Series 240 · 250 · 280
Electric and Pneumatic Control Valves
Information Sheet Part 4
Permissible differential pressures for valves
Type 3241 · Type 3251 · Type 3254 · Type 3256
Type 3281 · Type 3284 · Type 3286

Information Sheet for control valves	T 8000-1	Edition January 2015
Information Sheet for materials	T 8000-2	
Information Sheet for flow coefficients	T 8000-3	

Contents

Notes concerning selection

1. The specified differential pressures are based on the operating range.
2. The differential pressure specifications apply to adjustable and self-adjusting packings made of PTFE or graphite.
3. The specified differential pressures are based on the standard plug (parabolic and V-port plugs). The SAMSON Valve Sizing software must be used to determine the differential pressures of versions with perforated plug or AC trim.
4. The flow-to-open direction always applies.
5. For versions with bellows seal (Tables 2.x, 3.x, 5.x, 6.x) the permissible differential pressure of the closed valve is reduced by the correction value for the bellows seal.

   Example taken from Table 2.1:

Valve:	DN 50 to 100
	K_{VS} 100
	700 cm² actuator area
	Operating range 2.1 to 3.3 bar
Table values:	Δp = 24.5 bar
	Bellows correction value = –0.9 bar
Corrected permissible differential pressure	24.5 bar – 0.9 bar = 23.6 bar

NOTICE

The specified differential pressures provide an overview for various valve versions and are determined taking into account the above listed parameters. This Information Sheet and the data specified in it do not replace the differential pressures precisely determined by the SAMSON Valve Sizing software for each individual case.

Instrumentation

For accessories (e.g. quick exhaust valves) with a minimum supply pressure, make sure that the lower operating range value is higher than the minimum supply pressure for throttling service.

Note concerning ANSI versions

The operating ranges and bench ranges of the ANSI versions are specified in bar as for the DIN EN versions. Refer to the table below for the associated psi specifications which have been rounded off:

Bench range	
Pressures in bar	**Pressures in psi**
0.2 to 0.6	3 to 9
0.2 to 0.7	3 to 10
0.2 to 1.0	3 to 15
0.3 to 1.1	4 to 16
0.4 to 0.8	6 to 12
0.4 to 1.2	6 to 17
0.4 to 2.0	6 to 29
0.5 to 2.5	7 to 36
0.6 to 2.2	9 to 32
0.6 to 3.0	9 to 44
0.8 to 1.2	12 to 17
0.8 to 2.4	12 to 35
0.8 to 2.8	12 to 41
0.9 to 1.7	13 to 25
0.9 to 3.3	13 to 48
1.0 to 3.0	15 to 44
1.0 to 3.2	15 to 46
1.1 to 1.9	16 to 28
1.1 to 2.3	16 to 33
1.2 to 3.6	17 to 52
1.3 to 3.3	19 to 48
1.3 to 2.9	19 to 42
1.4 to 2.3	20 to 33
1.4 to 2.4	20 to 35
1.4 to 2.6	20 to 38
1.5 to 1.9	22 to 28
1.5 to 3.7	22 to 54
1.5 to 4.2	22 to 61
1.6 to 2.4	23 to 35
1.65 to 2.65	24 to 38
1.7 to 3.3	25 to 48
1.75 to 2.95	25 to 43

Bench range	
Pressures in bar	**Pressures in psi**
1.8 to 3.8	26 to 55
1.85 to 2.3	27 to 33
1.9 to 3.1	28 to 45
1.9 to 3.3	28 to 48
2.0 to 2.4	29 to 35
2.0 to 3.0	29 to 44
2.1 to 3.3	30 to 48
2.1 to 3.6	30 to 52
2.1 to 3.8	30 to 55
2.1 to 4.8	30 to 70
2.15 to 2.65	31 to 38
2.2 to 2.95	32 to 43
2.2 to 3.4	32 to 49
2.25 to 3.65	33 to 53
2.3 to 3.3	33 to 48
2.35 to 2.95	34 to 43
2.4 to 3.6	35 to 52
2.5 to 3.0	36 to 44
2.5 to 3.3	36 to 48
2.5 to 4.2	36 to 61
2.6 to 3.7	38 to 54
2.6 to 4.3	38 to 62
2.7 to 3.3	39 to 48
2.75 to 3.65	39 to 53
2.8 to 3.4	41 to 49
2.8 to 3.8	41 to 55
2.95 to 3.65	43 to 53
3.0 to 3.6	44 to 52
3.4 to 4.2	49 to 61
3.4 to 4.8	49 to 70
3.45 to 4.3	50 to 62

Valve versions according to DIN EN standards

Table 1: *Permissible differential pressures for Type 3241 Globe Valve up to DN 150*

Table 1.1: *Metal seal · Leakage class IV according to IEC 60534-4 · Unbalanced*

Note concerning the use of a metal bellows:

– Bellows correction value = 0 bar

– For valves with K_{VS} 4 or smaller, use the permissible differential pressures from the rows for K_{VS} = 6.3 to 10.

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0				
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)						
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)								
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3						
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
Required supply pressure in bar				Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]
DN	**K_{VS}**	**Actuator**	**Travel**	**Permissible differential pressures Δp in bar (p_2 = 0 bar)**										
15 to 25	0.1 to 0.25	120	15	50	50	50	50			50	50	–	50	3.4
		175		50	50	50	50	–		50	50	–	50	2.6
		240		50	50	50				50	–	–	50	2.2
15 to 50	0.4 to 1.0	120	15	8.3	50	50	50			50	50	50	50	5.7
		175		50	50	50	50	50		50	50	50	50	4.2
		240		50	50	50				50	50	–	50	3.3
	1.6 2.5 4.0	120		–	18	50	50			18	50	50	50	6
		175		35.5	50	50	50	50		35.5	50	50	50	6
		240		37	50	50				50	50	50	50	5.7
		350		50	50	50	50	50		50	50	50	50	4.2
		355		50	50	50	50	50	50	36.5	50	50	50	4.3
20 to 50	6.3 10	120	15	–	2.8	27	44			2.8	27	50	50	6
		175		7	21	28	35	50		7	42	50	50	6
		240		7.5	22	36.5				12	50	50	50	6
		350		21	49.5	50	50	50		21	50	50	50	6
		355		50	50	50	50	50	50	7.5	50	50	50	6
32 to 50	16	120	15	–	–	15.5	25.5			–	15.5	39	50	6
		175		3.8	12	16	20.5	31		3.8	24.5	50	50	6
		240		4	12.5	21				6.5	35.5	50	50	6
		350		12	29	45.5	50	50		12	50	50	50	6
		355		29.5	50	50	50	50	50	3.9	46.5	50	50	6
40 to 80	25	120	15	–	–	10	16.5			–	10	25	42	6
		175		2.1	7.5	10.5	13	20		2.1	16	38.5	50	6
		240		2.3	8	13.5				4.2	23.5	50	50	6
		350		7.5	19	30	35.5	50		7.5	35.5	50	50	6
		355		19	42	50	39	50	50	2.2	30.5	50	50	6
50 to 80	40	175	15	–	4.5	6	8	12		–	9.5	23.5	39.5	6
		240		–	4.7	8				2.3	14	33.5	50	6
		350		4.5	11.5	18.5	22	34		4.5	22	50	50	6
		355		11.5	26	40	24	39	50	–	18.5	47	50	6
		700		25.5	50	50	50	50	–	25.5	50	–	50	3.3
		750		27.5	50	50	50	–	–	27.5	50	–	50	3.1

