Simply Unique Single Seat

Unique SSV Y-body

Concept
The Unique Single Seat Y-body valve meets the highest demands of your process in terms of hygiene and safety. Built on the well-proven Unique SSV platform the Y-body version offers a straight through product flow path and is designed for gentle product treatment. The main use for these valves is in applications involving high viscosity or large particulates.

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 is designed to deliver years of reliability and performance as can be expected from all Alfa Laval products. 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)

Actuator function
- Pneumatic downward movement, spring return.
- Pneumatic upward movement, spring return.
- Pneumatic upward and downward movement (A/A).

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
Plug seal: . . . . . TR2 (floating PTFE design)

Options

A. Control and Indication: IndiTop, ThinkTop or ThinkTop Basic.
B. Product wetted seals in HNBR/NBR or FPM.
C. External surface finish bright.

Note!

For further details, see instruction ESE00608.

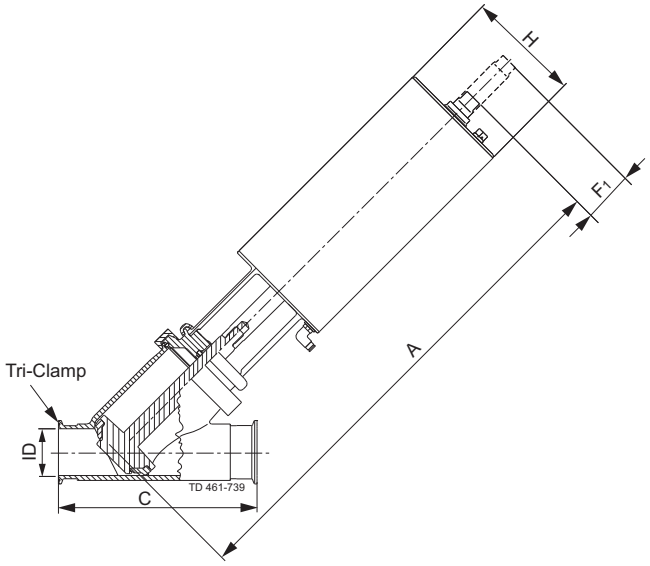
Other valves in the same basic design

The Unique SSV valve range includes several purpose built valves. Please use the Alfa Laval computer aided selection tool (CAS) for full access to all models and options.

The actuator comes with a 5 years warranty

Dimensions

	Nominal Size			
	DN/OD 51 mm	DN/OD 63.5 mm	DN/OD 76.1 mm	DN/OD 101.6 mm
A	440	456	560	620
C	200	235	264	321
ID	47	60	73	97
F_1	50	50	67	67
H	115	115	156	156
Weight (kg)	8.6	11.1	18.6	27.1



Y-body valve

Please note!

Opening/closing time will be affected by the following:

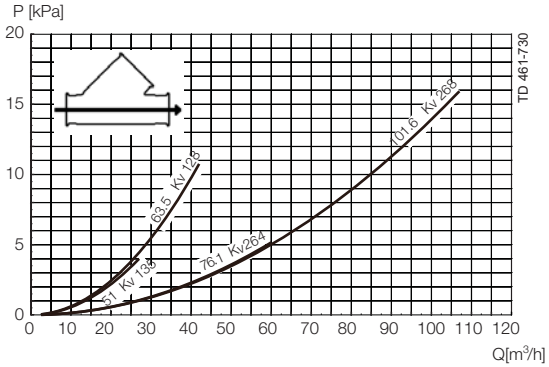
- The air supply (air pressure).
- The length and dimensions of the air hoses.
- The number of valves connected to the same air hose.
- Use of a single solenoid valve for serial connected air actuator functions.
- Product pressure.

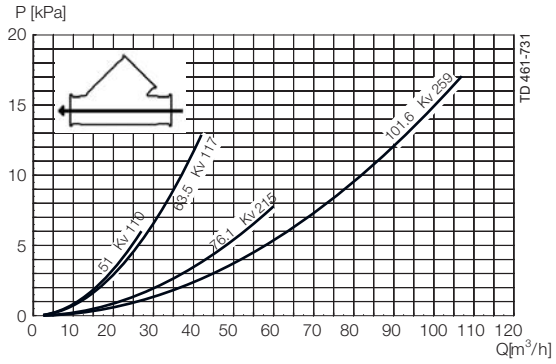
Air Connections Compressed air:

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

	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	0.8 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 VDI2173

Pressure drop can also be calculated in CAS.

Pressure drop can also be calculated with the following formula:

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

Where

Q = Flow in m^3/h.

Kv = m^3/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^3/h

2.5" shut-off valve, where Kv = 111 (See table above).

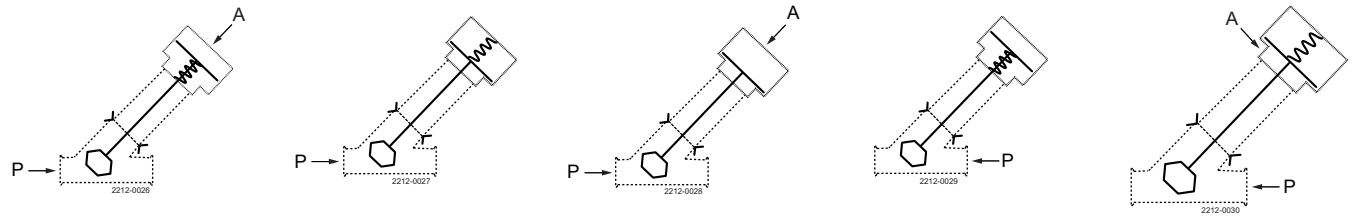
$Q = Kv \times \sqrt{\Delta p}$

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

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

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

Pressure data for Unique Single Seat Valve Y-body



1 2 3 4 5

A = Air P= Product pressure

Table 1

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	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
1	6	NO	4.9	2.7	3.8	2.1
2		NO	4.4	2.4	3.8	2.1
3	6	A/A	10.0	7.1	9.4	5.4

Table 2 Max. pressure in bar against which the valve can open.

Actuator / Valve body combination and direction of pressure	Air pressure (bar)	Plug position	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
4		NO	9.2	5.1	6.5	3.7
5	6	NC	9.8	5.4	6.5	3.7

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are continually updated on our website.
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