternative product wetted

seals: HNBR, FPM

Plug: PVDF

Options

- A. 3.1.B Certificate.
- B. Adapter for IndiTop, ThinkTop and ThinkTop Basic.
- C. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
- D. Product wetted seals of HNBR or FPM.
- E. Surface finish external ≤ 32 μinch Ra.

Dimensions (inch)

Nominal Size	Remote-controlled	
	OD 1/2"	OD 3/4"
A ¹	6.78	6.74
A ²	7.06	7.17
A ³	7.88	8.24
A ⁴	8.16	8.67
C	1.27	1.50
OD	0.50	0.75
ID	0.37	0.62
t	0.06	0.06
E ¹	1.17	1.18
E ²	1.77	1.77
F ¹	0.28	0.43
F ²	0.28	0.43
H	2.24	2.24
Weight (lbs) Stop valve	2.36	2.43
Weight (lbs) Change-over valve	3.00	3.11

(900-233)

*Dimensions valid for both welding ends and clamp ends.

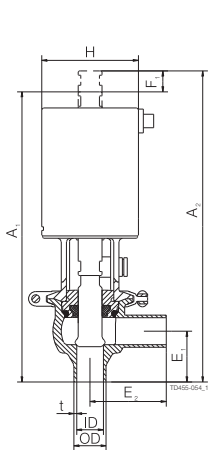
Please notel

Opening/closing time will be affected by the following:

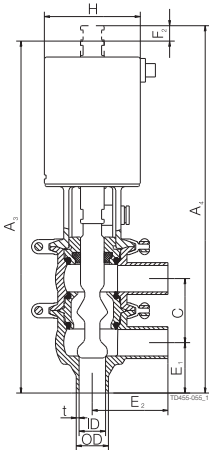
- The air supply (air pressure).
- The length and dimensions of the air hoses.
- Number of valves connected to the same air hose.
- Use of single solenoid valve for serial connected air actuator functions.
- Product pressure.

Air Connections Compressed air:

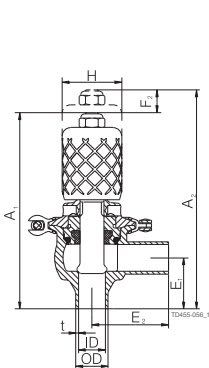
R 1/8" (BSP), internal thread.



