

# Safety Valves

## Type 06445



**Cryogenic Safety Valves, angle type, stainless steel, PN40**  
 $d_0=7.0$  &  $10.5$ mm up to PN50, type tested TÜV-SV.1111. S/G

Standard safety valve,

with PCTFE valve seal (except  $d_0=7$ , which is metal to metal seated only: in this case

the **Part No.** changes from **06445.X.X000** to **06445.070X.X100**), closed bonnet, with lifting device  
 "cleaned and degreased for oxygen service"

**Part No. 06445.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. 06445.X.2000**

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

**Part No. 06445.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. 06445.X.6000**

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

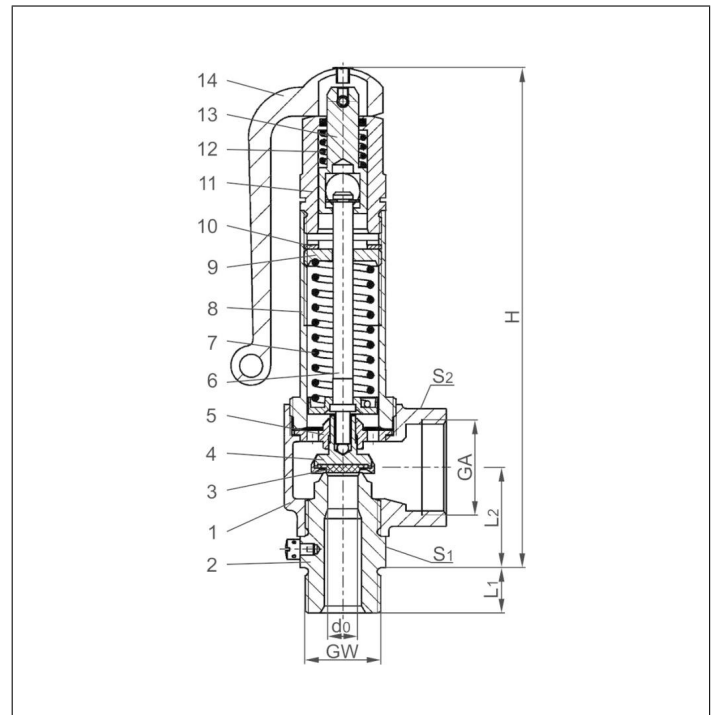


### Applications:

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), with PCTFE-seal up to  $+150^{\circ}\text{C}$  /  $302^{\circ}\text{F}$  (423K), suitable for horizontal installation

Materials	DIN EN	ASME/ASTM
1 Outlet body	1.4308	SA351 CF8
2 Inlet body	1.4301	A 479 Grade 304
3 Valve seal	PCTFE	
	1.4571	A 313 Grade 316Ti ( $d_0=7$ )
	1.4541	A 276 Grade 321 ( $d_0=10.5$ )
4 Disc	1.4541	A 276 Grade 321
5 Guide plate	1.4301	A 479 Grade 304
6 Stem	1.4301	A 479 Grade 304
7 Spring	1.4571	A 313 Grade 316Ti
8 Bonnet	1.4301	A 276 Grade 304
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	SA351 CF8M



Type 06425	Technical data									
Nominal size	GW	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
Orifice	$d_0$	7.0	7.0	10.5	10.5	14.0	14.0	18.0	18.0	23.0
Dimension code	.X.	0704	0706	1004	1006	1406	1410	1810	1812	2312
Set pressure range	bar	0.4-50.0	0.4-50.0	0.4-50.0	0.4-50.0	0.4-40.0	0.4-40.0	0.4-40.0	0.4-40.0	0.4-10.0
Outlet	GA	1	1	1	1	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2
Height	H	176	176	176	176	196	196	239	240	239
Length	A <sub>1</sub>	14	16	14	16	16	18	18	20	20
Length	L <sub>1</sub>	36	36	36	36	50	50	48	48	48
Length	L <sub>2</sub>	36.5	36.5	36.5	34.5	44	44	50.5	51.5	52
Wrench size across flats	S <sub>1</sub>	30	30	30	30	41	41	50	50	50
Wrench size across flats	S <sub>2</sub>	41	41	41	41	50	50	58	58	58
Weight	ca. kg	1.00	1.02	0.98	1.01	1.50	1.56	2.51	2.63	2.52
Coeff. of disch. from 3.0 bar	$\alpha_w$	0.78	0.78	0.69	0.69	0.66	0.66	0.66	0.66	0.54

Dimensions in mm.

