

Safety Valves

Type 06413



Cryogenic Safety Valves, angle type, stainless steel, PN50, type tested TÜV-SV.780. S/G

Full lift safety valve, orifice $d_0=23\text{mm}$ standard safety valve, with carbon filled PTFE valve seal, orifice $d_0=23\text{mm}$ with PCTFE seal, closed bonnet, with lifting device "cleaned and degreased for oxygen service"

Part No. 06413.X.0000

Inlet: male thread type G (BSPP) acc. to ISO 228/1, Outlet: female thread type G (BSPP) acc. to ISO 228/1

Part No. 06413.X.2000

Inlet: male thread type R (BSPT) acc. to ISO 7/1, Outlet: female thread type G (BSPP) acc. to ISO 228/1

Part No. 06413.X.5000

Inlet: male thread NPT acc. to ANSI B 1.20.1, Outlet: female thread type G (BSPP) acc. to ISO 228/1

Part No. 06413.X.6000

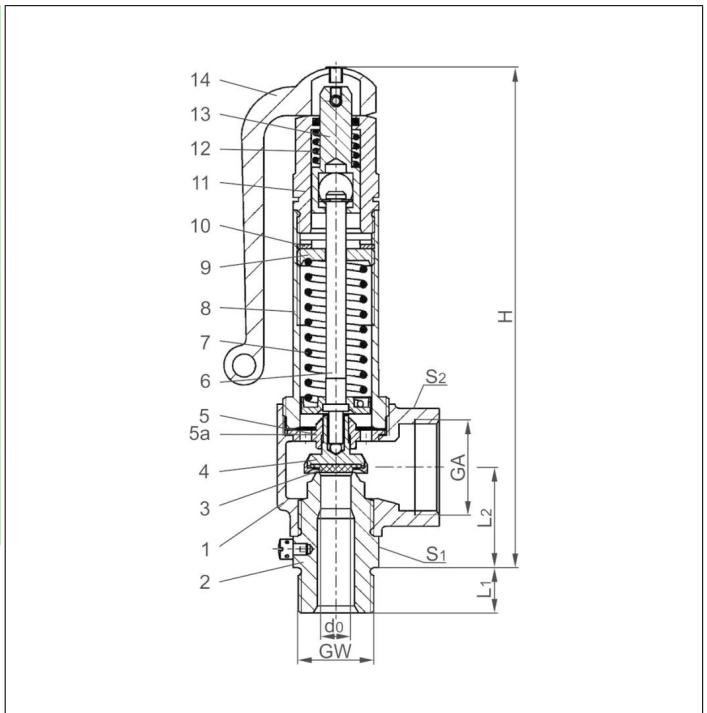
Inlet: male thread NPT acc. to ANSI B 1.20.1, Outlet: female thread NPT acc. to ANSI B 1.20.1



Applications:

Provided as safety device for protection against excessive pressure in stationary and moveable gas cylinders and pressure vessels. Approved for air gases, vapours and cryogenic liquefied gases incl. LNG. Working temperature: $-196^\circ\text{C} / -321^\circ\text{F}$ (77K) up to $+185^\circ\text{C} / +365^\circ\text{F}$ (458K), suitable for horizontal installation

Materials	DIN EN	ASME/ASTM
1 Outlet body	1.4308	A 351 CF8
2 Inlet body	1.4301	A 479 Grade 304
3 Valve seal	PTFE / Carbon filled (25%) PCTFE ($d_0=23$)	
4 Disc	1.4301	A 479 Grade 304
5 Guide plate	1.4301	A 479 Grade 304
5a Guide plate from GW 1	1.4301	A 479 Grade 304
6 Stem	1.4571	A 479 Grade 316Ti
7 Spring	1.4571	A 313 Grade 316Ti
8 Bonnet	1.4308	A 351 CF8
9 Spring clamp	1.4301	A 479 Grade 304
10 Thread ring	1.4301	A 479 Grade 304
11 Lifting cap	1.4301	A 479 Grade 304
12 Lifting spring	1.4571	A 313 Grade 316Ti
13 Lifting stem	1.4301	A 479 Grade 304
14 Lever	1.4408	A 351 CF8M



