VALVES

VALVES

FIGURE 31 / 41
BRONZE SERIES

SIZES 1/2" – 21/2"
PRESSURES to 300 PSIG at 422°F

FIGURE 31 BRONZE SERIES

- **Meets ASME Section I & VIII Code for Steam, Air & Non-hazardous Gas Service**
- **"V" or "UV" National Board Certified**
- **Dual Ring Control** See page 12
- **Rugged Cast Unitized Bonnet**
- **SS Spring Supplied as Standard**
- **Full Nozzle**
- **Soft Seat Design Available** See page 12
- **Open Lever Assembly**

Application Data

- Steam Boilers
- Pressure Reducing Stations
- Unfired Steam Pressure Vessels & Lines
- Accumulators, Sterilizers, Steam Cleaners
- Air compressors, Cookers, Receivers
- Pneumatic Systems
- OEM Equipment

Valve Ratings *See Capacity Charts beginning on page 14*

Model	Pressure PSIG (bar)	Temperature °F (°C)
0031/0041/041A/41AT/41AA	10 to 250 (.7 to 17.2)	-20 to 406 (-29 to 208)
0032/0042/042A/42AT/42AA	10 to 300 (.7 to 20.7)	-20 to 422 (-29 to 216)
0033/0043/043A/43AT	10 to 250 (.7 to 17.2)	-20 to 406 (-29 to 208)

Applicable Codes

- ASME Section I "V" for Steam
- ASME Section VIII "UV" for Steam/Air/Gas
- API 527
- Canadian Registration # 0G0591.9C
- PED (Consult Factory)

Options

- Top Outlet Discharge
- BSP Connections
- Soft Seated Valves
- Plain Cap (on selected models)
- Test Reports Available

Models

- 0031 - ASME Section I Steam, Bronze Trim
- 0041 - ASME Section VIII Steam, Bronze Trim
- 041A - ASME Section VIII Air, Bronze Trim
- 41AT - Top Outlet on 041A
- 41AA - Plain Cap on 041A (D orifice only)
- 0032 - SS Base & Disc on 0031
- 0042 - SS Base & Disc on 0041
- 042A - SS Base & Disc on 041A
- 42AT - SS Base & Disc on 41AT
- 42AA - SS Base & Disc on 41AA (D orifice only)
- 0033 - EPDM Soft Seat on 0031
- 0043 - EPDM Soft Seat on 0041
- 043A - Viton Soft Seat on 041A
- 43AT - Viton Soft Seat on 41AT

CODE SELECTION CHART

Model				Orifice	Inlet Size	Connec- tions	–	Set Pressure		
0	0	4	1	D	C	A	-	0	4	0
1	2	3	4	5	6	7		8	9	10

Model - Position 1, 2, 3 & 4
- 0031 = ASME Section I Steam, Bronze Trim
- 0041 = ASME Section VIII Steam, Bronze Trim
- 041A = ASME Section VIII Air, Bronze Trim
- 41AT = Top Outlet on 041A
- 41AA = Plain Cap on 041A (D orifice only)
- 0032 = SS Base & Disc on 0031
- 0042 = SS Base & Disc on 0041
- 042A = SS Base & Disc on 041A
- 42AT = SS Base & Disc on 41AT
- 42AA = SS Base & Disc on 41AA
- 0033 = EPDM Soft Seat on 0031
- 0043 = EPDM Soft Seat on 0041
- 043A = Viton Soft Seat on 041A
- 43AT = Viton Soft Seat on 41AT

Orifice - Position 5
- D
- E
- F
- G
- H
- J

Inlet Size - Position 6
- C = ½
- D = ¾
- E = 1
- F = 1¼
- G = 1½
- H = 2
- J = 2½

Connections - Position 7
- A = MPT x FPT
- E = MPT x Top
- F = MBSP x FBSP
- Z = Other

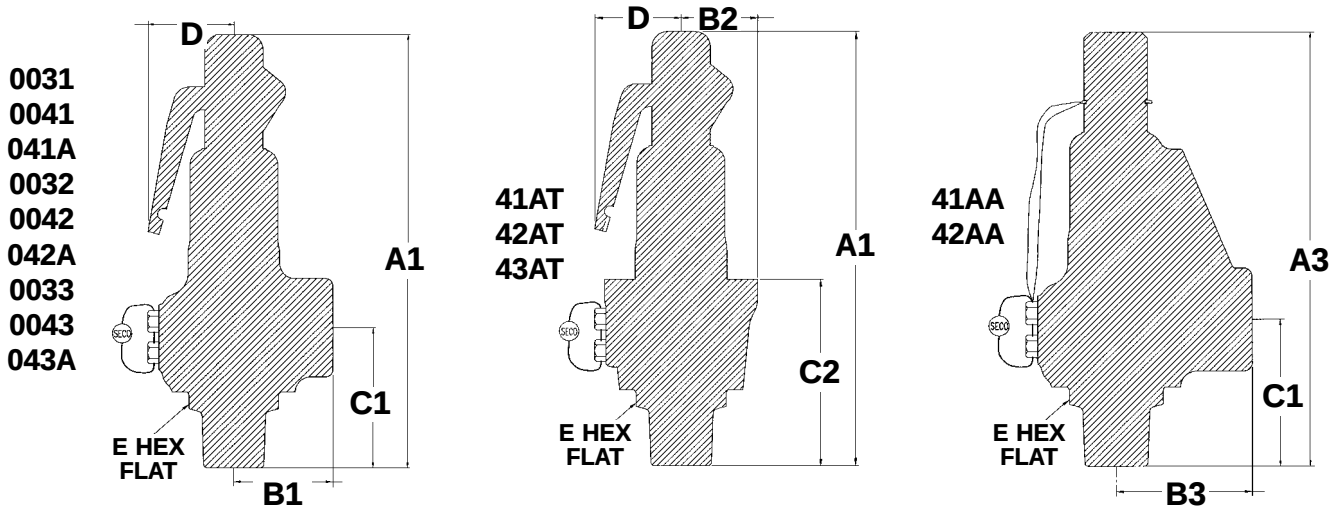
Set Pressure - Position 8, 9 & 10
- __ __ __ = Actual Setting
- LAS - Loosely Assembled†

†Spence Certified Assemblers Only (use 0031, 0032, 0033, 41AT, 42AT, 43AT, 41AA or 42AA only)

FIGURE 31 / 41
BRONZE SERIES

SPECIFICATION

The valve shall meet the ASME Section I or VIII Code for steam, air and gas services. It shall be “V” or “UV” National Board Certified. The valve shall have dual blowdown ring to allow better adjustment of the pop and blowdown. The valve shall consist of a unitized bonnet design guaranteeing proper guiding and making the valve extremely dependable in terms of pop action, seat tightness and repeatability.The valve shall be top guided and shall have a full nozzle for optimum flow performance. The valve shall have a stainless steel spring for better corrosion and yield strength. The valve shall meet the API 527 leakage standard requiring bubble tight shutoff up to 90% of set pressure.



DIMENSIONS* inches (mm) **AND WEIGHTS** pounds (kg)

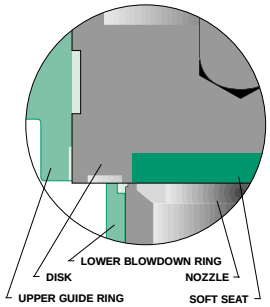
Model	Inlet	Orifice	Outlet[2]	A1	A3	B1	B2	B3	C1	C2	D[1]	E	Weight
****DCA	½ MPT (15)	D	¾ FPT (20)	6 9/16 (166.7)	6¼ (158.8)	1⅜ (34.9)	1 1/16 (27.0)	1⅞ (47.6)	2¼ (57.2)	2⅞ (73.0)	1⅜ (34.9)	1⅛ (28.6)	2 (0.91)
****DDA	¾ MPT (20)	D	¾ FPT (20)	6 9/16 (166.7)	6¼ (158.8)	1⅜ (34.9)	—	1⅞ (47.6)	2¼ (57.2)	—	1⅜ (34.9)	1¼ (31.8)	2¼ (1.02)
****EDA	¾ MPT (20)	E	1 FPT (25)	7⅛ (181.0)	—	1⅝ (41.3)	1¼ (31.8)	—	2 5/16 (58.7)	3⅛ (79.4)	1⅜ (34.9)	1¼ (31.8)	2½ (1.13)
****EEA	1 MPT (25)	E	1 FPT (25)	7⅛ (181.0)	—	1⅝ (41.3)	—	—	2 5/16 (58.7)	—	1⅜ (34.9)	1½ (38.1)	2¾ (1.25)
****FEA	1 MPT (25)	F	1¼ FPT (32)	9 (228.6)	—	1⅞ (47.6)	1 7/16 (36.5)	—	2 13/16 (71.4)	3½ (88.9)	1 11/16 (42.9)	1½ (38.1)	4 (1.81)
****FFA	1¼ MPT (32)	F	1¼ FPT (32)	9 (228.6)	—	1⅞ (47.6)	—	—	2 13/16 (71.4)	—	1 11/16 (42.9)	1¾ (44.5)	4¼ (1.93)
****GFA	1¼ MPT (32)	G	1½ FPT (40)	9 11/16 (246.1)	—	2⅛ (54.0)	1 11/16 (42.9)	—	3 (76.2)	3¾	1 11/16 (42.9)	1⅞ (47.6)	7 (3.18)
****GGA	1½ MPT (40)	G	1½ FPT (40)	9 11/16 (246.1)	—	2⅛ (54.0)	—	—	3 (76.2)	—	1 11/16 (42.9)	2 1/16 (52.4)	7¼ (3.29)
****HGA	1½ MPT (40)	H	2 FPT (50)	12⅛ (308.0)	—	2 9/16 (65.1)	2 1/16 (52.4)	—	3½ (88.9)	4 1/16 (119.1)	2¾ (69.9)	2¼ (57.2)	13½ (6.12)
****HHA	2 MPT (50)	H	2 FPT (50)	12⅛ (308.0)	—	2 9/16 (65.1)	—	—	3½ (88.9)	—	2¾ (69.9)	2 9/16 (65.1)	13¾ (6.24)
****JHA	2 MPT (50)	J	2½ FPT (65)	13 5/16 (338.1)	—	3⅛ (79.4)	2½ (63.5)	—	3¾ (95.3)	5 (127.0)	2¾ (69.9)	2¾ (69.9)	17½ (7.94)
****JJA	2½ MPT (65)	J	2½ FPT (65)	13 5/16 (338.1)	—	3⅛ (79.4)	—	—	3¾ (95.3)	—	2¾ (69.9)	3 (76.2)	17¾ (8.05)

*Accurate to ±1/8".
**** Use appropriate Model Number.

[1] Add 50% to D Dimension when lever is pulled out to manually operate valve.
[2] Outlet connections do not apply for **AT top outlet valve.

FIGURE 31 / 41 BRONZE SERIES SOFT SEATS

Safety Valves with metal seats will start to leak at 90% of set pressure. A Spence Safety Valve equipped with a soft seat seals on both the metal and soft seats (see illustration). As a result, it will not begin to leak until system pressure reaches 95% of set pressure, minimizing system energy loss.



The o-rings in standard soft seat safety valves tend to blow out during discharge. Spence Soft Seat Safety Valves utilize a flat soft seat insert in the disc assembly of the valve that stays in place during operation, thus providing hassle-free operation.

There are many troublesome applications where using a Spence Soft Seat Safety Valve can reduce costly downtime and repair costs. Consider a Spence Soft Seat Safety Valve for:

- Operating very close to set pressure
- Heavy vibration
- Hard-to-hold fluids
- Occasional foreign particles
- Icing problems
- Pipe strain due to excessive discharge

SERVICE RECOMMENDATIONS*

EPDM Soft Seat

WET - -20 to 422°F (-29 to 216°C)
DRY - -20 to 250°F (-29 to 121°C)

Acetone
Acetylene Gas
Beer
Bleach Liquor
Brake Fluid
Calcium Chloride
Carbon Monoxide
Carbonic Acid
Citric Acid
Denatured Alcohol
Ethylene Diamine
Freon 22
Hydrazine
Lindol Hydraulic Fluid
Lye
Methanol
Methyl Alcohol
Methyl Butyl Ketone
Nitrogen
STEAM
Sulfur Hexafluoride
WATER

Viton Soft Seat

-20 to 400°F (-29 to 204°C)

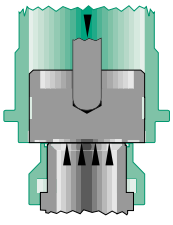
AIR
Benzoic Acid
Benzul Alcohol
Butane
Butyl Alcohol
Carbon Disulfide
Carbon Tetrachloride
Castor Oil
Chlorine
Chromic Acid
Corn Oil
Crude Oil
Diesel Oil
Dowtherm A
Ethane
Ethyl Alcohol
Ethyl Chloride
Ethylene
Ethylene Glycol
Fuel Oil
Gasoline
Glucose
Glycerin
Helium
Hydraulic Oil
Hydrogen Gas
Iodine
Kerosene
Linseed Oil
Methane
Mineral Oils
Natural Gas
Petroleum Oil
Propane
Propyl Alcohol
Propylene
Sulfur Dioxide
Turpentine

*These recommendations should be used as a guide only. It is the sole responsibility of the user to select suitable materials.

FIGURE 31 BRONZE SERIES DUAL RING CONTROL

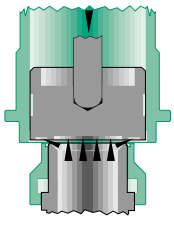
Safety Valves are pressure relief devices actuated by inlet static pressure and characterized by rapid opening or “pop” action. The difference between Safety Valves from different manufacturers is how well they do this.

Spence Figure 31 Safety Valves have Dual Ring Control which allows for finer adjustment of the “popping” action and length of “blowdown”. This allows exceptional flow efficiency and maximum lifting force while minimizing system energy loss.



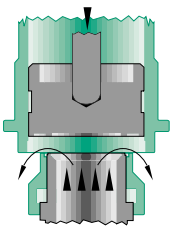
CLOSED

System pressure is pushing upward against the disk which is held closed by the downward force of the spring against the spindle.



OPENING

When system pressure rises above the set pressure of the spring, the disc begins to lift. This simmer/warn stage allows system pressure to enter the “huddling chamber” where it acts on a larger, secondary area of the disc. This magnified force causes the valve to “pop” open.



OPEN

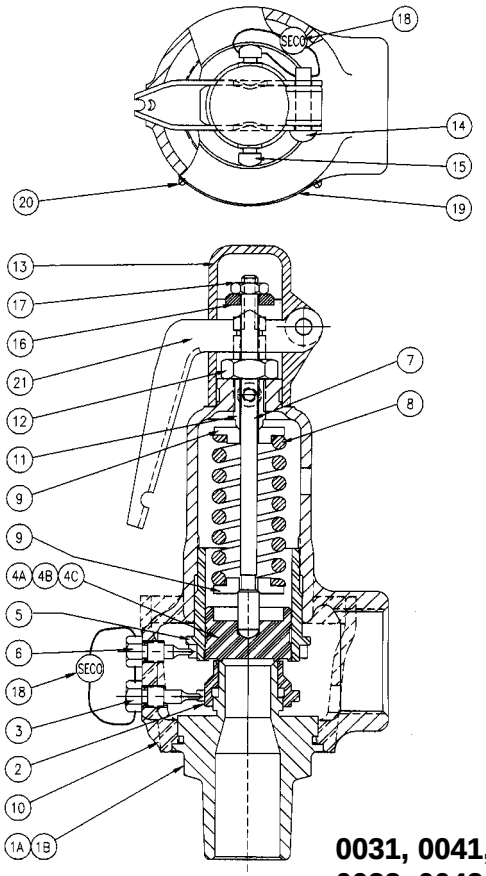
As pressure increases, the disc continues to lift until fully open. When pressure is reduced to a level below the set point of the valve, the spring force against the spindle will snap shut the disc.

FIGURE 31 / 41
BRONZE SERIES

Materials of Construction

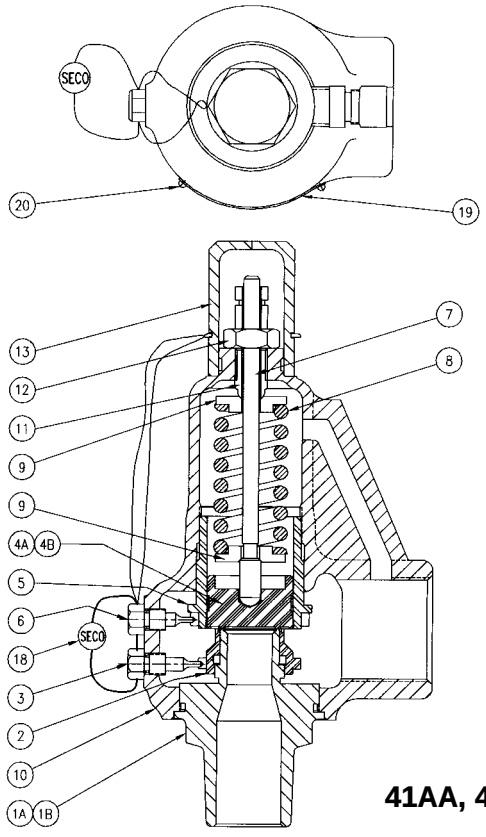
Ref	Part Name	Material
1A	Base/Nozzle - Bronze	Brass or Brz ASTM B283 or ASME SB62
1B	Base/Nozzle - SST	316 SST ASTM A276
2	Base Ring	Brass or Brz ASTM B283 or ASTM B62
3	Nozzle Ring Set Screw	Brass ASTM B16
4A	Disc - Bronze Metal	Brass or Brz ASTM B16 or ASTM B62
4B	Disc - SST Metal	316 SST ASTM A276
4C	Disc Assembly - Soft	Brass or Brz - EPDM/Viton
5	Guide Ring	Brass or Brz B283 or B584
6	Guide Ring Set Screw	Brass ASTM B16
7	Spindle	Steel ASTM A108
8	Spring	302 SST/17-7 SST
9	Spring Washer	Steel ASTM A108
10	Bonnet†	Cast Brz ASME SB62
11	Adjusting Bolt	Brass ASTM B16
12	Adjusting Bolt Locknut	Steel (Plated) SAE J995 GRD 2
13	Lifting Cap	Zinc Alloy
14	Lifting Cap Pin	Steel
15	Lifting Cap Lockscrew	Plated Steel
16	Spindle Nut	Steel ASTM
17	Spindle Nut Locknut	Plated Steel
18	Seal and Wire	Lead and SST
19	Nameplate	SST
20	Drive Screw	SST
21	Lever	Steel (Plated)

†41AT, 42AT, 43AT denoted by dotted line.



