DRESSER Consolidated

Pressure Relief Valves

1811 Series

Consolidated® Safety Valve

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Conversion Table

All the USCS values are converted to Metric values using the following conversion factors:

USCS Unit	Conversion Factor	Metric Unit
in.	25.4	mm
lb.	0.4535924	kg
in^2	6.4516	cm^2
ft^3/min	0.2831685	m^3/min
gal/min	3.785412	L/min
lb/hr	0.4535924	kg/hr
psig	0.6894757	barg
ft lb	1.3558181	Nm
°F	5/9 (°F-32)	°C

CONSOLIDATED TYPE 1811 safety valve is a cost effective, high capacity, flanged steel safety valve designed for steam service.

INLET SIZES	1.25" (31.75 mm) through 6" (152.4 mm) flanged
INLET RATINGS	ANSI Class 300 & 600
OUTLET SIZES	1.5" (38.1 mm) through 8" (203.2 mm) flanged
OUTLET RATINGS	ANSI Class 150
ORIFICE SIZES	Ten sizes: F through Q
TEMPERATURE RANGE	-20°F (-28.9°C) to 1000°F (537.8°C)
MATERIALS	Alloy and carbon steel cast body with stainless steel trim is standard.
CERTIFICATION	ASME B & PVC Section I and VIII
BLOWDOWN	4%
BACK PRESSURE LIMIT	20% of Set Pressure

CAUTION

Because the 1811 valve is not totally enclosed, upon actuation the system media will escape from the following locations:

(1) The valve outlet which is the main discharge area.

(2) The open yoke will also allow a small amount of steam to exhaust vertically.

(3) The drain hole at the base of the valve.

Features & Benefits

- A variety of pressure/temperature classes, orifice sizes and inlet/outlet combinations provide a flexible selection of safety valves to meet industrial needs at the lowest cost.
- Low spindle bearing point and concentric spindle loading virtually eliminates the natural tendency for the disc to assume a horizontal position during the opening and closing cycle of the valve.
- The mechanical flexibility of the Thermodisc™ allows the system pressure to assist in sealing the contact surface between the valve seat and Thermodisc™.
- Seal welding the seat bushing into the base assures no leakage of steam past the threaded area of the seat bushing.
- Dual ring adjustments allow fine tuning of the safety valve's performance characteristics needed to meet steam system conditions which vary at each installation. Sharp, clean opening assures long valve seat life and reduced maintenance cost. Consistent opening and closing pressures contribute to efficient steam system operation.

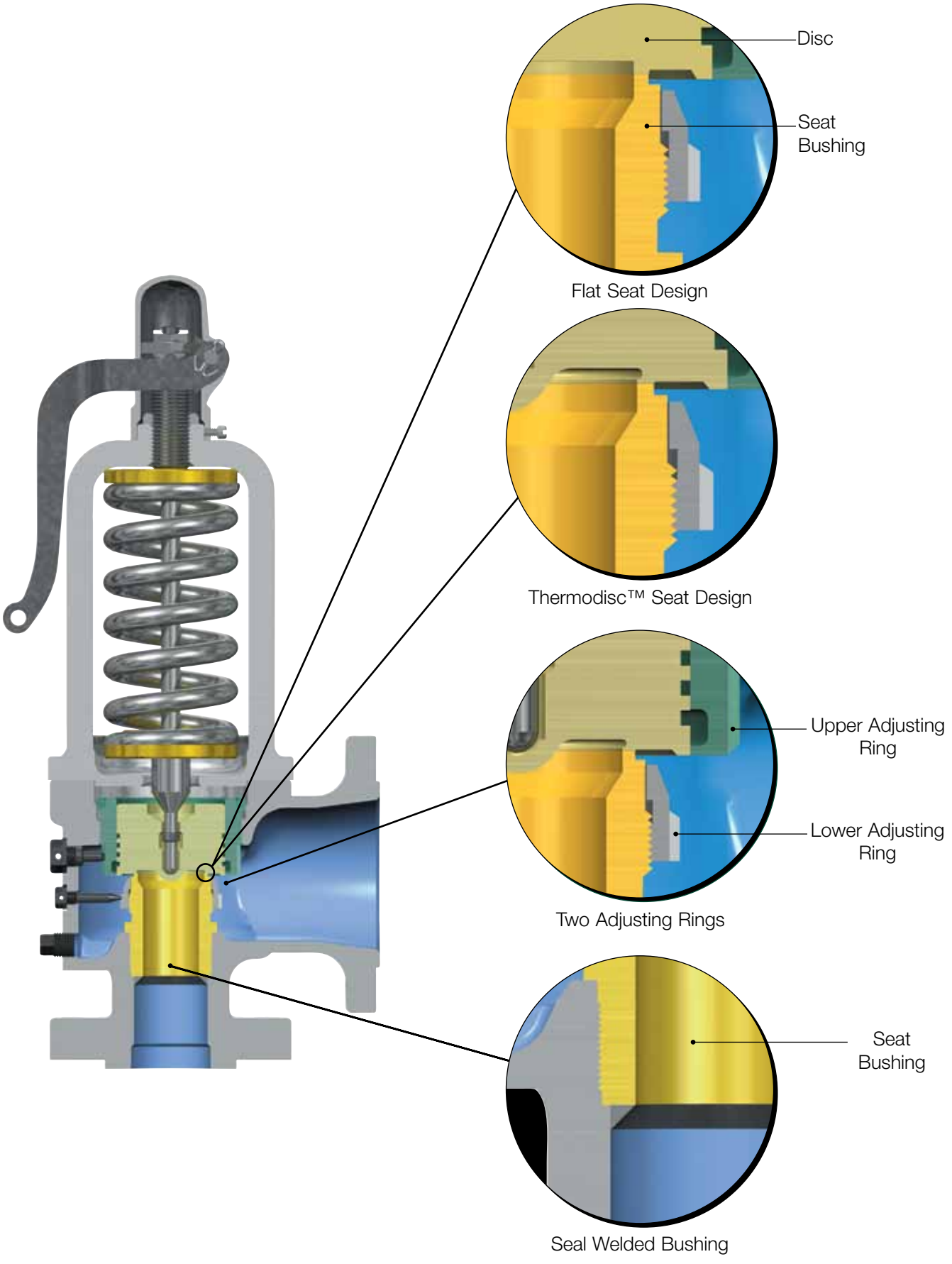
Maximum Set Pressure*

Temperature			Pressure Class			
°F	°C	Valve Temp. Class	300		600	
			psig	barg	psig	barg
750	399	1811B	320	22.06	725	49.99
950	510	1811D	320	22.06	640	44.12
1000	538		215	14.82	430	29.65

* For intermediate temperatures, interpolation is permitted per ANSI B16.34, 1996 edition, paragraph 2.1.

* For set pressures higher than those listed, factory approval is required.

Features & Benefits (Contd.)



Scope of Design

Flanged Inlet - Type 1811, class 300

Inlet (Note 2)			Outlet			Type Numbers		Orifice		
ANSI Std. R.F. Flange			ANSI Std. R.F. Flange			Maximum Temperature (Note 1)		Discharge area		Designation
Size		Class	Size		Class	750°F (399°C)	1000°F (538°C)			
in.	mm		in.	mm				in²	cm²	
1.25	31.8	300	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
1.25	31.8	300	1.50	38.1	150	1811GB	1811GD	.503	3.245	G
1.50	38.1	300	2.50	63.5	150	1811HB	1811HD	.785	5.065	H
1.50	38.1	300	2.50	63.5	150	1811JB	1811JD	1.287	8.303	J
2.00	50.8	300	3.00	76.2	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	300	4.00	101.6	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	300	4.00	101.6	150	1811MB	1811MD	3.600	23.226	M
4.00	101.6	300	6.00	152.4	150	1811NB	1811ND	4.340	28.000	N
4.00	101.6	300	6.00	152.4	150	1811PB	1811PD	6.380	41.161	P
6.00	152.4	300	8.00	203.2	150	1811QB	1811QD	11.050	71.290	Q

Flanged Inlet - Type 1811, class 600

Inlet (Note 2)			Outlet			Type Numbers		Orifice		
ANSI Std. R.F. Flange			ANSI Std. R.F. Flange			Maximum Temperature (Note 1)		Discharge area		Designation
Size		Class	Size		Class	750°F (399°C)	1000°F (538°C)			
in.	mm		in.	mm				in²	cm²	
1.25	31.8	600	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
1.25	31.8	600	1.50	38.1	150	1811GB	1811GD	.503	3.245	G
1.50	38.1	600	2.50	63.5	150	1811HB	1811HD	.785	5.065	H
1.50	38.1	600	2.50	63.5	150	1811JB	1811JD	1.287	8.303	J
2.00	50.8	600	3.00	76.2	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	600	4.00	101.6	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	600	4.00	101.6	150	1811MB	1811MD	3.600	23.226	M
4.00	101.6	600	6.00	152.4	150	1811NB	1811ND	4.340	28.000	N
4.00	101.6	600	6.00	152.4	150	1811PB	1811PD	6.380	41.161	P
6.00	152.4	600	8.00	203.2	150	1811QB	1811QD	11.050	71.290	Q

Notes

1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available with ANSI B16.5 flange facings. See page 1811.16 & 1811.17 for selections.

