Type T27

Suitable for Gases <
Suitable for Liquids <

The function of upstream pressure regulators (safety overflow valves, pressure retaining valves) is, that the outflow of the medium at a specific pressure, with an existing counter pressure or vacuum having no effect on the set over pressure (retaining pressure).

Overflow pressure > counter pressure

The above listed items are characteristic for an upstream pressure regulator, by comparison to a normal safety valve. The safety valve is only a device to prevent a specific pressure from being exceeded (actuation pressure).

Upstream pressure regulators, our model T27, are single-seat valves and are especially suitable for incompressible media, for example water, oil, etc. The valves are fully relieved so that the counter pressure has no effect on the set overflow pressure, only the overflow quantity changes according to the counter pressure. The external seal is generally produced by an o-ring. The valves have no stuffing box and are maintenance free.

An additional major factor is the fact, that safety valves tend to chatter with incompressible media. Even where protection against a specific pressure is required for incompressible media, preference should be given to the upstream pressure regulator rather than the safety valve. The control behaviour of the upstream pressure regulator is proportional.

A continuous small amount of the medium, about 10% of the maximum flow rate, should flow through the valve, so as to protect the seat and cone, and raise the sensitivity when the load changes.

Upstream pressure regulators for incompressible media close in the event of a pressure drop within 10 %. Below 3 bar setting pressure, within a pressure drop of 0.3 bar.

The mass flow of overflow valves is listed in the table on page 67, where by the following must be observed :

Overflow pressure - counter pressure =
differential pressure Δp

In addition, the velocity of the medium in the piping must be checked (the effects of the viscosity must be separately taken into account). Normally, with water the velocity in the piping should not exceed 2 m/s. Decisive for the valve size to be selected is almost always the velocity in the piping, where the use of upstream pressure regulators are concerned (mass flow table line 2 m/s). With small differential pressures, the mass flow quantity is above the 2 m/s line.

Versions :

0.7040 / EN-JS1030	DIN PN16
1.0619 / GP240GH	DIN PN40
1.4408 / GX5CrNiMo19-11-2	DIN PN40

- Seat, cone, guide cone, spindle in stainless steel

2.1050 / CC480K-GS	DIN PN40

- Cone, guide cone, spindle in bronze

The valves can be supplied with classification society acceptance.

Test Report based on DIN EN 10 204 - 2.2

Inspection certificate DIN EN 10 204 - 3.1 & 3.2

Type T27

Suitable for Gases <
Suitable for Liquids <

Spring for T 27

DN 15 - 40

Pressure of response	100	63	40	25	16	10	6.3	4	2.5	1.6	Do = Ø 21
P_1 = kp	363	229	145	91	58	36	23	15	9	6	mean seat-Ø = + 2 mm
L = length	71.5	68	59.5	60	59	52.5	51.2	45.6	45	43.2	
$f_{max.}$ = mm	24.7	28.0	32.1	41.4	52.7	59.7	for length				
$c = \frac{p}{f_1} = \frac{kp}{mm}$	17.7	12.0	7.64	4.64	2.74	1.83	1.13	0.74	0.45	0.27	Lo = 115 mm Di = 29 mm
Spring-No.	1	2	3	4	5	6	7	8	9	10	

DN 50 + 65

Pressure of response	40	25	16	10	6.3	4	2.5	1.6	1	0.63	Do = Ø 40
P_1 = kp	554	346	228	139	87	55	35	22	14	9	mean seat-Ø = + 2 mm
L = length	115	95	94.5	92	80.5	79	70	67.5	65.2	58	
$f_{max.}$ = mm	29.5	33.9	42.2	53.3	61.4	for length					
$c = \frac{p}{f_1} = \frac{kp}{mm}$	24.0	15.2	9.5	5.73	3.61	2.26	1.49	0.91	0.57	0.37	Lo = 145 mm Di = 34 mm
Spring-No.	11	12	13	14	15	16	17	18	19	20	

DN 80 + 100

Pressure of response	35	25	16	10	6.3	4	2.5	1.6	1	0.63	Do = Ø 65
P_1 = kp	881	564	353	222	141	88	56	35	22	14	mean seat-Ø = + 2 mm
L = length	143	124	138	138	119	115	132	116	110	104	
$f_{max.}$ = mm	39.4	46.0	for length								
$c = \frac{p}{f_1} = \frac{kp}{mm}$	27.5	17.1	10.5	7.1	4.25	2.63	1.7	1.05	0.66	0.41	Lo = 195 mm Di = 47 mm
Spring-No.	21+is*	21	22	23	24	25	26	27	28	29	* spring 21-30