0031, 0041, 041A
0032, 0042, 042A
0033, 0043, 043A
41AT, 42AT, 43AT

Ref	Part Name	Material
1A	Base/Nozzle - Bronze	Brass ASTM B283
1B	Base/Nozzle - SST	316 SST ASTM A276
2	Base Ring	Brass ASTM B283
3	Nozzle Ring Set Screw	Brass ASTM B16
4A	Disc - Bronze Metal	Brass ASTM B16
4B	Disc - SST Metal	316 SST ASTM A276
5	Guide Ring	Brass B283
6	Guide Ring Set Screw	Brass ASTM B16
7	Spindle	Steel ASTM A108
8	Spring	302 SST/17-7 SST
9	Spring Washer	Steel ASTM A108
10	Bonnet	Cast Brz ASME SB62
11	Adjusting Bolt	Brass ASTM B16
12	Adjusting Bolt Locknut	Steel (Plated) SAE J995 GRD 2
13	Cap	Brass ASTM B16
18	Seal and Wire	Lead and SST
19	Nameplate	SST
20	Drive Screw	SST



41AA, 42AA

SATURATED STEAM CAPACITY CHART

BRONZE MODELS 31, 32, 33

ASME Section I V" 90% rated at 3% Overpressure LBS/HR (KGS/HR)
Flow Coefficient = .9 x .975 = .878

LBS/HR

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479	J 1.391
10 *	143	255	400	654	1023	1678
15	170	303	475	776	1213	1991
20	197	351	550	899	1405	2305
25	224	398	625	1021	1596	2619
30	250	446	700	1144	1788	2933
35	277	494	774	1266	1979	3247
40	304	542	849	1388	2171	3561
45	331	589	924	1511	2362	3875
50	358	637	999	1633	2553	4189
55	385	685	1074	1756	2745	4503
60	411	733	1149	1878	2936	4817
65	438	780	1224	2001	3128	5131
70	466	829	1300	2126	3323	5451
75	493	878	1377	2252	3520	5774
80	521	928	1455	2378	3717	6098
85	548	977	1532	2504	3914	6421
90	576	1026	1609	2630	4111	6745
95	604	1075	1686	2756	4308	7068
100	631	1124	1763	2882	4506	7392
105	659	1174	1840	3008	4703	7715
110	687	1223	1917	3134	4900	8038
115	714	1272	1995	3261	5097	8362
120	742	1321	2072	3387	5294	8685
125	769	1370	2149	3513	5491	9009
130	797	1420	2226	3639	5688	9332
135	825	1469	2303	3765	5886	9655
140	852	1518	2380	3891	6083	9979
145	880	1567	2457	4017	6280	10302
150	908	1616	2535	4143	6477	10626
155	935	1666	2612	4269	6674	10949
160	963	1715	2689	4396	6871	11273
165	990	1764	2766	4522	7068	11596
170	1018	1813	2843	4648	7266	11919
175	1046	1862	2920	4774	7463	12243
180	1073	1912	2997	4900	7660	12566
185	1101	1961	3075	5026	7857	12890
190	1128	2010	3152	5152	8054	13213
195	1156	2059	3229	5178	8251	13537
200	1184	2108	3306	5404	8448	13860
205	1211	2158	3383	5531	8646	14183
210	1239	2207	3460	5657	8843	14509
215	1267	2256	3538	5783	9040	14830
220	1294	2305	3615	5909	9237	15154
225	1322	2354	3692	6035	9434	15477
230	1349	2404	3769	6161	9631	15800
235	1377	2453	3846	6287	9829	16124
240	1405	2502	3923	6413	10026	16447
245	1432	2551	4000	6540	10223	16771
250	1460	2600	4078	6666	10420	17094
255	1488	2650	4155	6792	10617	17418
260	1515	2699	4232	6918	10814	17741
265	1543	2748	4309	7044	11011	18064
270	1570	2797	4386	7470	11209	18388
275	1598	2846	4463	7296	11406	18711
280	1626	2896	4540	7422	11603	19035
285	1653	2945	4618	7548	11800	19358
290	1681	2994	4695	7675	11997	19682
295	1709	3043	4772	7801	12194	20005
300	1736	3092	4849	7927	12391	20328
1.0	6	10	15	25	39	65

KGS/HR

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47	J 8.974
0.4*	55	97	153	250	391	641
0.6*	62	110	173	282	441	723
0.8*	69	123	192	314	491	806
1*	76	135	212	346	542	889
1.2	83	148	232	379	592	971
1.4	90	160	251	411	642	1054
1.6	97	173	271	443	693	1136
1.8	104	185	291	475	743	1219
2	111	198	310	508	793	1302
2.2	118	211	330	540	844	1384
2.4	125	223	350	572	894	1467
2.6	132	236	370	604	944	1549
2.8	139	248	389	636	995	1632
3	146	261	409	669	1045	1715
3.2	153	273	429	701	1095	1797
3.4	161	286	448	733	1146	1880
3.6	168	299	468	765	1196	1962
3.8	175	311	488	797	1247	2045
4	182	324	507	830	1297	2128
4.2	189	336	527	862	1347	2210
4.4	196	349	547	894	1398	2293
4.6	203	361	567	926	1448	2375
4.8	210	374	587	959	1500	2460
5	217	387	607	993	1552	2545
5.2	225	400	627	1026	1603	2631
5.4	232	413	648	1059	1655	2716
5.6	239	426	668	1092	1707	2801
5.8	246	439	688	1125	1759	2886
6	254	452	709	1158	1811	2971
6.5	272	484	759	1241	1941	3184
7	290	517	810	1324	2070	3396
7.5	308	549	861	1407	2200	3609
8	326	581	912	1490	2329	3822
8.5	345	614	962	1573	2459	4034
9	363	646	1013	1656	2589	4247
9.5	381	678	1064	1739	2718	4460
10	399	711	1114	1822	2848	4672
10.5	417	743	1165	1905	2978	4885
11	435	775	1216	1988	3107	5098
11.5	454	808	1267	2071	3237	5310
12	472	840	1317	2154	3367	5523
12.5	490	873	1368	2237	3496	5736
13	508	905	1419	2319	3626	5948
13.5	526	937	1470	2402	3756	6161
14	544	970	1520	2485	3885	6374
14.5	563	1002	1571	2568	4015	6586
15	581	1034	1622	2651	4144	6799
15.5	599	1067	1673	2734	4274	7012
16	617	1099	1723	2817	4404	7224
16.5	635	1131	1774	2900	4533	7437
17	653	1164	1825	2983	4663	7650
17.5	672	1196	1875	3066	4793	7862
18	690	1228	1926	3149	4922	8075
18.5	708	1261	1977	3232	5052	8288
19	726	1293	2028	3315	5182	8500
19.5	744	1325	2078	3398	5311	8713
20	762	1358	2129	3481	5441	8926
20.5	780	1390	2180	3563	5571	9139
21	799	1423	2231	3646	5700	9351
21.5	817	1455	2281	3729	5830	9564
0.1	3.6	6.4	10.1	16.6	25.9	42.5

* Pressure settings below 15 PSIG (1.034 barg) are non code.

SATURATED STEAM CAPACITY CHART

BRONZE MODELS 41, 42, 43

ASME Section VIII "UV" 90% rated at 10% Overpressure LBS/HR (KGS/HR)
Flow Coefficient = .9 x .975 = .878

LBS/HR

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479	J 1.391
10 *	149	265	416	679	1062	1742
15	176	313	491	802	1254	2057
20	203	361	566	925	1445	2371
25	229	409	641	1047	1637	2686
30	256	456	716	1170	1829	3000
35	286	509	798	1305	2040	3346
40	315	562	881	1440	2251	3692
45	345	614	963	1575	2461	4038
50	374	667	1046	1709	2672	4384
55	404	720	1128	1844	2883	4730
60	434	772	1211	1979	3094	5076
65	463	825	1293	2114	3305	5422
70	493	877	1376	2249	3516	5768
75	522	930	1458	2384	3727	6114
80	552	983	1541	2519	3937	6460
85	581	1035	1623	2654	4148	6805
90	611	1088	1706	2789	4359	7151
95	640	1140	1788	2923	4570	7497
100	670	1193	1871	3058	4781	7843
105	699	1246	1953	3193	4992	8189
110	729	1298	2036	3328	5203	8535
115	758	1351	2118	3463	5414	8881
120	788	1404	2201	3598	5624	9227
125	818	1456	2283	3733	5835	9573
130	847	1509	2366	3868	6046	9919
135	877	1561	2448	4003	6257	10265
140	906	1614	2531	4137	6468	10611
145	936	1667	2614	4272	6679	10957
150	965	1719	2696	4407	6890	11303
155	995	1772	2779	4542	7100	11648
160	1024	1825	2861	4677	7311	11994
165	1054	1877	2944	4812	7522	12340
170	1083	1930	3026	4947	7733	12686
175	1113	1982	3109	5082	7944	13032
180	1143	2035	3191	5217	8155	13378
185	1172	2088	3274	5352	8366	13724
190	1202	2140	3356	5486	8577	14070
195	1231	2193	3439	5621	8787	14416
200	1261	2246	3521	5756	8998	14762
205	1290	2298	3604	5891	9209	15108
210	1320	2351	3686	6026	9420	15454
215	1349	2403	3769	6161	9631	15800
220	1379	2456	3851	6296	9842	16146
225	1408	2509	3934	6431	10053	16492
230	1438	2561	4016	6566	10263	16837
235	1468	2614	4099	6700	10474	17183
240	1497	2667	4181	6835	10685	17529
245	1527	2719	4264	6970	10896	17875
250	1556	2772	4346	7105	11107	18221
255	1586	2824	4429	7240	11318	18567
260	1615	2877	4511	7375	11529	18913
265	1645	2930	4594	7510	11740	19259
270	1674	2982	4676	7645	11950	19605
275	1704	3035	4759	7780	12161	19951
280	1733	3088	4841	7914	12372	20297
285	1763	3140	4924	8049	12583	20643
290	1793	3193	5007	8184	12794	20989
295	1822	3245	5089	8319	13005	21335
300	1852	3298	5172	8454	13216	21681
1.0	6.0	10.5	16.5	27.0	42.2	69

* Pressure settings below 15 PSIG (1.034 barg) are non code.

KGS/HR

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47	J 8.974
0.4*	57	102	160	261	409	670
0.6*	64	115	180	294	459	753
0.8*	71	127	199	326	509	836
1*	78	140	219	358	560	918
1.2	86	152	239	390	610	1001
1.4	93	165	259	423	661	1084
1.6	100	177	278	455	711	1167
1.8	107	190	298	487	762	1249
2	114	203	318	519	812	1332
2.2	121	216	339	554	866	1420
2.4	129	230	360	589	921	1511
2.6	137	244	382	625	977	1602
2.8	145	258	404	660	1032	1693
3	152	271	426	696	1088	1784
3.2	160	285	447	731	1143	1875
3.4	168	299	469	767	1199	1966
3.6	176	313	491	802	1254	2057
3.8	183	327	512	838	1309	2148
4	191	341	534	873	1365	2239
4.2	199	354	556	909	1420	2330
4.4	207	368	578	944	1476	2421
4.6	215	382	599	980	1531	2512
4.8	222	396	621	1015	1587	2603
5	230	410	643	1051	1642	2694
5.2	238	424	664	1086	1698	2785
5.4	246	438	686	1122	1753	2876
5.6	253	451	708	1157	1809	2967
5.8	261	465	729	1192	1864	3058
6	269	479	751	1228	1920	3149
6.2	277	493	773	1263	1975	3240
6.4	284	507	795	1299	2031	3331
6.6	292	521	816	1334	2086	3422
7	308	548	860	1405	2197	3604
7.5	327	583	914	1494	2336	3832
8	347	617	968	1583	2474	4059
8.5	366	652	1022	1671	2613	4287
9	386	687	1077	1760	2752	4514
9.5	405	721	1131	1849	2890	4742
10	424	756	1185	1938	3029	4969
10.5	444	790	1240	2026	3168	5196
11	463	825	1294	2115	3306	5424
11.5	483	860	1348	2204	3445	5651
12	502	894	1402	2292	3584	5879
12.5	522	929	1457	2381	3722	6106
13	541	964	1511	2470	3861	6334
13.5	560	998	1565	2559	4000	6561
14	580	1033	1619	2647	4138	6789
14.5	599	1067	1674	2736	4277	7016
15	619	1102	1728	2825	4416	7244
15.5	638	1137	1782	2913	4554	7471
16	658	1171	1836	3002	4693	7699
16.5	677	1206	1891	3091	4832	7926
17	696	1240	1945	3179	4970	8154
17.5	716	1275	1999	3268	5109	8381
18	735	1310	2053	3357	5248	8609
18.5	755	1344	2108	3446	5386	8836
19	774	1379	2162	3534	5525	9064
19.5	794	1413	2216	3623	5664	9291
20	813	1448	2271	3712	5802	9519
20.5	832	1483	2325	3800	5941	9746
0.1	3.9	6.9	10.9	17.7	27.7	45.5

AIR CAPACITY CHART

BRONZE MODELS 41A, 42A, 43A, 41AT, 42AT, 43AT, 41AA, 42AA

ASME Section VIII "UV" 90% rated at 10% Overpressure SCFM (M^3/HR)
Flow Coefficient = .9 x .975 = .878

SCFM

Set Pressure PSIG	Orifice Area in^2 D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479	J 1.391
10 *	53	94	148	242	378	620
15	63	111	175	285	446	732
20	72	128	201	329	514	844
25	82	145	228	373	583	956
30	91	162	255	416	651	1068
35	102	181	284	464	726	1191
40	112	200	313	512	801	1314
45	123	219	343	560	876	1437
50	133	237	372	608	951	1560
55	144	256	402	656	1026	1684
60	154	275	431	704	1101	1807
65	165	294	460	753	1176	1930
70	175	312	490	801	1251	2053
75	186	331	519	849	1326	2176
80	196	350	548	897	1402	2299
85	207	368	578	945	1477	2422
90	217	387	607	993	1552	2545
95	228	406	637	1041	1627	2669
100	238	425	666	1089	1702	2792
105	249	443	695	1137	1777	2915
110	259	462	725	1185	1852	3038
115	270	481	754	1233	1927	3161
120	280	500	783	1281	2002	3284
125	291	518	813	1329	2077	3407
130	302	537	842	1377	2152	3531
135	312	556	872	1425	2227	3654
140	323	575	901	1473	2302	3777
145	333	593	930	1521	2377	3900
150	344	612	960	1569	2452	4023
155	354	631	989	1617	2527	4146
160	365	649	1018	1665	2602	4269
165	375	668	1048	1713	2677	4392
170	386	687	1077	1761	2753	4516
175	396	706	1106	1809	2828	4639
180	407	724	1136	1857	2903	4762
185	417	743	1165	1905	2978	4885
190	428	762	1195	1953	3053	5008
195	438	781	1224	2001	3128	5131
200	449	799	1253	2049	3203	5254
205	459	818	1283	2097	3278	5378
210	470	837	1312	2145	3353	5501
215	480	855	1341	2193	3428	5624
220	491	874	1371	2241	3503	5747
225	501	893	1400	2289	3578	5870
230	512	912	1430	2337	3653	5993
235	522	930	1459	2385	3728	6116
240	533	949	1488	2433	3803	6239
245	543	968	1518	2481	3878	6363
250	554	987	1547	2529	3953	6486
255	564	1005	1576	2577	4028	6609
260	575	1024	1606	2625	4104	6732
265	585	1043	1635	2673	4179	6855
270	596	1062	1665	2721	4254	6978
275	606	1080	1694	2769	4329	7101
280	617	1099	1723	2817	4404	7224
285	628	1118	1753	2865	4479	7348
290	638	1136	1782	2913	4554	7471
295	649	1155	1811	2961	4629	7594
300	659	1174	1841	3009	4704	7717
1.0	2.2	3.6	6.0	9.6	15.0	24.6

* Pressure settings below 15 PSIG (1.034 barg) are non code.

M^3/HR

Set Pressure Barg	Orifice Area cm^2 D .766	E 1.365	F 2.141	G 3.499	H 5.47	J 8.974
0.4*	76	136	213	349	545	894
0.6*	86	153	240	392	612	1004
0.8*	95	170	266	435	679	1114
1*	105	186	292	478	747	1225
1.2	114	203	318	521	814	1335
1.4	123	220	345	564	881	1445
1.6	133	237	371	607	948	1556
1.8	142	253	397	650	1016	1666
2	152	270	424	693	1083	1776
2.2	162	288	452	738	1154	1894
2.4	172	307	481	786	1228	2015
2.6	182	325	510	833	1302	2137
2.8	193	343	539	880	1376	2258
3	203	362	568	928	1450	2379
3.2	214	380	596	975	1524	2501
3.4	224	399	625	1022	1598	2622
3.6	234	417	654	1070	1672	2743
3.8	245	436	683	1117	1746	2865
4	255	454	712	1164	1820	2986
4.2	265	473	741	1212	1894	3107
4.4	276	491	770	1259	1968	3229
4.6	286	510	799	1306	2042	3350
4.8	296	528	828	1354	2116	3471
5	307	547	857	1401	2190	3593
5.2	317	565	886	1448	2264	3714
5.4	328	583	915	1496	2338	3835
5.6	338	602	944	1543	2412	3957
5.8	348	620	973	1590	2486	4078
6	359	639	1002	1637	2560	4199
6.2	369	657	1031	1685	2634	4321
6.4	379	676	1060	1732	2708	4442
6.6	390	694	1088	1779	2782	4563
7	410	731	1146	1874	2930	4806
7.5	436	777	1219	1992	3114	5109
8	462	823	1291	2111	3299	5413
8.5	488	870	1363	2229	3484	5716
9	514	916	1436	2347	3669	6019
9.5	540	962	1508	2465	3854	6323
10	566	1008	1581	2584	4039	6626
10.5	592	1054	1653	2702	4224	6929
11	618	1100	1725	2820	4409	7233
11.5	644	1146	1798	2939	4594	7536
12	670	1193	1870	3057	4779	7839
12.5	695	1239	1942	3175	4964	8143
13	721	1285	2015	3293	5148	8446
13.5	747	1331	2087	3412	5333	8749
14	773	1377	2159	3530	5518	9053
14.5	799	1423	2232	3648	5703	9356
15	825	1469	2304	3767	5888	9659
15.5	851	1516	2376	3885	6073	9963
16	877	1562	2449	4003	6258	10266
16.5	903	1608	2521	4121	6443	10570
17	929	1654	2594	4240	6628	10873
17.5	955	1700	2666	4358	6813	11176
18	980	1746	2738	4476	6998	11480
18.5	1006	1792	2811	4595	7182	11783
19	1032	1839	2883	4713	7367	12086
19.5	1058	1885	2955	4831	7552	12390
20	1084	1931	3028	4949	7737	12693
20.5	1110	1977	3100	5068	7922	12996
0.1	5.2	9.2	14.5	23.6	37	60.7

NOTES:

FIGURE 31 / 41
CAST IRON SERIES

SIZES 1½" – 6"
PRESSURES to 250 PSIG at 406°F

- **Meets ASME Section I & VIII Code for Steam, Air & Non-hazardous Gas Service**
- **"V" or "UV" National Board Certified**
- **Dual Ring Control** See page 12
- **Heavy Duty Construction**
- **Flanged or Threaded Connections**
- **SS Trim Design Available**
- **Heavy Duty Open Lever Assembly**

FIGURE 31 CAST IRON SERIES

Options
- SS Trim
- BSP Connections
- Test Reports Available

Application Data
- Steam Boilers
- Pressure Reducing Stations
- Unfired Steam Pressure Vessels & Lines
- Air compressors, Cookers, Receivers
- Pneumatic Systems
- OEM Equipment

Models
- 0031 - ASME Section I Steam, Bronze Trim
- 0041 - ASME Section VIII Steam, Bronze Trim
- 041A - ASME Section VIII Air, Bronze Trim
- 0032 - SS Base & Disc on 0031
- 0042 - SS Base & Disc on 0041
- 042A - SS Base & Disc on 041A

Valve Ratings *See Capacity Charts beginning on page 21*

Model	Pressure PSIG (bar)	Temperature °F (°C)
All	10 to 250 (.7 to 17.2)	-20 to 406 (-29 to 208)

Applicable Codes
- ASME Section I "V" for Steam
- ASME Section VIII "UV" for Steam/Air/Gas
- API 527
- Canadian Registration # 0G0591.9C

CODE SELECTION CHART

Model				Orifice	Inlet Size	Connec- tions	–	Set Pressure		
0	4	1	A	K	H	C	-	1	0	0
1	2	3	4	5	6	7		8	9	10

Model -
Position 1, 2, 3 & 4
0031 = ASME Section I Steam, Bronze Trim
0041 = ASME Section VIII Steam, Bronze Trim
041A = ASME Section VIII Air, Bronze Trim
0032 = SS Base & Disc on 0031
0042 = SS Base & Disc on 0041
042A = SS Base & Disc on 041A

Orifice -
Position 5
J
K
L
M
N
P
Q
R

Inlet Size -
Position 6
G = 1½
H = 2
J = 2½
K = 3
M = 4
P = 6

Connections -
Position 7
B = FPT x FPT
C = 250# x FPT
D = 250# x 125#
Z = Other

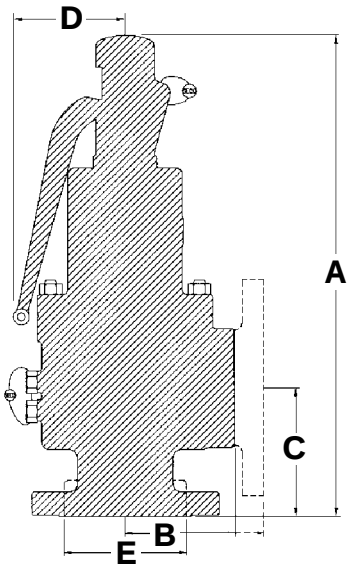
Set Pressure -
Position 8, 9 & 10
__ __ __ = Actual Setting
LAS - Loosely Assembled†

†Spence Certified Assemblers Only (use 0031or 0032 only)

FIGURE 31 / 41
CAST IRON SERIES

SPECIFICATION

The valve shall meet the ASME Section I or VIII Code for steam, air and gas services. It shall be “V” or “UV” National Board Certified. The valve shall have dual blowdown ring to allow better adjustment of the pop and blowdown. The valve shall be top guided and shall have a semi nozzle for optimum flow performance. The valve shall have an open lever assembly. The valve shall meet the API 527 leakage standard requiring bubble tight shutoff up to 90% of set pressure.