Scope of Design (Contd.)

Flanged Inlet - Type 1811, class 300

alternate inlet and outlet sizes for replacement valves only

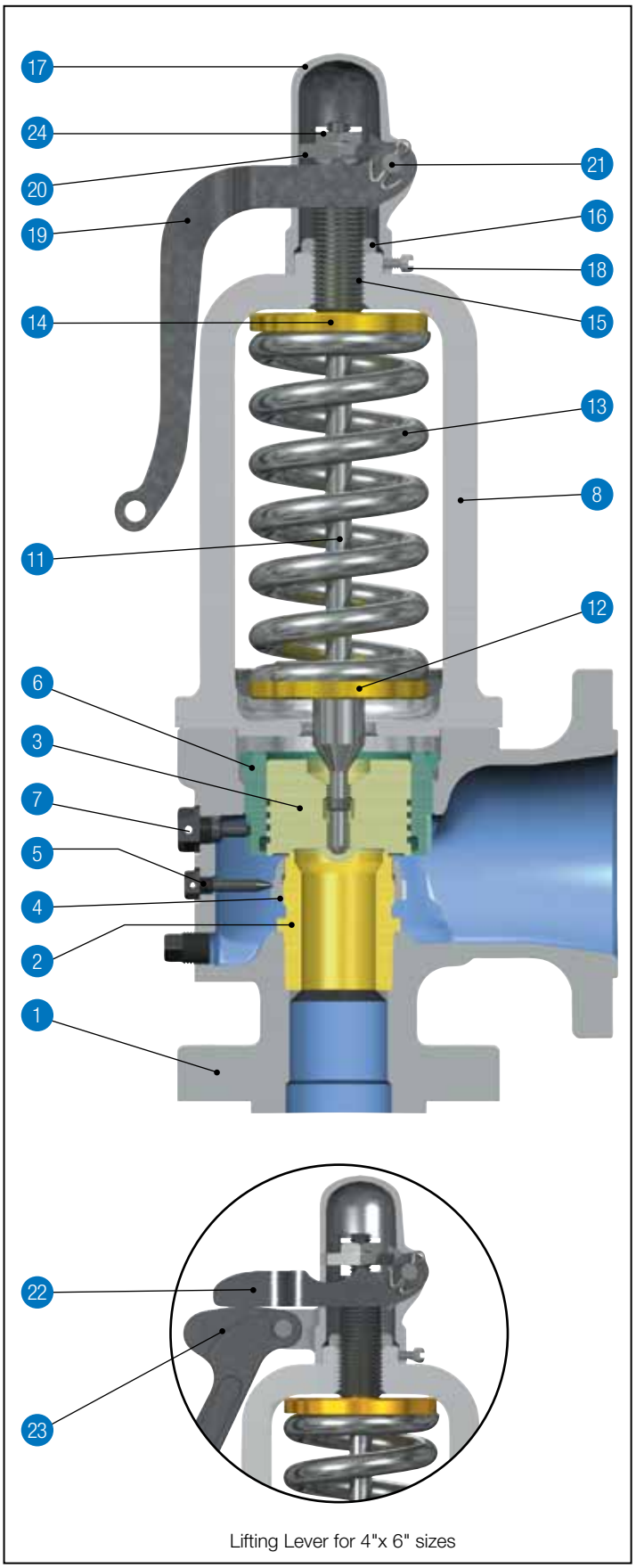
Inlet			Outlet			Type Numbers		Orifice		
ANSI Std. R.F. Flange			ANSI Std. R.F. Flange			Maximum Temperature		Discharge area		Designation
Size		Class	Size		Class	750°F (399°C)	1000°F (538°C)			
in.	mm		in.	mm				in²	cm²	
1.50	38.1	300	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
2.00	50.8	300	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
1.50	38.1	300	1.50	38.1	150	1811GB	1811GD	.503	3.245	G
2.00	50.8	300	1.50	38.1	150	1811GB	1811GD	.503	3.245	G
2.00	50.8	300	2.50	63.5	150	1811HB	1811HD	.785	5.065	H
2.50	63.5	300	2.50	63.5	150	1811HB	1811HD	.785	5.065	H
2.00	50.8	300	2.50	63.5	150	1811JB	1811JD	1.287	8.303	J
2.50	63.5	300	2.50	63.5	150	1811JB	1811JD	1.287	8.303	J
2.00	50.8	300	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	300	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	300	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
3.00	76.2	300	3.00	76.2	150	1811KB	1811KD	1.840	11.871	K
3.00	76.2	300	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	300	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	300	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	300	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
4.00	101.6	300	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	300	6.00	152.4	150	1811MB	1811MD	3.600	23.226	M

Flanged Inlet - Type 1811, class 600

alternate inlet and outlet sizes for replacement valves only

Inlet			Outlet			Type Numbers		Orifice		
ANSI Std. R.F. Flange			ANSI Std. R.F. Flange			Maximum Temperature		Discharge area		Designation
Size		Class	Size		Class	750°F (399°C)	1000°F (538°C)			
in.	mm		in.	mm				in²	cm²	
1.50	38.1	600	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
2.00	50.8	600	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
1.50	38.1	600	1.50	38.1	150	1811GB	1811GD	.503	3.245	G
2.00	50.8	600	1.50	38.1	150	1811GB	1811GD	.503	3.245	G
2.00	50.8	600	2.50	63.5	150	1811HB	1811HD	.785	5.065	H
2.50	63.5	600	2.50	63.5	150	1811HB	1811HD	.785	5.065	H
2.00	50.8	600	2.50	63.5	150	1811JB	1811JD	1.287	8.303	J
2.50	63.5	600	2.50	63.5	150	1811JB	1811JD	1.287	8.303	J
2.00	50.8	600	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	600	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	600	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
3.00	76.2	600	3.00	76.2	150	1811KB	1811KD	1.840	11.871	K
3.00	76.2	600	4.00	101.6	150	1811KB	1811KD	1.840	11.871	K
2.50	63.5	600	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	600	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	600	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
4.00	101.6	600	6.00	152.4	150	1811LB	1811LD	2.853	18.406	L
3.00	76.2	600	6.00	152.4	150	1811MB	1811MD	3.600	23.226	M

