

# Safety Valves

## Type 06413

# HEROSE



### 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, 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

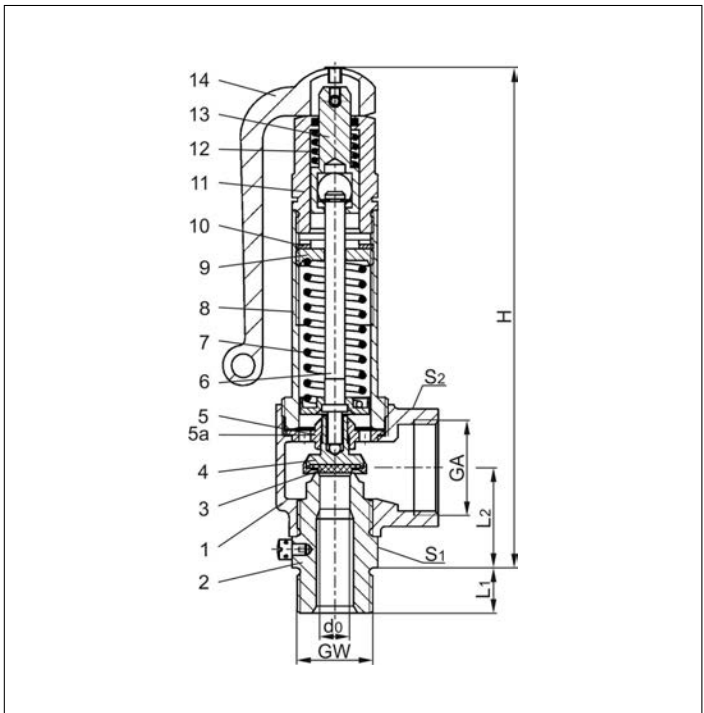
Inlet: male thread NPT acc. to ANSI B 1.20.1, Outlet: female thread NPT acc. to ANSI B 1.20.1



### 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:  $-196^{\circ}\text{C} / -321^{\circ}\text{F} (77\text{K})$  up to  $+185^{\circ}\text{C} / +365^{\circ}\text{F} (458\text{K})$ , suitable for horizontal installation

Materials	DIN EN	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%)	
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 97/23/EC (PED) and ASME Code Section VIII.



Type 06413	Technical data									
	GW	1/2	3/4	1/2	3/4	1	1-1/4	1-1/2	2	
Nominal size	$d_0$	7.0	7.0	10.5	10.5	15.0	23.0	23.0	23.0	
Dimension code	.X.	0704	0706	1004	1006	1510	2312	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	
Outlet	GA	1	1	1	1	1-1/4	2	2	2	
Height	H	175	175	175	175	194	270	270	268	
Length	$L_1$	14	16	14	16	18	20	20	25	
Length	$L_2$	36	36	36	36	42	56	56	54	
Wrench size across flats	$S_1$	30	30	30	30	41	55	55	65	
Wrench size across flats	$S_2$	41	41	41	41	50	70	70	70	
Weight	ca. kg	1.00	1.02	0.98	1.01	1.52	3.80	3.85	4.28	
Coefficient of discharge	$\alpha_w$	0.82	0.82	0.58	0.58	0.5	0.62	0.62	0.62	

Dimensions in mm.

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### Discharge capacities

Medium:

Air in m<sup>3</sup>/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.

d<sub>0</sub> - orifice

A<sub>0</sub> - 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 <sub>0</sub> (mm)	7.0	10.5	15.0	23.0		d <sub>0</sub> (inch)	0.276	0.414	0.591	0.907
	A <sub>0</sub> (mm <sup>2</sup> )	38.48	86.6	176.63	415.27		rated slope	0.862	1.517	2.769	7.55
Medium	Air in m <sup>3</sup> /h					Medium	Air in SCFM				
2.0	-	-	-	-	563	50	60	102	180	524	
2.9	-	143	252	737	60	70	118	208	607		
3.0	-	147	259	756	70	79	134	236	690		
3.3	93	158	279	814	80	89	150	265	772		
4.0	108	185	325	949	90	98	167	294	855		
5.0	130	222	391	1142	100	107	183	322	938		
6.0	153	260	458	1335	110	117	199	350	1021		
7.0	174	298	524	1528	120	126	215	379	1103		
8.0	196	335	590	1721	130	136	231	407	1186		
9.0	219	373	656	1914	140	145	248	435	1269		
10.0	241	410	722	2107	150	155	264	464	1352		
12.0	285	486	855	2493	175	179	304	535	1558		
14.0	330	561	987	2879	200	202	344	606	1766		
16.0	373	636	1119	3265	225	226	384	677	1972		
18.0	418	711	1252	3651	250	250	425	748	2179		
20.0	461	787	1384	4037	275	273	465	818	2386		
22.0	507	862	1517	4422	300	297	506	889	2593		
24.0	550	937	1649	4808	325	321	546	960	2800		
26.0	595	1012	1781	5194	350	345	586	1031	3007		
28.0	638	1088	1914	5580	375	368	626	1102	3213		
30.0	683	1163	2046	5966	400	392	667	1173	3420		
32.0	727	1238	2178	6352	425	416	707	1244	3627		
34.0	772	1313	2311	6738	450	439	748	1315	3834		
36.0	815	1389	2443	7124	475	463	788	1386	4041		
38.0	860	1464	2576	7510	500	487	828	1457	4248		
40.0	904	1539	2708	7896	525	510	869	1528	4455		
42.0	949	1614	2840	8282	550	534	909	1599	4662		
44.0	992	1690	2973	8668	575	558	949	1670	4868		
46.0	1037	1765	3105	9054	625	605	1030	1812	5282		
48.0	1081	1840	3238	9440	675	653	1111	1954	5696		
50.0	1126	1915	3370	9825	725	700	1191	2096	6109		