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0				
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)						
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)								
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3						
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]
DN	**K_{VS}**	**Actuator**	**Travel**	**Permissible differential pressures Δp in bar (p_2 = 0 bar)**										
65 80	60	175	15	–	2.6	3.3	4.4	6.5		–	5	13.5	22.5	6
		240		–	2.4	4.5				–	8	19	31.5	6
		350		2.3	6	10.5	12.5	19.5		2.3	12.5	28.5	47	6
		355		6.5	14.5	23	13.5	22.5	28.5	–	10.5	27	45.5	6
		700		14.5	30.5	47	36	50	–	14.5	35	–	49.5	3.3
		750		15.5	33	50	45	–	–	15.5	37.5	–	49	3.1
80	80 [4]	175	15	–	–	–	2.5	4		–	3	8	13.5	6
		240		–	–	2.6				–	4.8	11.5	19.5	6
		350		–	3.8	6	7.5	12		–	7.5	17.5	29	6
		355		3.8	9	14	8	13.5	17.5	–	6	16.5	28	6
		700		8.5	19	29	22	32.5	–	8.5	21.5	–	30.5	3.3
		750		9.5	20	31	27.5	–	–	9.5	23	–	30	3.1
100 or 150	63	355	30	2.1	6	10	9	16	21	2.1	12	29	47.5	6
		700		6	14	22	26.5	40.5	50	6	26.5	50	50	6
		750		6.5	15	24	34	46	50	6.5	28.5	50	50	5.6
		1000		44.5	50	50	50	50		3.8	32.5	50	50	4.7
100 to 150	100	355	30	–	3.6	6	5.5	9.5	13	–	7.5	17.5	29	6
		700		3.6	8.5	13.5	16	25	31	3.6	16	36.5	50	6
		750		3.9	9	14.5	20.5	28	32	3.9	17.5	39	50	5.6
		1000		27.5	41.5	40	45.5	50		2.1	20	49	50	4.7
	160	355	30	–	2.2	3.8	3.4	6	8	–	4.6	11	18.5	6
		700		2.1	5	8.5	10	15.5	20	2.1	10	23	37.5	6
		750		2.4	5.5	9	13	18	20.5	2.4	11	24.5	37.5	5.6
		1000		17	26.5	25.5	29	38		–	12.5	31	37	4.7
125	200	355	30	–	–	3.1	2.7	5	6.5	–	3.8	9	15	6
		700		–	4.4	7	8	13	16	–	8	19	31	6
		750		–	4.8	7.5	10.5	14.5	17	–	9	20.5	31	5.6
		1000		14	22	21	23.5	31.5		–	10.5	25.5	30.5	4.7
150	260	355	30	–	–	2.1	–	3.5	4.7	–	2.6	6.5	10.5	6
		700		–	3	5	5.5	9	11.5	–	5.5	13.5	22	6
		750		–	3.3	5	7.5	10.5	12	–	6	14.5	22	5.6
		1000		10	15.5	15	17	22.5		–	7	18	21.5	4.7

1) Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
2) Maximum permissible supply pressure
3) No handwheel possible
4) For DN 80 with K_{VS} 100 and 19 mm operating travel, see Table 1.3

Table 1.2: *Soft seal · Leakage class VI according to IEC 60534-4 · Unbalanced*

Note concerning the use of a metal bellows:

– Bellows correction value = 0 bar

– For valves with K_{VS} 4 or smaller, use the permissible differential pressures from the rows for K_{VS} = 6.3 to 10.

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0				
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)						
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)								
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3						
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]

DN	K_{VS}	Actuator	Travel	Permissible differential pressures Δp in bar (p_2 = 0 bar)										
15 to 25	0.1 to 0.25	120	15	50	50	–	–			50	–	–	–	1.5
15 to 50	0.4 to 1.0	120	15	19.5	50	–	–			50	–	–	50	2.1
		175		50	–	–	–	–		50	–	–	50	1.7
		240		50	–	–				50	–	–	–	1.5
	1.6 2.5 4.0	120		4.4	23.5	50	50			23.5	50	–	50	3.2
		175		41	50	50	50	–		41	50	–	50	2.5
		240		43	50	50				50	–	–	50	2.1
		350		50	–	–	–	–		50	–	–	50	1.7
20 to 50	6.3 10	120	15	–	5.5	29.5	46.5			5.5	29.5	50	50	5.4
		175		10	24	31	38	50		10	45	50	50	4
		240		10.5	25	39.5				15	50	–	50	3.2
		350		24	50	50	50	–		24	50	–	50	2.5
		355		50	–	–	–	–	–	10	50	–	50	2.6
32 to 50	16	120	15	–	3.3	17.5	27.5			3.3	17.5	40.5	50	6
		175		6	14	18.5	22.5	33		6	27	50	50	4.9
		240		6	14.5	23.5				9	38	–	50	3.8
		350		14	31	48	50	–		14	50	–	50	2.9
		355		31.5	50	–	50	–	–	6	48	–	50	3.1
40 to 80	25	120	15	–	2.1	11.5	18.5			2.1	11.5	27	44.5	6
		175		3.9	9.5	12	15	22		3.9	17.5	40	50	5.7
		240		4.1	9.5	15.5				6	25	50	50	4.5
		350		9.5	20.5	32	37.5	50		9.5	37.5	–	50	3.3
		355		21	43.5	–	41	50	–	4	32.5	–	50	3.5
50 to 80	40	175	15	2.4	5.5	7.5	9	13.5		2.4	11	25	41	6
		240		2.5	6	9.5				3.7	15.5	35	49.5	5.4
		350		5.5	13	20	23.5	35.5		5.5	23.5	–	48	4
		355		13	27	41.5	25.5	40.5	50	2.5	20	48.5	48	4.1
		700		27	–	–	–	–	–	27	–	–	44.5	2.1
		750		29	–	–	–	–	–	29	–	–	44	2

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0				
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)						
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)								
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3						
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]

DN	K_{VS}	Actuator	Travel	Permissible differential pressures Δp in bar (p_2 = 0 bar)										
65 80	60	175	15	–	3.4	4.4	5	8		–	6.5	14.5	23.5	6
		240		–	3.5	5.5				2.1	9	20	32.5	6
		350		3.4	7.5	11.5	13.5	20.5		3.4	13.5	29.5	37.5	4.9
		355		7.5	15.5	24	14.5	23.5	29.5	–	11.5	28	37.5	5.1
		700		15.5	32	–	37	–	–	15.5	36	–	35.5	2.5
		750		16.5	34	–	–	–	–	16.5	38.5	–	35	2.4
80	80 [4]	175	15	–	2.1	2.7	3.3	4.5		–	4	9	14.5	6
		240		–	2.1	3.4				–	5.5	12.5	20	6
		350		2.1	4.6	7	8	12.5		2.1	8	18.5	29.5	6
		355		4.7	9.5	15	9	14.5	18.5	–	7	17.5	29	6
		700		9.5	19.5	29.5	23	–	–	9.5	22	–	28.5	3.1
		750		10	21	–	28.5	–	–	10	24	–	28.5	2.9
100 or 150	63	355	30	3.1	7	11	10	17	22	3.1	13.5	30	37	4.9
		700		7	15	23.5	27.5	–	–	7	27.5	–	35	2.9
		750		7.5	16.5	25	35	–	–	7.5	29.5	–	35	2.8
100 to 150	100	355	30	–	4.5	7	6	10.5	13.5	–	8	18.5	29.5	5.9
		700		4.4	9.5	14.5	17	25.5	–	4.4	17	–	28.5	3.5
		750		4.5	10	15.5	21.5	29	–	4.8	18	–	28.5	3.3
		1000		28	–	–	–	–		3	21	–	27.5	2.9
	160	355	30	–	2.8	4.5	4.1	6.5	8.5	–	5	11.5	19	6
		700		2.8	6	9	10.5	16.5	20.5	2.8	10.5	–	23	4.1
		750		3	6.5	10	13.5	18.5	21	3	11.5	–	23	3.9
		1000		18	–	–	–	–		–	13.5	–	22.5	3.4
125	200	355	30	–	2.3	3.7	3.4	5.5	7	–	4.4	9.5	15.5	6
		700		2.3	5	7.5	9	13.5	17	2.3	9	19.5	21	4.4
		750		2.5	5	8	11.5	15	17.5	2.5	9.5	21	21	4.2
		1000		14.5	22.5	21.5	–	–		–	11	–	20.5	3.6
150	260	355	30	–	–	2.6	2.4	4	5	–	3.1	7	11	6
		700		–	3.6	5.5	6	9.5	12	–	6	14	18	5
		750		–	3.8	5.5	8	11	12.5	–	6.5	15	18	4.8
		1000		2.5	16	15.5	17.5	–		–	7.5	18.5	17.5	4

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
[2] Maximum permissible supply pressure
[3] No handwheel possible
[4] For DN 80 with K_{VS} 100 and 19 mm operating travel, see Table 1.4

Table 1.3: *Metal seal · Leakage class VI according to IEC 60534-4 · Unbalanced · 19 mm operating travel*

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		355	19	2.2 to 2.95 (1.4 to 2.6)	2.75 to 3.65 (1.9 to 3.3)					0.2 to 0.7 (0.2 to 1.0)				
		700		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)	2.5 to 3.3 (2.1 to 3.3)								
		750		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)									
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]
DN	**K_{VS}**	**Actuator**	**Travel**	**Permissible differential pressures Δp in bar (p_2 = 0 bar)**										
80	100	355	19	12.5	16					3.2	9.5	19.5	31	6
		700		16	25	30				7.5	20	–	30.5	3.4
		750		17.5	27					8	21.5	–	30	3.2

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
[2] Maximum permissible supply pressure

Table 1.4: *Soft seal · Leakage class VI according to IEC 60534-4 · Unbalanced · 19 mm operating travel*