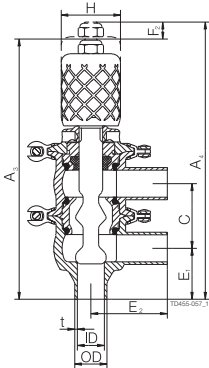
Stop valve



Divert valve



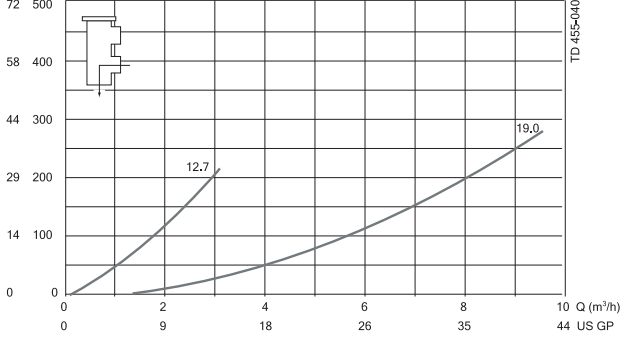
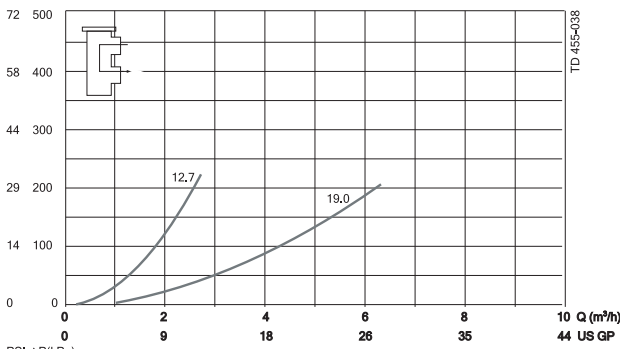
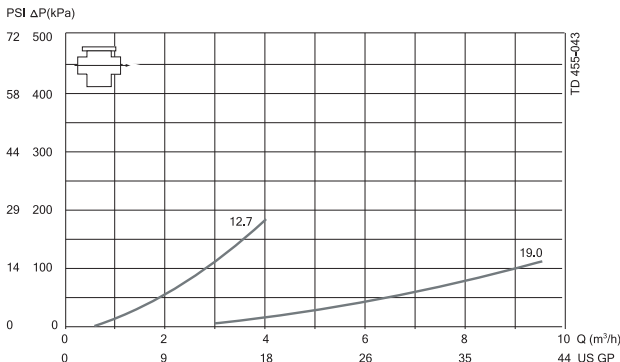
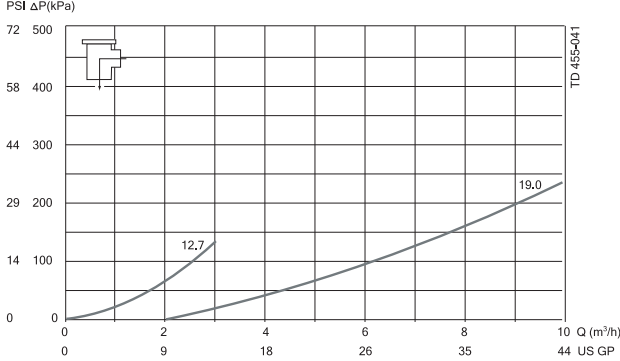
Manual stop valve



Manual divert valve

Pressure drop/capacity diagrams

Stop valve



Notel

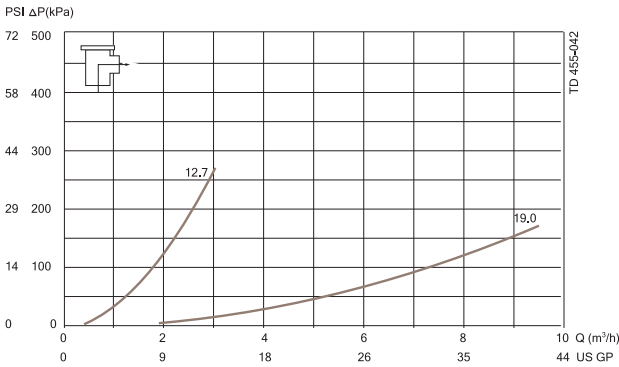
For the diagrams the following applies:

Medium: Water (68 °F).

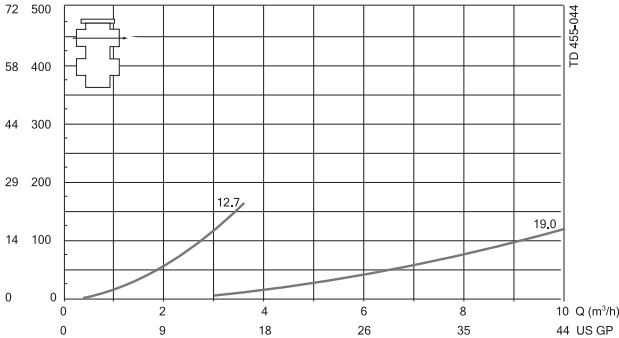
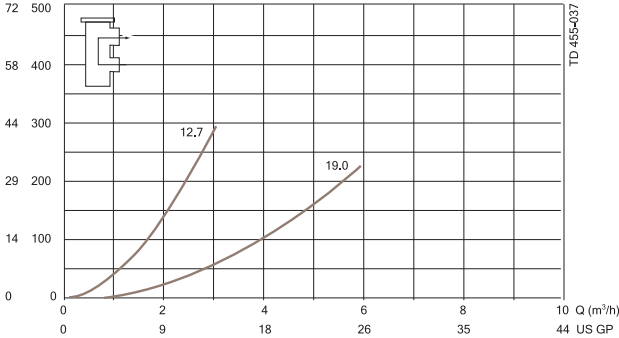
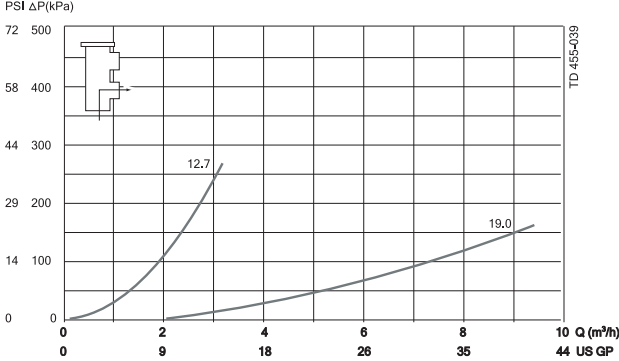
Measurement: In accordance with VDI2173

