Simply Unique Single Seat

Alfa Laval Unique SSV Manually Operated/Manually Regulating

Concept

The Unique Single Seat valve meets the highest demands of your process in terms of hygiene and safety. It is built on a well-proven platform, from an installed base of more than one million valves.

Working principle

The manual regulated Unique Single Seat Valve is a regulating valve used for manual control of pressure and flow. The valves permit gradual opening and the few and simple moving parts result in very reliable valves easy to dismantle. The plug can be fixed in the adjusted position with a lock screw. The valve is based on the modular platform of the Unique Single Seat Valve.

Standard Design

The manual operated valve can easily be converted to a pneumatic operated valve by replacing the crank mechanism with an actuator. The other parts are identical.

TECHNICAL DATA

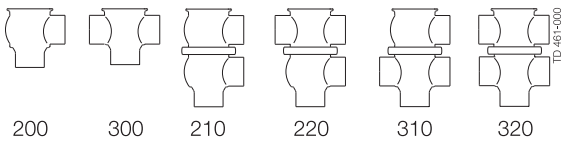
Temperature

Temperature range: . . . . . 10°C to +140°C (EPDM)

Pressure

Max product pressure: . . . . . 1000 kPa (10 bar)
Min. product pressure: . . . . . Full vacuum

Valve Body Combinations



Authorized to carry the 3A symbol

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
Other product wetted seals . . . . . EPDM

Options

A. Male parts or clamp liners in accordance with required standard.
B. Product wetted seals in HNBR or FPM.
C. Plug seal HNBR, FPM or TR2 plug (floating PTFE design - only for Manual Operated Valve).
D. External surface finish bright.

Note

For further details, see instruction ESE00307.

Other valves in the same basic design

The valve range includes several purpose built valves. Below listed are some of the valve models available, though please use the Alfa Laval computer aided selection tool (Anytime configurator) for full access to all models and options.

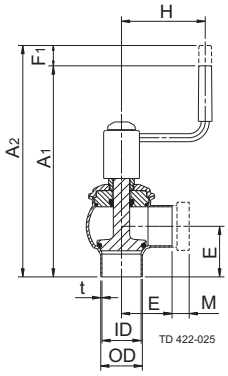
- Standard valve.
- Reverse acting valve.
- Aseptic valve.
- Long Stroke valve.
- Tank Outlet valve.

The actuator comes with a 5 years warranty

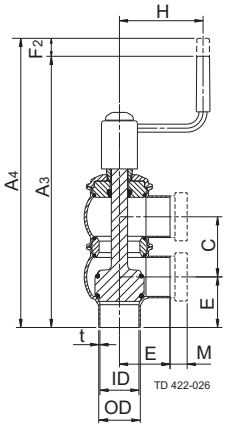
Dimensions (mm) - Unique Manually Operated Valves

Size	25 mm	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm	DN 25	DN 40	DN 50	DN 65	DN 80	DN 100
A_1 [1]	245	245	259	285	291	337	247	247	260	284	295	338
A_2 [1]	260	265	284	310	321	367	262	267	285	309	325	368
A_3 [1]	291	307	332	371	390	460	297	312	336	376	402	464
A_4 [1]	303	324	354	393	417	487	309	329	358	398	429	491
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_1	50	49.5	61	81	86	119	50	49.5	62	78	87	120
E_2	50	49.5	61	81	86	119	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	105	105	105	105	105	105	105	105	105	105	105	105
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	1.8	2.0	2.6	3.6	4.6	7.0	1.9	2.1	2.5	3.7	5.0	6.9
Change-over valve	2.6	3.0	4.2	5.6	7.3	11.4	2.8	3.2	4.2	5.9	8.2	11.2

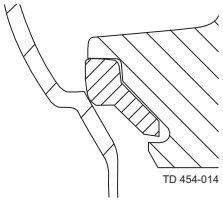
[1] For exact A_1 - A_4 dimensions, please refer to informations in Anytime configurator.



Shut off valve



Change-over valve



PTFE plug seal (TR2)

Fig. 2. Dimensions.

Kv-Factors

Valve size	Kv
38mm/DN40	14*/44
51mm/DN50	75
63.5mm/DN65	113
76.1mm/DN80	171
101.6mm/DN100	250

* optional

Kv = m^3/h at a pressure drop of 1 bar.

For other pressure drops than 1 bar the flow can be calculated with the following formula:

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

Where
Q = Flow in m^3/h.
Kv = See above.
Δ p = Pressure drop in bar over the valve.

Example:

Plug Kv 75
Q to be calculated at Δp = 2 bar:
$Q = 75 \times \sqrt{2} = 106\ m^3/h$
or at 50% stroke:
$Q = 0.5 \times 75 \times \sqrt{2} = 53\ m^3/h$

Pressure drop/capacity diagram:

The plugs have linear characteristics. This means that a certain amount of throttling, by reducing the stroke, results in a proportional reduction of the flow if the pressure drop remains unchanged.

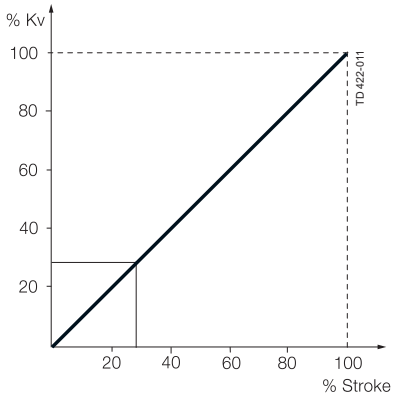


Fig. 3. The flow in % of the total flow at a pressure drop of 1 bar.

Dimensions (mm) - Unique Manually Regulating Valve

Size	38 mm	51 mm	63.5 mm	76.1 mm	101.6 mm	DN 40	DN 50	DN 65	DN 80	DN 100
A_1	176	189	215	221	267	178	191	215	226	269
A_2	196	214	240	251	297	198	216	240	256	299
OD	38	51	63.5	76.1	101.6	41	53	70	85	104
ID	34.8	47.8	60.3	72.9	97.6	38	50	66	81	100
t	1.6	1.6	1.6	1.6	2	1.5	1.5	2	2	2
E_1	49.5	61	81	86	119	49.5	62	78	87	120
E_2	49.5	61	81	86	119	49.5	62	78	87	120
F_1	20	25	25	30	30	20	25	25	30	30
H	80	80	80	80	80	80	80	80	80	80
M/ISO clamp	21	21	21	21	21	-	-	-	-	-
M/DIN clamp	-	-	-	-	-	21	21	28	28	28
M/DIN male	-	-	-	-	-	22	23	25	25	30
M/SMS male	20	20	24	24	35	-	-	-	-	-
Weight (kg) - Shut-off valve	2.1	2.9	4.0	5.4	8.2	2.2	2.9	4.1	5.9	8.1

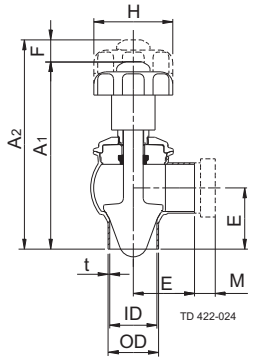


Fig. 4. Dimensions