Materials

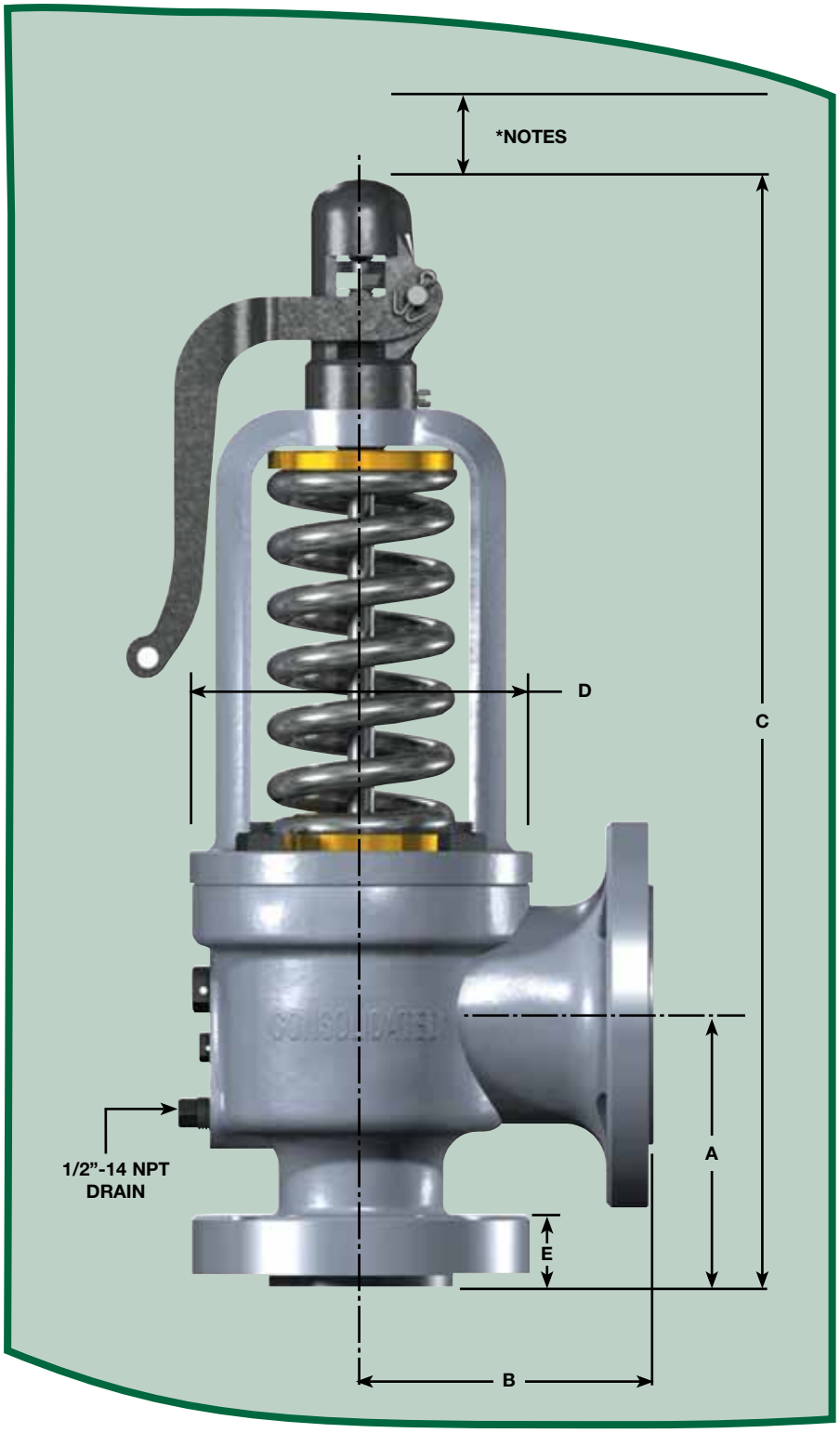


Lifting Lever for 4"x 6" sizes

300 & 600 ANSI Class

Ref. No.	Nomenclature	Material
1	Base	
	1811B	ASME SA216 WCC Carbon Steel
	1811D	ASME SA217 WC6 Alloy Steel
2	Seat Bushing	410 Stainless Steel
3	Disc	410 Stainless Steel
4	Lower Adjusting Ring	304 Stainless Steel
5	Lower Adjusting Ring Pin	416 or 410 Stainless Steel
6	Upper Adjusting Ring	
	1811B	Leaded Nickel Silver
	1811D	Monel
7	Upper Adjusting Ring Pin	616 Stainless Steel
8	Yoke	ASME SA216 WCC Carbon Steel
9	Base Stud (Not Shown)	ASME SA193 B7 Alloy Steel
10	Stud Nut (Not Shown)	ASME SA194 2H Carbon Steel
11	Spindle	410 Stainless Steel
12	Bottom Spring Washer	Carbon Steel
13	Spring	Alloy Steel
14	Top Spring Washer	Carbon Steel
15	Compression Screw	Brass
16	Compression Screw Locknut	Brass
17	Cap	
	(F – J Orifice)	Ductile Iron
	(K – Q Orifice)	Malleable Iron
18	Cap Set Screw	Carbon Steel
19	Lever	Malleable Iron
20	Release Nut	Carbon Steel
21	Lever Pin	
	(F – J Orifice)	Stainless Steel
	(K – Q Orifice)	Carbon Steel
22	Top Lever (4" & 6" Sizes)	Malleable Iron
23	Drop Lever (4" & 6" Sizes)	Malleable Iron
24	Release Locknut	Carbon Steel
	Base Pipe Plug (Not Shown)	Carbon Steel
	Cotter Pins (Not Shown)	Brass
	Weather Shield (Not Shown)	Carbon Steel

Dimensions & Weights



***Notes:**

1. When using the EVT-I or the Hydroset device, 15" (381 mm) clearance is required.
2. When using the EVT-II, 17" (431.8 mm) clearance is required. When using the assisted closing device, an additional 8" (203.20 mm) clearance is required.

Dimensions & Weights (Contd.)

300 ANSI Class

Inlet Size		Valve Type	A		B		C		D		E		Dismantling Height		Approximate Weight	
in.	mm		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg
1.25	31.8	1811FB	4.41	111.9	4.19	106.4	14.38	365.1	4.63	117.5	1.06	27.0	16.63	422.3	35	16
		1811FD	5.00	127.0	4.19	106.4	15.00	381.0	4.63	117.5	1.31	33.4	17.00	431.8	35	16
1.25	31.8	1811GB	4.41	111.9	4.19	106.4	14.38	365.1	4.63	117.5	1.63	41.4	16.63	422.3	35	16
		1811GD	5.00	127.0	4.19	106.4	15.00	381.0	4.63	117.5	1.31	33.4	17.00	431.8	35	16
1.50	38.1	1811HB	4.75	120.7	4.88	123.8	15.88	403.2	5.81	147.6	1.13	28.6	18.25	463.6	45	20
		1811HD	5.75	146.1	4.88	123.8	16.88	428.6	5.81	147.6	1.44	36.5	19.25	489.0	45	20
1.50	38.1	1811JB	4.75	120.7	4.88	123.8	15.88	403.2	5.81	147.6	1.13	28.6	18.25	463.6	45	20
		1811JD	5.75	146.1	4.88	123.8	16.88	428.6	5.81	147.6	1.44	36.5	19.25	489.0	45	20
2.00	50.8	1811KB	5.25	133.4	5.56	141.3	19.63	498.5	6.50	165.1	1.31	33.4	22.50	571.5	80	36
		1811KD	6.25	158.8	5.56	141.3	20.63	523.9	6.50	165.1	1.56	39.7	23.50	596.9	80	36
2.50	63.5	1811LB	6.13	155.6	6.56	166.7	21.00	533.4	7.63	193.7	1.44	36.5	23.88	606.4	112	51
		1811LD	7.50	190.5	6.56	166.7	22.31	566.7	7.63	193.7	1.81	46.1	25.25	641.4	112	51
3.00	76.2	1811MB	6.50	165.1	6.44	163.5	23.63	600.1	7.88	200.0	1.56	39.7	26.75	679.5	125	57
		1811MD	6.50	165.1	6.44	163.5	23.63	600.1	7.88	200.0	1.56	39.7	26.75	679.5	125	57
4.00	101.6	1811NB	7.25	184.2	7.44	188.9	26.00	660.4	8.75	222.3	1.56	39.7	29.13	739.8	160	73
		1811ND	7.69	195.3	7.44	188.9	26.38	669.9	8.75	222.3	1.81	46.1	29.56	750.9	160	73
4.00	101.6	1811PB	7.44	188.9	8.19	208.0	28.38	720.7	10.25	260.4	1.56	39.7	32.13	816.0	195	88
		1811PD	7.69	195.3	8.19	208.0	28.63	727.1	10.25	260.4	1.81	46.1	32.38	822.3	195	88
6.00	152.4	1811QB	9.88	250.8	9.38	238.1	36.25	920.8	12.38	314.3	1.75	44.5	41.38	1050.9	375	170
			10.31	262.0	9.38	238.1	36.75	933.5	12.38	314.3	2.19	55.6	41.88	1063.6	375	170