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		355	19	2.2 to 2.95 (1.4 to 2.6)	2.75 to 3.65 (1.9 to 3.3)					0.2 to 0.7 (0.2 to 1.0)				
		700		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)	2.5 to 3.3 (2.1 to 3.3)								
		750		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)									
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]
DN	**K_{VS}**	**Actuator**	**Travel**	**Permissible differential pressures Δp in bar (p_2 = 0 bar)**										
80	100	355	19	13.5	17					4	10.5	20.5	30	5.6
		700		17	26	31				8	21	–	28.5	3.2
		750		18.5	28					9	22.5	–	28.5	3

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
[2] Maximum permissible supply pressure

Table 1.5: *Note concerning other versions*

Version	Differential pressures
High-performance metal seal · Leakage class V according to IEC 60534-4 Unbalanced	The SAMSON Valve Sizing software must be used to determine the permissible differential pressures. Information on this valve sizing software can be found on our website (www. samson.de > Services > Software > Valve sizing).
Metal seal · Leakage class IV according to IEC 60534-4 · Balancing with PTFE seal · Without bellows seal	
Metal seal · Leakage class IV according to IEC 60534-4 · Balancing with graphite seal · Without bellows seal	

Table 2: *Permissible differential pressures for Type 325x and Type 328x Globe Valves as well as Type 3256 and Type 3286 Angle Valves up to DN 150*

Table 2.1: *Metal seal · Leakage class IV according to IEC 60534-4 · With correction value for bellows seal*

DN	K_{VS}	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in bar	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)			0.8 to 1.2 (0.8 to 2.4)
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)
		2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)			0.2 to 0.6
Required supply pressure in bar					Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]
DN	**K_{VS}**	**Actuator**	**Travel**	**Bellows**	**Permissible differential pressures Δp in bar (p_2 = 0 bar)**										
15 to 40	0.1 to 1.0	350	15	[4]	168	400	400	400	400		168	400	–	400	3.1
		355			400	400	–	400	–	–	43	400	–	400	3.3
	1.6 to 2.5	350	15	[4]	72.5	185	297	354	400		72.5	354	400	400	4.2
		355			188	400	400	388	400	400	17	302	400	400	4.3
	4.0 to 10	350	15	–10	16.5	44.5	72.5	86.5	136		16.5	86.5	199	326	6
		355			45	102	159	95	156	198	2.6	74	188	316	6
		700			100	213	326	248	368	–	100	241	–	400	3.8
		750			109	229	350	312	400	–	109	259	–	400	3.6
	16	350	15	–6.5	9	26	43	51.5	81		9	51.5	119	194	6
		355			26.5	60.5	95	56.5	93	118	–	43.5	112	189	6
		700			59.5	127	194	148	220	283	59.5	144	279	313	4.6
		750			64.5	137	209	186	245	299	64.5	155	299	311	4.3
	25	350	15	–4.2	5.5	17	28	33.5	53.5		5.5	33.5	78.5	129	6
		355			17	40	62.5	37	61.5	78.5	–	28.5	74	125	6
		700			39.5	84	129	98	146	188	39.5	95.5	185	207	4.6
		750			42.5	90.5	138	123	163	199	42.5	102	199	207	4.3
50 to 100	4 to 10	350	15	[5]	13.5	41.5	70	84	133		13.5	84	196	323	6
		355			42.5	99.5	156	92	153	196	–	71	185	313	6
		700			98	210	323	254	355	–	98	238	–	400	3.8
		750			106	226	347	309	400	–	106	257	–	400	3.6
	16	350	15	[5]	7.5	24.5	41	49.5	79		7.5	49.5	117	193	6
		355			25	59	93	54.5	91	117	–	42	110	187	6
		700			58	125	193	146	218	281	58	142	277	326	4.7
		750			63	135	207	185	243	298	63	153	298	324	4.5
	25	350	15	–4.2	4.7	15.5	27	32.5	52		4.7	32.5	77.5	128	6
		355			16	39	61.5	36	60	77	–	27.5	73	124	6
		700			38	83	128	97	145	187	38	94.5	184	269	5.7
		750			41.5	89.5	137	122	161	198	41.5	101	198	268	5.3

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar

[2] Maximum permissible supply pressure

[3] No top-mounted handwheel possible

[4] See K_{VS} 4 to 10 for differential pressures

[5] See K_{VS} 25 for differential pressures

DN	K_{VS}	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in bar	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0				
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)			0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)				
		2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)			0.2 to 0.6				
Required supply pressure in bar					Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]
DN	**K_{VS}**	**Actuator**	**Travel**	**Bellows**	**Permissible differential pressures Δp in bar (p_2 = 0 bar)**										
50 to 100	40	355	30	–2.5	2.4	9	15.5	13.5	24.5	32.5	2.4	18.5	45	74.5	6
		700			8.5	21.5	34.5	41	63.5	107	8.5	41	93	151	6
		750			9.5	23.5	37.5	53	72	82.5	9.5	44.5	100	162	6
		1000			70	107	102	116	153		5	51	125	204	5.9
		1400			–	125	158	190			8.5	73.5	177	201	4.5
	63	355	30	–1.5	–	5	9.5	8.5	15	20	–	11.5	28	46.5	6
		700			5	13.5	21.5	25.5	40	67.5	5	25.5	58	95	6
		750			5.5	14.5	23	33	45	51.5	5.5	27.5	62.5	102	6
		1000			43.5	67	64	73	96		3	32	78.5	131	6
		1400			–	78.5	99	119			5	46	111	146	5
	100	355	30	–0.9	–	3.1	5.5	5	9	12.5	–	7	17	28.5	6
		700			3.1	8	13	15.5	24.5	41.5	3.1	15.5	36	59.5	6
		750			3.4	8.5	14	20	27.5	31.5	3.4	17	38.5	63	6
		1000			27	41	39.5	45	59.5		–	19.5	48.5	81	6
		1400			–	48.5	61	74			3.1	28	68.5	90.5	5
	160	355	30	–0.7	–	–	3.5	3.1	5.5	7.5	–	4.3	10.5	18	6
		700			–	5	8	9.5	15.5	26.5	–	9.5	22.5	37.5	6
		750			2	5.5	9	12.5	17.5	20	2	10.5	24.5	40	6
		1000			17	26	25	28.5	37.5		–	12.5	31	51.5	6
		1400			–	31	39	47			–	18	44	73	5
150	63	355	30	–1.5	–	4.5	8.5	7.5	14	19.5	–	10.5	27	45.5	6
		700			4.4	12.5	20.5	24.5	39	49	4.4	24.5	57.5	94	6
		750			5	13.5	22.5	32	44	50.5	5	26.5	61.5	101	6
		1000			42.5	66	63	72	95		2	31	77.5	130	6
		1400			–	77.5	98	118			4.4	45	110	161	5.4
	100	355	30	–0.9	–	2.6	5	4.5	8.5	11.5	–	6	16.5	28	6
		700			2.5	7.5	12.5	15	24	30	2.5	15	35	58	6
		750			2.9	8	13.5	19.5	27	31	2.9	16	38	62.5	6
		1000			26	40.5	39	44.5	59		–	19	48	80.5	6
		1400			–	48	60.5	73			2.5	27.5	68	114	6
	160	355	30	–0.7	–	–	3.1	2.7	5	7	–	4	10.5	17.5	6
		700			–	4.7	7.5	9.5	15	19	–	9.5	22.5	37	6
		750			–	5	8.5	12.5	17	19.5	–	10	24	39.5	6
		1000			16.5	26	24.5	28	37.5		–	12	30.5	51.5	6
		1400			–	30.5	38.5	46.5			–	17.5	43.5	72.5	6
	250	1000	60	–0.2	4.6	7.5	8	9.5	14		–	–	13.5	26.5	6
		1400			7	15	19.5	23.5			4.9	15	31.5	50.5	6
		2800			15	31.5	40	48.5			15	36	–	50	3.3
	360	1000	60	–0.2	3.1	5	5.5	6.5	9.5		–	–	9	18.5	6
		1400			4.8	10.5	13	16			3.3	10.5	22	35	6
		2800			10.5	22	27.5	33.5			10.5	25	–	34.5	3.3

Table 2.2: *Soft seal · Leakage class VI according to IEC 60534-4 · With correction value for bellows seal*

DN	K_{VS}	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in bar	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0				
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0				
		1400-120	60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)				
Required supply pressure in bar			Upper spring range value + 0.2 bar								1.4	2.4	4.0	[1]	[2]

