



Sterile Control Valve

Actuator

- pneumatic
- electric

Nominal bores

- DN 10 to 50
- Up to DN 100 optional

Pressure ratings

- PN 10
- Up to PN 63 optional

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Features

Construction free of dead space

Diaphragm sealing
Bellows sealing

Optimally shaped case

Basic version with weld-on ends

Case and inner part of W 1.4435 (316L)

Emergency sealing with control connection

High control accuracy

Actuation

Columns comply with NAMUR

Advantages

- No residue formation
- Minimized cleaning cycles
- Suitable for CIP and SIP

- No stuffing box
- Leak tightness inside out and outside in
- No dead spaces, FDA compliant

- Purging the system purges the valve
- Same components with several nominal widths
- Sterilisable with steam (3 bar, 135°C) via overstroke, and the valve closed

- All current sterile connections are feasible e.g. BBS, Connectors, Naue, Tri Clamp, DIN 32 676 a.m.m.

- Quota of ferrite $\leq 0.5\%$
- Via electropolish $Ra \leq 0.8 \mu m$ (Option $\leq 0.6 \mu m$)
- Forged

- Safe from leakage and possibility of alert in case of rupture of the diaphragm

- The high positioning ratio allows the permanent control of the process, no on/off clocking is needed

- Pneumatic, electric and manual

- Simple mounting of positioners, limit switches etc.

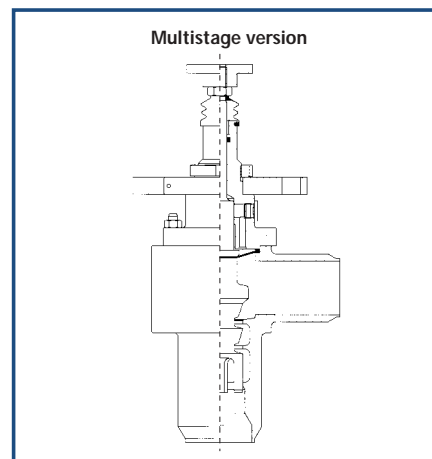
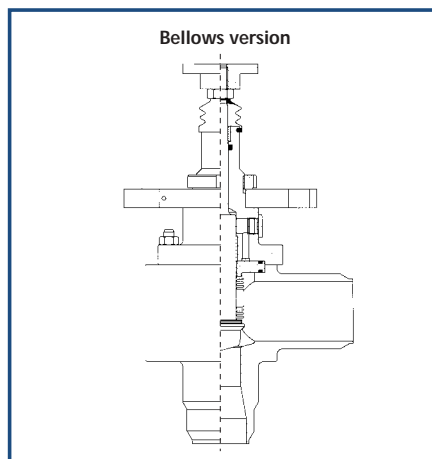
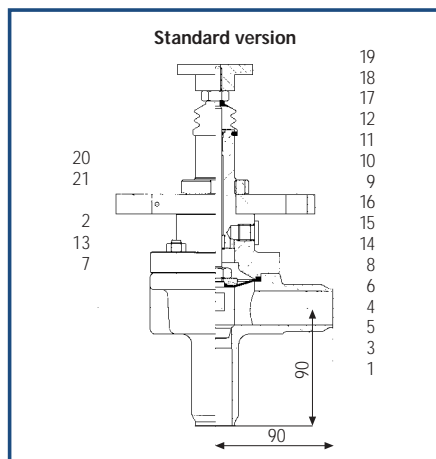
Applications

The sterile control valve was conceived for the **aseptic, biological and sterile technology** which requires absolute sterility.

Technical data

Nominal bores	<ul style="list-style-type: none"> ■ DN 10 to 50 (DN 65, 80 and 100) ■ ANSI 1/4" to 2" (DN 2 1/2", 3" and 4")
Pressure ratings	<ul style="list-style-type: none"> ■ PN 10 according to DIN 2401 (PN 63) ■ ANSI Class 100 (400)
Characteristics	<ul style="list-style-type: none"> ■ Equal percentage, linear, quick open
Rangeability	<ul style="list-style-type: none"> ■ kvs-value > 4 to 40, 50 : 1 ■ kvs-value < 4, 30 : 1
kvs-values	<ul style="list-style-type: none"> ■ Control valve 1.0 to 40 m³/h, smaller kvs values possible ■ Quick open valve 4.3 to 40 m³/h
Leakage	<ul style="list-style-type: none"> ■ Metal sealing ≤ 0.001% of kvs-value ■ Lapped plug and seat ≤ 0.01% of kvs-value
Range of application	<ul style="list-style-type: none"> ■ Temperature till max. 135°C, else upon request ■ Pressure up to max. 10 bar, else upon request

Materials



Options

- Lateral steam connection for sterilisation of the valve in closed state
- Special surface quality
- Space between diaphragm and the security stuffing box with steam
- Hydraulically supported double diaphragm with signal connection, e.g. for high pressures
- Version with bellows
- Version with multistage pressure release (avoidance of cavitation)