0031, 0041, 041A
0032, 0042, 042A

DIMENSIONS* inches (mm) **AND WEIGHTS** pounds (kg)

Model	Inlet	Orifice	Outlet	A	B	C	D[1]	E	Weight
****JGB	1½" FPT (40)	J	2½" FPT (65)	15⅛ (384.2)	3½ (88.9)	4¼ (108)	3 (76.2)	3¼ (82.6)	29 (13.2)
****JGC	1½" 250# (40)	J	2½" FPT (65)	15⅛ (384.2)	3½ (88.9)	4¼ (108)	3 (76.2)	—	36 (16.3)
****JHC	2" 250# (50)	J	3" FPT (80)	15¾ (400.1)	4 (101.6)	45/8 (117.5)	3½ (88.9)	—	42 (19.1)
****KHB	2" FPT (50)	K	3" FPT (80)	15¾ (400.1)	4 (101.6)	4⅝ (117.5)	3½ (88.9)	3⅝ (92.1)	36 (16.3)
****KHC	2" 250# (50)	K	3" FPT (80)	15¾ (400.1)	4 (101.6)	4⅝ (117.5)	3½ (88.9)	—	42 (19.1)
****KJC	2½" 250# (65)	K	3" FPT (80)	15¾ (400.1)	4 (101.6)	4¾ (120.7)	3½ (88.9)	—	45 (20.4)
****LJB	2½" FPT (65)	L	4" FPT (100)	23 [2] (584.2)	5⅛ (130.2)	5½ (139.7)	6 (152.4)	4½ (114.3)	97 (44.0)
****LJC	2½" 250# (65)	L	4" FPT (100)	23 [2] (584.2)	5⅛ (130.2)	5½ (139.7)	6 (152.4)	—	105 (47.6)
****KKC	3" 250# (80)	K	3" FPT (80)	15¾ (400.1)	4 (101.6)	5 (127)	3½ (88.9)	—	48 (21.8)
****LKC	3" 250# (80)	L	4" FPT (100)	23 [2] (584.2)	5⅛ (130.2)	5½ (139.7)	6 (152.4)	—	107 (48.5)
****MKB	3" FPT (80)	M	4" FPT (100)	23⅛ [2] (587.4)	5⅛ (130.2)	55/8 (142.9)	6 (152.4)	4½ (114.3)	99 (44.9)
****MKC	3" 250# (80)	M	4" FPT (100)	23 [2] (584.2)	5⅛ (130.2)	5½ (139.7)	6 (152.4)	—	107 (48.5)
****NMD	4" 250# (100)	N	6" 125# (150)	29½ [2] (749.3)	7¼ (184.2)	6¾ (171.5)	6 (152.4)	—	215 (97.5)
****PMD	4" 250# (100)	P	6" 125# (150)	29½ [2] (749.3)	7¼ (184.2)	6¾ (171.5)	6 (152.4)	—	215 (97.5)
****QPD [2]	6" 250# (150)	Q	8" 125# (200)	39½ [2] (1003.3)	10 (254)	9¼ (235)	10½ (266.7)	—	605 (274.4)
****RPD [2]	6" 250# (150)	R	8" 125# (200)	39½ [2] (1003.3)	10 (254)	9¼ (235)	10½ (266.7)	—	605 (274.4)

*Accurate to ±1/8".
**** Use appropriate Model Number.

[1] Add 50% to D Dimension when lever is pulled out to manually operate valve.
[2] Dimensions are current as of printing, consult factory for updated dimensions as they may change.

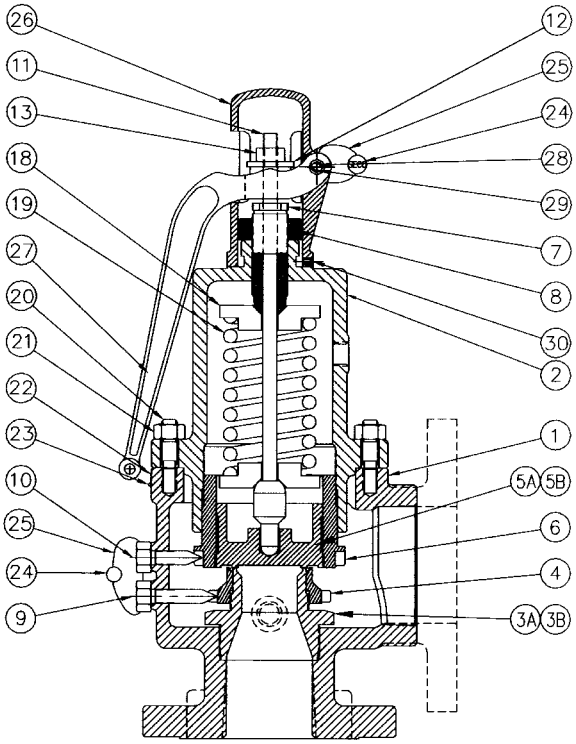
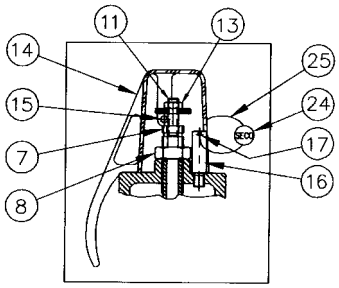


FIGURE 31 CAST IRON SERIES



CAP & LEVER CONFIGURATION FOR J & K ORIFICES

FIGURE 31 / 41
CAST IRON SERIES

MATERIALS OF CONSTRUCTION

Ref	Part Name	Material
1	Body	Cast Iron ASTM A126-B
2	Bonnet	Cast Iron ASTM A126-B
3A	Nozzle - Bronze	Brass or Bronze ASTM B16 or B62
3B	Nozzle - SST	SST ASME SA351, CF8M or ASME SA479, S31600
4	Nozzle Ring	Bronze ASTM B584-C84400
5A	Disc - Bronze	Brass or Bronze ASTM B16 or B62
5B	Disc - SST	SST ASTM A479, S31600
6	Guide Ring	ASTM B584-C84400
7	Adjusting Bolt	Brass ASTM B16
8	Adjusting Bolt Locknut	Steel, Zinc Plated
9	Nozzle Ring Set Screw	Brass ASTM B16
10	Guide Ring Set Screw	Brass ASTM B16
11	Spindle	Steel ASTM A108 Grade 1212
12	Spindle Nut	Steel ASTM A108 Grade 1212
13	Spindle Nut Locknut	Steel, Zinc Plated
14	Lifting Cap	Zinc Alloy Zamac #3
15	Lifting Cap Pins	Steel, Zinc Plated AISI 1020
16	Pivot Post	Steel AISI 1020
17	Post Pin	Steel, Zinc Plated AISI 1070
18	Spring Washer	Steel AISI 1212
19	Spring	Steel Zinc Plated
20	Stud	Steel, Chrome-Moly ASTM A193 B7
21	Stud Nut	Steel, Chrome-Moly ASTM A194 2H
22	Nameplate	SST AISI 304
23	Nameplate Screws	SST Commercial 18-8
24	Lead Seal	Lead
25	Seal Wire	SST AISI 304
26	Lifting Cap	Cast Iron A126-B*
27	Lifting Lever	Cast Iron ASTM A126-B
28	Clevis Pin	Steel, Zinc Plated
29	Cotter Pin	Steel
30	Liftcap Lockscrew	Steel

*Ductile Iron for 4" and above.

ASTM A395 Grade 60-40-18

SATURATED STEAM CAPACITY CHART

CAST IRON MODELS 31 & 32

ASME Section I "V" 90% rated at 3% Overpressure LBS/HR (KGS/HR)

Flow Coefficient = .9 x .975 = .878

LBS/HR

Set Pressure PSIG	Orifice Area, in² J 1.391	K 1.892	L 2.935	M 3.715	N 4.468	P 6.564	Q 11.365	R 16.475
10 *	1465	2281	3538	4478	5386	7912	13700	19860
15	1991	2708	4200	5318	6394	9394	16265	23579
20	2305	3135	4863	6157	7403	10876	18831	27298
25	2619	3562	5526	6996	8412	12358	21396	31017
30	2983	3989	6188	7835	9420	13839	23962	34736
35	3247	4416	6851	8674	10429	15321	26527	38455
40	3561	4843	7513	9512	11437	16803	29093	42174
45	3875	5270	8176	10351	12446	18285	31658	45893
50	4189	5697	8838	11190	13455	19766	34224	49612
55	4503	6125	9501	12029	14463	21248	36789	53331
60	4817	6552	10163	12868	15472	22730	39355	57050
65	5131	6979	10826	13707	16480	24212	41920	60769
70	5451	7414	11502	14562	17509	25723	44537	64562
75	5774	7854	12184	15426	18548	27249	47180	68393
80	6098	8294	12866	16290	19587	28775	49822	72223
85	6421	8734	13549	17154	20626	30302	52464	76054
90	6745	9174	14231	18018	21665	31828	55107	79884
95	7068	9614	14914	18882	22703	33354	57749	83715
100	7392	10054	15596	19746	23742	34880	60392	87546
105	7715	10494	16279	20610	24781	36406	63034	91376
110	8038	10934	16961	21474	25820	37932	65677	95207
115	8362	11374	17643	22338	26859	39459	68319	99037
120	8685	11813	18326	23202	27898	40985	70962	102868
125	9009	12253	19008	24066	28937	42511	73604	106699
130	9332	12693	19691	24930	29975	44037	76247	110529
135	9655	13133	20373	25794	31014	45563	78889	114360
140	9979	13573	21055	26658	32053	47090	81532	118190
145	10302	14013	21738	27522	33092	48616	84174	122021
150	10626	14453	22420	28386	34131	50142	86817	125851
155	10949	14893	23103	29250	35170	51668	89459	129682
160	11273	15333	23785	30114	36208	53194	92101	133513
165	11596	15773	24468	30978	37247	54721	94744	137343
170	11919	16212	25150	31842	38286	56247	97386	141174
175	12243	16652	25832	32706	39325	57773	100029	145004
180	12566	17092	26515	33570	40364	59299	102671	148835
185	12890	17532	27197	34434	41403	60825	105314	152666
190	13213	17972	27880	35298	42442	62351	107956	156496
195	13537	18412	28562	36162	43480	63878	110599	160327
200	13860	18852	29244	37026	44519	65404	113241	164157
205	14183	19292	29927	37890	45558	66930	115884	167988
210	14507	19732	30609	38754	46597	68456	118526	171818
215	14830	20172	31292	39618	47636	69982	121169	175649
220	15154	20612	31974	40482	48675	71509	123811	179480
225	15477	21051	32656	41346	49714	73035	126453	183310
230	15800	21491	33339	42210	50752	74561	129096	187141
235	16124	21931	34021	43074	51791	76087	131738	190971
240	16447	22371	34704	43938	52830	77613	134381	194802
245	16771	22811	35386	44802	53869	79140	137023	198633
250	17094	23251	36069	45666	54908	80666	139666	202463
1.0	64.6	88.0	136.4	172.8	207.8	305.2	528.4	766.0

* Pressure settings below 15 PSIG (1.034 barg) are non code.

KGS/HR

Set Pressure Barg	Orifice Area, cm² J 8.97	K 12.21	L 18.94	M 23.97	N 28.83	P 42.35	Q 73.32	R 106.29
0.4*	641	872	1352	1712	2059	3025	5237	7591
0.6*	724	984	1527	1932	2324	3414	5912	8570
0.8*	806	1097	1701	2153	2589	3804	6587	9548
1*	889	1209	1875	2374	2855	4194	7262	10527
1.2	971	1321	2050	2594	3120	4584	7937	11505
1.4	1054	1434	2224	2815	3385	4974	8611	12483
1.6	1137	1546	2398	3036	3651	5363	9286	13462
1.8	1219	1658	2573	3256	3916	5753	9961	14440
2	1302	1771	2747	3477	4182	6143	10636	15419
2.2	1384	1883	2921	3697	4447	6533	11311	16397
2.4	1467	1995	3095	3918	4712	6923	11986	17376
2.6	1550	2108	3270	4139	4978	7313	12661	18354
2.8	1632	2220	3444	4359	5243	7702	13336	19332
3	1715	2333	3618	4580	5508	8092	14011	20311
3.2	1797	2445	3793	4801	5774	8482	14686	21289
3.4	1880	2557	3967	5021	6039	8872	15361	22268
3.6	1963	2670	4141	5242	6304	9262	16036	23246
3.8	2045	2782	4316	5462	6570	9652	16711	24225
4	2128	2894	4490	5683	6835	10041	17386	25203
4.2	2211	3007	4664	5904	7100	10431	18061	26181
4.4	2293	3119	4838	6124	7366	10821	18736	27160
4.6	2376	3231	5013	6345	7631	11211	19411	28139
4.8	2461	3347	5192	6572	7904	11613	20106	29146
5	2546	3463	5372	6800	8178	12014	20801	30154
5.2	2631	3579	5551	7027	8451	12416	21497	31162
5.4	2716	3694	5731	7254	8724	12817	22192	32170
5.6	2801	3810	5911	7481	8998	13219	22887	33177
6	2971	4042	6270	7936	9544	14022	24277	35193
6.5	3184	4331	6718	8504	10228	15025	26015	37713
7	3397	4620	7167	9072	10911	16029	27753	40232
7.5	3610	4910	7616	9640	11594	17033	29491	42751
8	3822	5199	8065	10208	12277	18037	31229	45271
8.5	4035	5488	8514	10776	12961	19041	32967	47790
9	4248	5778	8963	11345	13644	20045	34705	50310
9.5	4460	6067	9411	11913	14327	21048	36443	52829
10	4673	6356	9860	12481	15010	22052	38181	55349
10.5	4886	6646	10309	13049	15694	23056	39919	57868
11	5099	6935	10758	13617	16377	24060	41657	60388
11.5	5311	7224	11207	14185	17060	25064	43395	62907
12	5524	7514	11656	14753	17744	26067	45133	65426
12.5	5737	7803	12104	15321	18427	27071	46871	67946
13	5949	8092	12553	15889	19110	28075	48609	70465
13.5	6162	8382	13002	16458	19793	29079	50347	72985
14	6375	8671	13451	17026	20477	30083	52085	75504
14.5	6588	8960	13900	17594	21160	31086	53823	78024
15	6800	9250	14349	18162	21843	32090	55561	80543
15.5	7013	9539	14798	18730	22526	33094	57299	83063
16	7226	9828	15246	19298	23210	34098	59037	85582
16.5	7438	10118	15695	19866	23893	35102	60775	88102
17	7651	10407	16144	20434	24576	36105	62513	90621
0.1	42.5	57.9	89.8	113.6	136.6	200.8	347.6	503.9

SATURATED STEAM CAPACITY CHART

CAST IRON MODELS 41 & 42

ASME Section VIII "UV" 90% rated at 10% Overpressure LBS/HR (KGS/HR)

Flow Coefficient = .9 x .975 = .878

LBS/HR

Set Pressure PSIG	Orifice Area, in² J 1.391	K 1.892	L 2.935	M 3.715	N 4.468	P 6.564	Q 11.365	R 16.475
10 *	1742	2251	3676	4653	5596	8221	14235	20635
15	2057	2798	4340	5494	6606	9706	16804	24360
20	2371	3225	5003	6335	7617	11190	19374	28085
25	2686	3653	5667	7175	8627	12674	21943	31809
30	3000	4081	6330	8015	9637	14158	24513	35534
35	3346	4551	7060	8939	10748	15790	27339	39631
40	3692	5022	7790	9863	11859	17422	30165	43729
45	4038	5492	8520	10787	12970	19055	32992	47826
50	4384	5963	9250	11711	14081	20687	35818	51923
55	4730	6433	9980	12636	15193	22320	38645	56020
60	5076	6904	10710	13560	16304	23952	41471	60117
65	5422	7374	11440	14484	17415	25585	44297	64215
70	5768	7845	12170	15408	18526	27217	47124	68312
75	6114	8316	12900	16332	19637	28849	49950	72409
80	6460	8786	13630	17256	20748	30482	52777	76506
85	6805	9257	14359	18180	21860	32114	55603	80604
90	7151	9727	15089	19105	22971	33747	58429	84701
95	7497	10198	15819	20029	24082	35379	61256	88798
100	7843	10668	16549	20953	25193	37012	64082	92895
105	8189	11139	17279	21877	26304	38644	66909	96992
110	8538	11609	18009	22801	27415	40276	69735	101090
115	8881	12080	18739	23725	28527	41909	72561	105187
120	9227	12550	19469	24649	29638	43541	75388	109284
125	9573	13021	20199	25574	30749	45174	78214	113381
130	9919	13491	20929	26498	31860	46806	81041	117479
135	10265	13962	21659	27422	32971	46438	83867	121576
140	10611	14432	22388	28346	34082	50071	86693	125673
145	10957	14903	23118	29270	35194	51703	89520	129770
150	11303	15373	23848	30194	36305	53336	92346	133868
155	11648	15844	24578	31118	37416	54968	95173	137965
160	11994	16314	25308	32043	38527	56601	97999	142062
165	12340	16785	26038	32967	39638	58233	100825	146159
170	12686	17256	26768	33891	40749	59865	103652	150256
175	13032	17726	27498	34815	41861	61498	106478	154354
180	13378	18197	28228	35739	42972	63130	109305	158451
185	13724	18667	28958	36663	44083	64763	112131	162548
190	14070	19138	29688	37587	45194	66395	114957	166645
195	14416	19608	30418	38512	46305	68028	117784	170743
200	14762	20079	31147	39436	47416	69660	120610	174840
205	15108	20549	31877	40360	48527	71292	123437	178937
210	15454	21020	32607	41284	49639	72925	126263	183034
215	15800	21490	33337	42208	50750	74557	129089	187131
220	16146	21961	34067	43132	51861	76190	131916	191229
225	16492	22431	34797	44057	52972	77822	134742	195326
230	16837	22902	35527	44981	54083	79455	137569	199423
235	17183	23372	36257	45905	55194	81087	140395	205320
240	17529	23843	36987	46829	56306	82719	143221	207618
245	17875	24313	37717	47753	57417	84352	146048	211715
250	18221	24784	38447	48677	58528	85984	148874	215812
1.0	69.2	94.0	146.0	184.8	222.2	326.4	565.2	819.4

* Pressure settings below 15 PSIG (1.034 barg) are non code.

KGS/HR

Set Pressure Barg	Orifice Area, cm² J 8.97	K 12.21	L 18.94	M 23.97	N 28.83	P 42.35	Q 73.32	R 106.29
0.4*	670	912	1414	1790	2153	3163	5477	7939
0.6*	753	1024	1589	2011	2419	3554	6153	8919
0.8*	836	1137	1763	2232	2685	3944	6829	9899
1*	918	1249	1938	2453	2950	4334	7504	10879
1.2	1001	1362	2113	2674	3216	4725	8180	11858
1.4	1084	1474	2287	2895	3482	5115	8856	12838
1.6	1167	1587	2462	3116	3747	5505	9532	13818
1.8	1249	1699	2636	3337	4013	5896	10208	14798
2	1332	1812	2811	3558	4279	6286	10884	15777
2.2	1420	1932	2997	3793	4562	6702	11604	16821
2.4	1511	2056	3189	4036	4854	7131	12347	17899
2.6	1602	2179	3381	4279	5146	7561	13091	18977
2.8	1693	2303	3573	4522	5439	7990	13834	20055
3	1784	2427	3765	4765	5731	8420	14578	21132
3.2	1875	2551	3957	5008	6023	8849	15321	22210
3.4	1966	2674	4149	5251	6316	9278	16065	23288
3.6	2057	2798	4341	5494	6608	9708	16808	24365
3.8	2148	2922	4533	5737	6900	10137	17552	25443
4	2239	3046	4725	5980	7192	10567	18295	26521
4.2	2330	3169	4917	6223	7485	10996	19038	27599
4.4	2421	3293	5109	6466	7777	11425	19782	28676
4.6	2512	3417	5301	6709	8069	11855	20525	29754
4.8	2603	3541	5493	6952	8362	12284	21269	30832
5	2694	3665	5685	7195	8654	12713	22012	31910
5.2	2785	3788	5877	7438	8946	13143	22756	32987
5.4	2876	3912	6069	7681	9238	13572	23499	34065
5.6	2967	4036	6261	7924	9531	14002	24243	35143
6	3149	4283	6645	8410	10115	14860	25730	37298
6.5	3377	4593	7125	9018	10846	15934	27588	39993
7	3604	4902	7605	9626	11577	17007	29447	42687
7.5	3832	5212	8085	10233	12307	18081	31305	45381
8	4059	5521	8565	10841	13038	19154	33164	48075
8.5	4287	5830	9045	11448	13769	20228	35023	50770
9	4514	6140	9525	12056	14499	21301	36881	53464
9.5	4742	6449	10005	12663	15230	22375	38740	56158
10	4969	6759	10485	13271	15961	23448	40599	58853
10.5	5196	7068	10965	13878	16691	24522	42457	61547
11	5424	7378	11445	14486	17422	25595	44316	64241
11.5	5651	7687	11925	15094	18153	26669	46174	66936
12	5879	7996	12404	15701	18884	27742	48033	69630
12.5	6106	8306	12884	16309	19614	28816	49892	72324
13	6334	8615	13364	16916	20345	29889	51750	75019
13.5	6561	8925	13844	17524	21076	30963	53609	77713
14	6789	9234	14324	18131	21806	32036	55468	80407
14.5	7016	9543	14804	18739	22537	33110	57326	83102
15	7244	9853	15284	19346	23268	34183	59185	85796
15.5	7471	10162	15764	19954	23998	35256	61044	88490
16	7699	10472	16244	20562	24729	36330	62902	91185
16.5	7926	10781	16724	21169	25460	37403	64761	93879
17	8154	11091	17204	21777	26191	38477	66619	96573
0.1	45.5	61.9	96	121.5	146.1	214.7	371.7	538.9

AIR CAPACITY CHART

CAST IRON MODELS 41A & 42A

ASME Section VIII "UV" 90% rated at 10% Overpressure SCFM (M^3/HR)
Flow Coefficient = .9 x .975 = .878

SCFM

Set Pressure PSIG	Orifice Area, in^2							
	J	K	L	M	N	P	Q	R
	1.391	1.892	2.935	3.715	4.468	6.564	11.365	16.475
10 *	620	843	1308	1656	1992	2926	5067	7345
15	732	996	1545	1956	2351	3455	5981	8671
20	844	1148	1781	2255	2711	3983	6896	9996
25	956	1300	2017	2554	3071	4511	7810	11322
30	1068	1453	2253	2853	3430	5039	8725	12648
35	1191	1620	2513	3182	3826	5620	9731	14106
40	1314	1787	2773	3511	4221	6201	10737	15565
45	1437	1955	3033	3840	4617	6782	11743	17023
50	1560	2122	3292	4169	5012	7363	12749	18482
55	1684	2290	3552	4498	5408	7945	13755	19940
60	1807	2457	3812	4826	5803	8526	14761	21398
65	1930	2625	4072	5155	6199	9107	15767	22857
70	2053	2792	4332	5484	6594	9688	16773	24315
75	2176	2960	4592	5813	6990	10269	17779	25773
80	2299	3127	4851	6142	7385	10850	18785	27232
85	2422	3295	5111	6471	7781	11431	19791	28690
90	2545	3462	5371	6800	8176	12012	20797	30149
95	2669	3630	5631	7129	8572	12593	21804	31607
100	2792	3797	5891	7458	8967	13174	22810	33065
105	2915	3965	6150	7787	9363	13755	23816	34524
110	3038	4132	6410	8116	9758	14336	24822	35982
115	3161	4300	6670	8445	10154	14917	25828	37440
120	3284	4467	6930	8774	10549	15498	26834	38899
125	3407	4635	7190	9103	10945	16079	27840	40357
130	3581	4802	7449	9432	11340	16660	28846	41816
135	3654	4970	7709	9761	11736	17241	29852	43274
140	3777	5137	7969	10090	12131	17822	30858	44732
145	3900	5305	8229	10418	12527	18403	31864	46191
150	4023	5472	8489	10747	12922	18984	32870	47649
155	4146	5640	8748	11076	13318	19565	33876	49107
160	4269	5807	9008	11405	13713	20147	34882	50566
165	4392	5974	9268	11734	14109	20728	35888	52024
170	4516	6142	9528	12063	14504	21309	36894	53483
175	4639	6309	9788	12392	14900	21890	37900	54941
180	4762	6477	10047	12721	15295	22471	38906	56399
185	4885	6644	10307	13050	15691	23052	39912	57858
190	5008	6812	10567	13379	16086	23633	40918	59316
195	5131	6979	10827	13708	16482	24214	41924	60774
200	5254	7147	11087	14037	16877	24795	42930	62233
205	5378	7314	11346	14366	17273	25376	43936	63691
210	5501	7482	11606	14695	17668	25957	44942	65150
215	5624	7649	11866	15024	18064	26538	45948	66608
220	5747	7817	12126	15353	18459	27119	46954	68066
225	5870	7984	12386	15682	18855	27700	47960	69525
230	5993	8152	12646	16010	19251	28281	48966	70983
235	6116	8319	12905	16339	19646	28862	49972	72441
240	6239	8487	13165	16668	20042	29443	50979	73900
245	6363	8654	13425	16997	20437	30024	51985	75358
250	6486	8822	13685	17326	20833	30605	52991	76817
1.0	24.6	33.6	52.0	65.8	79.2	116.2	201.2	291.8

* Pressure settings below 15 PSIG (1.034 barg) are non code.