DN	K_{VS}	Actuator	Travel	Bellows	Permissible differential pressures Δp in bar (p_2 = 0 bar)										
15 to 40	0.1 to 1.0	350	15	[4]	176	–	–	–	–		50	–	–	–	1.5
	1.6 to 2.5	350	15	[4]	78	–	–	–	–		78	–	–	121	1.7
	4.0 to 10	350	15	–10	19	47.5	75.5	89.5	–		19	89.5	–	83	2.5
		355			48	–	–	–	–	–	5	76.5	–	83	2.6
	16	350	15	–6.5	11.5	28	45	53.5	–		11.5	53.5	–	68	2.9
		355			28.5	63	–	58.5	–	–	3.2	46	–	68	3.1
	25	350	15	–4.2	7.5	18.5	30	35.5	55		7.5	35.5	–	57.5	3.3
		355			19	41.5	–	39	63	–	2.1	30.5	–	57.5	3.5
50 to 100	4 to 10	350	15	[5]	16.5	44.5	72.5	86.5	–		16.5	86.5	–	80	2.5
		355			45.5	–	–	–	–	–	2.7	74	–	80	2.6
	16	350	15	[5]	9.5	26.5	43.5	52	–		9.5	52	–	66.5	2.9
		355			27	61	–	57	–	–	–	44	–	66.5	3.1
		700			60	–	–	–	–	–	60	–	–	–	1.5
		750			65	–	–	–	–	–	65	–	–	–	1.5
	25	350	15	–4.2	6.5	17.5	28.5	34.5	54		6.5	34.5	–	56.5	3.3
		355			18	40.5	–	38	62	–	–	29	–	56.5	3.5
		700			40	–	–	–	–	–	40	–	–	51	1.7
		750			43	–	–	–	–	–	43	–	–	50	1.7
	40	355	30	–2.5	3.8	10	16.5	15	26	34	3.8	20	46.5	44.5	4.1
		700			10	23	36	42.5	–	–	10	–	–	41.5	2.5
		750			11	25	38.5	–	–	–	11	45.5	–	41	2.4
	63	355	30	–1.5	2.3	6.5	10.5	9.5	16	21.5	2.3	12.5	29	36.5	4.9
		700			6	14.5	22.5	26.5	–	–	6	26.5	–	34.5	2.9
		750			6.5	15.5	24.5	34	–	–	6.5	28.5	–	34	2.8
	100	355	30	–0.9	–	4	6.5	5.5	10	13	–	7.5	18	29	5.9
		700			3.9	9	14	16.5	25	–	3.9	16.5	–	28	3.5
		750			4.3	9.5	15	21	28.5	–	4.3	17.5	–	28	3.3
		1000			27.5	–	–	–	–		2.5	20.5	–	27	2.9
	160	355	30	–0.7	–	2.5	4.2	3.8	6	8.5	–	5	11.5	19	6
		700			2.5	5.5	9	10.5	16	26.5	2.5	10.5	–	23	4.1
		750			2.7	6	9.5	13.5	18	21	2.7	11	–	23	3.9
		1000			17.5	–	–	–	–		–	13	–	22	3.4

DN	K_{VS}	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in bar	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0
		1400-120	60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)
Required supply pressure in bar			Upper spring range value + 0.2 bar								1.4	2.4	4.0	[1]	[2]

DN	K_{VS}	Actuator	Travel	Bellows	Permissible differential pressures Δp in bar (p_2 = 0 bar)										
150	63	355	30	–1.5	–	5.5	9.5	8.5	15	20.5	–	11.5	28	35.5	4.9
		700			5.5	13.5	21.5	25.5	–	–	5.5	25.5	–	33.5	2.9
		750			6	14.5	23.5	33	–	–	6	27.5	–	33	2.8
	100	355	30	–0.9	–	3.4	6	5	9.5	12.5	–	7	17.5	28.5	5.9
		700			3.4	8	13.5	16	24.5	–	3.4	16	–	27.5	3.5
		750			3.7	9	14.5	20.5	28	–	3.7	17	–	27	3.3
		1000			27	–	–	–	–		–	20	–	26.5	2.9
	160	355	30	–0.7	–	2.2	3.8	3.4	6	8	–	4.6	11	18.5	6
		700			2.1	5	8.5	10	15.5	20	2.1	10	–	22.5	4.1
		750			2.4	5.5	9	13	18	20.5	2.4	11	–	22.5	3.9
		1000			17	–	–	–	–		–	12.5	–	22	3.4
	250	1000	60	–0.2	5	8	8.5	10	14.5		–	2.2	14	18	4.7
		1400			7.5	15.5	–	–			5.5	15.5	–	17.5	2.7
	360	1000	60	–0.2	3.6	5.5	6	7	10		–	–	9.5	15	5.3
		1400			5	11	13.5	–			3.8	11	–	15	3.1

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
[2] Maximum permissible supply pressure
[3] No top-mounted handwheel possible
[4] See K_{VS} 4 to 10 for differential pressures
[5] See K_{VS} 25 for differential pressures

Table 2.3: *Note concerning other versions*

Version	Differential pressures
High-performance metal seal · Leakage class V according to IEC 60534-4 · With correction value for bellows seal	The SAMSON Valve Sizing software must be used to determine the permissible differential pressures. Information on this valve sizing software can be found on our website (www. samson.de > Services > Software > Valve sizing).
Metal seal · Leakage class IV according to IEC 60534-4 · Balancing with PTFE seal · Without bellows seal	
Metal seal · Leakage class IV according to IEC 60534-4 · Balancing with graphite seal · Without bellows seal	

Table 3: *Permissible differential pressures for Type 3241, Type 325x and Type 328x Globe Valves as well as Type 3256 and Type 3286 Angle Valves in DN 200 and larger*

Table 3.1: *Metal seal · Leakage class IV according to IEC 60534-4 · With correction value for bellows seal*

DN	K_{VS}	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"					"Actuator stem retracts" [1]				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		1000	30	Correction value in bar	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)	0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)	0.4 to 2.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)		0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)		0.4 to 0.8 (0.4 to 1.2)				
			120		–	0.8 to 2.4	1.0 to 3.0	1.2 to 3.6		0.4 to 1.2				
		2800 2x2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)	2.8 to 3.8 (1.3 to 3.3)	0.2 to 0.6 (0.2 to 1.0)				
			120		0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.6 (1.1 to 2.3)	1.8 to 3.8 (1.3 to 3.3)	0.2 to 1.0				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[2]	[3]

DN	K_{VS}	Actuator	Travel	Bellows	Permissible differential pressures Δp in bar (p_2 = 0 bar)									
Up to 250	100	1000	30	–1	25.5	39.5	38	43.5	58	–	18	47	79.5	6
		1400			–	47	59.5	72.5		–	26.5	67	113	6
Up to 300	160	1000	30	–0.6	16	25	24	27.5	37	–	11.5	30	50.5	6
		1400			–	30	38	46		–	17	43	72	6
	250	1000	60	–0.4	4	7	8	9.5	13.5	–	–	13	26.5	6
		1400			6.5	14.5	19	23		4.6	14.5	31.5	50	6
		2800			14.5	31.5	39.5	48	56	14.5	35.5	68.5	81.5	4.8
Up to 400	360	1000	60	–0.3	2.9	4.9	5	6.5	9.5	–	–	9	18	6
		1400			4.5	10	13	16		3.1	10	21.5	34.5	6
		2800			10	21.5	27.5	33	39	10	24.5	47.5	68.5	5.6
		2x2800			21.5	44.5	56	67.5	–	21.5	50.5	–	65.5	3.1
	630	1000	60	–0.2	–	2.7	3	3.5	5	–	–	5	10	6
		1400			2.4	5.5	7	8.5		–	5.5	12	19.5	6
		2800			5.5	12	15	18.5	21.5	5.5	13.5	26.5	41	6
		2x2800			12	25	31.5	38	44.5	12	28	–	42	3.9
	1000	1400	120	–0.1	–	–	2	2.5		–	2.5	6.5	11	6
		2800			3.6	4.6	5.5	6.5	8.5	–	6.5	15	24	6
		2x2800			7.5	9.5	11.5	14	18	3.6	14	30.5	41	5.2
	1500	1400	120	–	–	–	–	–		–	–	4.6	7.5	6
		2800			2.4	3.2	3.9	4.6	6	–	4.6	10	16.5	6
		2x2800			5	6.5	8	9.5	12.5	2.4	9.5	21	34	6
Up to 500	2000	2800	120	–	–	2.3	2.8	3.3	4.4	–	3.3	7.5	12	6
		2x2800			3.9	4.9	6	7	9	–	7	15.5	25	6
	2500	2800	120	–	–	–	2.1	2.5	3.3	–	2.5	5.5	9	6
		2x2800			2.9	3.8	4.6	5	7	–	5	11.5	19	6
	4000	2800	120	–	–	–	–	–	2.1	–	–	3.7	6	6
		2x2800			–	2.4	2.9	3.4	4.4	–	3.4	7.5	12	6