Item	Description	Material
1	Body	1.4435
2	Stud	A2 – 70
3	Plug with stem	1.4435
4	Diaphragm	FDA-EPDM 1)
5	Diaphragm disc	1.4435
6	Hexagon nut	A4 – 70
7	Bonnet	1.4435
8	Upper guide bush	PTFE / glass
9	Lower guide bush	1.4401 / PTFE / glass
10	Ring	PTFE
11	O-ring	Viton
12	Disc	1.4435
13	Hexagon nut	A2 – 70
14	Screwed sealing plug	1.4436
15	Traverse	1.4301
16	Slotted nut	A2 – 70
17	Bellows	Neopren
18	Hexagon nut	A2 – 70
19	Coupling	1.4308
20	Plate	1.4301
21	Hammer head bolt	A2 – 70

Extract from actuator layout and permissible differential pressures Δp

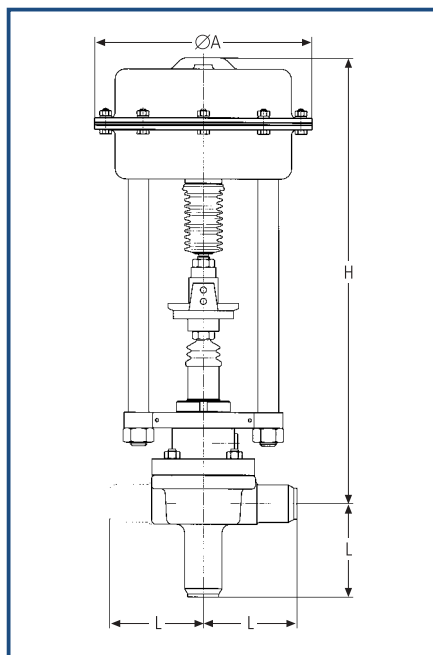
Actuator Po		Minimum air pressure setting (bar)				1.4	2	3	4	5
Spring closes		Actuator size MA 2/3... and no. of springs ...R, ...S				16 A6 3R	16 A6 2S	16 A6 3S	16 A6 5S	16 A6 7S
						21 A6 3R	21 A6 2S	21 A6 4S	21 A6 5S	21 A6 7S
						31 A6 3R	31 A6 2S	31 A6 3S	31 A6 5S	31 A6 6S

Valve														Actuator size	Permissible differential pressures (in bar) for metallic sealing					
Nominal bores																				
8	10	15	20	25	32	40	50	65	80	100	1)	1)	Seating	Stroke						
1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	1 1/2"	3"	4"	kvs	cv	mm	mm						
											m ³ /h	gpm								
											0.06	0.07	2	10	16 A6	10				
											0.1	0.12	4	10	16 A6	10				
											0.16	0.19	4	10	16 A6	10				
											0.25	0.29	5	10	16 A6	10				
											0.4	0.46	5	10	16 A6	10				
											0.63	0.73	8	10	16 A6	10	10			
											1	1.2	8	10	16 A6	10	10			
											1.6	1.9	10	10	16 A6	10	10			
														21 A6	10	10				
											2.5	2.9	12	10	16 A6	10	10	10		
														21 A6	10	10				
											4	4.7	15	10	16 A6	7	10	10		
														21 A6	10	10				
											6.3	7.3	20	10	16 A6	3.7	10	10		
														21 A6	10	10	10			
											10	11.5	25	10	16 A6	2	8.4	10	10	
														21 A6	10	10	10	10		
											16	19	30	10	16 A6	1.2	5.7	10	10	
														21 A6	10	10	10	10		
											25	29	32	10	16 A6	0.8	5	9	10	
														21 A6	10	10	10	10		
											40	46	46	10	16 A6	-	2	4	9	
														21 A6	6.5	6.4	10	10		
														31 A6	10	10	10	10		
											63	73	50	20						
											40	46	46	20						
											63	73	50	20						
											100	116	80	20						

1) Further kvs values (stroke 10 mm, only linear): 0,025 to 0,00025 and ■ DN 32, 65, 80 and 100 on request

Detailed documentation is available on request –
 please phone us: +41 (0)61 467 91 20 or visit our webpage:
www.von-rohr.ch

Weights and dimensions



Options: Length L changes according to connection part

Pneumatic actuators

Technical data

- Compact design, simple operation with multi-spring
- Diaphragm surfaces 110, 240 and 510 cm²
- Setting forces 0,3 to 29 kN
- Diaphragm made of polyamide weave with coating based on NBR
- Body made of steel plate coated on both sides with twin-pack epoxy resin, or in W1.4301
- Stem made of W1.4305, surface smoothed, o-ring seal
- Maximum air supply pressure 6 bar
- permissible ambient temperature -30°C to +90°C
- Quick and simple to reverse Po ↔ Ps

Options

- Body made of W1.4301, on request electropolished
- Mechanical stroke limitation, simple to adjust
- Emergency manual adjustment

Accessories

- Pneumatic and electro-pneumatic positioner, also in ex-version
- Integrated mounting possible
- Limit switches, solenoid valves, amplifiers, etc.

Valve	DN (mm)	8 -15	25	40	50
	L	90	90	105	115
	H (with MA*16)	347	354	359	365
	H (with MA*21)	424	431	436	442
	ØA (with MA*16)	162	162	162	162
	ØA (with MA*21)	210	210	210	210
	Weight (kg) with MA*16	10.0	10.4	13.5	13.8
	Weight (kg) with MA*21	12.5	13.0	16.0	16.5

Dimensions in mm

Connection examples