M^3/HR

Set Pressure Barg	Orifice Area, cm^2							
	J	K	L	M	N	P	Q	R
	8.97	12.21	18.94	23.97	28.83	42.35	73.32	106.29
0.4*	894	1216	1886	2387	2871	4218	7303	10587
0.6*	1004	1366	2119	2682	3225	4739	8205	11893
0.8*	1114	1516	2352	2976	3580	5259	9106	13200
1*	1225	1666	2584	3271	3934	5780	10007	14506
1.2	1335	1816	2817	3566	4288	6300	10908	15813
1.4	1445	1966	3050	3860	4643	6821	11810	17119
1.6	1556	2116	3283	4155	4997	7341	12711	18426
1.8	1666	2266	3515	4450	5351	7862	13612	19732
2	1776	2416	3748	4744	5706	8382	14513	21039
2.2	1894	2576	3996	5058	6083	8937	15474	22431
2.4	2015	2741	4252	5382	6473	9510	16465	23868
2.6	2137	2906	4508	5706	6863	10082	17456	25305
2.8	2258	3071	4764	6030	7252	10655	18448	26742
3	2379	3236	5020	6354	7642	11227	19439	28179
3.2	2501	3401	5276	6678	8032	11800	20430	29617
3.4	2622	3566	5532	7002	8422	12372	21422	31054
3.6	2743	3731	5788	7326	8811	12945	22413	32491
3.8	2865	3896	6044	7651	9201	13518	23405	33928
4	2986	4061	6300	7975	9591	14090	24396	35365
4.2	3107	4226	6556	8299	9981	14663	25387	36802
4.4	3229	4391	6812	8623	10370	15235	26379	38239
4.6	3350	4556	7068	8947	10760	15808	27370	39676
4.8	3471	4722	7324	9271	11150	16381	28361	41114
5	3593	4887	7580	9595	11540	16953	29353	42551
5.2	3714	5052	7836	9919	11929	17526	30344	43988
5.4	3835	5217	8092	10243	12319	18098	31336	45425
5.6	3957	5382	8348	10567	12709	18671	32327	46862
6	4199	5712	8860	11215	13488	19816	34310	49736
6.5	4503	6124	9501	12025	14463	21247	36788	53329
7	4806	6537	10141	12836	15437	22679	39267	56922
7.5	5109	6950	10781	13646	16412	24110	41745	60515
8	5413	7362	11421	14456	17386	25542	44224	64108
8.5	5716	7775	12061	15266	18360	26973	46702	67700
9	6019	8187	12701	16076	19335	28405	49180	71293
9.5	6323	8600	13341	16886	20309	29836	51659	74886
10	6626	9013	13981	17696	21283	31268	54137	78479
10.5	6929	9425	14621	18507	22258	32699	56616	82072
11	7233	9838	15261	19317	23232	34131	59094	85665
11.5	7536	10250	15901	20127	24206	35562	61573	89257
12	7839	10663	16541	20937	25181	36994	64051	92850
12.5	8143	11076	17181	21747	26155	38425	66530	96443
13	8446	11488	17821	22557	27130	39856	69008	100036
13.5	8749	11901	18461	23368	28104	41288	71486	103629
14	9053	12313	19101	24178	29078	42719	73965	107221
14.5	9356	12726	19741	24988	30053	44151	76443	110814
15	9659	13139	20381	25798	31027	45582	78922	114407
15.5	9963	13551	21022	26608	32001	47014	81400	118000
16	10266	13964	21662	27418	32976	48445	83879	121593
16.5	10570	14376	22302	28228	33950	49877	86357	125186
17	10873	14789	22942	29039	34925	51308	88836	128778
0.1	60.7	82.5	128	162	194.9	286.3	495.7	718.6

FIGURE 800 SAFETY RELIEF VALVE

FIGURE 800 SERIES

SIZES ½" – 1½"
PRESSURES to 900 PSIG at 422°F

- **Meets ASME VIII Code for Liquid, Steam, Air & Gas Service**
- **"UV" National Board Certified**
- **Short Blowdown**
- **No Ring Adjustments Required**
- **Unitized Bonnet Design**
- **All SS Internals/SS Springs**
- **Pivoting Disc Design**
- **Full Nozzle**
- **Soft Seat Design Available**
- **Wide Variety of Options**

Application Data

- Liquid Filled Pressure Vessels & Systems
- Steam/air/gas Pressure Vessels & Systems
- Low temperature cryogenic systems
- Pumps, Tanks & Hydraulic Systems
- Pressure Reducing Stations
- Vacuum Systems
- OEM Equipment

Applicable Codes

- ASME Section VIII "UV" for Liquid/Steam/Air/Gas
- API 527
- Canadian Registration # 0G0591.9C
- PED (Consult Factory)

Options

- Screwed, Plain & Packed Caps
- BSP Connections
- Vacuum Service (Non-code)
- EPDM, Viton & TFE/25% Glass Soft Seats
- Low Temperature Cryogenic Service Trim*
- Test Reports Available

Models

- 810 - Bronze Bonnet & Base, SS Disc
- 812 - EPDM Seat on 810
- 814 - Viton Seat on 810
- 816 - TFE/25% Glass Seat on 810
- 820 - Bronze Bonnet, SS Base & Disc
- 822 - EPDM Seat on 820
- 824 - Viton Seat on 820
- 826 - TFE/25% Glass Seat on 820
- 860 - 316 SS Bonnet, Base & Disc
- 862 - EPDM Seat on 860
- 864 - Viton Seat on 860
- 866 - TFE/25% Glass Seat on 860

VALVE RATINGS *See Capacity Charts beginning on page 28*

Model	Temperature* °F (°C)	Pressure PSIG (bar)		
		D,E Orifices	F,G Orifices	H Orifice
810/812	-20-406 (-28.9-207.8)	5-250 (0.34-17.24)		
814/816	-20-400 (-28.9-204.4)			
820[1]	-20-422 (-28.9-216.7)	5-900 (0.34-62.06)	5-600 (0.34-41.37)	5-500 (0.34-34.48)
822[1]/824[2]/826[2]	-20-400 (-28.9-204.4)			
860	-20-800 (-28.9-427)			
862/864/866	-20-400 (-28.9-204.4)			

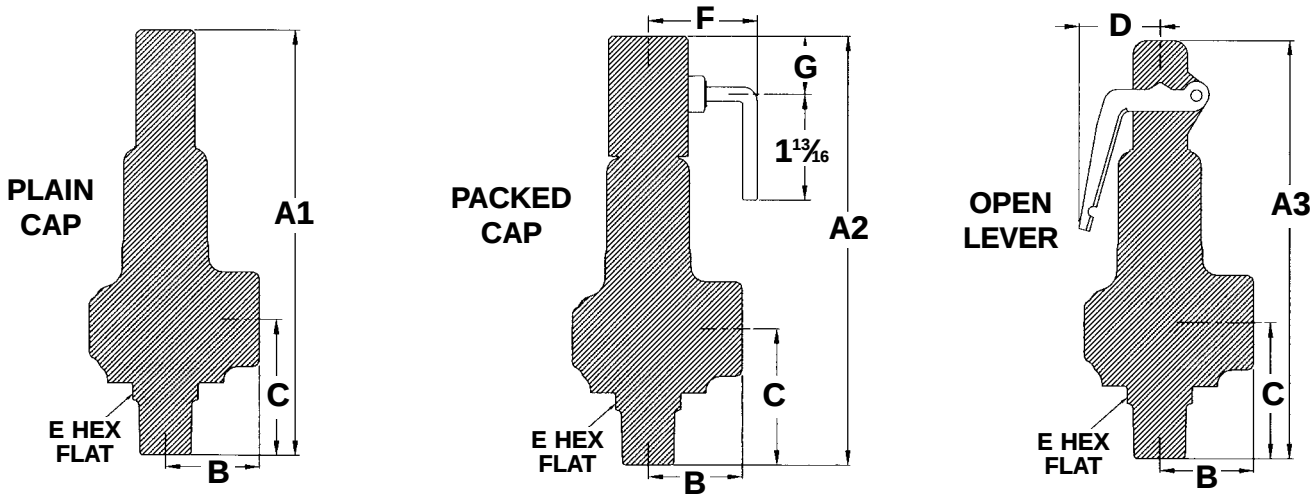
Maximum Backpressure (Plain/Packed Cap) - 50 PSIG (3.45 barg)
Vacuum Pressure Range - 10 to 30" HG (3.38.64 to 1015.92 mbarg)

[1] Maximum pressure for steam is 300 PSIG (20.67 barg).
[2] Maximum pressure for steam is 250 PSIG (17.4 barg).

FIGURE 800 SERIES

SPECIFICATION

The valve shall meet the ASME Section VIII code for liquid, steam, air and gas services. It shall be "UV" National Board Certified. It shall have non-adjustable blowdown that shall be less than 10% for steam, air or gas and less than 20% for liquid. The valve shall consist of a unitized bonnet design guaranteeing proper guiding and making the valve extremely dependable in terms of pop action, seat tightness and repeatability. The disc shall have a pivoting design which optimizes the seating performance. The valve shall have a full nozzle for optimum flow performance. Internal trim (excepting the base) shall be stainless steel. The valve shall meet the API 527 leakage standard requiring bubble tight shutoff up to 90% of set pressure.



DIMENSIONS* inches (mm) **AND WEIGHTS** pounds (kg)

Model	Inlet	Orifice	Outlet	A1	A2	A3	B	C	D(1)	E	F	G	Weight
8**+DCA	½ (15)	D	1 (25)	7⅜ (18.73)	7⅜ (18.73)	7⅛ (18.10)	1⅜ (3.49)	2¼ (5.72)	1 13/32 (3.57)	1⅛ (2.86)	1 15/16 (4.92)	½ (1.27)	2.50 (1.13)
8**+EDA	¾ (20)	E	1¼ (32)	8⅞ (22.54)	8⅞ (22.54)	8¾ (22.23)	1⅝ (4.13)	2 5/16 (5.87)	1 13/32 (3.57)	1¼ (3.18)	1 15/16 (4.92)	1 1/16 (2.70)	4.50 (2.04)
8**+FEA	1 (25)	F	1½ (40)	9⅞ (25.08)	9⅞ (25.08)	9¾ (24.77)	1⅞ (4.76)	2 13/16 (7.14)	2¼ (5.72)	1½ (3.81)	1 15/16 (4.92)	1 1/16 (2.70)	7.00 (3.18)
8**+GFA	1¼ (32)	G	2 (50)	12 (30.48)	12 (30.48)	11⅞ (30.16)	2⅛ (5.40)	3 (7.62)	2¼ (5.72)	1⅞ (4.76)	2⅛ (5.40)	1¾ (4.45)	11.50 (5.22)
8**+HGA	1½ (40)	H	2½ (65)	13⅜ (33.97)	13⅜ (33.97)	13¼ (33.66)	2 9/16 (6.51)	3½ (8.89)	3 (7.62)	2½ (6.35)	2⅛ (5.40)	1¾ (4.45)	17.00 (7.71)

*Accurate to ±1/8". **Use appropriate model number. (1) Add 50% to D Dimension when lever is pulled out to manually operate valve.
+Use appropriate Cap Letter

CODE SELECTION CHART

Model			Cap	Orifice	Inlet Size	Connections	Service		Set Pressure		
8	1	0	N	D	C	A	- A		0	2	5
1	2	3	4	5	6	7	8		9	10	11

Model -
Position 1, 2 & 3
- 810 = Bronze Bonnet & Base, SS Disc
- 812 = EPDM Seat on 810
- 814 = Viton Seat on 810
- 816 = TFE/25% Glass Seat on 810
- 820 = Bronze Bonnet, SS Base & Disc
- 822 = EPDM Seat on 820
- 824 = Viton Seat on 820
- 826 = TFE/25% Glass Seat on 820
- 860 = 316 SS Bonnet, Base & Disc
- 862 = EPDM Seat on 860
- 864 = Viton Seat on 860
- 866 = Teflon Seat on 860

Cap -
Position 4
- N = Plain Cap
- E = Open Lever
- P = Packed Cap

Orifice -
Position 5
- D
- E
- F
- G
- H

Inlet Size -
Position 6
- C = ½
- D = ¾
- E = 1
- F = 1¼
- G = 1½

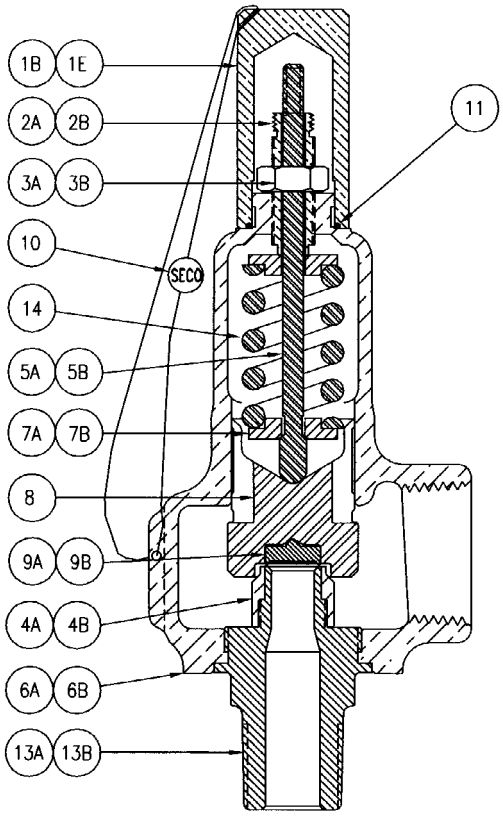
Connections -
Position 7
- A = MPT x FTP
- F = MBSP x FBSP
- Z = Other

Service -
Position 8
- A = Air/Gas Sect. VIII
- M = Steam Non-code
- N = Air/Gas Non-code
- P = Liquid Non-code
- T = Steam Sect. VIII
- V = Vacuum
- W = Liquid Sect. VIII
- G = *Loosely Assembled Gas*†
- X = *Loosely Assembled Liquid*†
- Z = Other

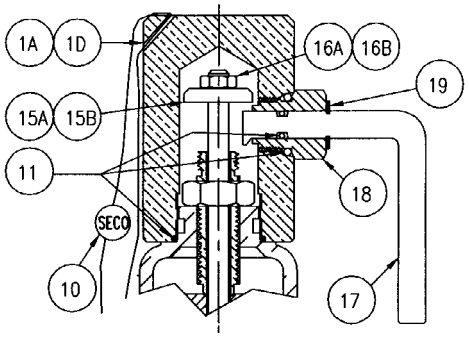
Set Pressure -
Position 9, 10 & 11
__ __ __ = Actual Setting
LAS - Loosely Assembled†

† Spence Certified Assemblers Only

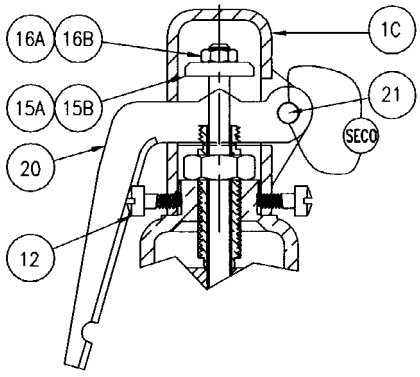
FIGURE 800 SERIES



PLAIN CAP VALVE



PACKED CAP OPTION



OPEN LEVER OPTION

MATERIALS OF CONSTRUCTION

Ref	Part Name	Material
1A	Cap - Packed	Brass ASTM B16
1B	Cap - Plain	Brass ASTM B16
1C	Cap - Open Lever	Zinc Alloy
1D	Cap - Packed (860 Series)	316 SST ASTM A276
1E	Cap - Plain (860 Series)	316 SST ASTM A276
2A	Adjusting Bolt	Brass ASTM B16
2B	Adjusting Bolt (860 Series)	316 SST ASTM A276
3A	Adjusting Bolt Locknut	303 SST ASTM A582
3B	Adjusting Bolt Locknut (860 Series)	316 SST ASTM A276
4A	Base Ring (Liquid Only)	Brass ASTM B16
4B	Base Ring (Liquid Only - Series 860)	316 SST ASTM A276
5A	Spindle	304 SST ASTM A479
5B	Spindle (860 Series)	316 SST ASTM A276
6A	Bonnet	Bronze ASME SB62
6B	Bonnet	316 SST ASTM A351 CF8M
7A	Spring Washer	303 SST ASTM A582
7B	Spring Washer (860 Series)	316 SST ASTM A276
8	Disc Holder - Metal/Soft[1]	316 SST ASTM A351 CF8M
9A	Disc - Metal	316 SST ASTM A276
9B	Disc Assembly - Soft	316SST - EPDM/Viton/TFE
10	Seal and Wire	Lead and SST
11	O-rings, various[3]	Buna-N/TFE
12	Lock Screw	Plated Steel
13A	Base[2]	Brass/Brz, ASTM B283/ASME SB62
13B	Base[2] (820 & 860 Series)	316 SST ASTM A276
14	Spring	316 SST or 302 SST or 17-7 SST
15A	Spindle Nut	Steel
15B	Spindle Nut (860 Series)	316 SST ASTM A276
16A	Spindle Nut Locknut	Plated Steel
16B	Spindle Nut Locknut (860 Series)	316 SST ASTM A582
17	Lifting Lever Packed Cap	316 SST ASTM A276
18	Packed Cap Plug	316 SST ASTM A276
19	Cap Snap Ring	SST AMS 5813, S15700
20	Lifting Lever Open Cap	Plated Steel
21	Lifting Cap Pin Open Lever	Steel
22	Nameplate (Not Shown)	SST
23	Drive Screw (Not Shown)	SST

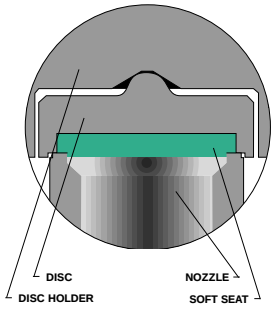
(1) ½, ¾ & 1 (15, 20, 25 mm) Metal and Soft Seat disc holders are different. 1¼ & 1½ (32 & 40mm) disc holders are identical.

(2) ½ & ¾ (15, 20 mm) Gas and Liquid bases are identical. 1, 1¼ & 1½ (25, 32 & 40 mm) Liquid Bases differ from Gas bases.

(3) TFE cap o-ring for models 816, 826, 866.

FIGURE 800 SERIES SOFT SEATS

Safety Valves with metal seats will start to leak at 90% of set pressure. A Spence Safety Valve equipped with a soft seat seals on both the metal and soft seats (see illustration). As a result, it will not begin to leak until system pressure reaches 95% of set pressure, minimizing system energy loss.



