

# SERIES 88 / 89 SAFETY VALVES

## SERIES 88

Series 88 are multiple purpose safety valves for air / gas protection. Designed for durability, yet an economical choice for safety and relief applications. Choose for a variety of applications where mid-level capacity is required.

ASME and National Board Certified for Section VIII as well as CRN Certifications.

Temperatures -60°F (-51°C) to 406°F (208°C), low reduced to -320°F (-196°C) with PTFE option, high increased to 425°F (218°C) with stainless option.

## SERIES 89

Series 89 the same as Series 88, but with a closed cap.

ASME and National Board Certified for Section VIII as well as CRN Certifications.

Temperatures -60°F (-51°C) to 406°F (208°C), low reduced to -320°F (-196°C) with PTFE option, high increased to 425°F (218°C) with stainless option.

**Usages:** Over pressure protection on Pressure vessels,  
Piping systems, Tanks, Compressors, Dryers, Inter and After-coolers

**Features:**

- Precision lapped metal to metal seating
- Stainless steel springs
- Ruggedly constructed
- Closed seal hex cap or lift lever options
- Wide variety of inlet and outlet options
- Disc-guided seat provides quick, accurate and excellent re-seating

**Options:**

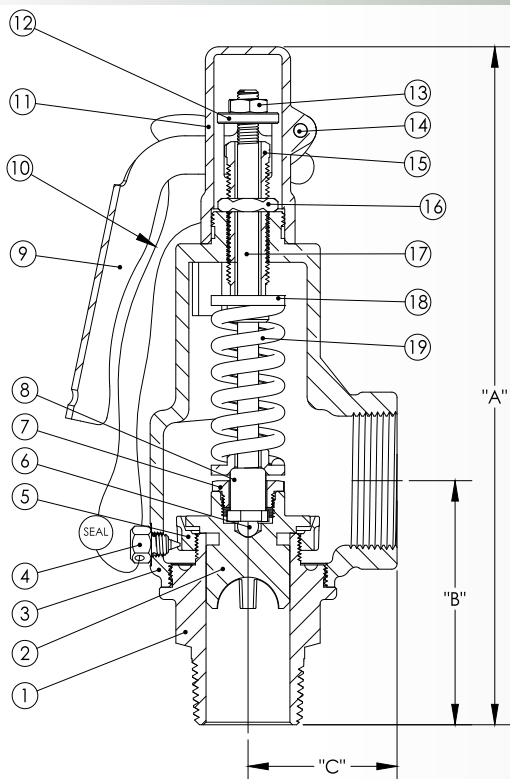
- Stainless steel body and disc
- Chrome plating
- Viton embedded o-ring at hex cap
- Packed lift lever
- Low Lead Configurations
- PTFE Seating
- Oxygen cleaning
- BSPT and BSPP connections

**Cryogenic:**

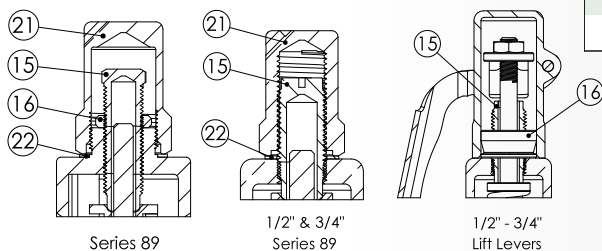
- Standard with PTFE seating
- O2 Cleaned and bagged



