



Large particles - Gentle Handling

Alfa Laval Unique Mixproof Large Particle Valve (Unique LP)

Concept

This Unique Mixproof LP valve is based on the well proven and exceptionally flexible design of the Unique Mixproof valves. The valves are designed for gentle handling of the product containing large particulates up to 1½" (45 mm) or products with high viscosity.

Working principle

Unique Mixproof LP is remote-controlled by means of compressed air. The valve is a normally closed (NC) valve. It is as standard supplied seat lift, which enables handling of two different products at the same time, or safe handling of one product while seat-lift cleaning operations are being conducted in the other portion of the valve – all without any risk of cross-contamination.

The 6" valve is as standard also equipped with balanced lower plug to protect against the effects of high pressure and water hammer. The 4" valve is, in order to accommodate 1½" (45mm) particles, not supplied with balanced lower plug. The 4" is however as standard equipped with a boost actuator to accommodate a product pressure of up to 10 bar.



Technical Data

Max. product pressure: .1000 kPa (10 bar)

Min. product pressure: .Full vacuum.

Temperature range: . . . -5 °C to +125 °C (Depending on elastomer type)

Air pressure:Max. 8 bar

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 < 1.6 µm

Product wetted parts: . . EPDM

Other seals:

CIP seals: EPDM

Actuator seals: NBR

Guide strips PTFE



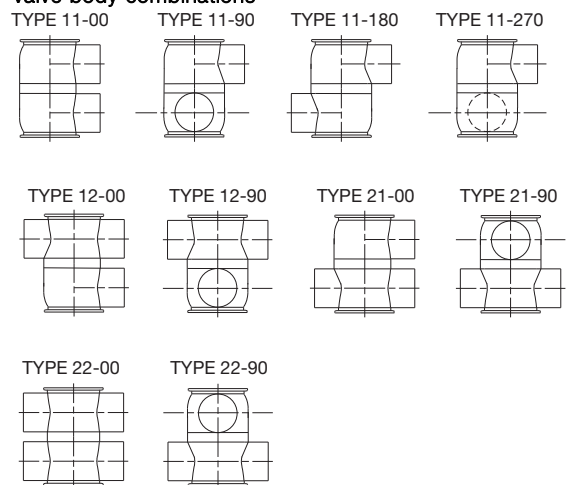
Availability

This LP edition of the Unique Mixproof valve is a high-end valve with regards to process security as well as from a hygienic point of view. The Unique Mixproof LP valve is available in 4" and 6" sizes.

Options

- Male parts or clamp liners in accordance with required standard.
- Control and Indication: ThinkTop or ThinkTop Basic.
- Side indication for detection of upper seat lift
- Product wetted seals in HNBR, NBR or FPM

Valve body combinations



TD 449-014_3

Pressure drop/capacity diagrams

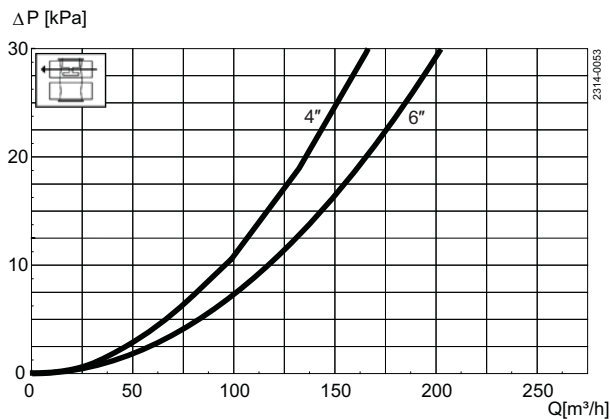


Fig. 2. Pressure drop/capacity diagram, upper bodies.

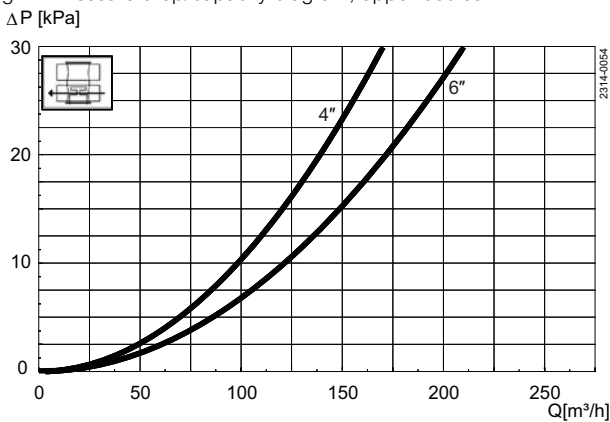


Fig. 4. Pressure drop/capacity diagram, lower body.