600 ANSI Class

Inlet Size		Valve Type	A		B		C		D		E		Dismantling Height		Approximate Weight	
inch	mm		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg
1.25	31.8	1811FB	4.41	111.9	4.19	106.4	14.38	365.1	4.68	118.7	1.06	27.0	16.68	423.5	35	16
		1811FD	5.00	127.0	4.19	106.4	15.00	381.0	4.68	118.7	1.31	33.4	17.00	431.8	35	16
1.25	31.8	1811GB	4.41	111.9	4.19	106.4	14.38	365.1	4.68	118.7	1.06	27.0	16.68	423.5	35	16
		1811GD	5.00	127.0	4.19	106.4	15.00	381.0	4.68	118.7	1.31	33.4	17.00	431.8	35	16
1.50	38.1	1811HB	4.75	120.7	4.88	123.8	15.88	403.2	5.19	131.8	1.13	28.6	18.25	463.6	45	20
		1811HD	5.75	146.1	4.88	123.8	16.88	428.6	5.19	131.8	1.44	36.5	19.25	489.0	45	20
1.50	38.1	1811JB	4.75	120.7	4.88	123.8	17.68	448.9	5.19	131.8	1.13	28.6	20.50	520.7	45	20
		1811JD	5.75	146.1	4.88	123.8	18.68	474.3	5.19	131.8	1.44	36.5	21.50	546.1	45	20
2.00	50.8	1811KB	5.25	133.4	5.56	141.3	21.68	550.5	6.50	165.1	1.31	33.4	24.68	626.7	80	36
		1811KD	6.25	158.8	5.56	141.3	22.68	575.9	6.50	165.1	1.56	39.7	25.68	652.1	80	36
2.50	63.5	1811LB	6.13	155.6	6.31	160.4	24.50	622.3	7.93	201.3	1.44	36.5	27.50	698.5	112	51
		1811LD	7.50	190.5	6.31	160.4	25.88	657.2	7.63	193.7	1.81	46.1	28.88	733.4	112	51
3.00	76.2	1811MB	6.50	165.1	6.44	163.5	26.00	660.4	7.88	200.0	1.56	39.7	29.13	739.8	125	57
		1811MD	6.50	165.1	6.44	163.5	26.00	660.4	7.88	200.0	1.56	39.7	29.13	739.8	125	57
4.00	101.6	1811NB	7.69	195.3	7.44	188.9	28.50	723.9	8.75	222.3	1.81	46.1	32.38	822.3	160	73
		1811ND	7.69	195.3	7.44	188.9	28.50	723.9	8.75	222.3	1.81	46.1	32.38	822.3	160	73
4.00	101.6	1811PB	7.69	195.3	8.19	208.0	32.75	831.9	10.25	260.4	1.81	46.1	37.25	946.2	195	88
		1811PD	7.69	195.3	8.19	208.0	32.75	831.9	10.25	260.4	1.81	46.1	37.25	946.2	195	88
6.00	152.4	1811QB	10.31	262.0	9.38	238.1	39.13	993.8	12.38	314.3	2.19	55.6	44.13	1120.8	375	170
		1811QD	10.31	262.0	9.38	238.1	39.13	993.8	12.38	314.3	2.19	55.6	44.13	1120.8	375	170

Orifice Capacities

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.14. Review pressure/ temperature limits on page 1811.1.

W=51.5KAP
K=.877
A= flow area in in^2.
P= (1.03 x set pressure) + 14.7 or
P= (2 psig + set pressure) + 14.7

ASME, B & PVC, Section I rating - 2010 Edition

lb/hr (kg/hr) saturated steam at 3% overpressure or 2 psig (0.14 barg), whichever is greater, 90% of actual capacity

Orifice Designation		F		G		H		J		K		L		M		N		P		Q	
Orifice Area		in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
		0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.000	6.380	41.160	11.050	71.290
Set Pressure		Orifice Capacity																			
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15	1.03	439	199	720	327	1123	509	1842	836	2634	1195	4084	1852	5154	2338	6213	2818	9134	4143	15820	7176
20	1.38	508	230	833	378	1301	590	2133	968	3049	1383	4729	2145	5967	2707	7193	3263	10575	4797	18316	8308
25	1.72	578	262	947	430	1478	670	2423	1099	3465	1572	5373	2437	6780	3075	8173	3707	12016	5450	20811	9440
30	2.07	647	293	1060	481	1655	751	2714	1231	3880	1760	6017	2729	7593	3444	9154	4152	13456	6104	23306	10571
35	2.41	716	325	1174	533	1833	831	3005	1363	4296	1949	6661	3021	8406	3813	10134	4597	14897	6757	25802	11704
40	2.76	786	357	1288	584	2010	912	3295	1495	4712	2137	7306	3314	9219	4182	11114	5041	16338	7411	28297	12835
45	3.10	855	388	1401	635	2187	992	3586	1627	5127	2326	7950	3606	10032	4550	12094	5486	17779	8064	30793	13967
50	3.45	924	419	1515	687	2364	1072	3877	1759	5543	2514	8594	3898	10845	4919	13074	5930	19219	8718	33288	15099
55	3.79	994	451	1628	738	2542	1153	4167	1890	5958	2703	9239	4191	11658	5288	14054	6375	20660	9371	35783	16231
60	4.14	1063	482	1742	790	2719	1233	4458	2022	6374	2891	9883	4483	12471	5657	15034	6819	22101	10025	38279	17363
65	4.48	1132	513	1856	842	2896	1314	4749	2154	6789	3079	10527	4775	13284	6026	16014	7264	23542	10678	40774	18495
70	4.83	1203	546	1971	894	3077	1396	5045	2288	7213	3272	11184	5073	14113	6402	17014	7717	25011	11345	43320	19650
75	5.17	1274	578	2088	947	3260	1479	5344	2424	7641	3466	11848	5374	14950	6781	18023	8175	26495	12018	45890	20815
80	5.52	1346	611	2205	1000	3442	1561	5644	2560	8069	3660	12512	5675	15788	7161	19033	8633	27979	12691	48460	21981
85	5.86	1417	643	2322	1053	3625	1644	5943	2696	8497	3854	13175	5976	16625	7541	20042	9091	29463	13364	51030	23147
90	6.21	1489	675	2439	1106	3807	1727	6242	2831	8925	4048	13839	6277	17462	7921	21052	9549	30947	14037	53601	24313
95	6.55	1560	708	2556	1159	3990	1810	6542	2967	9353	4242	14502	6578	18300	8301	22061	10007	32431	14710	56171	25479
100	6.89	1632	740	2673	1212	4173	1893	6841	3103	9781	4437	15166	6879	19137	8680	23071	10465	33915	15384	58741	26644
105	7.24	1703	772	2790	1266	4355	1975	7141	3239	10209	4631	15830	7180	19974	9060	24080	10923	35399	16057	61311	27810
110	7.58	1774	805	2907	1319	4538	2058	7440	3375	10637	4825	16493	7481	20812	9440	25090	11381	36883	16730	63882	28976
115	7.93	1846	837	3024	1372	4720	2141	7739	3510	11065	5019	17157	7782	21649	9820	26099	11838	38367	17403	66452	30142
120	8.27	1917	870	3141	1425	4903	2224	8039	3646	11493	5213	17820	8083	22486	10199	27109	12296	39851	18076	69022	31308
125	8.62	1989	902	3258	1478	5086	2307	8338	3782	11921	5407	18484	8384	23324	10580	28118	12754	41335	18749	71592	32474
130	8.96	2060	934	3375	1531	5268	2390	8637	3918	12349	5601	19148	8685	24161	10959	29128	13212	42819	19422	74163	33640
135	9.31	2131	967	3492	1584	5451	2473	8937	4054	12777	5796	19811	8986	24999	11339	30137	13670	44303	20096	76733	34806
140	9.65	2203	999	3609	1637	5633	2555	9236	4189	13205	5990	20475	9287	25836	11719	31147	14128	45787	20769	79303	35971
145	10.00	2274	1031	3726	1690	5816	2638	9535	4325	13633	6184	21139	9588	26673	12099	32156	14586	47271	21442	81873	37137
150	10.34	2346	1064	3843	1743	5998	2721	9835	4461	14061	6378	21802	9889	27511	12479	33166	15044	48755	22115	84444	38303
155	10.69	2417	1096	3960	1796	6181	2804	10134	4597	14489	6572	22466	10190	28348	12858	34175	15502	50239	22788	87014	39469
160	11.03	2488	1129	4077	1849	6364	2887	10433	4732	14917	6766	23129	10491	29185	13238	35185	15960	51723	23461	89584	40635
165	11.38	2560	1161	4194	1902	6546	2969	10733	4868	15345	6960	23793	10792	30023	13618	36194	16417	53207	24134	92154	41800
170	11.72	2631	1193	4311	1955	6729	3052	11032	5004	15773	7155	24457	11094	30860	13998	37204	16875	54691	24807	94725	42967
175	12.07	2703	1226	4428	2009	6911	3135	11332	5140	16201	7349	25120	11394	31698	14378	38213	17333	56175	25481	97295	44132
180	12.41	2774	1258	4545	2062	7094	3218	11631	5276	16629	7543	25784	11695	32535	14758	39223	17791	57659	26154	99865	45298
185	12.76	2845	1290	4662	2115	7277	3301	11930	5411	17057	7737	26447	11996	33372	15137	40232	18249	59143	26827	102435	46464
190	13.10	2917	1323	4779	2168	7459	3383	12230	5547	17485	7931	27111	12297	34210	15517	41242	18707	60627	27500	105006	47630
195	13.44	2988	1355	4896	2221	7642	3466	12529	5683	17913	8125	27775	12599	35047	15897	42251	19165	62112	28174	107576	48796
200	13.79	3060	1388	5013	2274	7824	3549	12828	5819	18341	8319	28438	12899	35884	16277	43261	19623	63596	28847	110146	49961
205	14.13	3131	1420	5130	2327	8007	3632	13128	5955	18769	8513	29102	13200	36722	16657	44270	20081	65080	29520	112716	51127
210	14.48	3203	1453	5247	2380	8190	3715	13427	6090	19197	8708	29766	13502	37559	17036	45280	20539	66564	30193	115287	52293
215	14.82	3274	1485	5364	2433	8372	3797	13726	6226	19625	8902	30429	13802	38396	17416	46289	20996	68048	30866	117857	53459
220	15.17	3345	1517	5481	2486	8555	3880	14026	6362	20053	9096	31093	14104	39234	17796	47299	21454	69532	31539	120427	54625
225	15.51	3417	1550	5598	2539	8737	3963	14325	6498	20481	9290	31756	14404	40071	18176	48308	21912	71016	32212	122997	55791
230	15.86	3488	1582	5715	2592	8920	4046	14625	6634	20909	9484	32420	14705	40909	18556	49318	22370	72500	32885	125568	56957
235	16.20	3560	1615	5832	2645	9103	4129	14924	6769	21337	9678	33084	15007	41746	18936	50327	22828	73984	33559	128138	58122
240	16.55	3631	1647	5949	2698	9285	4212	15223	6905	21765	9872	33747	15307	42583	19315	51337	23286	75468	34232	130708	59288
245	16.89	3702	1679	6066	2751	9468	4295	15523	7041	22193	10067	34411	15609	43421	19695	52346	23744	76952	34905	133278	60454
250	17.24	3774	1712	6183	2805	9650	4377	15822	7177	22621	10261	35074	15909	44258	20075	53356	24202	78436	35578	135849	61620
255	17.58	3845	1744	6300	2858	9833	4460	16121	7312	23049	10455	35738	16210	45095	20455	54365	24660	79920	36251	138419	62786
260	17.93	3917	1777	6417	2911	10016	4543	16421	7448	23477	10649	36402	16512	45933	20835	55375	25118	81404	36924	140989	63952