The o-rings in standard soft seat safety valves tend to blow out during discharge. Spence Soft Seat Safety Valves utilize a flat soft seat insert in the disc assembly of the valve that stays in place during operation, thus providing hassle-free operation.

There are many troublesome applications where using a Spence Soft Seat Safety Valve can reduce costly downtime and repair costs. Consider a Spence Soft Seat Safety Valve for:

- Operating very close to set pressure
- Heavy vibration
- Hard-to-hold fluids
- Occasional foreign particles
- Icing problems
- Pipe strain due to excessive discharge

SERVICE RECOMMENDATIONS*

EPDM Soft Seat

WET - -20 to 422°F (-29 to 216°C)
DRY - -20 to 250°F (-29 to121°C)

Acetone
Acetylene Gas
Beer
Bleach Liquor
Brake Fluid
Calcium Chloride
Carbon Monoxide
Carbonic Acid
Citric Acid
Denatured Alcohol
Ethylene Diamine
Freon 22
Hydrazine
Lindol Hydraulic Fluid
Lye
Methanol
Methyl Alcohol
Methyl Butyl Ketone
Nitrogen
STEAM
Sulfur Hexafluoride
WATER

Viton Soft Seat

-20 to 400°F (-29 to 204°C)

AIR
Benzoic Acid
Benzul Alcohol
Butane
Butyl Alcohol
Carbon Disulfide
Carbon Tetrachloride
Castor Oil
Chlorine
Chromic Acid
Corn Oil
Crude Oil
Diesel Oil
Dowtherm A
Ethane
Ethyl Alcohol
Ethyl Chloride
Ethylene
Ethylene Glycol
Fuel Oil
Gasoline
Glucose
Glycerin
Helium
Hydraulic Oil
Hydrogen Gas
Iodine
Kerosene
Linseed Oil
Methane
Mineral Oils
Natural Gas
Petroleum Oil
Propane
Propyl Alcohol
Propylene
Sulfur Dioxide
Turpentine

TFE/25% Glass Soft Seat

-400 to 400°F (-240 to 204°C)

Helium
Hydrogen
Nitrogen

*These recommendations should be used as a guide only. It is the sole responsibility of the user to select suitable materials.

SATURATED STEAM CAPACITY CHART
MODEL 800
ASME Section VIII "UV" 90% rated at 10% Overpressure LBS/HR (KGS/HR)
Flow Coefficient = .9 x .975 = .878

LBS/HR

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
5 *	122	217	341	557	870
10 *	149	265	416	679	1062
15	176	313	491	802	1254
20	203	361	566	925	1445
25	229	409	641	1047	1637
30	256	456	716	1170	1829
35	286	509	798	1305	2040
40	315	562	881	1440	2251
45	345	614	963	1575	2461
50	374	667	1046	1709	2672
55	404	720	1128	1844	2883
60	434	772	1211	1979	3094
65	463	825	1293	2114	3305
70	493	877	1376	2249	3516
75	522	930	1458	2384	3727
80	552	983	1541	2519	3937
85	581	1035	1623	2654	4148
90	611	1088	1706	2789	4359
95	640	1140	1788	2923	4570
100	670	1193	1871	3058	4781
105	699	1246	1953	3193	4992
110	729	1298	2036	3328	5203
115	758	1351	2118	3463	5414
120	788	1404	2201	3598	5624
125	818	1456	2283	3733	5835
130	847	1509	2366	3868	6046
135	877	1561	2448	4003	6257
140	906	1614	2531	4137	6468
145	936	1667	2614	4272	6679
150	965	1719	2696	4407	6890
155	995	1772	2779	4542	7100
160	1024	1825	2861	4677	7311
165	1054	1877	2944	4812	7522
170	1083	1930	3026	4947	7733
175	1113	1982	3109	5082	7944
180	1143	2035	3191	5217	8155
185	1172	2088	3274	5352	8366
190	1202	2140	3356	5486	8577
195	1231	2193	3439	5621	8787
200	1261	2246	3521	5756	8998
205	1290	2298	3604	5891	9209
210	1320	2351	3686	6026	9420
215	1349	2403	3769	6161	9631
220	1379	2456	3851	6296	9842
225	1408	2509	3934	6431	10053
230	1438	2561	4016	6566	10263
235	1468	2614	4099	6700	10474
240	1497	2667	4181	6835	10685
245	1527	2719	4264	6970	10896
250	1556	2772	4346	7105	11107
255	1586	2824	4429	7240	11318
260	1615	2877	4511	7375	11529
265	1645	2930	4594	7510	11740
270	1674	2982	4676	7645	11950
275	1704	3035	4759	7780	12161
280	1733	3088	4841	7914	12372
285	1763	3140	4924	8049	12583
290	1793	3193	5007	8184	12794
295	1822	3245	5089	8319	13005
300	1852	3298	5172	8454	13216
1.0	6.0	10.5	16.5	27.0	42.2

KGS/HR

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
0.4*	57	102	160	261	409
0.6*	64	115	180	294	459
0.8*	71	127	199	326	509
1*	78	140	219	358	560
1.2	86	152	239	390	610
1.4	93	165	259	423	661
1.6	100	177	278	455	711
1.8	107	190	298	487	762
2	114	203	318	519	812
2.2	121	216	339	554	866
2.4	129	230	360	589	921
2.6	137	244	382	625	977
2.8	145	258	404	660	1032
3	152	271	426	696	1088
3.2	160	285	447	731	1143
3.4	168	299	469	767	1199
3.6	176	313	491	802	1254
3.8	183	327	512	838	1309
4	191	341	534	873	1365
4.2	199	354	556	909	1420
4.4	207	368	578	944	1476
4.6	215	382	599	980	1531
4.8	222	396	621	1015	1587
5	230	410	643	1051	1642
5.2	238	424	664	1086	1698
5.4	246	438	686	1122	1753
5.6	253	451	708	1157	1809
5.8	261	465	729	1192	1864
6	269	479	751	1228	1920
6.2	277	493	773	1263	1975
6.4	284	507	795	1299	2031
6.6	292	521	816	1334	2086
7	308	548	860	1405	2197
7.5	327	583	914	1494	2336
8	347	617	968	1583	2474
8.5	366	652	1022	1671	2613
9	386	687	1077	1760	2752
9.5	405	721	1131	1849	2890
10	424	756	1185	1938	3029
10.5	444	790	1240	2026	3168
11	463	825	1294	2115	3306
11.5	483	860	1348	2204	3445
12	502	894	1402	2292	3584
12.5	522	929	1457	2381	3722
13	541	964	1511	2470	3861
13.5	560	998	1565	2559	4000
14	580	1033	1619	2647	4138
14.5	599	1067	1674	2736	4277
15	619	1102	1728	2825	4416
15.5	638	1137	1782	2913	4554
16	658	1171	1836	3002	4693
16.5	677	1206	1891	3091	4832
17	696	1240	1945	3179	4970
17.5	716	1275	1999	3268	5109
18	735	1310	2053	3357	5248
18.5	755	1344	2108	3446	5386
19	774	1379	2162	3534	5525
19.5	794	1413	2216	3623	5664
20	813	1448	2271	3712	5802
20.5	832	1483	2325	3800	5941
0.1	3.9	6.9	10.9	17.7	27.7

* Pressure settings below 15 PSIG (1.034 barg) are non code.

AIR CAPACITY CHART – MODEL 800

ASME Section VIII "UV"
90% rated at 10% Overpressure SCFM at 60°F **
Flow Coefficient = .9 x .975 = .878

SCFM

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
5 *	43	77	121	198	310
10 *	53	94	148	242	378
15	63	111	175	285	446
20	72	128	201	329	514
25	82	145	228	373	583
30	91	162	255	416	651
35	102	181	284	464	726
40	112	200	313	512	801
45	123	219	343	560	876
50	133	237	372	608	951
55	144	256	402	656	1026
60	154	275	431	704	1101
65	165	294	460	753	1176
70	175	312	490	801	1251
75	186	331	519	849	1326
80	196	350	548	897	1402
85	207	368	578	945	1477
90	217	387	607	993	1552
95	228	406	637	1041	1627
100	238	425	666	1089	1702
105	249	443	695	1137	1777
110	259	462	725	1185	1852
115	270	481	754	1233	1927
120	280	500	783	1281	2002
125	291	518	813	1329	2077
130	302	537	842	1377	2152
135	312	556	872	1425	2227
140	323	575	901	1473	2302
145	333	593	930	1521	2377
150	344	612	960	1569	2452
155	354	631	989	1617	2527
160	365	649	1018	1665	2602
165	375	668	1048	1713	2677
170	386	687	1077	1761	2753
175	396	706	1106	1809	2828
180	407	724	1136	1857	2903
185	417	743	1165	1905	2978
190	428	762	1195	1953	3053
195	438	781	1224	2001	3128
200	449	799	1253	2049	3203
205	459	818	1283	2097	3278
210	470	837	1312	2145	3353
215	480	855	1341	2193	3428
220	491	874	1371	2241	3503
225	501	893	1400	2289	3578
230	512	912	1430	2337	3653
235	522	930	1459	2385	3728
240	533	949	1488	2433	3803
245	543	968	1518	2481	3878
250	554	987	1547	2529	3953
255	564	1005	1576	2577	4028
260	575	1024	1606	2625	4104
265	585	1043	1635	2673	4179
270	596	1062	1665	2721	4254
275	606	1080	1694	2769	4329
280	617	1099	1723	2817	4404
285	628	1118	1753	2865	4479
290	638	1136	1782	2913	4554
295	649	1155	1811	2961	4629
300	659	1174	1841	3009	4704
1.0	2.2	3.6	6.0	9.6	15.0

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
305	670	1099	1723	2817	4404
310	680	1116	1750	2861	4472
315	691	1133	1777	2904	4540
320	701	1249	1958	3201	5004
325	712	1268	1988	3249	5079
330	722	1286	2017	3297	5154
335	733	1305	2046	3345	5229
340	743	1324	2076	3393	5304
345	754	1342	2105	3441	5380
350	764	1361	2134	3489	5455
355	775	1380	2164	3537	5530
360	785	1399	2193	3585	5605
365	796	1417	2223	3633	5680
370	806	1436	2252	3681	5755
375	817	1455	2281	3729	5830
380	827	1474	2311	3777	5905
385	838	1492	2340	3825	5980
390	848	1511	2369	3873	6055
395	859	1530	2399	3921	6130
400	869	1549	2428	3969	6205
405	880	1567	2458	4017	6280
410	890	1586	2487	4065	6355
415	901	1605	2516	4113	6430
420	911	1623	2546	4161	6505
425	922	1642	2575	4209	6580
430	933	1661	2604	4257	6655
435	943	1680	2634	4305	6731
440	954	1698	2663	4354	6806
445	964	1717	2693	4402	6881
450	975	1736	2722	4450	6956
455	985	1755	2751	4498	7031
460	996	1773	2781	4546	7106
465	1006	1792	2810	4594	7181
470	1017	1811	2839	4642	7256
475	1027	1829	2869	4690	7331
480	1038	1848	2898	4738	7406
485	1048	1867	2927	4786	7481
490	1059	1886	2957	4834	7556
495	1069	1904	2986	4882	7631
500	1080	1923	3016	4930	7706
505	1090	1942	3045	4978	-
510	1101	1961	3074	5026	-
515	1111	1979	3104	5074	-
520	1122	1998	3133	5122	-
525	1132	2017	3162	5170	-
530	1143	2036	3192	5218	-
535	1153	2054	3221	5266	-
540	1164	2073	3251	5314	-
545	1174	2092	3280	5362	-
550	1185	2110	3309	5410	-
555	1195	2129	3339	5458	-
560	1206	2148	3368	5506	-
565	1216	2167	3397	5554	-
570	1227	2185	3427	5602	-
575	1237	2204	3456	5650	-
580	1248	2223	3486	5698	-
585	1259	2242	3515	5746	-
590	1269	2260	3544	5794	-
595	1280	2279	3574	5842	-
600	1290	2298	3603	5890	-
1.0	2.2	3.6	6.0	9.6	15.0

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116
605	1301	2121
610	1311	2138
615	1322	2155
620	1332	2373
625	1343	2391
630	1353	2410
635	1364	2429
640	1374	2448
645	1385	2466
650	1395	2485
655	1406	2504
660	1416	2523
665	1427	2541
670	1437	2560
675	1448	2579
680	1458	2597
685	1469	2616
690	1479	2635
695	1490	2654
700	1500	2672
705	1511	2691
710	1521	2710
715	1532	2729
720	1542	2747
725	1553	2766
730	1563	2785
735	1574	2804
740	1585	2822
745	1595	2841
750	1606	2860
755	1616	2878
760	1627	2897
765	1637	2916
770	1648	2935
775	1658	2953
780	1669	2972
785	1679	2991
790	1690	3010
795	1700	3028
800	1711	3047
805	1721	3066
810	1732	3084
815	1742	3103
820	1753	3122
825	1763	3141
830	1774	3159
835	1784	3178
840	1795	3197
845	1805	3216
850	1816	3234
855	1826	3253
860	1837	3272
865	1847	3291
870	1858	3309
875	1868	3328
880	1879	3347
885	1889	3365
890	1900	3384
895	1911	3403
900	1921	3422
1.0	2.2	3.6

* Pressure settings below 15 PSIG (1.034 barg) are non code.

**For other temperatures, please use temperature correction factor.

AIR CAPACITY CHART – MODEL 800 – CONT'D.

ASME Section VIII "UV"

90% rated at 10% Overpressure NM³/HR at 15.68°C**

Flow Coefficient = .9 x .975 = .878

NM³/HR

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
0.4*	76	136	213	349	545
0.6*	86	153	240	392	612
0.8*	95	170	266	435	679
1*	105	186	292	478	747
1.2	114	203	318	521	814
1.4	123	220	345	564	881
1.6	133	237	371	607	948
1.8	142	253	397	650	1016
2	152	270	424	693	1083
2.2	162	288	452	738	1154
2.4	172	307	481	786	1228
2.6	182	325	510	833	1302
2.8	193	343	539	880	1376
3	203	362	568	928	1450
3.2	214	380	596	975	1524
3.4	224	399	625	1022	1598
3.6	234	417	654	1070	1672
3.8	245	436	683	1117	1746
4	255	454	712	1164	1820
4.2	265	473	741	1212	1894
4.4	276	491	770	1259	1968
4.6	286	510	799	1306	2042
4.8	296	528	828	1354	2116
5	307	547	857	1401	2190
5.2	317	565	886	1448	2264
5.4	328	583	915	1496	2338
5.6	338	602	944	1543	2412
5.8	348	620	973	1590	2486
6	359	639	1002	1637	2560
6.2	369	657	1031	1685	2634
6.4	379	676	1060	1732	2708
6.6	390	694	1088	1779	2782
6.8	400	713	1117	1827	2856
7	410	731	1146	1874	2930
7.2	421	750	1175	1921	3004
7.4	431	768	1204	1969	3077
7.6	442	786	1233	2016	3151
7.8	452	805	1262	2063	3225
8	462	823	1291	2111	3299
8.2	473	842	1320	2158	3373
8.4	483	860	1349	2205	3447
8.6	493	879	1378	2253	3521
8.8	504	897	1407	2300	3595
9	514	916	1436	2347	3669
9.2	524	934	1465	2394	3743
9.4	535	953	1494	2442	3817
9.6	545	971	1523	2489	3891
9.8	556	990	1552	2536	3965
10	566	1008	1581	2584	4039
10.2	576	1026	1609	2631	4113
10.4	587	1045	1638	2678	4187
10.6	597	1063	1667	2726	4261
10.8	607	1082	1696	2773	4335
11	618	1100	1725	2820	4409
11.2	628	1119	1754	2868	4483
11.4	638	1137	1783	2915	4557
11.6	649	1156	1812	2962	4631
11.8	659	1174	1841	3010	4705
12	670	1193	1870	3057	4779
12.2	680	1211	1899	3104	4853
0.1	5.2	9.2	14.6	23.6	37

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
12.4	690	1229	1928	3151	4927
12.6	701	1248	1957	3199	5001
12.8	711	1266	1986	3246	5074
13	721	1285	2015	3293	5148
13.5	747	1331	2087	3412	5333
14	773	1377	2159	3530	5518
14.5	799	1423	2232	3648	5703
15	825	1469	2304	3767	5888
15.5	851	1516	2376	3885	6073
16	877	1562	2449	4003	6258
16.5	903	1608	2521	4121	6443
17	929	1654	2594	4240	6628
17.5	955	1700	2666	4358	6813
18	980	1746	2738	4476	6998
18.5	1006	1792	2811	4595	7182
19	1032	1839	2883	4713	7367
19.5	1058	1885	2955	4831	7552
20	1084	1931	3028	4949	7737
20.5	1110	1977	3100	5068	7922
21	1136	2023	3172	5186	8107
21.5	1162	2069	3245	5304	8292
22	1188	2115	3317	5423	8477
22.5	1214	2162	3389	5541	8662
23	1240	2208	3462	5659	8847
23.5	1265	2254	3534	5777	9031
24	1291	2300	3607	5896	9216
24.5	1317	2346	3679	6014	9401
25	1343	2392	3751	6132	9586
25.5	1369	2438	3824	6251	9771
26	1395	2485	3896	6369	9956
26.5	1421	2531	3968	6487	10141
27	1447	2577	4041	6605	10326
27.5	1473	2623	4113	6724	10511
28	1499	2669	4185	6842	10696
28.5	1524	2715	4258	6960	10881
29	1550	2761	4330	7079	11065
29.5	1576	2808	4402	7197	11250
30	1602	2854	4475	7315	11435
30.5	1628	2900	4547	7433	11620
31	1654	2946	4620	7552	11805
31.5	1680	2992	4692	7670	11990
32	1706	3038	4764	7788	12175
32.5	1732	3084	4837	7907	12360
33	1758	3131	4909	8025	12545
33.5	1784	3177	4981	8143	12730
34	1809	3223	5054	8261	12915
34.5	1835	3269	5126	8380	13099
35	1861	3315	5198	8498	—
35.5	1887	3361	5271	8616	—
36	1913	3408	5343	8735	—
36.5	1939	3454	5416	8853	—
37	1965	3500	5488	8971	—
37.5	1991	3546	5560	9089	—
38	2017	3592	5633	9208	—
38.5	2043	3638	5705	9326	—
39	2069	3684	5777	9444	—
39.5	2094	3731	5850	9563	—
40	2120	3777	5922	9681	—
40.5	2146	3823	5994	9799	—
41	2172	3869	6067	9917	—
0.1	5.2	9.2	14.6	23.6	37

Set Pressure Barg	Orifice Area cm² D .766	E 1.365
41.5	2198	3915
42	2224	3961
42.5	2250	4007
43	2276	4054
43.5	2302	4100
44	2328	4146
44.5	2354	4192
45	2379	4238
45.5	2405	4284
46	2431	4330
46.5	2457	4377
47	2483	4423
47.5	2509	4469
48	2535	4515
48.5	2561	4561
49	2587	4607
49.5	2613	4653
50	2639	4700
50.5	2664	4746
51	2690	4792
51.5	2716	4838
52	2742	4884
52.5	2768	4930
53	2794	4976
53.5	2820	5023
54	2846	5069
54.5	2872	5115
55	2898	5161
55.5	2923	5207
56	2949	5253
56.5	2975	5299
57	3001	5346
57.5	3027	5392
58	3053	5438
58.5	3079	5484
59	3105	5530
59.5	3131	5576
60	3157	5622
60.5	3183	5669
61	3208	5715
61.5	3234	5761
62	3260	5807
0.1	5.2	9.2

* Pressure settings below 15 PSIG (1.034 barg) are non code.