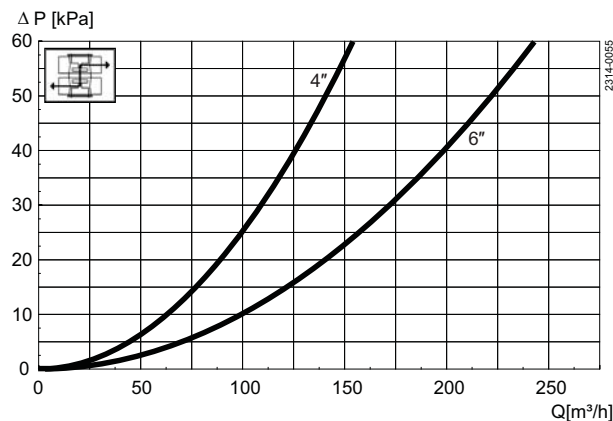


Fig. 3. Pressure drop/capacity diagram, between bodies.

Note!

For the diagrams the following applies:
Medium: Water (20 °C).
Measurement: In accordance with VDI 2173.

Air and CIP consumption

Size		OD	OD
		4"	6"
Kv-value			
Upper Seat-lift	[m³/h]	3.2	7.1
Lower Seat-lift	[m³/h]	2.9	6.0
Air consumption			
Upper Seat-lift	* [n litre]	0.62	0.62
Lower Seat-lift	* [n litre]	0.21	0.21
Main Movement	* [n litre]	3.54	3.54

Note

* [n litre] = volume at atmospheric pressure

Formula to estimate CIP flow during seat lift:

(for liquids with comparable viscosity and density to water):

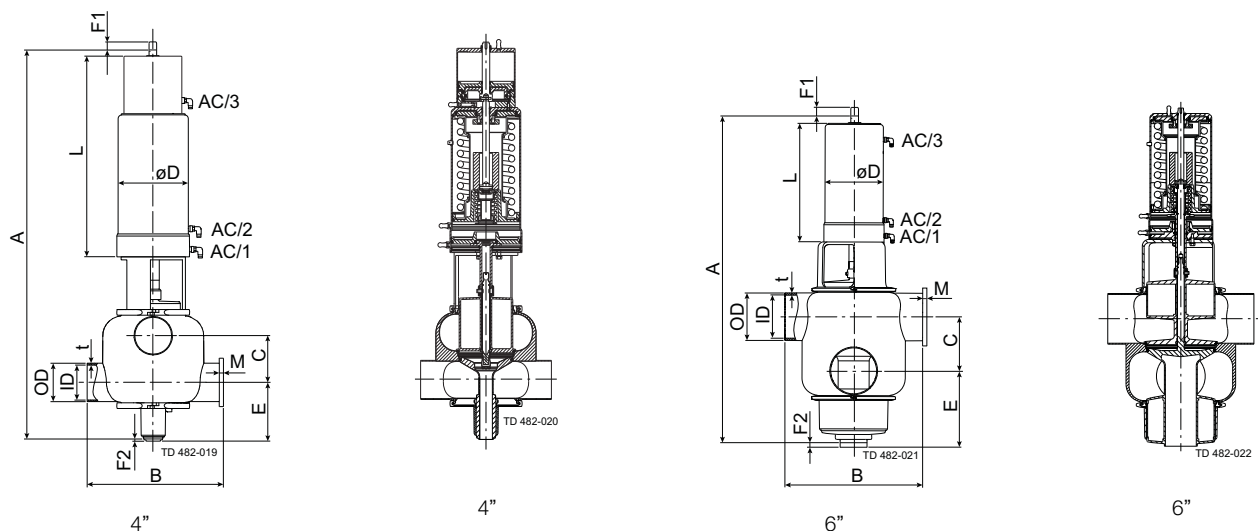
$$Q = K_v \cdot \sqrt{\Delta p}$$

$$Q = \text{CIP - flow (m}^3/\text{h)}.$$

K_v = K_v value from the above table.

Δp = CIP pressure (bar).

Dimensions



Size	4"	6"
A	1038.00	1002.00
B	350.00	440.00
**C	123.60	172.67
OD	101.60	152.40
ID	97.60	146.86
t	2.00	2.77
E	166.00	211.00
F1	75.00	75.00
F2	5.00	5.00
øD	186.00	186.00
L	534.00	379.00
M/Tri-clamp	21.00	38.60
Weight (kg)	64.90	86.20

NOTE!

**The measure C can always be calculated by the formula

$$C = \frac{1}{2}ID_{\text{upper}} + \frac{1}{2}ID_{\text{lower}} + 26\text{mm}.$$

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ESE02124EN 1507

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