Orifice Capacities (Contd.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.14. Review pressure/ temperature limits on page 1811.1.

W=51.5KAP
K=.877
A= flow area in in^2.
P= (1.03 x set pressure) + 14.7 or
P= (2 psig + set pressure) + 14.7

ASME, B & PVC, Section I rating - 2010 Edition

lb/hr (kg/hr) saturated steam at 3% overpressure or 2 psig (0.14 barg), whichever is greater, 90% of actual capacity

Orifice Designation	F		G		H		J		K		L		M		N		P		Q	
Orifice Area	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
	0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.000	6.380	41.160	11.050	71.290
Set Pressure	Orifice Capacity																			
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
265	18.27	3988	1809	6534	2964	10198	4626	16720	7584	23905	10843	37065	16812	46770	21215	56384	25575	82888	37597	143560	65118
270	18.62	4059	1841	6651	3017	10381	4709	17019	7720	24333	11037	37729	17114	47608	21595	57394	26033	84372	38270	146130	66283
275	18.96	4131	1874	6768	3070	10563	4791	17319	7856	24760	11231	38392	17414	48445	21974	58403	26491	85856	38944	148700	67449
280	19.31	4202	1906	6885	3123	10746	4874	17618	7991	25188	11425	39056	17716	49282	22354	59413	26949	87340	39617	151270	68615
285	19.65	4274	1939	7002	3176	10928	4957	17917	8127	25616	11619	39720	18017	50120	22734	60422	27407	88824	40290	153841	69781
290	19.99	4345	1971	7119	3229	11111	5040	18217	8263	26044	11813	40383	18317	50957	23114	61432	27865	90308	40963	156411	70947
295	20.34	4416	2003	7236	3282	11294	5123	18516	8399	26472	12007	41047	18619	51794	23493	62441	28323	91792	41636	158981	72113
300	20.68	4488	2036	7353	3335	11476	5205	18816	8535	26900	12202	41711	18920	52632	23873	63451	28781	93276	42309	161551	73278
305	21.03	4559	2068	7470	3388	11659	5288	19115	8670	27328	12396	42374	19221	53469	24253	64460	29239	94760	42982	164122	74444
310	21.37	4631	2101	7587	3441	11841	5371	19414	8806	27756	12590	43038	19522	54306	24633	65470	29697	96244	43656	166692	75610
315	21.72	4702	2133	7704	3494	12024	5454	19714	8942	28184	12784	43701	19822	55144	25013	66479	30154	97728	44329	169262	76776
320	22.06	4773	2165	7821	3548	12207	5537	20013	9078	28612	12978	44365	20124	55981	25393	67489	30612	99212	45002	171832	77942
325	22.41	4845	2198	7938	3601	12389	5620	20312	9213	29040	13172	45029	20425	56819	25773	68498	31070	100696	45675	174403	79108
330	22.75	4916	2230	8055	3654	12572	5703	20612	9349	29468	13366	45692	20726	57656	26152	69508	31528	102180	46348	176973	80274
335	23.10	4988	2263	8172	3707	12754	5785	20911	9485	29896	13561	46356	21027	58493	26532	70517	31986	103664	47021	179543	81439
340	23.44	5059	2295	8289	3760	12937	5868	21210	9621	30324	13755	47019	21327	59331	26912	71527	32444	105148	47694	182113	82605
345	23.79	5131	2327	8406	3813	13120	5951	21510	9757	30752	13949	47683	21629	60168	27292	72536	32902	106632	48367	184684	83771
350	24.13	5202	2360	8523	3866	13302	6034	21809	9892	31180	14143	48347	21930	61005	27671	73546	33360	108116	49041	187254	84937
355	24.48	5273	2392	8640	3919	13485	6117	22108	10028	31608	14337	49010	22231	61843	28052	74555	33818	109600	49714	189824	86103
360	24.82	5345	2424	8757	3972	13667	6199	22408	10164	32036	14531	49674	22532	62680	28431	75565	34276	111084	50387	192394	87268
365	25.17	5416	2457	8874	4025	13850	6282	22707	10300	32464	14725	50338	22833	63518	28811	76574	34733	112568	51060	194965	88435
370	25.51	5488	2489	8991	4078	14033	6365	23007	10436	32892	14920	51001	23134	64355	29191	77584	35192	114052	51733	197535	89600
375	25.86	5559	2522	9108	4131	14215	6448	23306	10571	33320	15114	51665	23435	65192	29571	78593	35649	115536	52406	200105	90766
380	26.20	5630	2554	9225	4184	14398	6531	23605	10707	33748	15308	52328	23736	66030	29951	79603	36107	117020	53079	202675	91932
385	26.54	5702	2586	9342	4237	14580	6613	23905	10843	34176	15502	52992	24037	66867	30330	80612	36565	118504	53753	205246	93098
390	26.89	5773	2619	9459	4291	14763	6696	24204	10979	34604	15696	53656	24338	67704	30710	81622	37023	119988	54426	207816	94264
395	27.23	5845	2651	9576	4344	14946	6779	24503	11114	35032	15890	54319	24639	68542	31090	82631	37481	121472	55099	210386	95429
400	27.58	5916	2683	9693	4397	15128	6862	24803	11250	35460	16084	54983	24940	69379	31470	83640	37938	122956	55772	212956	96595
405	27.92	5987	2716	9810	4450	15311	6945	25102	11386	35888	16279	55646	25241	70216	31849	84650	38397	124440	56445	215527	97761
410	28.27	6059	2748	9927	4503	15493	7028	25401	11522	36316	16473	56310	25542	71054	32230	85659	38854	125924	57118	218097	98927
415	28.61	6130	2781	10044	4556	15676	7111	25701	11658	36744	16667	56974	25843	71891	32609	86669	39312	127408	57791	220667	100093
420	28.96	6202	2813	10161	4609	15858	7193	26000	11793	37172	16861	57637	26144	72729	32989	87678	39770	128892	58464	223237	101259
425	29.30	6273	2845	10278	4662	16041	7276	26300	11929	37600	17055	58301	26445	73566	33369	88688	40228	130376	59138	225808	102425
430	29.65	6344	2878	10395	4715	16224	7359	26599	12065	38028	17249	58965	26746	74403	33749	89697	40686	131860	59811	228378	103591
435	29.99	6416	2910	10512	4768	16406	7442	26898	12201	38456	17443	59628	27047	75241	34129	90707	41144	133344	60484	230948	104756
440	30.34	6487	2942	10629	4821	16589	7525	27198	12337	38884	17637	60292	27348	76078	34508	91716	41602	134828	61157	233518	105922
445	30.68	6559	2975	10746	4874	16771	7607	27497	12472	39312	17832	60955	27649	76915	34888	92726	42060	136312	61830	236089	107088
450	31.03	6630	3007	10863	4927	16954	7690	27796	12608	39740	18026	61619	27950	77753	35268	93735	42517	137796	62503	238659	108254
455	31.37	6702	3040	10980	4980	17137	7773	28096	12744	40168	18220	62283	28251	78590	35648	94745	42976	139280	63176	241229	109420
460	31.72	6773	3072	11097	5034	17319	7856	28395	12880	40596	18414	62946	28552	79428	36028	95754	43433	140764	63849	243799	110585
465	32.06	6844	3104	11214	5087	17502	7939	28694	13015	41024	18608	63610	28853	80265	36408	96764	43891	142248	64523	246370	111752
470	32.41	6916	3137	11331	5140	17684	8021	28994	13151	41452	18802	64273	29154	81102	36787	97773	44349	143732	65196	248940	112917
475	32.75	6987	3169	11448	5193	17867	8104	29293	13287	41880	18996	64937	29455	81940	37167	98783	44807	145216	65869	251510	114083
480	33.09	7059	3202	11565	5246	18050	8187	29592	13423	42308	19191	65601	29756	82777	37547	99792	45265	146700	66542	254081	115249
485	33.44	7130	3234	11682	5299	18232	8270	29892	13559	42736	19385	66264	30057	83614	37927	100802	45723	148184	67215	256651	116415
490	33.78	7201	3266	11799	5352	18415	8353	30191	13694	43164	19579	66928	30358	84452	38307	101811	46181	149668	67888	259221	117581
495	34.13	7273	3299	11916	5405	18597	8435	30491	13830	43592	19773	67592	30659	85289	38686	102821	46639	151152	68561	261791	118746
500	34.47	7344	3331	12033	5458	18780	8518	30790	13966	44020	19967	68255	30960	86126	39066	103830	47096	152636	69235	264362	119913
505	34.82	7416	3364	12150	5511	18963	8601	31089	14102	44448	20161	68919	31261	86964	39446	104840	47555	154120	69908	266932	121078
510	35.16	7487	3396	12267	5564	19145	8684	31389	14238	44876	20355	69582	31562	87801	39826	105849	48012	155604	70581	269502	122244

Orifice Capacities (Contd.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.14. Review pressure/ temperature limits on page 1811.1.

W=51.5KAP
K=.877
A= flow area in in^2.
P= (1.03 x set pressure) + 14.7 or
P= (2 psig + set pressure) + 14.7

ASME, B & PVC, Section I rating - 2010 Edition

lb/hr (kg/hr) saturated steam at 3% overpressure or 2 psig (0.14 barg), whichever is greater, 90% of actual capacity