DN 125

Pressure of response	35	25	16	10	6.3	4	2.5	1.6	1	0.63	Do = Ø 98
P_1 = kp	2270	1765	1060	705	443	283	177	106	65	50	mean seat-Ø = + 2 mm
L = length	102	207	200	175	169	149	145	149	132	102	
$f_{max.}$ = mm	99.6	79.6	96.5	107.6	129.5	144.4	for length				
$c = \frac{p}{f_1} = \frac{kp}{mm}$	36.4	23.3	14.2	9.03	5.57	3.56	2.33	1.38	0.90	0.64	Lo = 300 mm Di = 60 mm
Spring-No.	41*	42	43	44	45	46	47	48	49	50	* Di = 72 mm

DN 150

Pressure of response	25	16	10	6.3	4	2.5	1.6	1	0.63	0.4	Do = Ø 125
P_1 = kp	2270	1765	1060	705	443	283	177	106	65	50	mean seat-Ø = + 2 mm
L = length	102	207	200	175	169	149	145	149	132	102	
$f_{max.}$ = mm	99.6	79.6	96.5	107.6	129.5	144.4	for length				
$c = \frac{p}{f_1} = \frac{kp}{mm}$	36.4	23.3	14.2	9.03	5.57	3.56	2.33	1.38	0.90	0.64	Lo = 300 mm Di = 60 mm
Spring-No.	41*	42	43	44	45	46	47	48	49	50	* Di = 72 mm

DN 200

Pressure of response	16	10	6.3	4	2.5	1.6	1	0.63	0.4		Do = Ø 150
P_1 = kp	2270	1765	1060	705	443	283	177	106	65		mean seat-Ø = + 2 mm
L = length	102	207	200	175	169	149	145	149	132		
$f_{max.}$ = mm	99.6	79.6	96.5	107.6	129.5	144.4	for length				
$c = \frac{p}{f_1} = \frac{kp}{mm}$	36.4	23.3	14.2	9.03	5.57	3.56	2.33	1.38	0.90		Lo = 300 mm Di = 60 mm
Spring-No.	41*	42	43	44	45	46	47	48	49		* Di = 72 mm

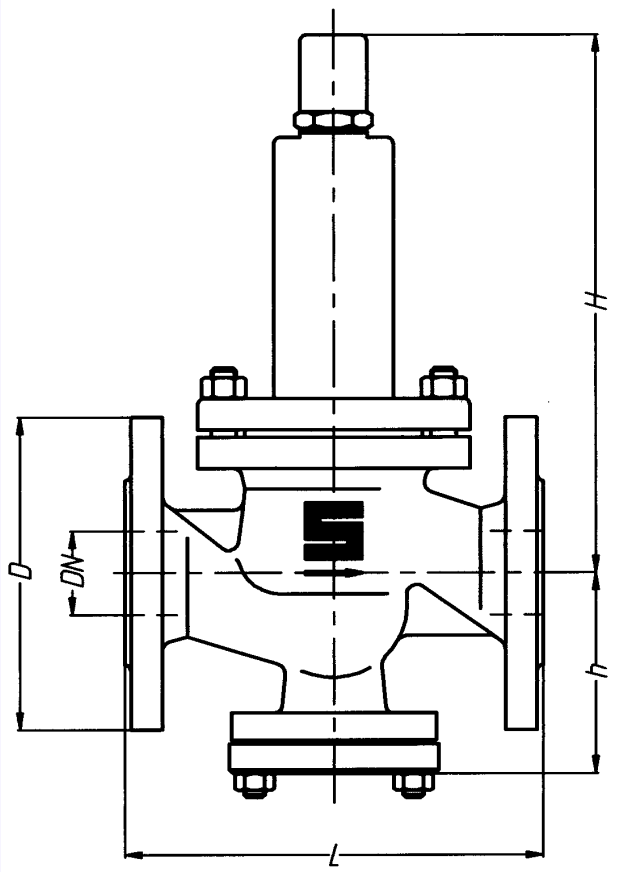
Overflow pressure, counter pressure, maximum and minimum mass flow, medium, temperature, viscosity, possible present piping diameter

Note: The cast steel version over DN 50 must be used for hot water systems with initial

