

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

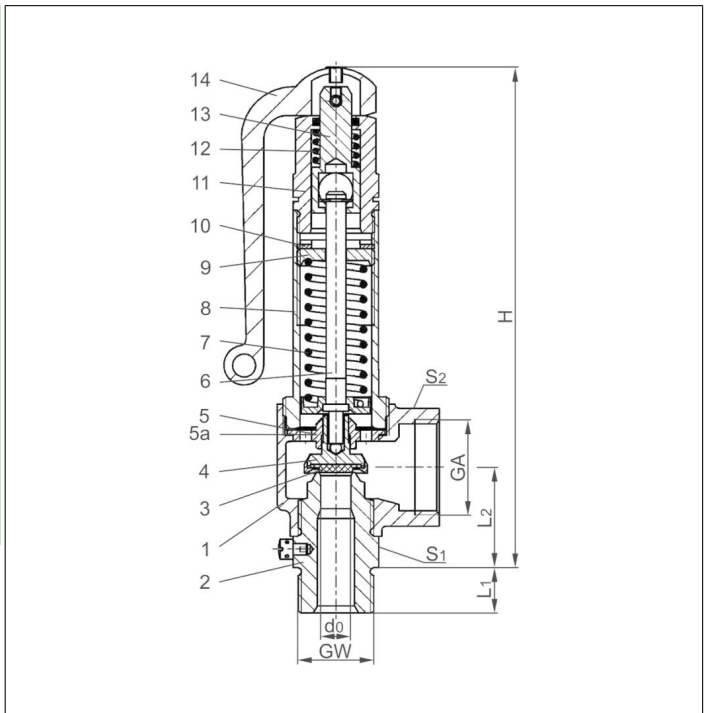


Applications:

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	
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

Essential: Valves are delivered at a set pressure, therefore when ordering please confirm set pressure, medium and temperature.



Standard marking acc. to Pressure Equipment Directive 2014/68/EU (PED) and ASME Code Section VIII.



Type 06413	Technical data									
	GW	1/2	3/4	1	1-1/4	1-1/2	2	2	2	2
Nominal size	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	2320	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.

Safety Valves

Type 06413



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.

The safety valve is marked with the lower capacity of both calculations.

Set pressure in bar (g)	GW	1/2 & 3/4	1/2 & 3/4	1	1-1/4, 1-1/2 & 2	Set pressure in psig	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		d ₀ (inch)	0.276	0.413	0.591	0.906
	A ₀ (mm ²)	38.48	86.59	176.71	415.48		A ₀ (in ²)	0.060	0.134	0.274	0.644
	Medium	Air in m ³ /h					Medium	Air in SCFM			
2.0		-	-	-	564	30		-	-	-	360
2.9		-	139	244	738	40		-	-	-	443
3.0		-	143	251	758	50		60	106	193	526
3.3		96	154	270	817	60		70	122	223	609
4.0		112	179	314	952	70		79	139	254	692
5.0		135	215	379	1148	80		89	156	284	775
6.0		158	251	442	1342	90		98	172	315	858
7.0		181	287	506	1535	100		107	189	345	941
8.0		204	324	571	1735	110		117	206	376	1025
9.0		227	361	634	1929	120		126	223	406	1108
10.0		250	398	699	2128	130		136	239	437	1191
12.0		295	470	827	2517	140		145	256	467	1274
14.0		341	543	955	2907	150		155	273	498	1357
16.0		387	615	1082	3297	175		179	314	574	1564
18.0		432	688	1210	3686	200		202	356	650	1772
20.0		482	767	1350	4115	225		226	398	726	1980
22.0		528	841	1479	4508	250		250	439	802	2187
24.0		574	914	1608	4902	275		273	481	878	2395
26.0		620	987	1737	5295	300		297	523	954	2602
28.0		666	1060	1865	5688	325		321	565	1031	2810
30.0		719	1144	2013	6139	350		345	606	1107	3018
32.0		765	1218	2143	6536	375		368	648	1183	3225
34.0		812	1292	2273	6933	400		392	690	1259	3433
36.0		858	1366	2403	7330	425		416	731	1335	3641
38.0		905	1440	2533	7727	450		439	773	1411	3848
40.0		959	1527	2686	8194	475		463	815	1488	4056
42.0		1006	1601	2817	8595	500		487	857	1564	4263
44.0		1053	1676	2948	8995	525		510	898	1640	4471
46.0		1100	1750	3079	9396	550		534	940	1716	4679
48.0		1147	1825	3210	9796	575		558	982	1792	4886
50.0		1204	1915	3370	10283	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