# DIMENSIONS AND MATERIALS



SERIES 88 / 89			
ITEM	DESCRIPTION	BRASS	STAINLESS
1	Body	B16/B283-C37700	SA479 316 SS
2	Disc	B62-C83600	SA479 316 SS
3	Bonnet	B584 C84400	B584 C84400
4	Lock Screw	B16 Brass	B16 Brass
5	Lower Ring	B584 C84400	B584 C84400
6	Ball	Stainless	Stainless
7	Disc Nut	B16 Brass	B16 Brass
8	Spring Support	B16 Brass	B16 Brass
9	Lift Lever	Plated Steel	Plated Steel
10	Seal Wire	Steel / Lead	Steel / Lead
11	Hood	Aluminum	Aluminum
12	Lifter Nut	B16 Brass	B16 Brass
13	Jam Nut	18-8 SS	18-8 SS
14	Lever Pin	B16 Brass	B16 Brass
15	Pressure Screw	B16 Brass	B16 Brass
16	Locknut	B16 Brass	B16 Brass
17	Spring Post	B16 Brass	B16 Brass
18	Spring Plate	B16 Brass	B16 Brass
19	Spring	302/17-7 SS	302/17-7 SS
20	Nameplate	Stainless	Stainless
21	Closed Hood	B16 Brass	B16 Brass
22	Closed Hood Seal	PTFE	PTFE



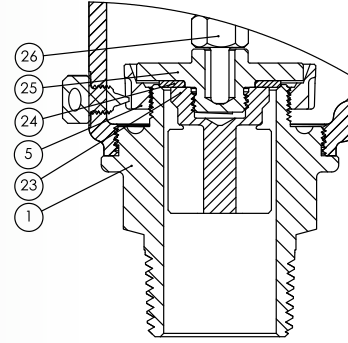
SERIES 88 / 89									
SIZE ID	INLET	OUTLET	DN	DIMENSIONS - in (mm)				WEIGHT Lbs. (Kg)	
				A-88	A-89	B	C		
A1	1/2"	1/2"	15	6-7/8" (175)	6" (152)	2-1/2" (64)	1-3/8" (35)	1.7 (0.8)	
A2	1/2"	3/4"	15	6-7/8" (175)	6" (152)	2-1/2" (64)	1-3/8" (35)	1.7 (0.8)	
B1	3/4"	3/4"	20	7-1/8" (181)	6-1/4" (159)	2-5/8" (67)	1-1/2" (38)	2.2 (1)	
B2	3/4"	1"	20	7-1/8" (181)	6-1/4" (159)	2-5/8" (67)	1-1/2" (38)	2.2 (1)	
C1	1"	1"	25	7-7/8" (200)	7-3/8" (187)	2-7/8" (73)	1-3/4" (44)	3 (1.4)	
C2	1"	1-1/4"	25	7-7/8" (200)	7-3/8" (187)	2-7/8" (73)	1-3/4" (44)	3 (1.4)	
D1	1-1/4"	1-1/4"	32	8-3/4" (222)	8-1/4" (210)	3-3/8" (86)	2" (51)	4 (1.8)	
D2	1-1/4"	1-1/2"	32	8-3/4" (222)	8-1/4" (210)	3-3/8" (86)	2" (51)	4 (1.8)	
E1	1-1/2"	1-1/2"	40	9-7/8" (251)	9-1/2" (241)	3-1/2" (89)	2-1/8" (54)	5.8 (2.6)	
E2	1-1/2"	2"	40	9-7/8" (251)	9-1/2" (241)	3-1/2" (89)	2-1/8" (54)	5.8 (2.6)	
F1	2"	2"	50	11-1/4" (286)	11" (279)	3-7/8" (98)	2-5/8" (67)	9.7 (4.4)	
F2	2"	2-1/2"	50	11-1/4" (286)	11" (279)	3-7/8" (98)	2-5/8" (67)	9.7 (4.4)	
G1	2-1/2"	2-1/2"	65	13-7/8" (352)	13" (330)	5-1/4" (133)	3-5/8" (92)	19 (8.6)	
G2	2-1/2"	3"	65	13-7/8" (352)	13" (330)	5-1/4" (133)	3-5/8" (92)	19 (8.6)	
H1	3"	3"	80	13-7/8" (352)	13-1/4" (337)	5-5/8" (143)	3-5/8" (92)	19 (8.6)	

"G" and "H" are Non-Code

# OPTIONS

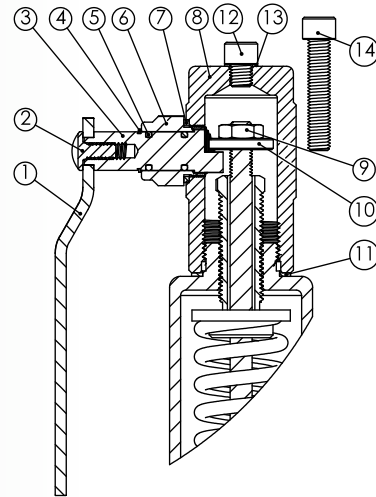
## PTFE SOFT SEAT

ITEM	DESCRIPTION	BRASS	STAINLESS
1	Body	B16/B283	SA479-316 SS
5	Lower Ring	B584-C84400	B584-C84400
23	Disc Wings	B16 Brass	SA479-316 SS
24	Insert	PTFE	PTFE
25	Disc	B16 Brass	SA479-316 SS
26	Support	B16 Brass	B16 Brass



## PACKED LIFT LEVER OPTION

ITEM	DESCRIPTION	MATERIAL
1	Handle	B16 Brass
2	Handle Screw	Steel/Plated
3	Cam	B16 Brass
4	Retaining Ring	Steel/Plated
5	O-Rings	Viton
6	Cam Nut	B16 Brass
7	O-Ring	PTFE
8	Hood	B16 Brass
9	Jam Nut	18-8 Stainless
10	Lifter Nut	B16 Brass
11	Hood Seal	PTFE
12	Plug	Gag Screw Option 18-8 / PTFE
13	Seal	
14	Gag Screw	



SERIES	INLET SIZES	METALS	MIN. TEMP °F (°C)	MAX. TEMP <sup>3,4</sup> °F (°C)	MAX PRESSURE <sup>1,2</sup> PSI (BAR)	SERVICES	CERTIFICATIONS
Series 88/89	1/2" to 3"	Brass/Bronze	-60° (-51°)	406° (208°)	250 (17.2)	Air / Gas / Steam	ASME VIII
	1/2" to 3"	Stainless/Bronze	-320° (-196°)	425° (218°)	250 (17.2)	Air / Gas / Steam	ASME VIII
	1/2" to 3"	No Lead	-60° (-51°)	406° (208°)	250 (17.2)	Air / Gas / Steam	ASME VIII
	1/2" to 3"	Stainless/No Lead	-320° (-196°)	406° (208°)	250 (17.2)	Air / Gas / Steam	ASME VIII

<sup>1</sup> PTFE disc lowers minimum temperature to -320°F

## SERIES 88 / 89 PART NUMBERS

88	C	2	A	1	M	1	K	1	125
SERIES	INLET	OUTLET	METALS	CONNECTION	SEATING	CAP	SERVICE	OPTION	SET
88	A- 1/2"	1- Same Size as Inlet 2- Next Larger than Inlet	A- Brass/Bronze	1- NPT MxF	M- Metal	1- Lift lever	K- ASME VIII Air/gas	1- None	Ex.125
89	B- 3/4"		B- 316 SS Nozzle Disc w/Bronze	2- NPT FxF	P- PTFE	2- Closed cap	N- Non-code Air/gas	2- Chrome Plating	
	C- 1"		L- No Lead Nozzle-Disc-Bonnet	3- BSPT MxF		3- Packed Lift Lever	T- Non-code Steam	3- O2 Cleaned	
	D- 1-1/4"		M- 316 Nozzle-Disc/No Lead Bonnet	4- BSPT FxF		4- Lift Lever Anti-Vibration Spring		4- API Seating	
	E- 1-1/2"			8- BSPP MxF		5- Closed Cap with Test Gag		5- O2 Clean / API Seating	
	F- 2"			9- BSPP FxF		6- Packed Lever with Test Gag			
	G- 2-1/2"					8- Closed Cap with O-Ring			
	H- 3"								