Orifice Designation		F		G		H		J		K		L		M		N		P		Q	
Orifice Area		in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
		0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.00	6.380	41.160	11.050	71.290
Set Pressure		Orifice Capacity																			
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
515	35.51	7558	3428	12384	5617	19328	8767	31688	14373	45304	20550	70246	31863	88639	40206	106859	48470	157088	71254	272072	123410
520	35.85	7630	3461	12501	5670	19510	8850	31987	14509	45732	20744	70910	32164	89476	40586	107868	48928	158572	71927	274643	124576
525	36.20	7701	3493	12618	5723	19693	8933	32287	14645	46160	20938	71573	32465	90313	40965	108878	49386	160056	72600	277213	125742
530	36.54	7773	3526	12735	5776	19876	9016	32586	14781	46588	21132	72237	32766	91151	41345	109887	49844	161540	73273	279783	126907
535	36.89	7844	3558	12852	5830	20058	9098	32885	14916	47016	21326	72900	33067	91988	41725	110897	50302	163024	73946	282353	128073
540	37.23	7915	3590	12969	5883	20241	9181	33185	15052	47444	21520	73564	33368	92825	42105	111906	50760	164508	74620	284924	129239
545	37.58	7987	3623	13086	5936	20423	9264	33484	15188	47872	21714	74228	33669	93663	42485	112916	51218	165992	75293	287494	130405
550	37.92	8058	3655	13203	5989	20606	9347	33783	15324	48300	21909	74891	33970	94500	42864	113925	51676	167476	75966	290064	131571
555	38.27	8130	3688	13320	6042	20788	9429	34083	15460	48728	22103	75555	34271	95338	43245	114935	52134	168960	76639	292634	132737
560	38.61	8201	3720	13437	6095	20971	9512	34382	15595	49156	22297	76219	34572	96175	43624	115944	52591	170444	77312	295205	133903
565	38.96	8273	3753	13554	6148	21154	9595	34682	15731	49584	22491	76882	34873	97012	44004	116954	53049	171928	77985	297775	135068
570	39.30	8344	3785	13671	6201	21336	9678	34981	15867	50012	22685	77546	35174	97850	44384	117963	53507	173412	78658	300345	136234
575	39.64	8415	3817	13788	6254	21519	9761	35280	16003	50440	22879	78209	35475	98687	44764	118973	53965	174896	79331	302915	137400
580	39.99	8487	3850	13905	6307	21701	9843	35580	16139	50868	23073	78873	35776	99524	45143	119982	54423	176380	80005	305486	138566
585	40.33	8558	3882	14022	6360	21884	9926	35879	16274	51296	23267	79537	36077	100362	45523	120992	54881	177864	80678	308056	139732
590	40.68	8630	3915	14139	6413	22067	10009	36178	16410	51724	23462	80200	36378	101199	45903	122001	55339	179348	81351	310626	140898
595	41.02	8701	3947	14256	6466	22249	10092	36478	16546	52152	23656	80864	36679	102036	46283	123011	55797	180832	82024	313196	142063
600	41.37	8772	3979	14373	6519	22432	10175	36777	16682	52580	23850	81527	36980	102874	46663	124020	56255	182316	82697	315767	143230
605	41.71	8844	4012	14490	6573	22614	10258	37076	16817	53008	24044	82191	37281	103711	47043	125030	56713	183800	83370	318337	144395
610	42.06	8915	4044	14607	6626	22797	10341	37376	16953	53436	24238	82855	37582	104549	47423	126039	57170	185284	84043	320907	145561
615	42.40	8987	4076	14724	6679	22980	10424	37675	17089	53864	24432	83518	37883	105386	47802	127049	57628	186768	84717	323477	146727
620	42.75	9058	4109	14841	6732	23162	10506	37975	17225	54292	24626	84182	38184	106223	48182	128058	58086	188252	85390	326048	147893
625	43.09	9129	4141	14958	6785	23345	10589	38274	17361	54720	24821	84846	38485	107061	48562	129068	58544	189736	86063	328618	149059
630	43.44	9201	4174	15075	6838	23527	10672	38573	17496	55148	25015	85509	38786	107898	48942	130077	59002	191220	86736	331188	150224
635	43.78	9272	4206	15192	6891	23710	10755	38873	17632	55576	25209	86173	39087	108735	49321	131087	59460	192704	87409	333758	151390
640	44.13	9344	4238	15309	6944	23893	10838	39172	17768	56004	25403	86836	39388	109573	49701	132096	59918	194188	88082	336329	152556
645	44.47	9415	4271	15426	6997	24075	10920	39471	17904	56432	25597	87500	39689	110410	50081	133106	60376	195672	88755	338899	153722
650	44.82	9486	4303	15543	7050	24258	11003	39771	18040	56860	25791	88164	39991	111248	50461	134115	60834	197156	89428	341469	154888
655	45.16	9558	4335	15660	7103	24440	11086	40070	18175	57288	25985	88827	40291	112085	50841	135125	61292	198640	90102	344039	156053
660	45.51	9629	4368	15777	7156	24623	11169	40369	18311	57716	26180	89491	40592	112922	51221	136134	61749	200124	90775	346610	157220
665	45.85	9701	4400	15894	7209	24806	11252	40669	18447	58144	26374	90154	40893	113760	51601	137144	62207	201608	91448	349180	158385
670	46.19	9772	4433	16011	7262	24988	11334	40968	18583	58572	26568	90818	41194	114597	51980	138153	62665	203092	92121	351750	159551
675	46.54	9844	4465	16128	7316	25171	11417	41267	18718	59000	26762	91482	41496	115434	52360	139163	63123	204576	92794	354320	160717
680	46.88	9915	4497	16245	7369	25353	11500	41567	18854	59428	26956	92145	41796	116272	52740	140172	63581	206060	93467	356891	161883
685	47.23	9986	4530	16362	7422	25536	11583	41866	18990	59856	27150	92809	42097	117109	53120	141182	64039	207544	94140	359461	163049
690	47.57	10058	4562	16479	7475	25718	11665	42166	19126	60284	27344	93472	42398	117946	53499	142191	64497	209028	94814	362031	164214
695	47.92	10129	4594	16596	7528	25901	11748	42465	19262	60712	27538	94136	42699	118784	53880	143201	64955	210512	95487	364601	165380
700	48.26	10201	4627	16713	7581	26084	11832	42764	19397	61139	27732	94800	43001	119621	54259	144210	65413	211996	96160	367172	166546
705	48.61	10272	4659	16830	7634	26266	11914	43064	19534	61567	27926	95463	43301	120459	54639	145220	65871	213480	96833	369742	167712
710	48.95	10343	4692	16947	7687	26449	11997	43363	19669	61995	28120	96127	43602	121296	55019	146229	66328	214964	97506	372312	168878
715	49.30	10415	4724	17064	7740	26631	12080	43662	19805	62423	28315	96791	43904	122133	55399	147239	66786	216448	98179	374883	170044
720	49.64	10486	4756	17181	7793	26814	12163	43962	19941	62851	28509	97454	44204	122971	55779	148248	67244	217932	98852	377453	171210
725	49.99	10558	4789	17298	7846	26997	12246	44261	20076	63279	28703	98118	44506	123808	56158	149258	67702	219416	99525	380023	172376

Orifice Capacities (Contd.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.14. Review pressure/ temperature limits on page 1811.1.

W=51.5KAP
K=.877
A= flow area in in^2.
P= (1.10 x set pressure) + 14.7 or
P= (3 psig + set pressure) + 14.7

ASME, B & PVC, Section VIII rating - 2010 Edition

lb/hr (kg/hr) saturated steam at 10% overpressure or 3 psig (0.21 barg), whichever is greater, 90% of actual capacity

