



# Alfa Laval Unique SSV Y-body

## Single seat valves

### Introduction

The Alfa Laval Unique SSV Y-body is a versatile, reliable pneumatic single seat valve with a single contact surface between the plug and the seat to minimize the risk of contamination. Its compact, modular and hygienic design meets the highest process demands in terms of hygiene and safety.

Built on the well-proven Alfa Laval Unique SSV platform, the Unique SSV Y-body provides uninterrupted flow and gentle handling of products that are highly viscous or contain large particles and require gentle product treatment.

Few moving parts ensure easy dismantling, high reliability and low maintenance costs. A wide range of optional features enables customization to specific process requirements.

### Application

This robust single seat valve is designed for uninterrupted flow and gentle handling of products that are highly viscous or contain large particles in hygienic applications across the dairy, food, beverage, brewery and many other industries.

### Benefits

- Exceptional valve hygiene and durability
- Extended seal life due to the defined seal compression
- Enhanced product safety due to the static seal leak detection
- Protection against full vacuum due to the double lip seal
- Gentle product handling

### Standard design

The Unique SSV Y-body is available in a one-body configuration, with easy-to-configure valve bodies, plugs, actuator and clamp ring.

The valve seals are optimized for durability and long service life through a defined compression design. The actuator is connected to the valve body using a yoke and all components are assembled with a clamp ring.

The valve can also be fitted with the Alfa Laval ThinkTop V50 and V70 for sensing and control of the valve.

Using the Alfa Laval Anytime configurator, it is easy to customize to meet virtually any process requirement.

### Working principle

The Alfa Laval Unique SSV Y-body is operated by means of compressed air from a remote location. The valve can be controlled using an Alfa Laval ThinkTop®.



### Certificates



Authorized to carry  
the 3A symbol



## 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

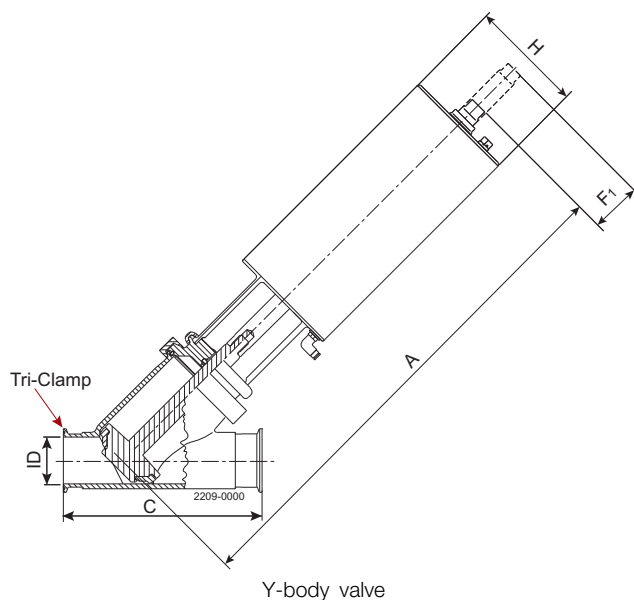
The Unique SSV valve range includes several purpose built valves. Please use the Alfa Laval Anytime configurator for full access to all models and options.

- Single seat valve.
- Reverse acting valve.
- Long stroke valve.
- Manually operated valve.
- Aseptic valve.

Semi-Maintainable actuator comes with 5 year warranty

## Dimensions (mm)

|                | 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 <sub>1</sub> | 50           | 50            | 67            | 67             |
| H              | 115          | 115           | 156           | 156            |
| Weight (kg)    | 8.6          | 11.1          | 18.6          | 27.1           |