**For other temperatures, please use temperature correction factor.

WATER CAPACITY CHART – MODEL 800

ASME Section VIII "UV"
90% rated at 10% Overpressure GPM at 60°F**
Flow Coefficient = .9 x .836 = .752

GPM

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
5 *	9.6	17.1	26.8	43.9	68.6
10 *	12.3	21.8	34.2	55.9	87.4
15	14.4	25.7	40.3	65.8	102.9
20	16.3	29.0	45.5	74.4	116.3
25	18.0	32.0	50.2	82.1	128.3
30	19.5	34.8	54.5	89.1	139.3
35	21.1	37.6	58.9	96.3	150.5
40	22.5	40.1	63.0	102.9	160.9
45	23.9	42.6	66.8	109.2	170.6
50	25.2	44.9	70.4	115.1	179.9
55	26.4	47.1	73.8	120.7	188.7
60	27.6	49.2	77.1	126.0	197.0
65	28.7	51.2	80.3	131.2	205.1
70	29.8	53.1	83.3	136.1	212.8
75	30.9	55.0	86.2	140.9	220.3
80	31.9	56.8	89.0	145.5	227.5
85	32.9	58.5	91.8	150.0	234.5
90	33.8	60.2	94.4	154.4	241.3
95	34.7	61.9	97.0	158.6	247.9
100	35.6	63.5	99.5	162.7	254.4
105	36.5	65.1	102.0	166.7	260.7
110	37.4	66.6	104.4	170.7	266.8
115	38.2	68.1	106.7	174.5	272.8
120	39.0	69.5	109.0	178.3	278.7
125	39.8	71.0	111.3	181.9	284.4
130	40.6	72.4	113.5	185.5	290.0
135	41.4	73.8	115.7	189.1	295.6
140	42.2	75.1	117.8	192.5	301.0
145	42.9	76.4	119.9	195.9	306.3
150	43.7	77.7	121.9	199.3	311.6
155	44.4	79.0	123.9	202.6	316.7
160	45.1	80.3	125.9	205.8	321.8
165	45.8	81.5	127.9	209.0	326.8
170	46.5	82.8	129.8	212.2	331.7
175	47.1	84.0	131.7	215.3	336.5
180	47.8	85.2	133.6	218.3	341.3
185	48.5	86.3	135.4	221.3	346.0
190	49.1	87.5	137.2	224.3	350.6
195	49.8	88.6	139.0	227.2	355.2
200	50.4	89.8	140.8	230.1	359.7
205	51.0	90.9	142.5	233.0	364.2
210	51.6	92.0	144.3	235.8	368.6
215	52.3	93.1	146.0	238.6	373.0
220	52.9	94.2	147.6	241.4	377.3
225	53.5	95.2	149.3	244.1	381.6
230	54.1	96.3	151.0	246.8	385.8
235	54.6	97.3	152.6	249.5	390.0
240	55.2	98.3	154.2	252.1	394.1
245	55.8	99.4	155.8	254.7	398.2
250	56.4	100.4	157.4	257.3	402.2
255	56.9	101.4	159.0	259.9	406.2
260	57.5	102.4	160.5	262.4	410.2
265	58.0	103.3	162.0	264.9	414.1
270	58.6	104.3	163.6	267.4	418.0
275	59.1	105.3	165.1	269.9	421.8
280	59.6	106.2	166.6	272.3	425.7
285	60.2	107.2	168.0	274.7	429.4
290	60.7	108.1	169.5	277.1	433.2
295	61.2	109.0	171.0	279.5	436.9
300	61.7	110.0	172.4	281.9	440.6
1.0	0.10	0.20	0.28	0.48	0.74

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
305	62.2	110.9	173.8	284.2	444.3
310	62.8	111.8	175.3	286.5	447.9
315	63.3	112.7	176.7	288.8	451.5
320	63.8	113.6	178.1	291.1	455.0
325	64.3	114.4	179.5	293.4	458.6
330	64.7	115.3	180.8	295.6	462.1
335	65.2	116.2	182.2	297.8	465.6
340	65.7	117.1	183.6	300.1	469.1
345	66.2	117.9	184.9	302.3	472.5
350	66.7	118.8	186.2	304.4	475.9
355	67.2	119.6	187.6	306.6	479.3
360	67.6	120.4	188.9	308.8	482.7
365	68.1	121.3	190.2	310.9	486.0
370	68.6	122.1	191.5	313.0	489.3
375	69.0	122.9	192.8	315.1	492.6
380	69.5	123.8	194.0	317.2	495.9
385	69.9	124.6	195.3	319.3	499.1
390	70.4	125.4	196.6	321.4	502.4
395	70.8	126.2	197.8	323.4	505.6
400	71.3	127.0	199.1	325.5	508.8
405	71.7	127.8	200.3	327.5	511.9
410	72.2	128.5	201.6	329.5	515.1
415	72.6	129.3	202.8	331.5	518.2
420	73.0	130.1	204.0	333.5	521.3
425	73.5	130.9	205.2	335.5	524.4
430	73.9	131.6	206.4	337.4	527.5
435	74.3	132.4	207.6	339.4	530.6
440	74.8	133.2	208.8	341.3	533.6
445	75.2	133.9	210.0	343.3	536.6
450	75.6	134.7	211.2	345.2	539.6
455	76.0	135.4	212.3	347.1	542.6
460	76.4	136.2	213.5	349.0	545.6
465	76.9	136.9	214.7	350.9	548.5
470	77.3	137.6	215.8	352.8	551.5
475	77.7	138.4	217.0	354.7	554.4
480	78.1	139.1	218.1	356.5	557.3
485	78.5	139.8	219.2	358.4	560.2
490	78.9	140.5	220.4	360.2	563.1
495	79.3	141.2	221.5	362.0	566.0
500	79.7	142.0	222.6	363.9	568.8
505	80.1	142.7	223.7	365.7	-
510	80.5	143.4	224.8	367.5	-
515	80.9	144.1	225.9	369.3	-
520	81.3	144.8	227.0	371.1	-
525	81.7	145.5	228.1	372.9	-
530	82.1	146.1	229.2	374.6	-
535	82.4	146.8	230.2	376.4	-
540	82.8	147.5	231.3	378.1	-
545	83.2	148.2	232.4	379.9	-
550	83.6	148.9	233.5	381.6	-
555	84.0	149.6	234.5	383.4	-
560	84.3	150.2	235.6	385.1	-
565	84.7	150.9	236.6	386.8	-
570	85.1	151.6	237.7	388.5	-
575	85.5	152.2	238.7	390.2	-
580	85.8	152.9	239.7	391.9	-
585	86.2	153.5	240.8	393.6	-
590	86.6	154.2	241.8	395.3	-
595	86.9	154.9	242.8	396.9	-
600	87.3	155.5	243.8	398.6	-
1.0	0.10	0.20	0.28	0.48	0.74

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116
605	87.7	156.1
610	88.0	156.8
615	88.4	157.4
620	88.7	158.1
625	89.1	158.7
630	89.5	159.3
635	89.8	160.0
640	90.2	160.6
645	90.5	161.2
650	90.9	161.8
655	91.2	162.5
660	91.6	163.1
665	91.9	163.7
670	92.3	164.3
675	92.6	164.9
680	92.9	165.5
685	93.3	166.1
690	93.6	166.8
695	94.0	167.4
700	94.3	168.0
705	94.6	168.6
710	95.0	169.2
715	95.3	169.7
720	95.6	170.3
725	96.0	170.9
730	96.3	171.5
735	96.6	172.1
740	97.0	172.7
745	97.3	173.3
750	97.6	173.9
755	97.9	174.4
760	98.3	175.0
765	98.6	175.6
770	98.9	176.2
775	99.2	176.7
780	99.5	177.3
785	99.9	177.9
790	100.2	178.4
795	100.5	179.0
800	100.8	179.6
805	101.1	180.1
810	101.4	180.7
815	101.7	181.2
820	102.1	181.8
825	102.4	182.3
830	102.7	182.9
835	103.0	183.4
840	103.3	184.0
845	103.6	184.5
850	103.9	185.1
855	104.2	185.6
860	104.5	186.2
865	104.8	186.7
870	105.1	187.2
875	105.4	187.8
880	105.7	188.3
885	106.0	188.9
890	106.3	189.4
895	106.6	189.9
900	106.9	190.4
1.0	0.10	0.20

* Pressure settings below 15 PSIG (1.034 barg) are non code.

**For other temperatures, please use temperature correction factor.

WATER CAPACITY CHART – MODEL 800 – CONT'D.

ASME Section VIII "UV"

90% rated at 10% Overpressure NM³/HR at 15.68°C**

Flow Coefficient = .9 x .836 = .752

NM³/HR

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
0.4*	2.3	4.1	6.4	10.5	16.3
0.6*	2.6	4.7	7.4	12.1	18.8
0.8*	2.9	5.3	8.2	13.5	21
1*	3.2	5.8	9	14.7	23
1.2	3.5	6.2	9.7	15.9	24.9
1.4	3.7	6.6	10.4	17	26.6
1.6	4	7	11	18	28.2
1.8	4.2	7.4	11.6	19	29.7
2	4.4	7.8	12.2	19.9	31.2
2.2	4.6	8.1	12.8	20.9	32.6
2.4	4.8	8.5	13.3	21.8	34.1
2.6	5	8.9	13.9	22.7	35.5
2.8	5.2	9.2	14.4	23.5	36.8
3	5.3	9.5	14.9	24.4	38.1
3.2	5.5	9.8	15.4	25.2	39.4
3.4	5.7	10.1	15.9	25.9	40.6
3.6	5.8	10.4	16.3	26.7	41.7
3.8	6	10.7	16.8	27.4	42.9
4	6.2	11	17.2	28.1	44
4.2	6.3	11.3	17.6	28.8	45.1
4.4	6.5	11.5	18.1	29.5	46.1
4.6	6.6	11.8	18.5	30.2	47.2
4.8	6.8	12	18.9	30.8	48.2
5	6.9	12.3	19.2	31.5	49.2
5.2	7	12.5	19.6	32.1	50.2
5.4	7.2	12.8	20	32.7	51.1
5.6	7.3	13	20.4	33.3	52.1
5.8	7.4	13.2	20.7	33.9	53
6	7.5	13.4	21.1	34.5	53.9
6.2	7.7	13.7	21.4	35	54.8
6.4	7.8	13.9	21.8	35.6	55.7
6.6	7.9	14.1	22.1	36.2	56.5
6.8	8	14.3	22.4	36.7	57.4
7	8.2	14.5	22.8	37.2	58.2
7.2	8.3	14.7	23.1	37.8	59
7.4	8.4	14.9	23.4	38.3	59.8
7.6	8.5	15.1	23.7	38.8	60.6
7.8	8.6	15.3	24	39.3	61.4
8	8.7	15.5	24.3	39.8	62.2
8.2	8.8	15.7	24.7	40.3	63
8.4	8.9	15.9	24.9	40.8	63.8
8.6	9	16.1	25.2	41.3	64.5
8.8	9.1	16.3	25.5	41.7	65.3
9	9.2	16.5	25.8	42.2	66
9.2	9.3	16.7	26.1	42.7	66.7
9.4	9.4	16.8	26.4	43.1	67.4
9.6	9.5	17	26.7	43.6	68.2
9.8	9.6	17.2	26.9	44.1	68.9
10	9.7	17.4	27.2	44.5	69.6
10.2	9.8	17.5	27.5	44.9	70.3
10.4	9.9	17.7	27.8	45.4	70.9
10.6	10	17.9	28	45.8	71.6
10.8	10.1	18	28.3	46.2	72.3
11	10.2	18.2	28.6	46.7	73
11.2	10.3	18.4	28.8	47.1	73.6
11.4	10.4	18.5	29.1	47.5	74.3
11.6	10.5	18.7	29.3	47.9	74.9
11.8	10.6	18.9	29.6	48.3	75.6
12	10.7	19	29.8	48.7	76.2
12.2	10.8	19.2	30.1	49.2	76.8
.1	0.02	0.05	0.06	0.11	0.17

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
12.4	10.9	19.3	30.3	49.6	77.5
12.6	10.9	19.5	30.6	50	78.1
12.8	11	19.6	30.8	50.3	78.7
13	11.1	19.8	31	50.7	79.3
13.5	11.3	20.2	31.6	51.7	80.8
14	11.5	20.5	32.2	52.7	82.3
14.5	11.7	20.9	32.8	53.6	83.8
15	11.9	21.3	33.3	54.5	85.2
15.5	12.1	21.6	33.9	55.4	86.6
16	12.3	22	34.4	56.3	88
16.5	12.5	22.3	35	57.2	89.4
17	12.7	22.6	35.5	58	90.7
17.5	12.9	23	36	58.9	92
18	13.1	23.3	36.5	59.7	93.3
18.5	13.3	23.6	37	60.5	94.6
19	13.4	23.9	37.5	61.3	95.9
19.5	13.6	24.2	38	62.1	97.1
20	13.8	24.6	38.5	62.9	98.4
20.5	14	24.9	39	63.7	99.6
21	14.1	25.2	39.4	64.5	100.8
21.5	14.3	25.5	39.9	65.2	102
22	14.5	25.7	40.4	66	103.2
22.5	14.6	26	40.8	66.7	104.3
23	14.8	26.3	41.3	67.5	105.5
23.5	14.9	26.6	41.7	68.2	106.6
24	15.1	26.9	42.2	68.9	107.8
24.5	15.3	27.2	42.6	69.7	108.9
25	15.4	27.4	43	70.4	110
25.5	15.6	27.7	43.5	71.1	111.1
26	15.7	28	43.9	71.8	112.2
26.5	15.9	28.3	44.3	72.4	113.2
27	16	28.5	44.7	73.1	114.3
27.5	16.2	28.8	45.1	73.8	115.4
28	16.3	29	45.6	74.5	116.4
28.5	16.5	29.3	46	75.1	117.4
29	16.6	29.6	46.4	75.8	118.5
29.5	16.7	29.8	46.8	76.4	119.5
30	16.9	30.1	47.1	77.1	120.5
30.5	17	30.3	47.5	77.7	121.5
31	17.2	30.6	47.9	78.4	122.5
31.5	17.3	30.8	48.3	79	123.5
32	17.4	31.1	48.7	79.6	124.4
32.5	17.6	31.3	49.1	80.2	125.4
33	17.7	31.5	49.5	80.8	126.4
33.5	17.8	31.8	49.8	81.4	127.3
34	18	32	50.2	82.1	128.3
34.5	18.1	32.2	50.6	82.7	129.2
35	18.2	32.5	50.9	83.3	-
35.5	18.4	32.7	51.3	83.8	-
36	18.5	32.9	51.6	84.4	-
36.5	18.6	33.2	52	85	-
37	18.7	33.4	52.4	85.6	-
37.5	18.9	33.6	52.7	86.2	-
38	19	33.8	53.1	86.7	-
38.5	19.1	34.1	53.4	87.3	-
39	19.2	34.3	53.8	87.9	-
39.5	19.4	34.5	54.1	88.4	-
40	19.5	34.7	54.4	89	-
40.5	19.6	34.9	54.8	89.6	-
41	19.7	35.2	55.1	90.1	-
.1	0.02	0.05	0.06	0.11	0.17

Set Pressure Barg	Orifice Area cm² D .766	E 1.365
41.5	19.9	35.4
42	20	35.6
42.5	20.1	35.8
43	20.2	36
43.5	20.3	36.2
44	20.4	36.4
44.5	20.6	36.6
45	20.7	36.8
45.5	20.8	37
46	20.9	37.2
46.5	21	37.4
47	21.1	37.6
47.5	21.2	37.8
48	21.4	38
48.5	21.5	38.2
49	21.6	38.4
49.5	21.7	38.6
50	21.8	38.8
50.5	21.9	39
51	22	39.2
51.5	22.1	39.4
52	22.2	39.6
52.5	22.3	39.8
53	22.4	40
53.5	22.5	40.2
54	22.6	40.3
54.5	22.8	40.5
55	22.9	40.7
55.5	23	40.9
56	23.1	41.1
56.5	23.2	41.3
57	23.3	41.4
57.5	23.4	41.6
58	23.5	41.8
58.5	23.6	42
59	23.7	42.2
59.5	23.8	42.3
60	23.9	42.5
60.5	24	42.7
61	24.1	42.9
61.5	24.2	43.1
62	24.3	43.2
.1	0.02	0.05

* Pressure settings below 15 PSIG (1.034 barg) are non code.

**For other temperatures, please use temperature correction factor.

WATER CAPACITY CHART – MODEL 800 – CONT'D

NON CODE

90% rated at 25% Overpressure GPM at 60°F**

Flow Coefficient = .9 x .836 = .752

GPM

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
5	8.5	15.1	23.7	38.8	60.6
10	12.0	21.4	33.6	54.9	85.8
15	14.7	26.2	41.1	67.2	105.0
20	17.0	30.3	47.5	77.6	121.3
25	19.0	33.8	53.1	86.7	135.6
30	20.8	37.1	58.1	95.0	148.5
35	22.5	40.0	62.8	102.6	160.4
40	24.0	42.8	67.1	109.7	171.5
45	25.5	45.4	71.2	116.4	181.9
50	26.9	47.9	75.0	122.7	191.7
55	28.2	50.2	78.7	128.6	201.1
60	29.4	52.4	82.2	134.4	210.0
65	30.6	54.6	85.6	139.9	218.6
70	31.8	56.6	88.8	145.1	226.9
75	32.9	58.6	91.9	150.2	234.8
80	34.0	60.5	94.9	155.2	242.5
85	35.0	62.4	97.8	159.9	250.0
90	36.0	64.2	100.7	164.6	257.3
95	37.0	66.0	103.4	169.1	264.3
100	38.0	67.7	106.1	173.5	271.2
105	38.9	69.3	108.7	177.8	277.9
110	39.8	71.0	111.3	181.9	284.4
115	40.7	72.6	113.8	186.0	290.8
120	41.6	74.1	116.2	190.0	297.1
125	42.5	75.7	118.6	193.9	303.2
130	43.3	77.2	121.0	197.8	309.2
135	44.1	78.6	123.3	201.6	315.1
140	45.0	80.1	125.6	205.2	320.9
145	45.8	81.5	127.8	208.9	326.5
150	46.5	82.9	130.0	212.5	332.1
155	47.3	84.3	132.1	216.0	337.6
160	48.1	85.6	134.2	219.4	343.0
165	48.8	86.9	136.3	222.8	348.3
170	49.5	88.2	138.4	226.2	353.6
175	50.3	89.5	140.4	229.5	358.7
180	51.0	90.8	142.4	232.7	363.8
185	51.7	92.0	144.3	235.9	368.8
190	52.4	93.3	146.3	239.1	373.8
195	53.1	94.5	148.2	242.2	378.7
200	53.7	95.7	150.1	245.3	383.5
205	54.4	96.9	151.9	248.4	388.3
210	55.1	98.1	153.8	251.4	393.0
215	55.7	99.2	155.6	254.4	397.6
220	56.4	100.4	157.4	257.3	402.2
225	57.0	101.5	159.2	260.2	406.8
230	57.6	102.6	160.9	263.1	411.3
235	58.2	103.7	162.7	265.9	415.7
240	58.9	104.8	164.4	268.7	420.1
245	59.5	105.9	166.1	271.5	424.4
250	60.1	107.0	167.8	274.3	428.8
255	60.7	108.1	169.5	277.0	433.0
260	61.3	109.1	171.1	279.7	437.2
265	61.8	110.2	172.7	282.4	441.4
270	62.4	111.2	174.4	285.0	445.6
275	63.0	112.2	176.0	287.7	449.7
280	63.6	113.2	177.6	290.3	453.8
285	64.1	114.2	179.1	292.8	457.8
290	64.7	115.2	180.7	295.4	461.8
295	65.3	116.2	182.3	297.9	465.8
300	65.8	117.2	183.8	300.5	469.7
1.0	0.10	0.20	0.30	0.50	0.80

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
305	66.4	118.2	185.3	302.9	473.6
310	66.9	119.2	186.8	305.4	477.4
315	67.4	120.1	188.3	307.9	481.3
320	68.0	121.1	189.8	310.3	485.1
325	68.5	122.0	191.3	312.7	488.9
330	69.0	122.9	192.8	315.1	492.6
335	69.5	123.9	194.2	317.5	496.3
340	70.1	124.8	195.7	319.9	500.0
345	70.6	125.7	197.1	322.2	503.7
350	71.1	126.6	198.5	324.5	507.3
355	71.6	127.5	199.9	326.8	510.9
360	72.1	128.4	201.3	329.1	514.5
365	72.6	129.3	202.7	331.4	518.1
370	73.1	130.2	204.1	333.7	521.6
375	73.6	131.0	205.5	335.9	525.1
380	74.1	131.9	206.9	338.1	528.6
385	74.5	132.8	208.2	340.4	532.1
390	75.0	133.6	209.6	342.6	535.5
395	75.5	134.5	210.9	344.8	538.9
400	76.0	135.3	212.2	346.9	542.3
405	76.5	136.2	213.6	349.1	545.7
410	76.9	137.0	214.9	351.2	549.1
415	77.4	137.9	216.2	353.4	552.4
420	77.9	138.7	217.5	355.5	555.7
425	78.3	139.5	218.8	357.6	559.0
430	78.8	140.3	220.0	359.7	562.3
435	79.2	141.1	221.3	361.8	565.6
440	79.7	142.0	222.6	363.9	568.8
445	80.1	142.8	223.8	365.9	572.0
450	80.6	143.6	225.1	368.0	575.2
455	81.0	144.4	226.3	370.0	578.4
460	81.5	145.1	227.6	372.0	581.6
465	81.9	145.9	228.8	374.1	584.7
470	82.4	146.7	230.1	376.1	587.9
475	82.8	147.5	231.3	378.1	591.0
480	83.2	148.3	232.5	380.0	594.1
485	83.7	149.0	233.7	382.0	597.2
490	84.1	149.8	234.9	384.0	600.3
495	84.5	150.6	236.1	385.9	603.3
500	85.0	151.3	237.3	387.9	606.4
505	85.4	152.1	238.5	389.8	-
510	85.8	152.8	239.6	391.7	-
515	86.2	153.6	240.8	393.7	-
520	86.6	154.3	242.0	395.6	-
525	87.1	155.1	243.1	397.5	-
530	87.5	155.8	244.3	399.4	-
535	87.9	156.5	245.4	401.2	-
540	88.3	157.3	246.6	403.1	-
545	88.7	158.0	247.7	405.0	-
550	89.1	158.7	248.9	406.8	-
555	89.5	159.4	250.0	408.7	-
560	89.9	160.1	251.1	410.5	-
565	90.3	160.9	252.2	412.3	-
570	90.7	161.6	253.3	414.1	-
575	91.1	162.3	254.5	416.0	-
580	91.5	163.0	255.6	417.8	-
585	91.9	163.7	256.7	419.6	-
590	86.6	154.2	241.8	395.3	-
595	86.9	154.9	242.8	396.9	-
600	87.3	155.5	243.8	398.6	-
1.0	0.10	0.20	0.28	0.48	0.74

Set Pressure PSIG	Orifice Area in² D 0.1188	E 0.2116
605	93.5	166.5
610	93.8	167.1
615	94.2	167.8
620	94.6	168.5
625	95.0	169.2
630	95.4	169.9
635	95.7	170.5
640	96.1	171.2
645	96.5	171.9
650	96.9	172.5
655	97.2	173.2
660	97.6	173.9
665	98.0	174.5
670	98.3	175.2
675	98.7	175.8
680	99.1	176.5
685	99.4	177.1
690	99.8	177.8
695	100.2	178.4
700	100.5	179.0
705	100.9	179.7
710	101.2	180.3
715	101.6	181.0
720	101.9	181.6
725	102.3	182.2
730	102.7	182.8
735	103.0	183.5
740	103.4	184.1
745	103.7	184.7
750	104.1	185.3
755	104.4	185.9
760	104.7	186.6
765	105.1	187.2
770	105.4	187.8
775	105.8	188.4
780	106.1	189.0
785	106.5	189.6
790	106.8	190.2
795	107.1	190.8
800	107.5	191.4
805	107.8	192.0
810	108.1	192.6
815	108.5	193.2
820	108.8	193.8
825	109.1	194.4
830	109.5	195.0
835	109.8	195.5
840	110.1	196.1
845	110.4	196.7
850	110.8	197.3
855	111.1	197.9
860	111.4	198.5
865	111.7	199.0
870	112.1	199.6
875	112.4	200.2
880	112.7	200.7
885	113.0	201.3
890	113.3	201.3
895	113.7	202.5
900	114.0	203.0
1.0	0.10	0.20

**For other temperatures, please use temperature correction factor.

SPENCE

WATER CAPACITY CHART – MODEL 800 – CONT'D.