[1] For actuators with 2800 cm² and 2x2800 cm² actuator areas with fail-safe action "stem retracts", a plug stem made of 1.4548 must be used.
[2] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
[3] Maximum permissible supply pressure

Table 3.2: *Soft seal · Leakage class VI according to IEC 60534-4 · With correction value for bellows seal*

DN	K_{VS}	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"					"Actuator stem retracts" [1]				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		1000	30	Correction value in bar	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)	0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)	0.4 to 2.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)		0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)		0.4 to 0.8 (0.4 to 1.2)				
			120		–	0.8 to 2.4	1.0 to 3.0	1.2 to 3.6		0.4 to 1.2				
		2800 2x2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)	2.8 to 3.8 (1.3 to 3.3)	0.2 to 0.6 (0.2 to 1.0)				
			120		0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.6 (1.1 to 2.3)	1.8 to 3.8 (1.3 to 3.3)	0.2 to 1.0				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[2]	[3]

DN	K_{VS}	Actuator	Travel	Bellows	Permissible differential pressures Δp in bar (p_2 = 0 bar)									
Up to 250	100	1000	30	–1	26	–	–	–	–	–	19	–	25.5	2.9
Up to 300	160	1000	30	–0.6	16.5	–	–	–	–	–	12	–	21	3.4
	250	1000	60	–0.4	4.8	7.5	8.5	10	14	–	–	13.5	17.5	4.7
		1400			7	15.5	–	–		5	15.5	–	17	2.7
Up to 400	360	1000	60	–0.3	3.3	5	5.5	6.5	10	–	–	9.5	15	5.3
		1400			5	10.5	13.5	–		3.5	10.5	–	14.5	3.1
	630	1000	60	–0.2	–	3	3.3	3.9	5.5	–	–	5	10.5	6
		1400			2.8	6	7.5	9		2	6	–	11.5	3.9
	1000	1400	120	–0.1	–	–	2.3	2.8		–	2.8	7	9	5.1
		2800			3.8	4.9	5.5	7	9	–	7	–	8.5	2.9
	1500	1400	120	–	–	–	–	–		–	–	4.8	7.5	5.9
		2800			2.7	3.4	4.1	4.8	6	–	4.8	–	7.5	3.3
Up to 500	2000	2800	120	–	2	2.5	3	3.5	4.6	–	3.5	–	6.5	3.7
	2500	2800	120	–	–	–	2.3	2.7	3.5	–	2.7	–	5.5	4.1
	4000	2800	120	–	–	–	–	–	2.2	–	–	3.8	4.7	4.9

1) For actuators with 2800 cm² and 2x2800 cm² actuator areas with fail-safe action "stem retracts", a plug stem made of 1.4548 must be used.
2) Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar
3) Maximum permissible supply pressure

Table 3.3: *Note concerning other versions*

Version	Differential pressures
High-performance metal seal · Leakage class V according to IEC 60534-4 · With correction value for bellows seal	The SAMSON Valve Sizing software must be used to determine the permissible differential pressures. Information on this valve sizing software can be found on our website (www. samson.de > Services > Software > Valve sizing).
Metal seal · Leakage class IV according to IEC 60534-4 · Balancing with PTFE seal · Without bellows seal	
Metal seal · Leakage class IV according to IEC 60534-4 · Balancing with graphite seal · Without bellows seal	

Valve versions according to ANSI/ASTM standards

Table 4: *Permissible differential pressures for Type 3241 Globe Valve up to NPS 6*

Table 4.1: *Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Unbalanced*

Note concerning the use of a metal bellows:

– Bellows correction value = 0 bar

– For valves with K_{VS} 4 (C_V 5) or smaller, use the permissible differential pressures from the rows for K_{VS} = 6.3 to 10 (C_V = 7.5 to 12).

NPS	C_V	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)		
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)				
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)
Required supply pressure in bar				Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
½ to 1	0.12 to 0.3	120	15	725	725	725	725			725	725	–	725	49
		175		725	725	725	725	–		725	725	–	725	38
		240		725	725	725				725	–	–	725	31
½ to 2	0.5 to 1.2	120	15	120	725	725	725			725	725	725	725	83
		175		725	725	725	725	725		725	725	725	725	61
		240		725	725	725				725	725	–	725	47
	2 3 5	120		–	261	725	725			261	725	725	725	87
		175		514	725	725	725	725		514	725	725	725	87
		240		536	725	725				725	725	725	725	82
		350		725	725	725	725	725		725	725	725	725	60
		355		725	725	725	725	725	725	529	725	725	725	62
¾ to 2	7.5 12	120	15	–	40	391	638			40	391	725	725	87
		175		101	304	406	507	725		101	609	725	725	87
		240		108	319	529				174	725	725	725	87
		350		304	717	725	725	725		304	725	725	725	87
		355		725	725	725	725	725	725	108	725	725	725	87
1¼ to 2	20	120	15	–	–	224	369			–	224	565	725	87
		175		55	174	232	297	449		55	355	725	725	87
		240		58	181	304				94	514	725	725	87
		350		174	420	659	725	725		174	725	725	725	87
		355		427	725	725	725	725	725	56	674	725	725	87
1½ to 3	30	120	15	–	–	145	239			–	145	362	609	87
		175		30	108	152	188	290		30	232	558	725	87
		240		33	116	195				60	340	725	725	87
		350		108	275	435	514	725		108	514	725	725	87
		355		275	609	725	565	725	725	31	442	725	725	87
2 to 3	47	175	15	–	65	87	116	174		–	137	340	572	87
		240		–	68	116				33	203	485	725	87
		350		65	166	268	319	493		65	319	725	725	87
		355		166	377	580	348	565	725	–	268	681	725	87
		700		369	725	725	725	725	–	369	725	–	725	47
		750		398	725	725	725	–	–	398	725	–	725	45

NPS	C_V	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)		
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)				
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)
Required supply pressure in bar				Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
2½ 3	70	175	15	–	37	47	63	94		–	72	195	326	87
		240		–	34	65				–	116	275	456	87
		350		33	87	152	181	282		33	181	413	681	87
		355		94	210	333	195	326	413	–	152	391	659	87
		700		210	442	681	522	725	–	210	507	–	717	47
		750		224	478	725	652	–	–	224	543	–	710	45
3	95 [4]	175	15	–	–	–	36	58		–	43	116	195	87
		240		–	–	37				–	69	166	282	87
		350		–	55	87	108	174		–	108	253	420	87
		355		55	130	203	116	195	253	–	87	239	406	87
		700		123	275	420	319	471	–	123	311	–	442	47
		750		137	290	449	398	–	–	137	333	–	435	44
4 to 6	75	355	30	30	87	145	130	232	304	30	174	420	688	87
		700		87	203	319	384	587	725	87	384	725	725	87
		750		94	217	348	493	667	725	94	413	725	725	81
		1000		645	725	725	725	725		55	471	725	725	68
	120	355	30	–	52	87	79	137	188	–	108	253	420	87
		700		52	123	195	232	362	449	52	232	529	725	87
		750		56	130	210	297	406	464	56	253	565	725	81
		1000		398	601	580	659	725		30	290	710	725	68
	190	355	30	–	31	55	49	87	116	–	66	159	268	87
		700		30	72	123	145	224	290	30	145	333	543	87
		750		34	79	130	188	261	297	34	159	355	543	81
		1000		246	384	369	420	551		–	181	449	536	68
6	300	355	30	–	–	30	–	50	68	–	37	94	152	87
		700		–	43	72	79	130	166	–	79	195	319	87
		750		–	47	72	108	152	174	–	87	210	319	81
		1000		145	224	217	246	326		–	101	261	311	68

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)

[2] Maximum permissible supply pressure in psi

[3] No handwheel possible

[4] For NPS 3 with C_V 120 and 19 mm operating travel, see Table 4.3

Table 4.2: *Soft seal · Leakage class VI according to ANSI/FCI 70-2 · Unbalanced*

Note concerning the use of a metal bellows:

– Bellows correction value = 0 bar

– For valves with K_{VS} 4 (C_V 5) or smaller, use the permissible differential pressures from the rows for K_{VS} = 6.3 to 10 (C_V = 7.5 to 12).

NPS	C_V	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0				
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)						
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)								
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3						
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]
NPS	**C_V**	**Actuator**	**Travel**	**Permissible differential pressures Δp in psi (p_2 = 0 psi)**										
½ to 1	0.12 to 0.3	120	15	725	725	–	–			725	–	–	–	21
½ to 2	0.5 to 1.2	120	15	282	725	–	–			725	–	–	725	30
		175		725	–	–	–	–		725	–	–	725	24
		240		725	–	–				725	–	–	–	21
	2 3 5	120		63	340	725	725			340	725	–	725	46
		175		594	725	725	725	–		594	725	–	725	36
		240		623	725	725				725	–	–	725	30
		350		725	–	–	–	–		725	–	–	725	24
¾ to 2	7.5 12	120	15	–	79	427	674			79	427	725	725	78
		175		145	348	449	551	725		145	652	725	725	58
		240		152	362	572				217	725	–	725	46
		350		348	725	725	725	–		348	725	–	725	36
		355		725	–	–	–	–	–	145	725	–	725	37
1¼ to 2	20	120	15	–	47	253	398			47	253	587	725	87
		175		87	203	268	326	478		87	391	725	725	71
		240		87	210	340				130	551	–	725	55
		350		203	449	696	725	–		203	725	–	725	42
		355		456	725	–	725	–	–	87	696	–	725	44
1½ to 3	30	120	15	–	30	166	268			30	166	391	645	87
		175		56	137	174	217	319		56	253	580	725	82
		240		59	137	224				87	362	725	725	65
		350		137	297	464	543	725		137	543	–	725	47
		355		304	630	–	594	725	–	58	471	–	725	50
2 to 3	47	175	15	34	79	108	130	195		34	159	362	594	87
		240		36	87	137				53	224	507	717	78
		350		79	188	290	340	514		79	340	–	696	58
		355		188	391	601	369	587	725	36	290	703	696	59
		700		391	–	–	–	–	–	391	–	–	645	30
		750		420	–	–	–	–	–	420	–	–	638	29

NPS	C_V	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		120	15	0.2 to 1.0	0.4 to 2.0	1.4 to 2.3	2.1 to 3.3			0.2 to 1.0				
		175		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.7 to 3.3 (1.3 to 2.9)						
		240		0.3 to 1.1 (0.2 to 1.0)	0.6 to 2.2 (0.4 to 2.0)	0.9 to 3.3 (0.6 to 3.0)								
		350		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3						
		355	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15	0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
2½ 3	70	175	15	–	49	63	72	116		–	94	210	340	87
		240		–	50	79				30	130	290	471	87
		350		49	108	166	195	297		49	195	427	543	71
		355		108	224	348	210	340	427	–	166	406	543	73
		700		224	464	–	536	–	–	224	522	–	514	36
		750		239	493	–	–	–	–	239	558	–	507	34
3	95 [4]	175	15	–	30	39	47	65		–	58	130	210	87
		240		–	30	49				–	79	181	290	87
		350		30	66	101	116	181		30	116	268	427	87
		355		68	137	217	130	210	268	–	101	253	420	87
		700		137	282	427	333	–	–	137	319	–	413	44
		750		145	304	–	413	–	–	145	348	–	413	42
4 to 6	75	355	30	44	101	159	145	246	319	44	195	435	536	71
		700		101	217	340	398	–	–	101	398	–	507	42
		750		108	239	362	507	–	–	108	427	–	507	40
	120	355	30	–	65	101	87	152	195	–	116	268	427	85
		700		63	137	210	246	369	–	63	246	–	413	50
		750		65	145	224	311	420	–	69	261	–	413	47
		1000		406	–	–	–	–		43	304	–	398	42
	190	355	30	–	40	65	59	94	123	–	72	166	275	87
		700		40	87	130	152	239	297	40	152	–	333	59
		750		43	94	145	195	268	304	43	166	–	333	56
		1000		261	–	–	–	–		–	195	–	326	49
6	300	355	30	–	–	37	34	58	72	–	44	101	159	87
		700		–	52	79	87	137	174	–	87	203	261	72
		750		–	55	79	116	159	181	–	94	217	261	69
		1000		36	232	224	253	–		–	108	268	253	58

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)
[2] Maximum permissible supply pressure in psi
[3] No handwheel possible
[4] For NPS 3 with C_V 120 and 19 mm operating travel, see Table 4.4

Table 4.3: *Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Unbalanced · 19 mm operating travel*

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		355	19	2.2 to 2.95 (1.4 to 2.6)	2.75 to 3.65 (1.9 to 3.3)					0.2 to 0.7 (0.2 to 1.0)				
		700		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)	2.5 to 3.3 (2.1 to 3.3)								
		750		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)									
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]
NPS	**C_V**	**Actuator**	**Travel**	**Permissible differential pressures Δp in psi (p_2 = 0 psi)**										
3	120	355	19	181	232					46	137	282	449	87
		700		232	362	435				108	290	–	442	49
		750		253	391					116	311	–	435	46

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)
[2] Maximum permissible supply pressure in psi

Table 4.4: *Soft seal · Leakage class VI according to ANSI/FCI 70-2 · Unbalanced · 19 mm operating travel*

DN	K_{VS}	Actuator cm²	Travel [mm]	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		355	19	2.2 to 2.95 (1.4 to 2.6)	2.75 to 3.65 (1.9 to 3.3)					0.2 to 0.7 (0.2 to 1.0)				
		700		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)	2.5 to 3.3 (2.1 to 3.3)								
		750		1.4 to 2.4 (0.4 to 2.0)	2.1 to 3.6 (0.6 to 3.0)									
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[1]	[2]
NPS	**C_V**	**Actuator**	**Travel**	**Permissible differential pressures Δp in psi (p_2 = 0 psi)**										
3	120	355	19	195	246					58	152	297	435	81
		700		246	377	449				116	304	–	413	46
		750		268	406					130	326	–	413	43

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)
[2] Maximum permissible supply pressure in psi

Table 4.5: *Note concerning other versions*

Version	Differential pressures
High-performance metal seal · Leakage class V according to ANSI/ FCI 70-2 · Unbalanced	The SAMSON Valve Sizing software must be used to determine the permissible differential pressures. Information on this valve sizing software can be found on our website (www. samson.de > Services > Software > Valve sizing).
Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Balancing with PTFE seal · Without bellows seal	
Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Balancing with graphite seal · Without bellows seal	

Table 5: *Permissible differential pressures for Type 325x and Type 328x Globe Valves as well as Type 3256 and Type 3286 Angle Valves up to NPS 6*

Table 5.1: *Metal seal · Leakage class IV according to ANSI/FCI 70-2 · With correction value for bellows seal*

NPS	C_V	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in psi	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0				
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)			0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)				
		2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)			0.2 to 0.6				
Required supply pressure in bar			Upper spring range value + 0.2 bar								1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Bellows	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
½ to 1½	0.12 to 1.2	350	15	[4]	2436	5801	5801	5801	5801		2436	5801	–	5801	44
		355			5801	5801	–	5801	–	–	623	5801	–	5801	47
	2 to 3	350	15	[4]	1051	2683	4307	5134	5801		1051	5134	5801	5801	60
		355			2726	5801	5801	5627	5801	5801	246	4380	5801	5801	62
	5 to 12	350	15	–145	239	645	1051	1254	1972		239	1254	2886	4728	87
		355			652	1479	2306	1377	2262	2871	37	1073	2726	4583	87
		700			1450	3089	4728	3596	5337		1450	3495	–	5801	55
		750			1580	3321	5078	4525	5801		1580	3756	–	5801	52
	20	350	15	–94	130	377	623	746	1174		130	746	1725	2813	87
		355			384	877	1377	819	1348	1711	–	630	1624	2741	87
		700			862	1841	2813	2146	3190	4104	862	2088	4046	4539	66
		750			935	1987	3031	2697	3553	4336	935	2248	4336	4510	62
	30	350	15	–61	79	246	406	485	775		79	485	1138	1870	87
		355			246	580	906	536	891	1138	–	413	1073	1812	87
		700			572	1218	1870	1421	2117	2726	572	1385	2683	3002	66
		750			616	1312	2001	1783	2364	2886	616	1479	2886	3002	62
2 to 4	5 to 12	350	15	[5]	195	601	1015	1218	1929		195	1218	2842	4684	87
		355			616	1443	2262	1334	2219	2842	–	1029	2683	4539	87
		700			1421	3045	4684	3683	5148	–	1421	3451	–	5801	55
		750			1537	3277	5032	4481	5801	–	1537	3727	–	5801	52
	20	350	15	[5]	108	355	594	717	1145		108	717	1696	2799	87
		355			362	855	1348	790	1319	1696	–	609	1595	2712	87
		700			841	1812	2799	2117	3161	4075	841	2059	4017	4728	68
		750			913	1958	3002	2683	3524	4322	913	2219	4322	4699	65
	30	350	15	–61	68	224	391	471	754		68	471	1124	1856	87
		355			232	565	891	522	870	1116	–	398	1058	1798	87
		700			551	1203	1856	1406	2103	2712	551	1370	2668	3901	82
		750			601	1298	1987	1769	2335	2871	601	1464	2871	3887	76

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)

[2] Maximum permissible supply pressure in psi

[3] No top-mounted handwheel possible

[4] See K_{VS} 4 to 10 (C_V 5 to 12) for differential pressures

[5] See K_{VS} 25 (C_V 30) for differential pressures

NPS	C_V	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in psi	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0				
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)			0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)				
		2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)			0.2 to 0.6				
Required supply pressure in bar					Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Bellows	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
2 to 4	47	355	30	–36	34	130	224	195	355	471	34	268	652	1080	87
		700			123	311	500	594	920	1551	123	594	1348	2190	87
		750			137	340	543	768	1044	1196	137	645	1450	2349	87
		1000			1015	1551	1479	1682	2219		72	739	1812	2958	85
		1400			–	1812	2291	2755			123	1066	2567	2915	65
	75	355	30	–22	–	72	137	123	217	290	–	166	406	674	87
		700			72	195	311	369	580	979	72	369	841	1377	87
		750			79	210	333	478	652	746	79	398	906	1479	87
		1000			630	971	928	1058	1392		43	464	1138	1899	87
		1400			–	1138	1435	1725			72	667	1609	2117	72
	120	355	30	–13	–	44	79	72	130	181	–	101	246	413	87
		700			44	116	188	224	355	601	44	224	522	862	87
		750			49	123	203	290	398	456	49	246	558	913	87
		1000			391	594	572	652	862		–	282	703	1174	87
		1400			–	703	884	1073			44	406	993	1312	72
	190	355	30	–10	–	–	50	44	79	108	–	62	152	261	87
		700			–	72	116	137	224	384	–	137	326	543	87
		750			29	79	130	181	253	290	29	152	355	580	87
		1000			246	377	362	413	543		–	181	449	746	87
		1400			–	449	565	681			–	261	638	1058	72
6	75	355	30	–22	–	65	123	108	203	282	–	152	391	659	87
		700			63	181	297	355	565	710	63	355	833	1363	87
		750			72	195	326	464	638	732	72	384	891	1464	87
		1000			616	957	913	1044	1377		29	449	1124	1885	87
		1400			–	1124	1421	1711			63	652	1595	2335	78
	120	355	30	–13	–	37	72	65	123	166	–	87	239	406	87
		700			36	108	181	217	348	435	36	217	507	841	87
		750			42	116	195	282	391	449	42	232	551	906	87
		1000			377	587	565	645	855		–	275	696	1167	87
		1400			–	696	877	1058			36	398	986	1653	87
	190	355	30	–10	–	–	44	39	72	101	–	58	152	253	87
		700			–	68	108	137	217	275	–	137	326	536	87
		750			–	72	123	181	246	282	–	145	348	572	87
		1000			239	377	355	406	543		–	174	442	746	87
		1400			–	442	558	674			–	253	630	1051	87
	290	1000	60	–3	66	108	116	137	203		–	–	195	384	87
		1400			101	217	282	340			71	217	456	732	87
		2800			217	456	580	703			217	522	–	725	47
	420	1000	60	–3	44	72	79	94	137		–	–	130	268	87
		1400			69	152	188	232			47	152	319	507	87
		2800			152	319	398	485			152	362	–	500	47

Table 5.2: *Soft seal · Leakage class VI according to ANSI/FCI 70-2 · With correction value for bellows seal*

NPS	C_V	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in psi	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0				
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0				
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0				
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)				
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0				
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0				
		1400-120	60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)				
Required supply pressure in bar		Upper spring range value + 0.2 bar									1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Bellows	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
½ to 1½	0.12 to 1.2	350	15	[4]	2552	–	–	–	–		725	–	–	–	21
	2 to 3	350	15	[4]	1131	–	–	–	–		1131	–	–	1754	24
	5 to 12	350	15	–145	275	688	1055	1298	–		275	1298	–	1203	36
		355			696	–	–	–	–	–	72	1109	–	1203	36
	20	350	15	–94	166	406	652	775	–		166	775	–	986	42
		355			413	913	–	848	–	–	46	667	–	986	44
	30	350	15	–61	108	268	435	514	797		108	514	–	833	47
		355			275	601	–	565	913	–	30	442	–	833	50
2 to 4	5 to 12	350	15	[5]	239	645	1051	1254	–		239	1254	–	1160	36
		355			659	–	–	–	–	–	39	1073	–	1160	37
	20	350	15	[5]	137	384	630	754	–		137	754	–	964	42
		355			391	884	–	826	–	–	–	638	–	964	44
		700			870	–	–	–	–	–	870	–	–	–	21
		750			942	–	–	–	–	–	942	–	–	–	21
	30	350	15	–61	94	253	413	500	783		94	500	–	819	47
		355			261	587	–	551	899	–	–	420	–	819	50
		700			580	–	–	–	–	–	580	–	–	739	24
		750			623	–	–	–	–	–	623	–	–	725	24
	47	355	30	–36	55	145	239	217	377	493	55	290	674	645	59
		700			145	333	522	616	–	–	145	–	–	601	36
		750			159	362	558	–	–	–	159	659	–	594	34
2 to 4	75	355	30	–22	33	94	152	137	232	311	33	181	420	529	71
		700			87	210	326	384	–	–	87	384	–	500	42
		750			94	224	355	493	–	–	94	413	–	493	40
	120	355	30	–13	–	58	94	79	145	188	–	108	261	420	85
		700			56	130	203	239	362	–	56	239	–	406	50
		750			62	137	217	304	413	–	62	253	–	406	47
		1000			398	–	–	–	–		36	297	–	391	42
	190	355	30	–10	–	36	60	55	87	123	–	72	166	275	87
		700			36	79	130	152	232	384	36	152	–	333	59
		750			39	87	137	195	261	304	39	159	–	333	56
		1000			253	–	–	–	–		–	188	–	319	49

NPS	C_V	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"						"Actuator stem retracts"
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		350	15	Correction value in psi	0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3		0.2 to 1.0
		355	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	1.5 to 1.9 (0.9 to 1.7)	2.35 to 2.95 (1.4 to 2.6)	2.95 to 3.65 (1.9 to 3.3)	0.4 to 1.2 (0.4 to 2.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.1 to 1.9 (0.9 to 1.7)	1.75 to 2.95 (1.4 to 2.6)	2.25 to 3.65 (1.9 to 3.3)	0.2 to 1.0
		700	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	1.85 to 2.3 (1.4 to 2.3)	2.7 to 3.3 (2.1 to 3.3)	3.45 to 4.3 [3] (2.6 to 4.3)	0.2 to 0.6 (0.2 to 1.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.4 to 2.3	2.1 to 3.3	2.6 to 4.3 [3]	0.2 to 1.0
		750	15		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 [3] (0.6 to 3.0)	2.15 to 2.65 (1.4 to 2.4)	2.8 to 3.4 (1.9 to 3.1)	3.4 to 4.2 (2.1 to 3.8)	0.2 to 0.6 (0.2 to 1.0)
			30		0.4 to 1.2 (0.2 to 1.0)	0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 [3] (0.6 to 3.0)	1.65 to 2.65 (1.4 to 2.4)	2.2 to 3.4 (1.9 to 3.1)	2.5 to 4.2 (2.1 to 3.8)	0.2 to 1.0
		1000	30		1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)		0.4 to 1.2 (0.4 to 2.0)
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)		0.4 to 2.0
		1400-120	60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)			0.4 to 0.8 (0.4 to 1.2)
Required supply pressure in bar					Upper spring range value + 0.2 bar						1.4	2.4	4.0	[1]	[2]

NPS	C_V	Actuator	Travel	Bellows	Permissible differential pressures Δp in psi (p_2 = 0 psi)										
6	75	355	30	–22	–	79	137	123	217	297	–	166	406	514	71
		700			79	195	311	369	–	–	79	369	–	485	42
		750			87	210	340	478	–	–	87	398	–	478	40
	120	355	30	–13	–	49	87	72	137	181	–	101	253	413	85
		700			49	116	195	232	355	–	49	232	–	398	50
		750			53	130	210	297	406	–	53	246	–	391	47
		1000			391	–	–	–	–		–	290	–	384	42
	190	355	30	–10	–	31	55	49	87	116	–	66	159	268	87
		700			30	72	123	145	224	290	30	145	–	326	59
		750			34	79	130	188	261	297	34	159	–	326	56
		1000			246	–	–	–	–		–	181	–	319	49
	290	1000	60	–3	72	116	123	145	210		–	31	203	261	68
		1400			108	224	–	–			79	224	–	253	39
	420	1000	60	–3	52	79	87	101	145		–	–	137	217	76
		1400			72	159	195	–			55	159	–	217	44