Orifice Designation		F		G		H		J		K		L		M		N		P		Q	
Orifice Area		in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
		0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.000	6.380	41.160	11.050	71.290
Set Pressure		Orifice Capacity																			
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
15	1.03	453	205	742	337	1159	526	1900	862	2717	1232	4213	1911	5316	2411	6409	2907	9422	4274	16319	7402
20	1.38	522	237	856	388	1336	606	2191	994	3133	1421	4857	2203	6129	2780	7389	3352	10863	4927	18815	8534
25	1.72	592	269	970	440	1513	686	2482	1126	3548	1609	5502	2496	6942	3149	8369	3796	12304	5581	21310	9666
30	2.07	661	300	1083	491	1691	767	2772	1257	3964	1798	6146	2788	7755	3518	9350	4241	13745	6235	23806	10798
35	2.41	737	334	1208	548	1886	855	3092	1403	4421	2005	6855	3109	8650	3924	10428	4730	15329	6953	26550	12043
40	2.76	813	369	1333	605	2081	944	3412	1548	4878	2213	7563	3431	9544	4329	11506	5219	16914	7672	29295	13288
45	3.10	890	404	1458	661	2276	1032	3731	1692	5335	2420	8272	3752	10438	4735	12584	5708	18499	8391	32040	14533
50	3.45	966	438	1583	718	2471	1121	4051	1838	5792	2627	8981	4074	11332	5140	13662	6197	20084	9110	34785	15778
55	3.79	1042	473	1708	775	2666	1209	4371	1983	6249	2834	9690	4395	12227	5546	14740	6686	21669	9829	37530	17023
60	4.14	1118	507	1833	831	2861	1298	4690	2127	6706	3042	10398	4716	13121	5952	15818	7175	23254	10548	40275	18268
65	4.48	1195	542	1958	888	3056	1386	5010	2272	7163	3249	11107	5038	14015	6357	16896	7664	24839	11267	43020	19514
70	4.83	1271	577	2083	945	3251	1475	5330	2418	7620	3456	11816	5360	14910	6763	17974	8153	26423	11985	45765	20759
75	5.17	1347	611	2208	1002	3446	1563	5650	2563	8077	3664	12524	5681	15804	7169	19052	8642	28008	12704	48510	22004
80	5.52	1424	646	2333	1058	3641	1652	5969	2707	8534	3871	13233	6002	16698	7574	20131	9131	29593	13423	51255	23249
85	5.86	1500	680	2458	1115	3836	1740	6289	2853	8991	4078	13942	6324	17592	7980	21209	9620	31178	14142	54000	24494
90	6.21	1576	715	2583	1172	4031	1828	6609	2998	9448	4286	14651	6646	18487	8386	22287	10109	32763	14861	56745	25739
95	6.55	1652	749	2708	1228	4226	1917	6928	3142	9906	4493	15359	6967	19381	8791	23365	10598	34348	15580	59490	26984
100	6.89	1729	784	2832	1285	4421	2005	7248	3288	10363	4701	16068	7288	20275	9197	24443	11087	35933	16299	62235	28229
105	7.24	1805	819	2957	1341	4616	2094	7568	3433	10820	4908	16777	7610	21169	9602	25521	11576	37517	17017	64980	29474
110	7.58	1881	853	3082	1398	4811	2182	7887	3577	11277	5115	17485	7931	22064	10008	26599	12065	39102	17736	67724	30719
115	7.93	1957	888	3207	1455	5006	2271	8207	3723	11734	5322	18194	8253	22958	10414	27677	12554	40687	18455	70469	31964
120	8.27	2034	923	3332	1511	5201	2359	8527	3868	12191	5530	18903	8574	23852	10819	28755	13043	42272	19174	73214	33209
125	8.62	2110	957	3457	1568	5396	2448	8847	4013	12648	5737	19612	8896	24747	11225	29833	13532	43857	19893	75959	34454
130	8.96	2186	992	3582	1625	5591	2536	9166	4158	13105	5944	20320	9217	25641	11631	30912	14021	45442	20612	78704	35700
135	9.31	2262	1026	3707	1681	5786	2624	9486	4303	13562	6152	21029	9539	26535	12036	31990	14510	47027	21331	81449	36945
140	9.65	2339	1061	3832	1738	5981	2713	9806	4448	14019	6359	21738	9860	27429	12442	33068	14999	48611	22050	84194	38190
145	10.00	2415	1095	3957	1795	6176	2801	10125	4593	14476	6566	22446	10181	28324	12848	34146	15488	50196	22769	86939	39435
150	10.34	2491	1130	4082	1852	6371	2890	10445	4738	14933	6773	23155	10503	29218	13253	35224	15977	51781	23487	89684	40680
155	10.69	2567	1164	4207	1908	6566	2978	10765	4883	15390	6981	23864	10825	30112	13659	36302	16466	53366	24206	92429	41925
160	11.03	2644	1199	4332	1965	6761	3067	11085	5028	15848	7189	24573	11146	31007	14065	37380	16955	54951	24925	95174	43170
165	11.38	2720	1234	4457	2022	6956	3155	11404	5173	16305	7396	25281	11467	31901	14470	38458	17444	56536	25644	97919	44415
170	11.72	2796	1268	4582	2078	7151	3244	11724	5318	16762	7603	25990	11789	32795	14876	39536	17933	58121	26363	100664	45660
175	12.07	2872	1303	4707	2135	7346	3332	12044	5463	17219	7810	26699	12110	33689	15281	40614	18422	59705	27082	103409	46906
180	12.41	2949	1338	4832	2192	7541	3421	12363	5608	17676	8018	27407	12432	34584	15687	41693	18912	61290	27801	106154	48151
185	12.76	3025	1372	4957	2248	7736	3509	12683	5753	18133	8225	28116	12753	35478	16093	42771	19401	62875	28520	108898	49395
190	13.10	3101	1407	5082	2305	7931	3597	13003	5898	18590	8432	28825	13075	36372	16498	43849	19890	64460	29239	111643	50640
195	13.44	3178	1442	5207	2362	8126	3686	13322	6043	19047	8640	29534	13396	37266	16904	44927	20379	66045	29958	114388	51886