NON CODE

90% rated at 25% Overpressure NM³/HR at 15.6°C**

Flow Coefficient = .9 x .836 = .752

NM³/HR

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
0.4	2.3	4.1	6.4	10.5	16.3
0.6	2.6	4.7	7.4	12.1	18.8
0.8	2.9	5.3	8.2	13.5	21
1	3.3	5.9	9.2	15	23.5
1.2	3.6	6.4	10.1	16.4	25.7
1.4	3.9	6.9	10.9	17.7	27.7
1.6	4.2	7.4	11.6	19	29.7
1.8	4.4	7.9	12.3	20.1	31.5
2	4.6	8.3	13	21.2	33.2
2.2	4.9	8.7	13.6	22.2	34.8
2.4	5.1	9.1	14.2	23.2	36.3
2.6	5.3	9.4	14.8	24.2	37.8
2.8	5.5	9.8	15.4	25.1	39.2
3	5.7	10.1	15.9	26	40.6
3.2	5.9	10.5	16.4	26.8	41.9
3.4	6.1	10.8	16.9	27.7	43.2
3.6	6.2	11.1	17.4	28.5	44.5
3.8	6.4	11.4	17.9	29.2	45.7
4	6.6	11.7	18.4	30	46.9
4.2	6.7	12	18.8	30.7	48.1
4.4	6.9	12.3	19.2	31.5	49.2
4.6	7	12.6	19.7	32.2	50.3
4.8	7.2	12.8	20.1	32.9	51.4
5	7.3	13.1	20.5	33.5	52.4
5.2	7.5	13.3	20.9	34.2	53.5
5.4	7.6	13.6	21.3	34.9	54.5
5.6	7.8	13.8	21.7	35.5	55.5
5.8	7.9	14.1	22.1	36.1	56.5
6	8	14.3	22.5	36.7	57.4
6.2	8.2	14.6	22.8	37.4	58.4
6.4	8.3	14.8	23.2	37.9	59.3
6.6	8.4	15	23.6	38.5	60.2
6.8	8.6	15.3	23.9	39.1	61.2
7	8.7	15.5	24.3	39.7	62
7.2	8.8	15.7	24.6	40.3	62.9
7.4	8.9	15.9	25	40.8	63.8
7.6	9.1	16.1	25.3	41.4	64.6
7.8	9.2	16.3	25.6	41.9	65.5
8	9.3	16.6	26	42.4	66.3
8.2	9.4	16.8	26.3	43	67.2
8.4	9.5	17	26.6	43.5	68
8.6	9.6	17.2	26.9	44	68.8
8.8	9.7	17.4	27.2	44.5	69.6
9	9.9	17.6	27.5	45	70.4
9.2	10	17.8	27.8	45.5	71.1
9.4	10.1	17.9	28.1	46	71.9
9.6	10.2	18.1	28.4	46.5	72.7
9.8	10.3	18.3	28.7	47	73.4
10	10.4	18.5	29	47.4	74.2
10.2	10.5	18.7	29.3	47.9	74.9
10.4	10.6	18.9	29.6	48.4	75.6
10.6	10.7	19.1	29.9	48.8	76.3
10.8	10.8	19.2	30.2	49.3	77.1
11	10.9	19.4	30.4	49.8	77.8
11.2	11	19.6	30.7	50.2	78.5
11.4	11.1	19.8	31	50.6	79.2
11.6	11.2	19.9	31.3	51.1	79.9
11.8	11.3	20.1	31.5	51.5	80.6
12	11.4	20.3	31.8	52	81.2
12.2	11.5	20.4	32.1	52.4	81.9
.1	0.02	0.05	0.07	0.11	0.18

Set Pressure Barg	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
12.4	11.6	20.6	32.3	52.8	82.6
12.6	11.7	20.8	32.6	53.2	83.2
12.8	11.8	20.9	32.8	53.7	83.9
13	11.8	21.1	33.1	54.1	84.6
13.5	12.1	21.5	33.7	55.1	86.2
14	12.3	21.9	34.3	56.1	87.7
14.5	12.5	22.3	34.9	57.1	89.3
15	12.7	22.7	35.5	58.1	90.8
15.5	12.9	23	36.1	59.1	92.3
16	13.1	23.4	36.7	60	93.8
16.5	13.3	23.8	37.3	60.9	95.3
17	13.5	24.1	37.8	61.9	96.7
17.5	13.7	24.5	38.4	62.8	98.1
18	13.9	24.8	38.9	63.6	99.5
18.5	14.1	25.2	39.5	64.5	100.9
19	14.3	25.5	40	65.4	102.2
19.5	14.5	25.8	40.5	66.2	103.6
20	14.7	26.2	41	67.1	104.9
20.5	14.9	26.5	41.5	67.9	106.2
21	15.1	26.8	42.1	68.7	107.5
21.5	15.2	27.1	42.5	69.6	108.7
22	15.4	27.4	43	70.4	110
22.5	15.6	27.8	43.5	71.2	111.2
23	15.8	28.1	44	71.9	112.5
23.5	15.9	28.4	44.5	72.7	113.7
24	16.1	28.7	45	73.5	114.9
24.5	16.3	29	45.4	74.3	116.1
25	16.4	29.3	45.9	75	117.3
25.5	16.6	29.6	46.3	75.8	118.4
26	16.8	29.8	46.8	76.5	119.6
26.5	16.9	30.1	47.2	77.2	120.7
27	17.1	30.4	47.7	77.9	121.8
27.5	17.2	30.7	48.1	78.7	123
28	17.4	31	48.6	79.4	124.1
28.5	17.5	31.2	49	80.1	125.2
29	17.7	31.5	49.4	80.8	126.3
29.5	17.8	31.8	49.8	81.5	127.4
30	18	32.1	50.3	82.2	128.4
30.5	18.1	32.3	50.7	82.8	129.5
31	18.3	32.6	51.1	83.5	130.6
31.5	18.4	32.8	51.5	84.2	131.6
32	18.6	33.1	51.9	84.9	132.7
32.5	18.7	33.4	52.3	85.5	133.7
33	18.9	33.6	52.7	86.2	134.7
33.5	19	33.9	53.1	86.8	135.7
34	19.2	34.1	53.5	87.5	136.7
34.5	19.3	34.4	53.9	88.1	137.7
35	19.4	34.6	54.3	88.7	-
35.5	19.6	34.9	54.7	89.4	-
36	19.7	35.1	55.1	90	-
36.5	19.9	35.4	55.4	90.6	-
37	20	35.6	55.8	91.2	-
37.5	20.1	35.8	56.2	91.9	-
38	20.3	36.1	56.6	92.5	-
38.5	20.4	36.3	56.9	93.1	-
39	20.5	36.5	57.3	93.7	-
39.5	20.6	36.8	57.7	94.3	-
40	20.8	37	58	94.9	-
40.5	20.9	37.2	58.4	95.5	-
41	21	37.5	58.8	96.1	-
.1	0.02	0.05	0.07	0.11	0.18

Set Pressure Barg	Orifice Area cm² D .766	E 1.365
41.5	21.2	37.7
42	21.3	37.9
42.5	21.4	38.2
43	21.5	38.4
43.5	21.7	38.6
44	21.8	38.8
44.5	21.9	39
45	22	39.3
45.5	22.2	39.5
46	22.3	39.7
46.5	22.4	39.9
47	22.5	40.1
47.5	22.6	40.3
48	22.8	40.5
48.5	22.9	40.8
49	23	41
49.5	23.1	41.2
50	23.2	41.4
50.5	23.3	41.6
51	23.5	41.8
51.5	23.6	42
52	23.7	42.2
52.5	23.8	42.4
53	23.9	42.6
53.5	24	42.8
54	24.1	43
54.5	24.3	43.2
55	24.4	43.4
55.5	24.5	43.6
56	24.6	43.8
56.5	24.7	44
57	24.8	44.2
57.5	24.9	44.4
58	25	44.6
58.5	25.1	44.8
59	25.2	45
59.5	25.3	45.1
60	25.5	45.3
60.5	25.6	45.5
61	25.7	45.7
61.5	25.8	45.9
62	25.9	46.1
.1	0.02	0.05

**For other temperatures, please use temperature correction factor.

VACUUM CAPACITY CHART – MODEL 800

NON CODE – Plain or Packed Cap
90% rated SCFM (NM³/HR) at 60°F (15.6°C)**
Flow Coefficient = .9 x .975 = .878

SCFM

Set Pressure in.HG	Orifice Area in² D 0.1188	E 0.2116	F 0.3318	G 0.5424	H 0.8479
10	27	48	76	124	194
11	28	50	78	127	199
12	28	51	80	130	204
13	29	52	82	133	208
14	29	53	83	135	211
15	30	53	84	137	214
16	30	54	85	138	216
17	30	54	85	139	218
18	30	55	86	140	219
19	31	55	86	140	220
20	31	55	86	141	220
21	31	55	86	141	220
22	31	55	86	141	220
23	31	55	86	141	220
24	31	55	86	141	220
25	31	55	86	141	220
26	31	55	86	141	220
27	31	55	86	141	220
28	31	55	86	141	220
29	31	55	86	141	220
30	31	55	86	141	220

NM³/HR

Set Pressure mmHG	Orifice Area cm² D .766	E 1.365	F 2.141	G 3.499	H 5.47
254.0	46	82	129	211	330
279.4	48	85	133	216	338
304.8	48	87	136	221	347
330.2	49	88	139	226	353
355.6	49	90	141	229	358
381.0	51	90	143	233	364
406.4	51	92	144	234	367
431.8	51	92	144	236	370
457.2	51	93	146	238	372
482.6	53	93	146	238	374
508.0	53	93	146	240	374
533.4	53	93	146	240	374
558.8	53	93	146	240	374
584.2	53	93	146	240	374
609.6	53	93	146	240	374
635.0	53	93	146	240	374
660.4	53	93	146	240	374
685.8	53	93	146	240	374
711.2	53	93	146	240	374
736.6	53	93	146	240	374
762.0	53	93	146	240	374

** For other temperatures, please use temperature correction factor.

FIGURE 10 SERIES

SIZES ¾" – 3"
PRESSURES to 15 PSIG at 250°F

FIGURE 10 SERIES SAFETY VALVE

- **Meets ASME Section IV Code for Steam Service**
- **"HV" National Board Certified**
- **Low Cost**
- **High Capacity**
- **Dependable**
- **Tight Shutoff**
- **Sharp Popping and Closing Action**
- **High Degree of Repeatability**
- **Unitized Body**

MODELS

- 0010 - Cast Iron Body, Bronze Seats

APPLICATION DATA

- Industrial Low Pressure Steam Heating Boilers
- Commercial Low Pressure Steam Heating Boilers

VALVE RATINGS

Model	Pressure PSIG (bar)	Temperature °F (°C)
All	5 to 15 (.3 to 1)	-20 to 250 (-29 to 121)

APPLICABLE CODES

- ASME Section IV "HV" for Low Pressure Steam (when set @ 15 PSI)
- Canadian Registration #0G0591.9C

CODE SELECTION CHART

Model				Orifice	Inlet Size	Connec-tions	–	Set Pressure		
0	0	1	0	Z	H	A	-	0	1	5
1	2	3	4	5	6	7		8	9	10

Model -
Position 1, 2, 3 & 4
0010 = Cast Iron Body, Bronze Seats

Orifice -
Position 5
Z

Inlet Size -
Position 6
D = ¾
E = 1
F = 1¼
G = 1½
H = 2
J = 2½
K = 3

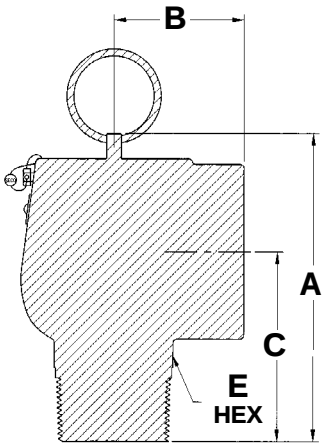
Connections -
Position 7
A = MPT x FPT

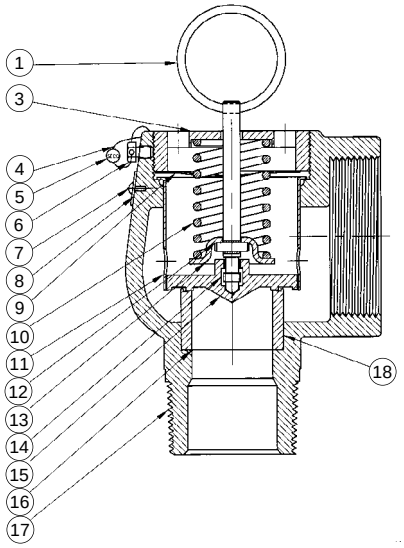
Set Pressure -
Position 8, 9 & 10
__ __ __ = Actual Setting

FIGURE 10 SERIES

SPECIFICATION

The valve shall meet the ASME Section IV Code for low pressure steam service. It shall be "HV" National Board Certified. The valve inlet and outlet shall be one integral casting assuring proper alignment of disc, seat and spindle for smooth action. The valve shall maintain a high degree of repeatability. The valve shall be top guided by a disc guide fitted into the body. The valve shall have an open lever assembly. The valve shall have a non-adjustable blowdown.





MATERIALS OF CONSTRUCTION

Ref	Part Name	Material
1	Pull Ring	SST
3	Compression Screw	Stl. plated CI ASTM A108/A126
4	Seal Wire	SST
5	Seal	Lead
6	Lock Screw	Brass ASTM B16
7	Drive Screw	SST
8	Nameplate	SST
9	Wave Washer	Plated Steel
10	Spring	Plated Steel
11	Disc Guide	Brass/Bronze ASTM B135/B505
12	Spindle Pin	Plated Steel
13	Spring Washer	Plated Steel
14	Spindle	Steel ASTM A108
15	Disc	Brass/Bronze ASTM B16/B62
16	Seat	Brass/Bronze ASTM B16/B505
17	Body	Cast Iron ASTM A126
18	Sealant	Sealant

DIMENSIONS inches (mm) **AND WEIGHTS** pounds (kg)

Model	Inlet	Orifice	Outlet	A*	B	C	E Hex	Weight
0010ZDA	¾ (20)	Z	1 (25)	3 5/16 (76)	1½ (38)	2 3/16 (56)	1¼ (32)	1 (.4)
0010ZEA	1 (25)	Z	1¼ (32)	4 (95)	2 (51)	2⅝ (67)	1½ (38)	2 (.9)
0010ZFA	1¼ (32)	Z	1½ (40)	5 (108)	2⅛ (54)	3 (76)	1⅞ (48)	3 (1.4)
0010ZGA	1½ (40)	Z	2 (50)	5⅛ (117)	2 3/16 (56)	3 3/16 (81)	2 (51)	4 (1.8)
0010ZHA	2 (50)	Z	2½ (65)	6 11/16 (156)	2⅞ (73)	4 (102)	3 (76)	8 (3.6)
0010ZJA	2½ (65)	Z	2½ (65)	8⅜ (194)	3⅜ (95)	4⅜ (111)	3¼ (83)	14 (6.3)
0010ZKA	3 (80)	Z	3 (80)	9½ (229)	3⅞ (98)	5⅛ (130)	4 (102)	22 (10)

* Add 1/4" to "A" dimension to allow for lift.

SATURATED STEAM CAPACITY CHART—MODEL 0010

ASME Section IV "HV" 90% rated at 33.3% Overpressure** LBS/HR (KGS/HR)

LBS/HR

Set Pressure PSIG	Valve & Orifice Area, in²						
	¾ Z 1	1 Z 1¼	1¼ Z 1½	1½ Z 2	2 Z 2½	2½ Z 2½	3 Z 3
	0.276	0.49	0.765	1.107	1.961	3.063	4.43
5*	243	431	673	974	1725	2694	3896
10*	318	565	883	1277	2263	3534	5112
15	394	700	1093	1581	2801	4375	6327

* Pressure settings below 15 PSIG (1.034 barg) are non code.

** Pressure settings below 15 PSIG (1 barg) are at 10% overpressure.

KGS/HR

Set Pressure Barg	Valve & Orifice Area cm²						
	20 Z 25	25 Z 32	32 Z 40	40 Z 50	50 Z 65	65 Z 65	80 Z 80
	1.78	3.16	4.94	7.14	12.65	19.76	25.58
0.4*	255	452	706	1022	1811	2828	4091
0.7*	321	569	889	1286	2279	3559	5148

Consult Factory for capacities below 5 PSIG

FIGURE 15 SERIES

SIZES ¾" – 3"
PRESSURES to 15 PSIG at 400°F

- **Air & Non-hazardous Service**
- **Low Cost**
- **High Capacity**
- **Cast Iron or Aluminum Body**
- **Dependable**
- **Tight Shutoff**
- **Sharp Popping & Closing Action**
- **High Degree of Repeatability**
- **Unitized Body**

FIGURE 15LC SAFETY VALVE

Application Data

- Bulk Hauling Railroad and Truck Tank Cars
- High Volume Blowers
- Compressors
- Dryers
- Pneumatic Equipment
- Tanks

Valve Ratings

Model	Pressure PSIG (bar)	Temperature °F (°C)
All	5 to 15 (.3 to 1)	-20 to 400 (-29 to 204)

Applicable Codes

- Canadian Registration #0G0591.9C — 015C, 015LC
  #0H0591.9C — 015A, 015LA

Options

- Stainless Trim
- Set Pressures 15 to 60 psi (Consult Factory)
- Polyurethane Soft Seat Available (Consult Factory)

Models

- 015C - Cast Iron Body, Bronze Seats, Pull Ring
- 015A - Cast Iron Body, Bronze Seats, Sealed Cap
- 15LC - Aluminum Body on 015C (2 x 2½ only)
- 15LA - Aluminum Body on 015A (2 x 2½ only)

CODE SELECTION CHART

Model			Orientation	Inlet Size	Connections	–	Set Pressure		
0	1	5	C	Z	K	A	- 0	1	5
1	2	3	4	5	6	7	8	9	10

Model -
Position 1, 2, 3 & 4
015C = Cast Iron Body, Brz Seats, Pull Ring
015A = Cast Iron Body, Brz Seats, Sealed Cap
15LC = Aluminum Body on 015C (2 x 2½ only)
15LA = Aluminum Body on 015A (2 x 2½ only)

Orifice -
Position 5
Z

Inlet Size -
Position 6
D = ¾
E = 1
F = 1¼
G = 1½
H = 2
J = 2½
K = 3

Connections -
Position 7
A = MPT x FPT

Set Pressure -
Position 8, 9 & 10
__ __ __ = Actual Setting
LAS - Loosely Assembled†

† Spence Certified Assemblers Only

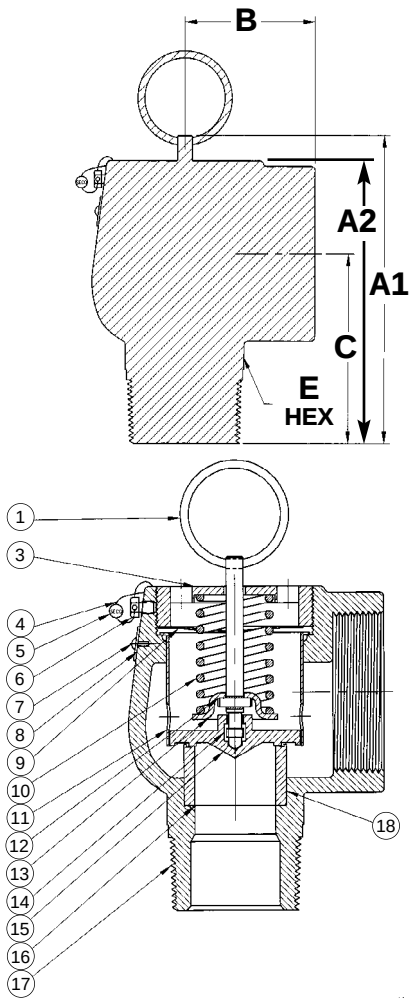
FIGURE 15 SERIES

SPECIFICATION

The valve inlet and outlet shall be one integral casting assuring proper alignment of disc, seat and spindle for smooth action. The valve shall maintain a high degree of repeatability. The valve shall be top guided by a disc guide fitted into the body. The valve shall have a non-adjustable blowdown.