Type T27

Suitable for Gases <
Suitable for Liquids <

Model T27



DN	Flanges PN16				Flanges PN40				L	H	h
	D	k	z	i	D	k	z	i			
15	95	65	4	14	95	65	4	14	130	275	95
20	105	75	4	14	105	75	4	14	150	275	95
25	115	85	4	14	115	85	4	14	160	275	95
32	140	100	4	18	140	100	4	18	180	275	95
40	150	110	4	18	150	110	4	18	200	275	95
50	165	125	4	18	165	125	4	18	230	360	120
65	185	145	4	18	185	145	8	18	290	360	155
80	200	160	8	18	200	160	8	18	310	495	190
100	220	180	8	18	235	190	8	23	350	495	200
125	250	210	8	18	270	220	8	27	400	660	210
150	285	240	8	23	300	250	8	27	480	680	235
200	340	295	12	23	375	320	12	30	600	740	285

Dimensions in mm

Installation lengths to EN 558-1

DN	15	20	25	32	40	50	65	80	100
GGG	8.0	8.0	9.0	11.0	13.0	23.0	31.0	48.0	69.0
GS/VA	8.5	8.5	10.0	12.0	14.0	24.0	33.0	50.0	72.0

Type T27

Suitable for Gases <
Suitable for Liquids <

Mass flow table for water quantity in t/h for 20°C

Kv >	Δp [bar]	DN 15	20	25	32	40	50	65	80	100	125	150	200
	0.5	0.57	1.02	1.59	2.60	4.07	6.36	10.74	16.27	25.42	39.72	57.20	101.69
	1.0	0.81	1.44	2.25	3.68	5.75	8.99	15.19	23.01	35.95	56.18	80.89	143.81
	1.5	0.99	1.76	2.75	4.51	7.05	11.01	18.60	28.18	44.03	68.80	99.08	176.13
	2.0	1.14	2.03	3.18	5.21	8.14	12.71	21.48	32.54	50.85	79.45	114.40	203.38
2 m/s →	2.5	1.28	2.27	3.55	5.82	9.10	14.21	24.02	36.38	56.85	88.82	127.91	227.39
	3.0	1.40	2.49	3.89	6.38	9.96	15.57	26.31	39.85	62.27	97.30	140.11	249.10
	3.5	1.51	2.69	4.20	6.89	10.76	16.82	28.42	43.05	67.63	105.10	151.34	269.05
	4.0	1.62	2.88	4.49	7.36	11.50	17.98	30.38	46.02	71.91	112.35	161.79	287.62
	4.5	1.72	3.05	4.77	7.81	12.20	19.07	32.22	48.81	76.27	119.17	171.60	305.07
	5.0	1.81	3.22	5.02	8.23	12.86	20.10	33.97	51.45	80.39	125.61	180.89	321.57
	6.0	1.98	3.52	5.50	9.02	14.09	22.02	37.21	56.36	88.07	137.60	198.15	352.27
	7.0	2.14	3.80	5.95	9.74	15.22	23.78	40.19	60.88	95.12	148.63	214.03	380.49
	8.0	2.29	4.07	6.36	10.41	16.27	25.42	42.96	65.06	101.69	158.89	228.80	406.76
	9.0	2.46	4.31	6.74	11.04	17.26	26.97	45.57	69.03	107.86	168.53	242.68	431.44
	10.0	2.56	4.55	7.11	11.64	18.19	28.42	48.04	72.76	113.69	177.65	255.81	454.77
	11.0	2.68	4.77	7.45	12.21	19.08	29.81	50.38	76.32	119.24	186.32	268.30	476,97
	12.0	2.80	4.98	7.78	12.75	19.93	31.14	52.62	79.71	124.55	194.60	280.23	498,18
	13.0	2.92	5.19	8.10	13.47	20.74	32.41	54.77	82.96	129.63	202.55	291.67	518,52
	14.0	3.03	5.38	8.41	13.78	21.52	33.63	56.84	86.10	134.52	210.19	302.68	538,09
	15.0	3.13	5.57	8.70	14.26	22.28	34.81	58.83	89.12	139.25	217.57	313.30	556,98
	16.0	3.24	5.75	8.99	14.73	23.01	35.95	60.76	92.04	143.81	224.71	323.58	575,25
	17.0	3.34	5.93	9.26	15.18	23.72	37.06	62.63	94.87	148.24	231.62	333,54	592,95
	18.0	3.43	6.10	9.53	15.62	24.41	38.13	64.45	97.62	152.54	238.34	343,21	610,14
	19.0	3.53	6.27	9.79	16.05	25.07	39.18	66.21	100.30	156.72	244.87	352,61	626,86
	20.0	3.62	6.43	10.05	16.46	25.73	40.20	67.93	102.90	160.79	251.23	361,77	643,15
	22.0	3.79	6.75	10.54	17.27	26.98	42.16	71.25	107.93	168.63	263.49	379,43	674,54
	24.0	3.96	7.05	11.01	18.04	28.18	44.03	74.42	112.73	176.13	275.21	396,30	704,53
	26.0	4.12	7.33	11.46	18.77	29.33	45.83	77.46	117.33	183.33	286,45	418,48	733,30
	28.0	4.28	7.61	11.89	19.48	30.44	47.56	80.38	121.76	190.25	297,26	428,05	760,98
	30.0	4.43	7.88	12.31	20.16	31.51	49.23	83.20	126.03	196.92	307,69	443,08	787,69
	32.0	4.58	8.14	12.71	20.83	32.54	50.85	85.93	130.16	203.38	317,78	457,61	813,53
	34.0	4.72	8.39	13.10	21.47	33.54	52.41	88.57	134.17	209.64	327,56	471,69	838,56
	36.0	4.85	8.63	13.48	22.09	34.51	53.93	91.14	138.06	215.72	337,06	485,37	862,87
	38.0	4.99	8.87	13.85	22.69	35.46	55.41	93.64	141.84	221.63	346,30	498,67	886,52
	40.0	5.12	9.10	14.21	23.28	36.38	56.85	96.07	145.53	227.39	355,29	511,62	909,55