[1] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)
[2] Maximum permissible supply pressure in psi
[3] No top-mounted handwheel possible
[4] See K_{VS} 4 to 10 (C_V 5 to 12) for differential pressures
[5] See K_{VS} 25 (C_V 30) for differential pressures

Table 5.3: *Note concerning other versions*

Version	Differential pressures
High-performance metal seal · Leakage class V according to ANSI/FCI 70-2 · With correction value for bellows seal	The SAMSON Valve Sizing software must be used to determine the permissible differential pressures. Information on this valve sizing software can be found on our website (www. samson.de > Services > Software > Valve sizing).
Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Balancing with PTFE seal · Without bellows seal	
Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Balancing with graphite seal · Without bellows seal	

Table 6: *Permissible differential pressures for Type 3241, Type 325x and Type 328x Globe Valves as well as Type 3256 and Type 3286 Angle Valves in NPS 8 and larger*

Table 6.1: *Metal seal · Leakage class IV according to ANSI/FCI 70-2 · With correction value for bellows seal*

NPS	C_V	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"					"Actuator stem retracts" [1]				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		1000	30	Correction value in psi	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)	0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)	0.4 to 2.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)		0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)		0.4 to 0.8 (0.4 to 1.2)				
			120		–	0.8 to 2.4	1.0 to 3.0	1.2 to 3.6		0.4 to 1.2				
		2800 2x2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)	2.8 to 3.8 (1.3 to 3.3)	0.2 to 0.6 (0.2 to 1.0)				
			120		0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.6 (1.1 to 2.3)	1.8 to 3.8 (1.3 to 3.3)	0.2 to 1.0				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[2]	[3]

NPS	C_V	Actuator	Travel	Bellows	Permissible differential pressures Δp in psi (p_2 = 0 psi)									
Up to 10	120	1000	30	–15	369	572	551	630	841	–	261	681	1153	87
		1400			–	681	862	1051		–	384	971	1638	87
Up to 12	190	1000	30	–9	232	362	348	398	536	–	166	435	732	87
		1400			–	435	551	667		–	246	623	1044	87
	250	1000	60	–6	58	101	116	137	195	–	–	188	384	87
		1400			94	210	275	333		66	210	456	725	87
		2800			210	456	572	696	812	210	514	993	1182	69
Up to 16	420	1000	60	–4	42	71	72	94	137	–	–	130	261	87
		1400			65	145	188	232		44	145	311	500	87
		2800			145	311	398	478	565	145	355	688	993	81
		2x2800			311	645	812	979	–	311	732	–	949	44
	735	1000	60	–3	–	39	43	50	72	–	–	72	145	87
		1400			34	79	101	123		–	79	174	282	87
		2800			79	174	217	268	311	79	195	384	594	87
		2x2800			174	362	456	551	645	174	406	–	609	56
	1150	1400	120	–1	–	–	29	36		–	36	94	159	87
		2800			52	66	79	94	123	–	94	217	348	87
		2x2800			108	137	166	203	261	52	203	442	594	75
	1750	1400	120	–	–	–	–	–		–	–	66	108	87
		2800			34	46	56	66	87	15	66	145	239	87
		2x2800			72	94	116	137	181	34	137	304	493	87
Up to 20	2300	2800	120	–	–	33	40	47	63	–	47	108	174	87
		2x2800			56	71	87	101	130	–	101	224	362	87
	2900	2800	120	–	–	–	30	36	47	–	36	79	130	87
		2x2800			42	55	66	72	101	–	72	166	275	87
	4600	2800	120	–	–	–	–	–	30	–	–	53	87	87
		2x2800			–	34	42	49	63	–	49	108	174	87

[1] For actuators with 2800 cm² and 2x2800 cm² actuator areas with fail-safe action "stem retracts", a plug stem made of 1.4548 must be used.
[2] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)
[3] Maximum permissible supply pressure in psi

Table 6.2: *Soft seal · Leakage class VI according to ANSI/FCI 70-2 · With correction value for bellows seal*

NPS	C_V	Actuator cm²	Travel [mm]	Bellows	Fail-safe action "actuator stem extends"					"Actuator stem retracts" [1]				
Actuator operating range [bar], actuator area [cm²] and travel [mm]. Bench range of actuator [bar] written in parentheses when it is different.		1000	30	Correction value in psi	1.6 to 2.4 (0.4 to 2.0)	2.4 to 3.6 (0.6 to 3.0)	2.3 to 3.3 (0.8 to 2.8)	2.6 to 3.7 (1.0 to 3.2)	3.4 to 4.8 (1.5 to 4.2)	0.4 to 1.2 (0.4 to 2.0)				
			60		0.8 to 2.4 (0.4 to 2.0)	1.2 to 3.6 (0.6 to 3.0)	1.3 to 3.3 (0.8 to 2.8)	1.5 to 3.7 (1.0 to 3.2)	2.1 to 4.8 (1.5 to 4.2)	0.2 to 1.0				
		1400-120	30		–	2.0 to 2.4 (0.8 to 2.4)	2.5 to 3.0 (1.0 to 3.0)	3.0 to 3.6 (1.2 to 3.6)		0.8 to 1.2 (0.8 to 2.4)				
			60		0.8 to 1.2 (0.4 to 1.2)	1.6 to 2.4 (0.8 to 2.4)	2.0 to 3.0 (1.0 to 3.0)	2.4 to 3.6 (1.2 to 3.6)		0.4 to 0.8 (0.4 to 1.2)				
			120		–	0.8 to 2.4	1.0 to 3.0	1.2 to 3.6		0.4 to 1.2				
		2800 2x2800	60		0.8 to 1.2 (0.2 to 1.0)	1.6 to 2.4 (0.4 to 2.0)	2.0 to 3.0 (0.5 to 2.5)	2.4 to 3.6 (0.6 to 3.0)	2.8 to 3.8 (1.3 to 3.3)	0.2 to 0.6 (0.2 to 1.0)				
			120		0.8 to 2.4 (0.4 to 2.0)	1.0 to 3.0 (0.5 to 2.5)	1.2 to 3.6 (0.6 to 3.0)	1.4 to 2.6 (1.1 to 2.3)	1.8 to 3.8 (1.3 to 3.3)	0.2 to 1.0				
Required supply pressure in bar			Upper spring range value + 0.2 bar							1.4	2.4	4.0	[2]	[3]

NPS	C_V	Actuator	Travel	Bellows	Permissible differential pressures Δp in psi (p_2 = 0 psi)									
Up to 10	120	1000	30	–15	377	–	–	–	–	–	275	–	369	42
Up to 12	190	1000	30	–9	239	–	–	–	–	–	174	–	304	49
	290	1000	60	–6	69	108	123	145	203	–	–	195	253	68
		1400			101	224	–	–		72	224	–	246	39
Up to 16	420	1000	60	–4	47	72	79	94	145	–	–	137	217	76
		1400			72	152	195	–		50	152	–	210	44
	735	1000	60	–3	–	43	47	56	79	–	–	72	152	87
		1400			40	87	108	130		29	87	–	166	56
	1150	1400	120	–1	–	–	33	40		–	40	101	130	73
		2800			55	71	79	101	130	–	101	–	123	42
	1730	1400	120	–	–	–	–	–		–	–	69	108	85
		2800			39	49	59	69	87	–	69	–	108	47
Up to 20	2300	2800	120	–	29	36	43	50	66	–	50	–	94	53
	2900	2800	120	–	–	–	33	39	50	–	39	–	79	59
	4600	2800	120	–	–	–	–	–	31	–	–	55	68	71

[1] For actuators with 2800 cm² and 2x2800 cm² actuator areas with fail-safe action "stem retracts", a plug stem made of 1.4548 must be used.
[2] Permissible differential pressure based on the maximum permissible supply pressure –0.2 bar (–3 psi)
[3] Maximum permissible supply pressure in psi

Table 6.3: *Note concerning other versions*

Version	Differential pressures
High-performance metal seal · Leakage class V according to ANSI/FCI 70-2 · With correction value for bellows seal	The SAMSON Valve Sizing software must be used to determine the permissible differential pressures. Information on this valve sizing software can be found on our website (www. samson.de > Services > Software > Valve sizing).
Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Balancing with PTFE seal · Without bellows seal	
Metal seal · Leakage class IV according to ANSI/FCI 70-2 · Balancing with graphite seal · Without bellows seal	

Specifications subject to change without notice

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