

Pressure Control Valves

Safety Valves SV 4, 40

Normal and Proportional Valve



Technical Data

Connection DN	15 - 150
Nominal Pressure PN	16 - 40
Set Pressure	0.2 - 40 bar
Temperature	200 °C
Medium	liquids, gases, steam

Description

Safety valves are the ultimate protection device for tanks and pipelines. They prevent pressure limits being exceeded once all automatic control and monitoring equipment has failed.

SV 4 and SV 40 are spring-loaded normal and proportional safety valves with tested components and provided with flanged connection. SV 4 features a closed spring cap, SV 40 is provided with an open spring cap for better cooling of the spring.

Normal safety valves initially open proportionally up to a pressure rise of 10 %. This initial phase is followed by the full opening of the valve, allowing a large flow of medium.

Especially in the case of liquids, the wide proportional range results in a continuous operation.

Pressure rise:

above 1 bar set pressure:10 % up to required valve lift;
below 1 bar set pressure:0.1 bar.

Proportional safety valves open almost continuously as the pressure rises. They produce the valve lift required for draining the volume within a maximum pressure rise of 10 %. They are used where only small volumes are expected to be drained (e.g. thermal expansion) and where the loss of medium is to be minimised.

Pressure rise:

above 1 bar set pressure:.....10 % up to required valve lift;
below 1 bar set pressure:.....0.1 bar.

Options

» Special version up to 300 °C

Operating instructions, know how and safety instructions must be observed. The pressure has always been indicated as overpressure. We reserve the right to alter technical specifications without notice.



Available Versions

H2	without lifting device, gastight cap
H3	with lifting device, not gastight
H4	with lifting device, gastight cap

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Materials		
1	Body	GG-25 / GGG-40 / GS-C 25
5	Seat	1.4571 / 1.4404
7	Cone	1.4122
8	Guide	1.4104 / 1.0501 / 0.7040
9	Bonnet	0.7040 (0.7043 / 1.0619)
12	Spindle	1.4021
16	Spring Plate	1.0718 / 1.4404
18	Adjusting Screw	1.4104 with PTFE-bush
54	Spring	up to 200 °C 1.1200 / 1.7102 / 1.8159 / 1.4310 from 200 °C 1.7102 / 1.8159 / 1.4310

Materials Stainless Steel Design		
1	Body	1.4408
5	Seat	1.4571 / 1.4404
7	Cone	1.4404
8	Guide	1.4404
9	Bonnet	1.4408
12	Spindle	1.4404
16	Spring Plate	1.4404
18	Adjusting Screw	1.4404 with PTFE-bush
54	Spring	up to 200 °C 1.4310 from 200 °C 1.4310

Dimensions [mm]												
DN inlet	15	20	25	32	40	50	65	80	100	125	150	
DN outlet	15	20	25	32	40	50	65	80	100	125	150	
do	12	18	18	18	23	29	37	46	60	74	92	
A ₁	90	95	100	105	115	125	145	155	175	200	225	
B ₁	90	95	100	105	115	125	145	155	175	200	225	
C (H2)*	218	218	218	218	218	233	315	360	400	500	600	
C (H3)*	220	220	220	220	220	235	325	370	430	545	645	
C (H4)*	215	215	215	215	215	230	330	375	435	540	640	
E	150	150	150	200	200	250	250	300	350	400	450	

*H2 = without lifting device, gastight cap

*H3 = with lifting device, not gastight

*H4 = with lifting device, gastight cap

Dimensions for stainless steel design on request.

Weights [kg]												
nominal diameter DN												
15	20	25	32	40	50	65	80	100	125	150		
5	6	6	8	9	12	15	20	33	48	65		

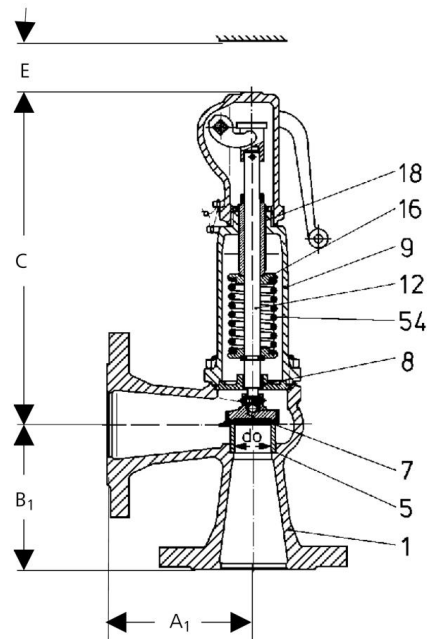
Customs Tariff Number												
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Special designs on request.

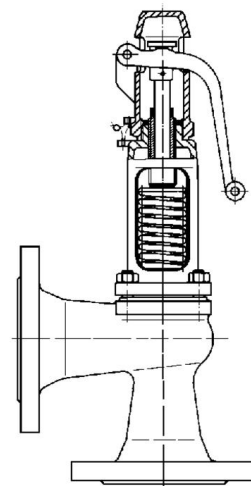
The pressure has always been indicated as overpressure.

Mankenberg reserves the right to alter or improve the designs or specifications of the products described herein without notice.

