Simply Unique

Unique 7000 - Manually Operated/Manually Regulating Valves

Concept
The new generation that meets the highest demands of your process in terms of hygiene and safety. Unique Single Seat Valves are built on a well-proven, platform from an installed base of more than one million valves.

Working principle
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.

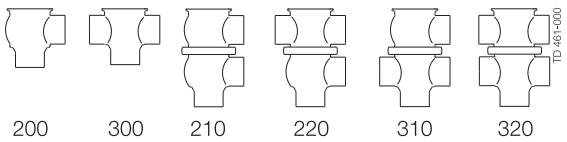
Standard Design
The manual operated valve can easily be converted to a pneumatic operated valve by replacing the crank mechanism with an actuator. The other parts are identical.

TECHNICAL DATA

Temperature
Temperature range: . . . . . +50°F to +284°F (EPDM).

Pressure
Max product pressure: . . . . . 145 psi (10 bar).
Min. product pressure: . . . . . Full vacuum

Valve Body Combinations



200 300 210 220 310 320

PHYSICAL DATA

Materials
Product wetted steel parts: . . . . . AISI 316L
Other steel parts . . . . . AISI 304
Plug seal: . . . . . EPDM
Optional plug seal: . . . . . PTFE (TR2)
External surface finish . . . . . Semi-bright (blasted)
Internal surface finish . . . . . Bright (polished), Ra < 16 µin
Other product wetted seals . . . . . EPDM
Optional product wetted seals: . . . . . HNBR and FPM

Options

A. Weld ends or connection types other than Tri-Clamp.
B. Product wetted seals in HNBR or FPM.
C. Replacable elastomer plug seals (only for Manual Operated Valve).
D. External surface finish blasted.

Note

For further details, see instruction ESE00504ENUS.

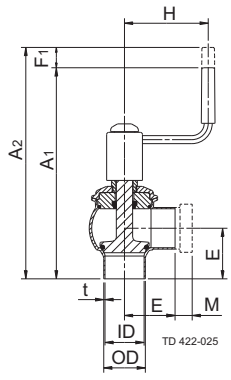
Other valves in the same basic design

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 (CAS) for full access to all models and options.

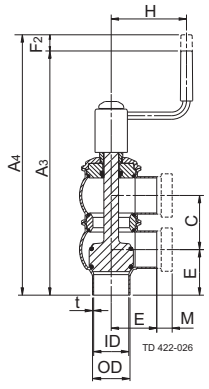
- Standard valve.
- Reverse acting valve.
- Aseptic valve.
- Long Stroke valve.
- Tank Outlet valve.

The actuator comes with a 5 years warranty

Size	1 inch	1.5 inch	2 inch	2.5 inch	3 inch	4 inch
A_1	9.65	9.65	10.2	11.22	11.46	13.27
A_2	10.24	10.43	11.18	12.2	12.64	14.45
A_3	11.46	12.09	13.07	14.61	15.35	18.11
A_4	11.93	12.76	13.94	15.47	16.42	19.17
C	1.88	2.39	2.91	3.4	3.89	4.87
OD	0.98	1.5	2.01	2.5	3	4
ID	0.86	1.37	1.88	2.37	2.87	3.84
t	0.06	0.06	0.06	0.06	0.06	0.08
E_1	1.97	1.95	2.40	3.19	3.39	4.69
E_2	1.97	1.95	2.40	3.19	3.39	4.69
F_1	0.59	0.79	0.98	0.98	1.18	1.18
F_2	0.47	0.67	0.87	0.87	1.06	1.06
H	4.13	4.13	4.13	4.13	4.13	4.13
M/ clamp	0.5	0.5	0.5	0.5	0.5	0.63
Weight (kg)						
Shut off valve:	1.8	2	2.6	3.6	4.6	7
Change-over valve:	2.6	3	4.2	5.6	7.3	11.4



a. Shut off valve.



b. Change-over valve.

Fig. 2. Dimensions.

Kv-Factors

Valve size	Kv
1.5"	14*/44
2.0"	75
2.5"	113
3.0"	171
4.0"	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.

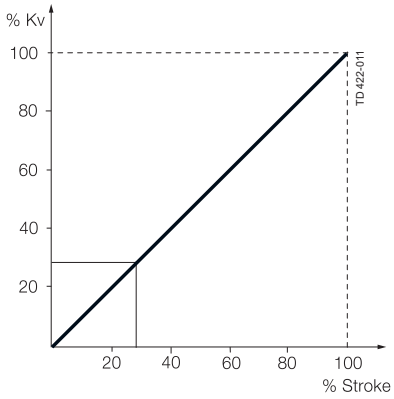


Fig. 3. The flow in % of the total flow at a pressure drop of 1 bar.

Dimensions (inch) - Unique Manually Regulating Valve

Size	1.5"	2"	2.5"	3"	4"
A1	6.93	7.48	8.50	8.74	10.60
A2	7.72	8.46	9.49	9.92	11.70
OD	1.50	2.01	2.50	3.00	4.00
ID	1.37	1.88	2.37	2.87	3.84
t	0.06	0.06	0.06	0.06	0.08
E1	19.50	2.44	3.23	3.43	4.72
E2	19.50	2.44	3.23	3.43	4.72
F1	0.79	0.98	0.98	1.18	1.18
H	3.15	3.15	3.15	3.15	3.15
M/ISO clamp	0.83	0.83	0.83	0.83	0.83
M/DIN clamp					
M/DIN male					
M/SMS male	0.79	0.79	0.95	0.95	1.38
Weight (kg)					
Shut off valve:	2.1	2.9	4.0	5.4	8.2

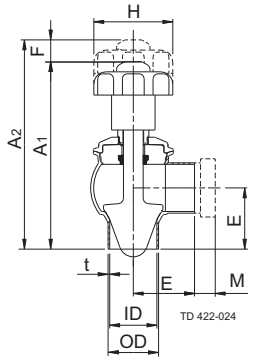


Fig. 4. Dimensions

ESE00305ENUS 1505

How to contact Alfa Laval
Contact details for all countries
are continually updated on our website.
Please visit www.alfalaval.us to
access the information direct.