MATERIALS OF CONSTRUCTION

Ref	Part Name	Material
1	Pull Ring	SST
3	Compression Screw	Stl. plated CI ASTM A108/A126
4	Seal Wire	SST
5	Seal	Lead
6	Lock Screw	Brass ASTM B16
7	Drive Screw	SST
8	Nameplate	SST
9	Wave Washer	Plated Steel
10	Spring	Plated Steel
11	Disc Guide	Brass/Bronze ASTM B135/B505
12	Spindle Pin	Plated Steel
13	Spring Washer	Plated Steel
14	Spindle	Steel ASTM A108
15	Disc	Brass/Bronze ASTM B16/B62
16	Seat	Brass/Bronze ASTM B16/B505
17	Body Body	Cast Iron ASTM A126 Aluminum ASTM B26, A03560, T6
18	Sealant	Sealant
19	Bushing 015A/15LA	Brass ASTM B16



DIMENSIONS inches (mm) **AND WEIGHTS** pounds (kg)

Model	Inlet	Orifice	Outlet	A1	A2	B	C	E Hex	Weight
****ZDA	¾ (20)	Z	1 (25)	3 5/16 (76)	3 (76)	1½ (38)	2 3/16 (56)	1¼ (32)	1 (.4)
****ZEA	1 (25)	Z	1¼ (32)	4 (95)	3¾ (95)	2 (51)	2⅝ (67)	1½ (38)	2 (.9)
****ZFA	1¼ (32)	Z	1½ (40)	5 (108)	4¼ (108)	2⅛ (54)	3 (76)	1⅞ (48)	3 (1.4)
****ZGA	1½ (40)	Z	2 (50)	5⅛ (117)	4⅝ (117)	2 3/16 (56)	3 3/16 (81)	2 (51)	4 (1.8)
****ZHA	2 (50)	Z	2½ (65)	6 11/16 (156)	6⅛ (156)	2⅞ (73)	4 (102)	3 (76)	8 (3.6)
****ZJA	2½ (65)	Z	2½ (65)	8⅜ (194)	7⅝ (194)	3⅜ (95)	4⅜ (111)	3¼ (83)	14 (6.3)
****ZKA	3 (80)	Z	3 (80)	9½ (229)	9 (229)	3⅞ (98)	5⅛ (130)	4 (102)	22 (10)

**** Use appropriate Model Number.

AIR CAPACITY CHART – MODELS 015C, 015A, 15LC, 15LA

**ASME Section VIII "UV" 90% rated at 3 PSI Overpressure SCFM (M^3/HR)

SCFM

Set Pressure PSIG	Valve & Orifice Area, in² ¾ Z 1 0.276	1 Z 1¼ 0.49	1¼ Z 1½ 0.765	1½ Z 2 1.107	2 Z 2½ 1.961	2½ Z 2½ 3.063	3 Z 3 4.43
5*	82	145	226	328	579	906	1311
10*	100	177	276	400	706	1105	1599
15	118	209	326	472	834	1305	1888

* Pressure settings below 15 PSIG (1.034 barg) are non code.
**Only 2" size is ASME Certified.

M^3/HR

Set Pressure Barg	Valve & Orifice Area cm² 20 Z 25 1.78	25 Z 32 3.16	32 Z 40 4.94	40 Z 50 7.14	50 Z 65 12.65	65 Z 65 19.76	80 Z 80 25.58
0.4*	144	255	398	576	1018	1593	2305
0.7*	171	302	472	683	1207	1888	2732
1.0*	197	350	545	790	1395	2183	3159

Consult factory for capacities below 5 psi or between 15 to 60 psi.

FIGURE 15V SERIES

SIZES ¾" – 3"
PRESSURES to 30" HG at 400°F

- **Vacuum Service**
- **Low Cost**
- **High Capacity**
- **Cast Iron or Aluminum Body**
- **Dependable**
- **Tight Shutoff**
- **Sharp Popping & Closing Action**
- **High Degree of Repeatability**
- **Unitized Body**

FIGURE 15V SERIES SAFETY VALVE

Application Data

- Vacuum Pumps
- Bulk Hauling Railroad & Truck Tank Cars
- Pneumatic Equipment
- Tanks

Valve Ratings

Model	Pressure in.HG (mmHG)	Temperature °F (°C)
All	5 to 30 (.2 to 1)	-20 to 400 (-29 to 204)

Applicable Codes

- Canadian Registration #0H0591.9C

Options

- Stainless Trim

Models

- 015V - Cast Iron Body, Bronze Seats, Vacuum Service
- 015LV - Aluminum Body on 015V (2" x 2½" only)

CODE SELECTION CHART

Model				Orifice	Inlet Size	Connec-tions	–	Set Pressure		
0	0	5	2	Z	H	Z	-	0	1	5
1	2	3	4	5	6	7	8	9	10	

Model -
Position 1, 2, 3 & 4
0050 = Bronze Body, Viton Soft Seat
0051 = Pull Ring on 0050
0052 = Aluminum Body, Viton Soft Seat
0053 = Pull Ring on 0052

Orifice -
Position 5
Z

Inlet Size -
Position 6
H = 2

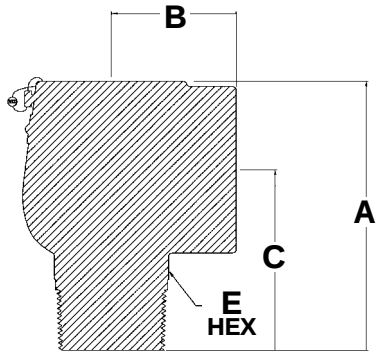
Connections -
Position 7
Z

Set Pressure -
Position 8, 9 & 10
__ __ __ = Actual Setting

FIGURE 15V SERIES

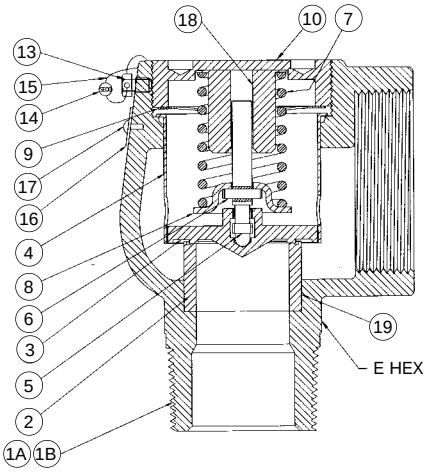
SPECIFICATION

The valve inlet and outlet shall be one integral casting assuring proper alignment of disc, seat and spindle for smooth action. The valve shall maintain a high degree of repeatability. The valve shall be top guided by a disc guide fitted into the body. The valve shall have a non-adjustable blowdown.



MATERIALS OF CONSTRUCTION

Ref	Part Name	Material
1A	Body	Cast ASTM A126
1B	Body	Aluminum ASTM B26, A03560, T6
2	Seat	Bronze ASTM B505
3	Disc	Brass/Bronze ASTM B505
4	Disc Guide	Brass ASTM B135
5	Spindle	Steel ASTM A108
6	Spindle Pin	Plated Steel
7	Spring	Plated Steel
8	Spring Washer	Plated Steel
9	Wave Washer	Plated Steel
10	Compression Screw	Cast Iron ASTM A126
13	Lock Screw	Brass ASTM B16
14	Seal	Lead
15	Seal Wire	SST
16	Nameplate	SST
17	Drive Screw	SST
18	Bushing	Brass ASTM B16



DIMENSIONS inches (mm) **AND WEIGHTS** pounds (kg)

Model	Inlet	Orifice	Outlet*	A1	B	C	E Hex	Weight
****ZDA	¾ (20)	Z	1 (25)	3 (76)	1½ (38)	2 3/16 (56)	1¼ (32)	1 (.4)
****ZEA	1 (25)	Z	1¼ (32)	3¾ (95)	2 (51)	2⅝ (67)	1½ (38)	2 (.9)
****ZFA	1¼ (32)	Z	1½ (40)	4¼ (108)	2⅛ (54)	3 (76)	1⅞ (48)	3 (1.4)
****ZGA	1½ (40)	Z	2 (50)	4⅝ (117)	2 3/16 (56)	3 3/16 (81)	2 (51)	4 (1.8)
****ZHA	2 (50)	Z	2½ (65)	6⅛ (156)	2⅞ (73)	4 (102)	3 (76)	8 (3.6)
****ZJA	2½ (65)	Z	2½ (65)	7⅝ (194)	3⅜ (95)	4⅜ (111)	3¼ (83)	14 (6.3)
****ZKA	3 (80)	Z	3 (80)	9 (229)	3⅞ (98)	5⅛ (130)	4 (102)	22 (10)

**** Add appropriate model number

* Valve outlet should be mounted at vacuum side of system.

AIR CAPACITY CHART – MODELS 015V & 015LV

Rated Flow SCFM (M³/HR)

SCFM

Set* Pressure in. HG	Valve & Orifice Area, in²*						
	¾ Z 1 0.276	1 Z 1¼ 0.49	1¼ Z 1½ 0.765	1½ Z 2 1.107	2 Z 2½ 1.961	2½ Z 2½ 3.063	3 Z 3 4.43
5	36	85	132	191	337	528	764
6	39	90	140	203	359	561	812
7	41	94	147	213	376	588	851
8	42	98	152	221	389	609	881
9	43	100	156	227	400	625	904
10	44	102	159	231	407	637	922
11	45	104	161	234	412	645	933
12	45	104	162	236	415	650	940
12.8-30	45	105	163	236	417	651	943

*Valve outlet should be mounted at vacuum side of system.

M³/HR

Set Pressure mmHG	Valve & Orifice Area cm²*						
	20 Z 25 1.78	25 Z 32 3.16	32 Z 40 4.94	40 Z 50 7.14	50 Z 65 12.65	65 Z 65 19.76	80 Z 80 25.58
127	62	144	224	325	573	897	1297
152	66	153	238	346	610	953	1380
178	69	160	249	362	639	999	1445
203	71	166	258	375	661	1034	1497
229	73	171	265	385	679	1062	1536
254	75	174	270	392	692	1082	1566
279	76	176	274	397	701	1096	1586
305	76	177	276	400	706	1104	1597
325-762	76	178	276	401	708	1107	1601

FIGURE 50 SERIES

SIZES 2"
PRESSURES to 30 PSIG at 225°F

- **Air, Gas, Vapors and Powdered Solids**
- **High Capacity**
- **Tamper Proof Spring Setting**
- **Weatherproof**
- **Spring Chamber Isolated from Process Fluid**
- **Soft Seat Seal**
- **Bronze or Aluminum Body**

FIGURE 50 SERIES SAFETY VALVE

MODELS

- 0050 - Bronze Body, Viton Soft Seat
- 0051 - Pull Ring on 0050
- 0052 - Aluminum Body, Viton Soft Seat
- 0053 - Pull Ring on 0052

APPLICATION DATA

- Bulk Hauling Truck Tank Trailers
- Bulk Hauling Railroad Tank Cars
- Storage Vessels for Powdered Solids (flour, cement, etc.)

VALVE RATINGS

Model	Pressure PSIG (bar)	Temperature °F (°C)
All	10 to 30 (.7 to 2.1)	-20 to 225 (-29 to 107)

APPLICABLE CODES

- Canadian Registration #0G0591.9C

CODE SELECTION CHART

Model | Orifice | Inlet Size | Connec- tions | – | Set Pressure

0	0	5	2	Z	H	Z	-	0	1	5
1	2	3	4	5	6	7	8	9	10	

Model -
Position 1, 2, 3 & 4
0050 = Bronze Body, Viton Soft Seat
0051 = Pull Ring on 0050
0052 = Aluminum Body, Viton Soft Seat
0053 = Pull Ring on 0052

Orifice -
Position 5
Z

Inlet Size -
Position 6
H = 2

Connections -
Position 7
Z

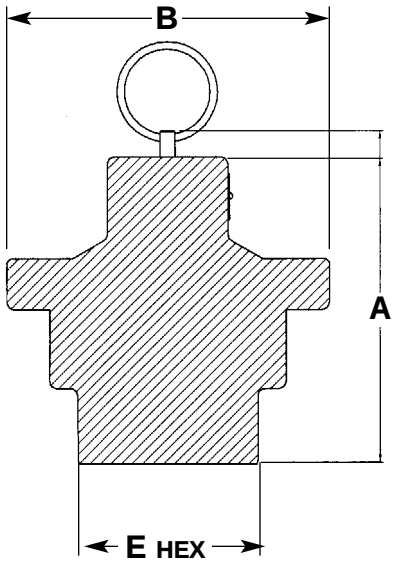
Set Pressure -
Position 8, 9 & 10
__ __ __ = Actual Setting
LAS - Loosely Assembled†

†Spence Certified Assemblers Only

FIGURE 50 SERIES

SPECIFICATION

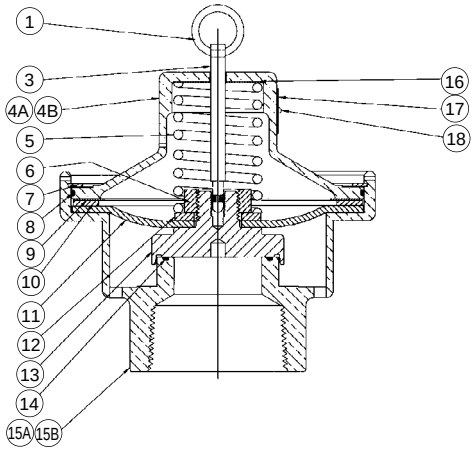
The valve shall meet the ASME Section VIII Code for air services. It shall be "UV" National Board Certified. The valve setting shall be tamper resistant. The valve shall be weatherproof and the diaphragm shall completely seal the spring chamber from the process fluid. The valve shall have an O-ring seat seal for tight shutoff.



MATERIALS OF CONSTRUCTION

Ref	Part Name	Material
1	Pull Ring	SST
3	Spindle (0051/0053)	Steel ASTM A108. 12L14
4A 4B	Cover Cover	Bronze ASTM B62 Aluminum ASTM B 26, A03560, T6
5	Spring	Steel ASTM A228, Plated
6	Disc Nut	Steel, Plated
7	Retaining Ring	Steel, Plated
8	Weather Seal	Viton
9	Wave Spring	Steel, Plated
10	Washer	Steel, Plated
11	Diaphragm	Nylon Reinforced
12	Disc Washer	Plated Steel
13	Disc	ASTM B16, C36000, H02
14	Seat Seal	Viton
15A 15B	Body Body	Bronze ASME SB62 Aluminum ASTM B26, A03560, T6
16	Fender Washer	Steel, Plated
17	Nameplate	SST
18	Drive Screw	SST

Lead seal plus SS wire not shown



DIMENSIONS* inches (mm) **AND WEIGHTS** pounds (kg)

Model	Inlet	Orifice	Outlet	A	B	E	Weight
0050ZHZ	2 (50)	Z	Atmosphere	5 3/32 (129)	5 3/8 (136)	3 (76)	7 (3.2)
0051ZHZ	2 (50)	Z	Atmosphere	6 (152)	5 3/8 (136)	3 (76)	7 (3.2)
0052ZHZ	2 (50)	Z	Atmosphere	5 3/32 (129)	5 3/8 (136)	3 (76)	3 (1.4)
0053ZHZ	2 (50)	Z	Atmosphere	6 (152)	5 3/8 (136)	3 (76)	3 (1.4)

AIR CAPACITY CHART – MODELS 0050, 0051, 0052, 0053

ASME Section VIII "UV" 90% rated at 10% Slope SCFM (NM³/HR)

SCFM

Set Pressure PSIG	Orifice Area, in²
	2.011
10*	637
15	752
20	867
25	982
30	1097
1.0	25.3

NM³/HR

Set Pressure Barg	Orifice Area cm²
	12.97
0.6*	1082
0.8*	1278
1.0*	1473
1.2	1669
0.1	43.0

* Pressure settings below 15 PSIG (1.034 barg) are non code.

DRIP PAN ELBOW

SIZES 3/4" – 8"
PRESSURES to 250 PSIG at 406°F

- **Collects Discharge Condensate from Steam Systems**
- **Returns Condensate to Safe Areas**
- **Increases Life of Safety Valves**
- **Reduces Discharge Piping Strain**
- **Female NPT or Flange Connections**
- **Compatible with All Spence ASME Safety Valves**
- **Helps Prevent Injury & Property Damage**

Application Data

- Steam Boilers
- Steam Pressure Reducing Stations
- Steam Pressure Vessels & Lines

Valve Ratings

Model	Pressure PSIG (bar)	Temperature °F (°C)
All	250 (17.2)	406 (208)

Models

- DPE - Drip Pan Elbow, Cast Iron

CODE SELECTION CHART

Model			Size
D	P	E	- H
1	2	3	4

Model -
Position 1, 2 & 3
DPE = Drip Pan Elbow, Cast Iron

Size -
Position 4
D = ¾
E = 1
F = 1¼
G = 1½
H = 2
J = 2½
K = 3
M = 4
P = 6
Q = 8

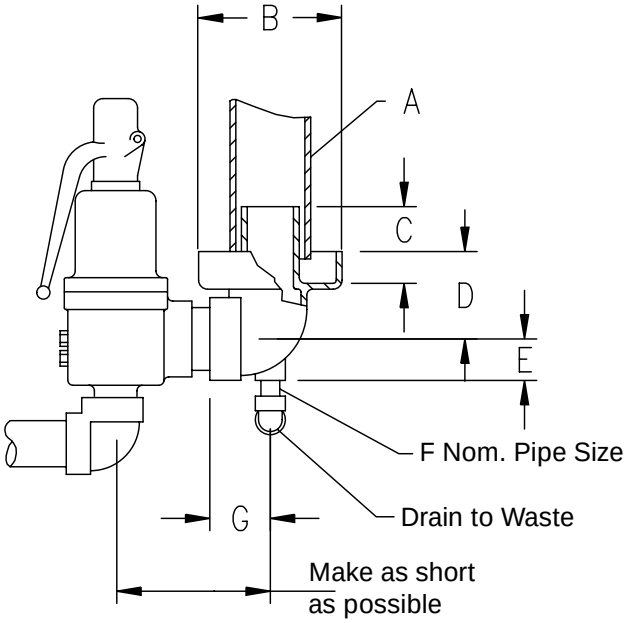
DRIP PAN ELBOW

SPECIFICATION

The Drip Pan Elbow shall be a minimum of the size of the safety valve discharge and installed on the discharge side of the safety valve. It shall be made of cast iron and conform to the Power Piping Code. It shall have a pan to collect condensate in the steam riser pipe and a drain to pipe away the condensate.

MATERIALS OF CONSTRUCTION

Body .....Cast Iron
ASTM A126 Class B



DIMENSIONS* inches (mm) **AND WEIGHTS** pounds (kg)

Model	Outlet	A	B	C	D	E	F	G	Weight
DPE-D	¾	2 (51)	3¾ (95)	2¾ (70)	2 (51)	1 (25)	⅜ (10)	1½ (38)	2 (.9)
DPE-E	1	2 (51)	3¾ (95)	2¾ (70)	2 (51)	1 (25)	⅜ (10)	1½ (38)	2 (.9)
DPE-F	1¼	2.5 (65)	5½ (140)	4 15/16 (125)	4⅛ (105)	1 7/16 (37)	⅜ (10)	2⅛ (54)	4 (1.8)
DPE-G	1½	2.5 (65)	5½ (140)	4 15/16 (125)	4⅛ (105)	1 7/16 (37)	⅜ (10)	2⅛ (54)	4 (1.8)
DPE-H	2	3 (76)	6¼ (159)	4⅝ (117)	3⅝ (92)	1⅝ (41)	½ (13)	2¼ (57)	6 (2.7)
DPE-J	2½	4 (102)	7⅜ (187)	5 9/16 (141)	4 5/16 (110)	1 15/16 (49)	¾ (19)	2 11/16 (68)	11 (5.0)
DPE-K	3	4 (102)	8 (203)	6½ (165)	4⅞ (124)	2 5/16 (59)	¾ (19)	3⅛ (79)	14 (6.4)
DPE-M	4	6 (152)	9⅝ (244)	8¼ (210)	5¾ (146)	2⅞ (73)	¾ (19)	3¾ (95)	26 (11.8)
DPE-P*	6	8 (203)	12¾ (324)	11 9/16 (294)	7 9/16 (192)	4 3/16 (106)	¾ (19)	8 (203)	74 (33.6)
DPE-Q*	8	10 (254)	16½ (419)	14⅜ (378)	9 9/16 (243)	5¾ (146)	1 (25)	10¾ (273)	100 (45.4)

*6" and 8" Drip Pan Elbows have integral 125# flange.

NOTES: