

# SAFETY & RELIEF VALVES

## Safety Relief Valves

### 500 SERIES



### ASME SECTION VIII SAFETY RELIEF VALVES

Versatile ASME Section VIII safety relief valve certified for steam, air/gas and liquid service. Choice of bronze, carbon steel or stainless steel bodies to suit a wide range of applications.

#### FEATURES

- Set pressures to 1200 psig @ 800°F max
- Inlet sizes 1/2" through 2"
- Wide range of materials and options
- High capacity full nozzle design
- Stainless steel springs are standard
- Short "tuned" blowdown
- API 527 seat tightness
- Back pressure tight bonnet design
- Packed lever and screwed cap designs
- One trim suitable for all types of service
- Optional soft seating
- CSA B51 CRN #0G8547.5C
- Optional Dual ASME/CE European Pressure Equipment Directive Compliance Marking

Series Number	Valve Size (in.)	Orifice Letter	Flow Area (sq. in.)	Dimensions (in.)			Wt. Ea. (lbs.)
				A	B	C	
5xxDC	1/2 X 1	D	0.13	2.37	7.50	1.62	2.0
5xxDCD*	1/2 X 3/4	D	0.13	2.37	7.50	1.62	2.0
5xxDD	3/4 X 1	D	0.13	2.37	7.50	1.62	2.0
5xxDDD*	3/4 X 3/4	D	0.13	2.37	7.50	1.62	2.0
5xxED	3/4 X 1-1/4	E	0.23	2.62	9.00	2.00	3.0
5xxEE	1 X 1-1/4	E	0.23	2.62	9.00	2.00	3.0
5xxFE	1 X 1-1/2	F	0.36	2.87	10.25	2.37	5.0
5xxFF	1-1/4 X 1-1/2	F	0.36	2.87	10.25	2.37	5.0
5xxGF	1-1/4 X 2	G	0.59	3.25	13.25	2.62	9.0
5xxGG	1-1/2 X 2	G	0.59	3.25	13.25	2.62	9.5
5xxHG	1-1/2 X 2-1/2	H	0.92	3.50	15.00	2.75	15.5
5xxHH	2 X 2-1/2	H	0.92	3.50	15.00	2.75	16.0
5xxJH	2 X 3	J	1.50	4.00	17.00	3.25	23.0

\* 3/4" outlet option available with 510 and 520 bronze bodied models only.

### 500 SERIES NUMBERING SYSTEM

52	3	J	H	B	K	M	AA	0425	Q
SERIES BODY/TRIM MATERIAL	CAP	ORIFICE LETTER	INLET SIZE	CONNECTION	SERVICE	SEAT	SPECIAL OPTIONS	SET PRESSURE	SUFFIX
51 = Bronze/Brass	1 = Screwed Cap	D	C = 1/2	B = MNPT x NPT	J = Sec VIII Liquid	M = Metal	Factory Issued Letters/Numbers for Special Options or Features "AA" = Default Setting "CE" = CE/PED "HT" = High Temp Spring "OX" = Cleaned for Oxygen	Set Pressure, PSIG (4 digits)  Vacuum "HG" Prefix + 2 digits	Q = Performance (Calibration) Test Reports
52 = Bronze/Stainless	2 = Screwed + Gag	E	D = 3/4	D = 3/4 Outlet (Model 510 & 520 D Orifice Only)	K = Sec VIII Air/Gas	B = BUNA-N			
53 = Carbon/Stainless	3 = Packed Lever	F	E = 1		L = Sec VIII Steam	E = EPR			
54 = All Stainless	4 = Packed + Gag	G	F = 1-1/4		M = Non Code Liquid	K = PCTFE			
		H	G = 1-1/2		N = Non Code Air	N = Neoprene			
		J	H = 2		P = Non Code Steam	Z = Kalrez®			
					Q = Vacuum	S = Silicone			
						V = Viton			

Notes:

1. The ASME Code Section VIII requires a lift lever for the following services: air, steam, or hot water over 140°F
2. Maximum back pressure is 50 psig.
3. High temperature stainless steel alloy spring is required above 550°F / 288°C. Specify option "HT"
4. Contact factory for pricing and availability.



See Safety & Relief Valve Catalog (SRCA9000) for more detailed information about the products in this section.

Customer Service (704) 841-6000

# COMMERCIAL PRODUCTS CATALOG

## Safety Relief Valves

### 500 SERIES (CONT.)

### ASME SECTION VIII SAFETY RELIEF VALVES

#### Pressure and Temperature Ratings

Series Body Trim	510 Bronze Brass	520 Bronze Stainless	530 Carbon Steel Stainless	540 Stainless Steel Stainless
Max. Set-Steam	250 PSI	300 PSI	900 PSI (D/E) 600 PSI (F/G) 500 PSI (H/J)	900 PSI (D/E) 600 PSI (F/G) 500 PSI (H/J)
Max. Set-Air/ Gas/Liquid	300 PSI	1200 PSI (D) <sup>1</sup> 900 PSI (E) 600 PSI (F/G) 500 PSI (H/J)	1200 PSI (D) <sup>1</sup> 900 PSI (E) 600 PSI (F/G) 500 PSI (H/J)	1200 PSI (D) <sup>1</sup> 900 PSI (E) 600 PSI (F/G) 500 PSI (H/J)
Temp. Limits*	-320/406°F	-320/422°F	-20/800°F	-320/800°F

<sup>1</sup>Max set pressure for liquids is 1000 psi.

#### Notes:

- Limits based upon materials of construction and use of metal to metal seating. Refer to 500 series soft seat chart for limitations based upon elastomer.
- Specify "HT" high temperature Inconel springs for service temperature beyond 550°F.
- \* Models 510, 520 and 540 are suitable for cryogenic service to -320°F, with choice of either "M" metal or "K" PCTFE seat options.

#### ASME Section VIII Water - US gallons per minute @ 10% overpressure. NATIONAL BOARD CERTIFIED.

Set Pressure psig	Orifice					
	D	E	F	G	H	J
15	14	25	40	65	102	167
20	16	29	45	74	115	189
25	18	32	50	82	127	208
30	19	34	54	89	138	226
35	21	37	58	96	149	244
40	22	40	62	102	160	261
45	24	42	66	108	169	277
50	25	44	70	114	178	292
55	26	46	73	120	187	306
60	28	48	76	125	195	320
65	29	50	79	130	203	333
70	30	52	82	135	211	345
75	31	54	85	140	218	357
80	32	56	88	145	226	369
85	33	58	91	149	233	381
90	34	59	93	153	239	392
95	35	61	96	158	246	402
100	36	63	98	162	252	413
125	40	70	110	181	282	462
150	44	77	121	198	309	506
175	47	83	130	214	334	546
200	50	89	139	229	357	584
225	53	94	148	242	378	619
250	56	99	156	256	399	653
275	59	104	163	268	418	685
300	62	108	171	280	437	715
325	64	113	178	291	455	744
350	66	117	184	302	472	772
375	69	121	191	313	489	799
400	71	125	197	323	505	826
425	73	129	203	333	520	851
450	75	133	209	343	535	876
475	77	136	215	352	550	900
500	79	140	220	361	564	923
525	81	143	226	370		
550	83	147	231	379		
575	85	150	236	388		
600	87	153	241	396		
625	89	157				
650	91	160				
675	92	163				
700	94	166				
725	96	169				
750	97	171				
775	99	174				
800	100	177				
825	102	180				
850	104	183				
875	105	185				
900	107	188				
950	109					
1000	112					

Note: To determine water capacity at 25% overpressure, multiply the capacity at 10% above by 1.066.

# SAFETY & RELIEF VALVES

## Safety Relief Valves

### 500 SERIES (CONT.)

### ASME SECTION VIII SAFETY RELIEF VALVES

ASME Section VIII Steam - Pounds per hour of saturated steam @ 10% overpressure. NATIONAL BOARD CERTIFIED.

Set Pressure psig	Orifice					
	D	E	F	G	H	J
15	188	331	520	853	1332	2180
20	216	381	600	984	1536	2513
25	245	432	679	1114	1740	2846
30	274	482	759	1245	1943	3180
35	305	538	846	1388	2168	3546
40	337	593	934	1532	2392	3913
45	368	649	1021	1676	2616	4280
50	400	705	1108	1819	2840	4646
55	431	760	1196	1963	3064	5013
60	463	816	1283	2106	3288	5380
65	494	872	1371	2250	3512	5746
70	526	927	1458	2393	3736	6113
75	558	983	1546	2537	3960	6479
80	589	1038	1633	2680	4184	6846
85	621	1094	1721	2824	4408	7213
90	652	1150	1808	2968	4632	7579
95	684	1205	1896	3111	4857	7946
100	715	1261	1983	3255	5081	8313
125	873	1539	2421	3972	6201	10146
150	1031	1817	2858	4690	7322	11979
175	1189	2095	3295	5408	8442	13812
200	1346	2373	3733	6126	9562	15645
225	1504	2651	4170	6843	10683	17478
250	1662	2929	4607	7561	11803	19312
275	1820	3207	5045	8279	12924	21145
300	1977	3485	5482	8997	14044	22978
325	2135	3763	5919	9714	15165	24811
350	2293	4041	6357	10432	16285	26644
375	2451	4319	6794	11150	17405	28477
400	2608	4597	7231	11867	18526	30311
425	2766	4875	7669	12585	19646	32144
450	2924	5153	8106	13303	20767	33977
475	3082	5431	8543	14021	21887	35810
500	3239	5709	8981	14738	23008	37643
525	3397	5987	9418	15456		
550	3555	6266	9855	16174		
575	3713	6544	10293	16892		
600	3870	6822	10730	17609		
625	4028	7100				
650	4186	7378				
675	4344	7656				
700	4501	7934				
725	4659	8212				
750	4817	8490				
775	4975	8768				
800	5132	9046				
825	5290	9324				
850	5448	9602				
875	5606	9880				
900	5763	10158				
Approx. 1 psi Increment	6.3	11.1	17.5	28.7	44.8	73.3

ASME Section VIII Air - Standard cubic feet of air per minute @ 10% overpressure. NATIONAL BOARD CERTIFIED.

Set Pressure psig	Orifice					
	D	E	F	G	H	J
15	67	118	185	304	474	776
20	77	136	213	350	547	895
25	87	154	242	397	619	1013
30	97	172	270	443	692	1132
35	109	191	301	494	772	1262
40	120	211	332	545	851	1393
45	131	231	363	596	931	1523
50	142	251	395	648	1011	1654
55	154	271	426	699	1091	1784
60	165	290	457	750	1170	1915
65	176	310	488	801	1250	2045
70	187	330	519	852	1330	2176
75	198	350	550	903	1410	2306
80	210	370	581	954	1489	2437
85	221	389	612	1005	1569	2567
90	232	409	644	1056	1649	2698
95	243	429	675	1107	1729	2828
100	255	449	706	1158	1808	2959
125	311	548	862	1414	2207	3611
150	367	647	1017	1669	2606	4264
175	423	746	1173	1925	3005	4916
200	479	845	1329	2180	3404	5569
225	535	944	1484	2436	3802	6221
250	592	1043	1640	2691	4201	6874
275	648	1142	1796	2947	4600	7526
300	704	1240	1951	3202	4999	8179
325	760	1339	2107	3458	5398	8831
350	816	1438	2263	3713	5796	9484
375	872	1537	2418	3969	6195	10136
400	928	1636	2574	4224	6594	10789
425	985	1735	2730	4480	6993	11441
450	1041	1834	2885	4735	7392	12094
475	1097	1933	3041	4991	7791	12746
500	1153	2032	3197	5246	8189	13399
525	1209	2131	3352	5501		
550	1265	2230	3508	5757		
575	1321	2329	3664	6012		
600	1378	2428	3819	6268		
625	1434	2527				
650	1490	2626				
675	1546	2725				
700	1602	2824				
725	1658	2923				
750	1715	3022				
775	1771	3121				
800	1827	3220				
825	1883	3319				
850	1939	3418				
875	1995	3517				
900	2051	3616				
950	2163					
1000	2276					
1050	2388					
1100	2501					
1150	2613					
1200	2725					
Approx. 1 psi Increment	2.2	4	6.2	10.2	16	26.1



See Safety & Relief Valve Catalog (SRCA9000) for more detailed information about the products in this section.

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