### 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.

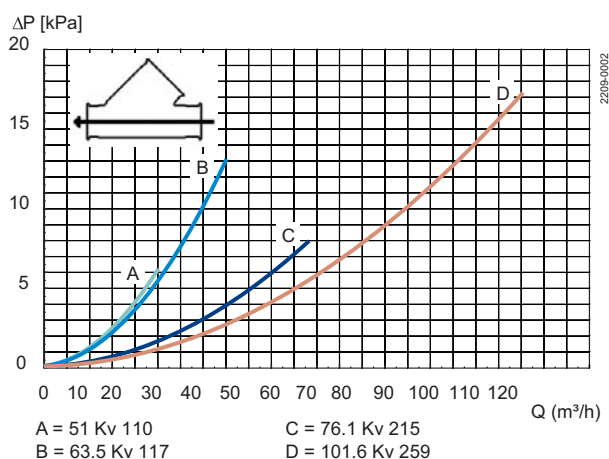
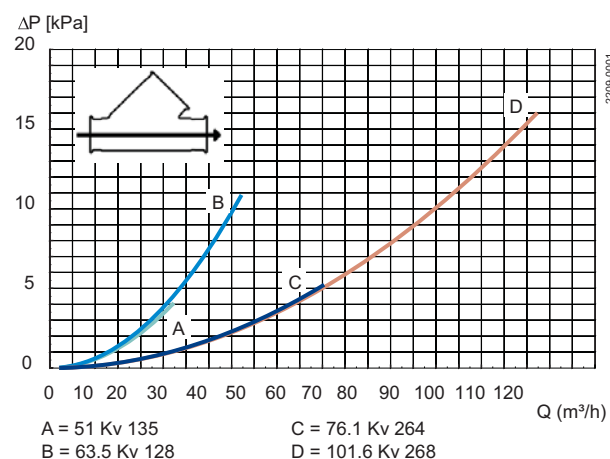
#### Air Connections Compressed air:

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

### Air Consumption (Litres free air) for one stroke

| Size      | DN/OD                    | DN/OD                    |
|-----------|--------------------------|--------------------------|
|           | 51 - 63.5 mm             | 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 Anytime configurator.

Pressure drop can also be calculated with the following formula:

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

Where

$Q$  = Flow in  $\text{m}^3/\text{h}$ .

$K_v$  =  $\text{m}^3/\text{h}$  at a pressure drop of 1 bar (see table above).

$\Delta p$  = Pressure drop in bar over the valve.

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$K_v$  =  $\text{m}^3/\text{h}$  at a pressure drop of 1 bar (see table above).

$\Delta p$  = 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 Y-body

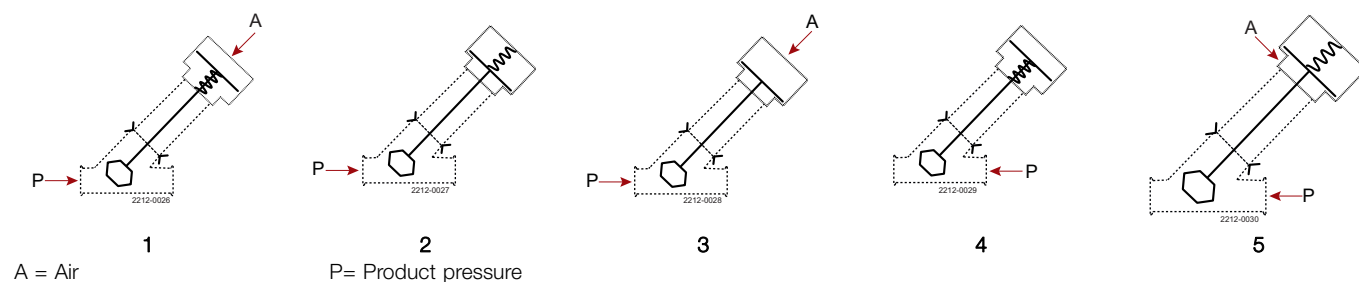


Table 1

| 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   | 6                  | NO            | 4.9        | 2.7         | 3.8         | 2.1          |
| 2   | 6                  | NO            | 4.4        | 2.4         | 3.8         | 2.1          |
| 3   | 6                  | A/A           | 10.0       | 7.1         | 9.4         | 5.4          |

Table 2

| Actuator / Valve body combination and direction of pressure | Air pressure (bar) | Plug position | Max. pressure in bar against which the valve can open. |             |             |              |
|---|--------------------|---------------|--|-------------|-------------|--------------|
|   |                    |               | 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     |
| 4   | 6                  | NO            | 9.2  | 5.1         | 6.5         | 3.7          |
| 5   | 6                  | NC            | 9.8  | 5.4         | 6.5         | 3.7          |

Alfa Laval reserves the right to change specifications without prior notification.

#### How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information direct.