## SERIES 88 / 89 AIR CAPACITY SCFM - ASME SECTION VIII

SLOPE	.644	.93	2.274	3.504	4.90	7.404	13.416	16.98
SET PSI	A 1/2"	B 3/4"	C 1"	D 1-1/4"	E 1-1/2"	F 2"	G* 2-1/2"	H* 3"
5	15	21	52	80	111	168	305	385
10	18	26	63	97	136	205	372	470
15	21	30	74	115	160	242	439	555
20	24	35	86	132	185	279	506	640
25	27	40	97	150	209	316	573	725
30	31	44	108	167	234	353	640	810
35	34	49	121	186	261	394	714	903
40	38	55	133	206	288	435	788	997
45	41	60	146	225	315	475	861	1090
50	45	65	158	244	342	516	935	1184
55	48	70	171	264	368	557	1009	1277
60	52	75	184	283	395	598	1083	1370
65	56	80	196	302	422	638	1156	1464
70	59	85	209	321	449	679	1230	1557
75	63	90	221	341	476	720	1304	1650
80	66	96	234	360	503	760	1378	1744
85	70	101	246	379	530	801	1452	1837
90	73	106	259	398	557	842	1525	1931
95	77	111	271	418	584	883	1599	2024
100	80	116	284	437	611	923	1673	2117
120	94	136	334	514	719	1086	1968	2491
140	109	157	384	591	827	1249	2263	2865
160	123	177	434	668	934	1412	2558	3238
180	137	198	484	745	1042	1575	2854	3612
200	151	218	534	822	1150	1738	3149	3985
220	165	239	584	899	1258	1901	3444	4359
240	179	259	634	977	1366	2063	3739	4732
250	187	269	659	1015	1420	2145	3887	4919

## SERIES 88 / 89 AIR CAPACITY NM3/HR - ASME SECTION VIII

SLOPE	.644	.93	2.274	3.504	4.90	7.404	13.416	16.98
SET BAR	A 1/2"	B 3/4"	C 1"	D 1-1/4"	E 1-1/2"	F 2"	G* 2-1/2"	H* 3"
0.2	23	33	80	123	171	259	470	594
0.5	27	39	96	149	208	314	569	720
1	35	51	124	192	268	405	734	929
2	51	74	180	278	389	587	1064	1347
3	68	99	242	372	521	787	1426	1804
4	86	124	303	467	653	987	1789	2265
5	103	149	365	562	786	1188	2153	2725
6	121	174	427	657	919	1389	2516	3185
7	138	200	488	752	1052	1589	2880	3645
8	156	225	550	847	1185	1790	3243	4105
9	173	250	611	942	1317	1991	3607	4565
10	191	275	673	1037	1450	2191	3970	5025
11	208	300	735	1132	1583	2392	4334	5485
12	225	326	796	1227	1716	2592	4698	5945
13	243	351	858	1322	1848	2793	5061	6406
14	260	376	919	1417	1981	2994	5425	6866
15	278	401	981	1512	2114	3194	5788	7326
16	295	426	1043	1607	2247	3395	6152	7786
17.2	316	457	1117	1721	2406	3636	6588	8338

Set pressures not limited to this chart. Specify when ordering.  
 Capacities are at 3 PSI or 10% (whichever is greater) over set pressure  
 \* 2-1/2" ("G") and 3" ("H") sizes are NON-Code  
 Set pressures below 15 PSI (1.03 Bar) are NON-Code..

Maximum back-pressure is 10% of set pressure or 50 PSI (3.45 Bar) whichever is less.

Lifting Device as required by the ASME,  
 ASME Section VIII: UG136(3)

Each pressure relief valve on air, water at the valve inlet that exceeds 140°F (60°C), excluding over-pressure or relief events, or steam service shall have a substantial lifting device which when activated will release the seating force on the disc when the pressure relief valve is subjected to a pressure of at least 75% of the set pressure of the valve.