# Safety Valves

## Type 06445



### 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.

Set pressure in bar (g)	GW	1/2 & 3/4	1/2 & 3/4	3/4 & 1	1 & 1-1/4	1-1/4	
	d <sub>0</sub> (mm)	7.0	10.5	14.0	18.0	23.0	
	A <sub>0</sub> (mm <sup>2</sup> )	38.48	86.59	153.94	254.47	415.48	
Medium							Air in m <sup>3</sup> /h
0.4		24	43	77	123	157	
0.5		27	49	87	141	179	
1.0		41	77	131	216	287	
1.5		54	101	179	291	376	
2.0		66	126	219	362	473	
3.0		88	176	299	495	661	
4.0		111	221	375	621	829	
5.0		134	266	453	748	1000	
6.0		156	311	529	875	1169	
7.0		179	356	606	1001	1337	
8.0		202	402	684	1131	1511	
9.0		225	447	761	1258	1680	
10.0		248	494	839	1387	1853	
12.0		293	584	993	1641	-	
14.0		339	674	1147	1895	-	
16.0		384	765	1300	2149	-	
18.0		430	855	1454	2403	-	
20.0		480	954	1623	2683	-	
22.0		525	1046	1778	2939	-	
24.0		571	1137	1933	3196	-	
26.0		617	1228	2088	3452	-	
28.0		663	1319	2244	3709	-	
30.0		715	1424	2421	4003	-	
32.0		762	1516	2578	4262	-	
34.0		808	1608	2735	4520	-	
36.0		854	1700	2891	4779	-	
38.0		900	1792	3048	5038	-	
40.0		955	1901	3232	5343	-	
42.0		1002	1994	-	-	-	
44.0		1048	2086	-	-	-	
46.0		1095	2179	-	-	-	
48.0		1142	2272	-	-	-	
50.0		1198	2385	-	-	-	

Set pressure in psig	GW	1/2 & 3/4	1/2 & 3/4	3/4 & 1	1 & 1-1/4	1-1/4	
	d <sub>0</sub> (inch)	0.276	0.413	0.551	0.709	0.906	
	A <sub>0</sub> (in <sup>2</sup> )	0.060	0.134	0.239	0.394	0.644	
Medium							Air in SCFM
15		-	-	92	-	-	
28		-	-	129	-	298	
29		42	-	-	-	304	
35		47	90	154	-	346	
40		52	100	169	280	382	
50		62	118	201	333	454	
60		72	137	233	385	525	
70		82	156	265	438	597	
80		92	174	296	490	669	
90		101	193	328	543	740	
100		111	212	360	595	812	
120		131	249	424	700	955	
145		155	296	503	831	1134	
160		170	324	551	910	-	
180		190	361	614	1015	-	
220		229	436	741	1225	-	
240		249	473	805	1330	-	
250		258	492	836	1383	-	
260		268	511	868	1435	-	
280		288	548	932	1540	-	
300		307	585	995	1645	-	
325		332	632	1075	1777	-	
350		357	679	1154	1908	-	
375		381	725	1233	2039	-	
400		406	772	1313	2170	-	
425		430	819	1392	2302	-	
450		455	865	1472	2433	-	
475		479	912	1551	2564	-	
500		504	959	1630	2695	-	
525		528	1006	1710	2827	-	
550		553	1052	1789	2958	-	
575		577	1099	1868	3089	-	
600		602	1146	-	-	-	
625		626	1192	-	-	-	
650		651	1239	-	-	-	
675		675	1286	-	-	-	
700		700	1332	-	-	-	
725		724	1379	-	-	-	