Type 06413	Technical data									
	GW	1/2	3/4	1	1-1/4	1-1/2	2	2	2	2
Nominal size	GW	1/2	3/4	1	1-1/4	1-1/2	2	2	2	2
Orifice	d_0	7.0	7.0	10.5	10.5	15.0	23.0	23.0	23.0	23.0
Dimension code	.X.	0704	0706	1004	1006	1510	2312	2314	2314	2320
Set pressure range	bar	3.3-50.0	3.3-50.0	2.9-50.0	2.9-50.0	2.9-50.0	2.0-50.0	2.0-50.0	2.0-50.0	2.0-50.0
Outlet	GA	1	1	1	1	1-1/4	2	2	2	2
Height	H	175	175	175	175	194	270	270	270	268
Length	L_1	14	16	14	16	18	20	20	20	25
Length	L_2	36	36	36	36	42	56	56	56	54
Wrench size across flats	S_1	30	30	30	30	41	55	55	55	65
Wrench size across flats	S_2	41	41	41	41	50	70	70	70	70
Weight	ca. kg	1.00	1.02	0.98	1.01	1.52	3.80	3.85	3.85	4.28
Coefficient of discharge	α_w	0.82	0.82	0.58	0.58	0.5	0.62	0.62	0.62	0.62
Coefficient of discharge	rated slope	0.862	0.862	1.517	1.517	2.769	7.55	7.55	7.55	7.55

Dimensions in mm.

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Discharge capacities

Medium:

Air in m³/h at 0°C and 1013.25 mbar

Air in SCFM at 60°F (15.6°C) and 14.7 psia (1013.25 mbar)

The capacity indicated below is for a fully opened valve.

d₀ - orifice

A₀ - flow area

Calculation of discharge capacity acc. to AD2000-Merkblatt A2 / DIN EN ISO 4126-1 resp. ASME Code Sec. VIII.

Set pressure in bar (g)	GW	1/2 & 3/4	1/2 & 3/4	1	1-1/4, 1-1/2 & 2
	d ₀ (mm)	7.0	10.5	15.0	23.0
	A ₀ (mm ²)	38.48	86.59	176.71	415.48
	Medium	Air in m ³ /h			
2.0	-	-	-	-	564
2.9	-	139	244	738	
3.0	-	143	251	758	
3.3	96	154	270	817	
4.0	112	179	314	952	
5.0	135	215	379	1148	
6.0	158	251	442	1342	
7.0	181	287	506	1535	
8.0	204	324	571	1735	
9.0	227	361	634	1929	
10.0	250	398	699	2128	
12.0	295	470	827	2517	
14.0	341	543	955	2907	
16.0	387	615	1082	3297	
18.0	432	688	1210	3686	
20.0	482	767	1350	4115	
22.0	528	841	1479	4508	
24.0	574	914	1608	4902	
26.0	620	987	1737	5295	
28.0	666	1060	1865	5688	
30.0	719	1144	2013	6139	
32.0	765	1218	2143	6536	
34.0	812	1292	2273	6933	
36.0	858	1366	2403	7330	
38.0	905	1440	2533	7727	
40.0	959	1527	2686	8194	
42.0	1006	1601	2817	8595	
44.0	1053	1676	2948	8995	
46.0	1100	1750	3079	9396	
48.0	1147	1825	3210	9796	
50.0	1204	1915	3370	10283	

Set pressure in psig	GW	1/2 & 3/4	1/2 & 3/4	1	1-1/4, 1-1/2 & 2
	d ₀ (inch)	0.276	0.413	0.591	0.906
	A ₀ (in ²)	0.060	0.134	0.274	0.644
	Medium	Air in SCFM			
30	-	-	-	-	360
40	-	-	-	-	443
50	60	106	193	526	
60	70	122	223	609	
70	79	139	254	692	
80	89	156	284	775	
90	98	172	315	858	
100	107	189	345	941	
110	117	206	376	1025	
120	126	223	406	1108	
130	136	239	437	1191	
140	145	256	467	1274	
150	155	273	498	1357	
175	179	314	574	1564	
200	202	356	650	1772	
225	226	398	726	1980	
250	250	439	802	2187	
275	273	481	878	2395	
300	297	523	954	2602	
325	321	565	1031	2810	
350	345	606	1107	3018	
375	368	648	1183	3225	
400	392	690	1259	3433	
425	416	731	1335	3641	
450	439	773	1411	3848	
475	463	815	1488	4056	
500	487	857	1564	4263	
525	510	898	1640	4471	
550	534	940	1716	4679	
575	558	982	1792	4886	
600	582	1024	1868	5094	
625	605	1065	1944	5302	
650	629	1107	2021	5509	
675	653	1149	2097	5717	
700	676	1190	2173	5924	
725	700	1232	2249	6132	