Type T27

Suitable for Gases <
Suitable for Liquids <

Mass flow table for gas quantity in Nm³/h for 0°C												
Δp [bar]	DN 15	20	25	32	40	50	65	80	100	125	150	200
0,5	5	9	15	75	117	183	309	469	732	1142	1644	2929
1,0	7	13	20	100	156	244	412	625	977	1523	2192	3906
1,5	9	16	25	125	195	305	515	781	1221	1904	2740	4882
2,0	10	19	30	150	234	366	619	938	1465	2285	3288	5859
2,5	12	22	35	175	273	427	722	1094	1709	2666	3836	6835
3,0	14	26	40	200	312	488	825	1250	1954	3047	4385	7812
3,5	16	29	45	225	351	549	928	1407	2198	3428	4933	8788
4,0	18	32	50	250	390	610	1031	1563	2442	3809	5481	9765
4,5	20	35	55	275	430	671	1135	1719	2686	4190	6029	10741
5,0	21	39	60	300	469	732	1238	1876	2931	4571	6577	11718
6,0	25	45	71	350	547	855	1444	2188	3419	5333	7673	13671
7,0	29	52	81	400	625	977	1651	2501	3908	6095	8770	15624
8,0	32	58	91	450	703	1099	1857	2814	4396	6857	9866	17577
9,0	36	65	101	500	781	1221	2063	3126	4885	7619	10962	19530
10,0	40	71	111	550	860	1343	2270	3439	5373	8381	12059	21483
11,0	43	78	121	600	938	1465	2476	3752	5862	9143	13155	-
12,0	47	84	132	650	1016	1588	2682	4064	6350	9905	14251	-
13,0	51	91	142	700	1094	1710	2889	4377	6839	10667	15347	-
14,0	54	97	152	750	1172	1832	3095	4690	7327	11429	16444	-
15,0	58	104	162	800	1250	1954	3302	5002	7816	12191	17540	-
16,0	62	110	172	850	1329	2076	3508	5315	8304	12953	18636	-
17,0	66	117	182	900	1407	2198	3714	5628	8793	13715	19732	-
18,0	69	123	193	950	1485	2321	3921	5940	9281	14477	-	-
19,0	73	130	203	1000	1563	2443	4127	6253	9770	15239	-	-
20,0	77	136	213	1050	1641	2565	4333	6566	10258	16000	-	-
22,0	84	149	234	1150	1798	2809	4746	7191	11235	17524	-	-
24,0	91	162	254	1250	1954	3054	5159	7816	12212	19048	-	-
26,0	99	175	274	1350	2111	3298	5572	8442	13190	-	-	-
28,0	106	188	294	1450	2267	3542	5985	9067	14167	-	-	-
30,0	113	201	315	1550	2423	3786	6397	9693	15144	-	-	-
35,0	131	234	365	1800	2814	4397	7429	11256	17586	-	-	-
40,0	150	266	406	2050	3205	5008	8461	12819	-	-	-	-