Pressure drop can also be calculated in CAS.

Pressure drop can also be calculated with the following formula:



Change-over valve



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

Where

Q = Flow (gallon/minute).

Cv = gallon/minute at a pressure drop of 1 psi (see table above).

Δ p = Pressure drop in psi over the valve.

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Cv = gallon/minute at a pressure drop of 1 psi (see table above).

Δp = Pressure drop in psi over the valve.

2.5" shut-off valve, where Cv = 128 (See table above).

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

$$160 = 128 \times \sqrt{\Delta p}$$

$$\Delta p = \left(\frac{160}{128} \right)^2 = 1.6 \text{ psi}$$

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

Pressure data for Small Single Seat Valve

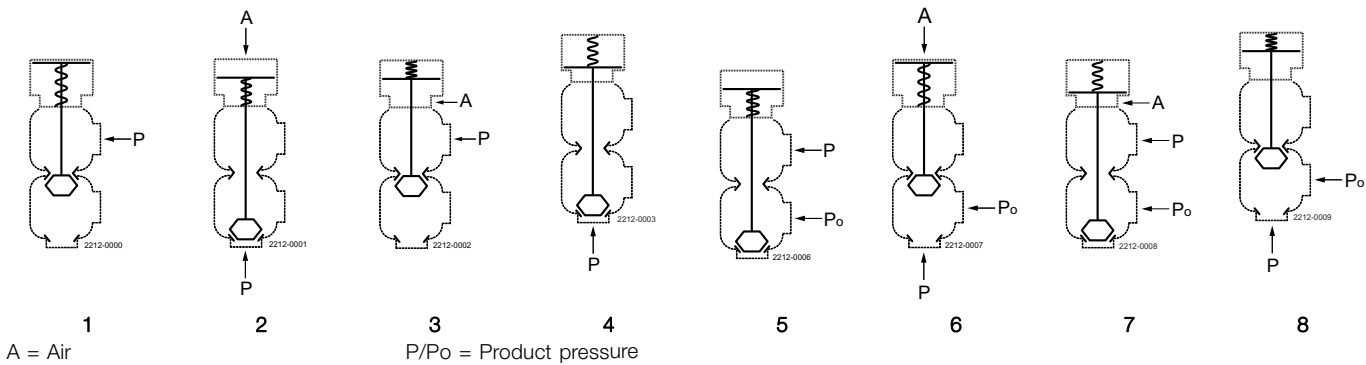


Table 1 - Shut-off and change-over valves

The table shows the approx. static pressure (p) in psi against which the valve can open

Actuator / Valve body combination and direction of pressure	Air pressure (psi)	Plug position	Valve size	
			DN/OD ½"	DN/OD ¾"
1		NO	Min. 145	Min. 145
2	29	NO	29	-
	43.5	NO	Min. 145	43.5
	58	NO		Min. 145
3	29	NC	130.5	-
	43.5	NC	Min. 145	Min. 145
4		NC	Min. 145	Min. 145

Table 2 - Stop and change-over valve.

The table shows the approx. static pressure (p) in psi against which the valve can open

Actuator / Valve body combination and direction of pressure	Air pressure (psi)	Plug position	Valve size	
			DN/OD ½"	DN/OD ¾"
5		NO	Min. 145	Min. 145
6	29	NO	130.5	-
	43.5	NO	Min. 145	87
	58	NO	-	Min. 145
7	29	NC	Min. 145	Min. 145
8		NC	Min. 145	Min. 145

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