SV 4



SV 40



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Flow Rate													
type	medium	set pressure[bar]	flange connection - nominal diameter DN										
			15	20	25	32	40	50	65	80	100	125	150
4 40	saturated steam [kg/h]	0.5	55	30	63	63	102	163	265	410	697	1060	1638
		1	78	67	101	101	165	263	428	661	1125	1711	2645
		2	125	129	170	170	278	442	720	1113	1893	2880	4452
		3	168	177	232	232	379	603	981	1517	2581	3926	6068
		4	201	221	290	290	473	752	1224	1892	3218	4895	7567
		5	251	265	347	347	566	900	1465	2265	3853	5861	9058
		6	293	308	404	404	659	1048	1706	2636	4485	6823	10545
		7	333	350	457	457	750	1192	1940	2999	5102	7761	11996
		8	374	394	516	516	842	1339	2179	3368	5730	8717	13473
		9	415	437	572	572	934	1485	2418	3737	6358	9617	14948
		10	456	480	629	629	1026	1632	2656	4105	6984	10629	16421
		12	538	566	741	741	1210	1924	3132	4842	8237	12530	19366
		14	618	650	852	852	1391	2211	3599	5563	9641	14355	22250
		16	699	736	964	964	1574	2503	4074	6297	10714	16296	25189
		18	781	822	1077	1077	1758	2795	4550	7083	11965	18200	28131
		24	1024	1078	1412	1412	2306	3665	5967	9222	15690	23966	-
	28	1189	1251	1639	1639	2676	4254	6925	10704	18211	-	-	
	32	1354	1425	1867	1867	3049	4847	7890	12195	20748	-	-	
	air [Nm³/h]	0.5	67	35	74	74	120	191	311	481	819	1245	1925
		1	93	80	121	121	197	313	510	788	1341	2039	3152
		2	151	156	206	206	336	534	870	1344	2287	3478	5377
		3	206	217	284	284	463	737	1199	1854	3153	4797	7414
		4	258	272	356	356	582	925	1505	2327	3958	6021	9306
		5	311	327	429	429	700	1113	1811	2800	4763	7245	11198
		6	363	382	501	501	818	1301	2117	3273	5568	8469	13091
		7	416	438	574	574	936	1489	2423	3746	6378	9694	14983
		8	468	493	646	646	1055	1677	2729	4219	7177	10918	16875
		9	521	548	718	718	1173	1865	3085	4692	7982	12142	18767
		10	573	604	791	791	1291	2053	3342	5165	8787	13366	20659
		12	679	714	936	936	1528	2429	3954	6111	10397	15815	24444
		14	784	825	1081	1081	1764	2805	4566	7057	12006	18263	28228
		16	889	935	1225	1225	2001	3181	5178	8003	13616	20711	32013
18		994	1046	1370	1370	2237	3557	5790	8949	15226	23160	-	
22		1204	1267	1660	1660	2710	4309	7014	10842	18445	28057	-	
24	1309	1377	1805	1805	2947	4685	7626	11788	20055	30505	-		
32	1729	1820	2384	2384	3893	6189	10075	15572	-	-	-		
36	1939	2041	2674	2674	4366	6941	11299	-	-	-	-		
40	2149	2262	2964	2964	4839	7693	12523	-	-	-	-		
4	water [m³/h]	0.5	2.14	1.9	2.51	2.51	4.09	6.51	10.6	16.4	27.8	42.4	65.5
		1	2.9	2.58	3.39	3.39	5.54	8.81	14.3	22.2	37.7	57.4	88.7
		2	4.1	3.65	4.8	4.8	7.84	12.5	20.3	31.3	53.3	81.1	125
		3	5.02	4.47	5.88	5.88	9.6	15.3	24.8	38.4	65.3	99.3	154
		4	5.79	5.16	6.79	6.79	11.1	17.6	28.7	44.3	75.4	115	177
		5	6.48	5.77	7.59	7.59	12.4	19.7	32.1	49.6	84.3	128	198
		6	7.09	6.32	8.31	8.31	13.6	21.6	35.1	54.3	92.4	140	217
		7	7.66	6.82	8.98	8.98	14.7	23.3	37.9	58.6	99.8	152	235
		8	8.19	7.3	9.6	9.6	15.7	24.9	40.6	62.7	107	162	251
		9	8.69	7.74	10.2	10.2	16.6	26.4	43.0	66.5	113	172	266
		10	9.16	8.16	10.7	10.7	17.5	27.9	45.3	70.1	119	181	280
		12	10.0	8.93	11.8	11.8	19.2	30.5	49.7	76.8	131	199	307
		14	10.8	9.65	12.7	12.7	20.7	33.0	53.7	82.9	141	215	332
		16	11.6	10.3	13.6	13.6	22.2	35.2	57.4	88.7	151	229	355
		22	13.6	12.1	15.9	15.9	26.0	41.3	67.3	104	177	269	-
		28	15.3	13.0	18.0	18.0	29.3	46.6	75.9	117	200	304	-
32	16.4	14.6	19.2	19.2	31.3	49.8	81.1	125	-	-	-		
36	17.4	15.5	20.4	20.4	33.2	52.9	86	-	-	-	-		
40	18.3	16.3	21.5	21.5	35.0	55.7	90.7	-	-	-	-		

Special designs on request.

The pressure has always been indicated as overpressure.

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