200	13.79	3254	1476	5331	2418	8321	3774	13642	6188	19504	8847	30242	13718	38161	17310	46005	20868	67630	30676	117133	53131
205	14.13	3330	1510	5456	2475	8516	3863	13962	6333	19961	9054	30951	14039	39055	17715	47083	21356	69215	31395	119878	54376
210	14.48	3406	1545	5581	2531	8711	3951	14282	6478	20418	9261	31660	14361	39949	18121	48161	21845	70799	32114	122623	55621
215	14.82	3483	1580	5706	2588	8906	4040	14601	6623	20875	9469	32368	14682	40844	18527	49239	22334	72384	32833	125368	56866
220	15.17	3559	1614	5831	2645	9101	4128	14921	6768	21332	9676	33077	15003	41738	18932	50317	22823	73969	33552	128113	58111
225	15.51	3635	1649	5956	2702	9296	4217	15241	6913	21790	9884	33786	15325	42632	19338	51395	23312	75554	34271	130858	59356
230	15.86	3711	1683	6081	2758	9491	4305	15560	7058	22247	10091	34495	15647	43526	19743	52474	23802	77139	34990	133603	60601
235	16.20	3788	1718	6206	2815	9686	4393	15880	7203	22704	10298	35203	15968	44421	20149	53552	24291	78724	35709	136348	61846
240	16.55	3864	1753	6331	2872	9881	4482	16200	7348	23161	10506	35912	16289	45315	20555	54630	24780	80309	36428	139093	63092
245	16.89	3940	1787	6456	2928	10076	4570	16519	7493	23618	10713	36621	16611	46209	20960	55708	25269	81893	37146	141838	64337
250	17.24	4016	1822	6581	2985	10271	4659	16839	7638	24075	10920	37329	16932	47104	21366	56786	25758	83478	37865	144583	65582
255	17.58	4093	1857	6706	3042	10466	4747	17159	7783	24532	11128	38038	17254	47998	21772	57864	26247	85063	38584	147328	66827
260	17.93	4169	1891	6831	3098	10661	4836	17479	7928	24989	11335	38747	17575	48892	22177	58942	26736	86648	39303	150072	68072

Orifice Capacities (Contd.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.14. Review pressure/ temperature limits on page 1811.1.

W=51.5KAP
K=.877
A= flow area in in^2.
P= (1.10 x set pressure) + 14.7 or
P= (3 psig + set pressure) + 14.7

ASME, B & PVC, Section VIII rating - 2010 Edition

lb/hr (kg/hr) saturated steam at 10% overpressure or 3 psig (0.21 barg), whichever is greater, 90% of actual capacity

Orifice Designation	F		G		H		J		K		L		M		N		P		Q	
Orifice Area	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
	0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.000	6.380	41.160	11.050	71.290
Set Pressure	Orifice Capacity																			
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
265	18.27	4245	1925	6956	3155	10856	4924	17798	8073	25446	11542	39456	17897	49786	22583	60020	27225	88233	40022	152817	69317
270	18.62	4321	1960	7081	3212	11051	5013	18118	8218	25903	11749	40164	18218	50681	22989	61098	27714	89818	40741	155562	70562
275	18.96	4398	1995	7206	3269	11246	5101	18438	8363	26360	11957	40873	18540	51575	23394	62176	28203	91403	41460	158307	71807
280	19.31	4474	2029	7331	3325	11441	5190	18757	8508	26817	12164	41582	18861	52469	23800	63255	28692	92987	42178	161052	73052
285	19.65	4550	2064	7456	3382	11636	5278	19077	8653	27274	12371	42290	19182	53363	24205	64333	29181	94572	42897	163797	74297
290	19.99	4627	2099	7581	3439	11831	5366	19397	8798	27731	12579	42999	19504	54258	24611	65411	29670	96157	43616	166542	75542
295	20.34	4703	2133	7706	3495	12026	5455	19717	8943	28189	12786	43708	19826	55152	25017	66489	30159	97742	44335	169287	76787
300	20.68	4779	2168	7830	3552	12221	5543	20036	9088	28646	12994	44417	20147	56046	25422	67567	30648	99327	45054	172032	78032
305	21.03	4855	2202	7955	3608	12416	5632	20356	9233	29103	13201	45125	20468	56941	25828	68645	31137	100912	45773	174777	79278
310	21.37	4932	2237	8080	3665	12611	5720	20676	9378	29560	13408	45834	20790	57835	26234	69723	31626	102497	46492	177522	80523
315	21.72	5008	2272	8205	3722	12806	5809	20995	9523	30017	13615	46543	21112	58729	26639	70801	32115	104081	47210	180267	81768
320	22.06	5084	2306	8330	3778	13001	5897	21315	9668	30474	13823	47251	21433	59623	27045	71879	32604	105666	47929	183012	83013
325	22.41	5160	2341	8455	3835	13196	5986	21635	9813	30931	14030	47960	21754	60518	27451	72958	33093	107251	48648	185757	84258
330	22.75	5237	2375	8580	3892	13391	6074	21954	9958	31388	14237	48669	22076	61412	27856	74036	33582	108836	49367	188502	85503
335	23.10	5313	2410	8705	3949	13586	6163	22274	10103	31845	14445	49378	22397	62306	28262	75114	34071	110421	50086	191246	86748
340	23.44	5389	2444	8830	4005	13781	6251	22594	10248	32302	14652	50086	22719	63200	28667	76192	34560	112006	50805	193991	87993
345	23.79	5465	2479	8955	4062	13976	6339	22914	10394	32759	14859	50795	23040	64095	29073	77270	35049	113591	51524	196736	89238
350	24.13	5542	2514	9080	4119	14171	6428	23233	10538	33216	15067	51504	23362	64989	29479	78348	35538	115175	52243	199481	90483
355	24.48	5618	2548	9205	4175	14366	6516	23553	10683	33673	15274	52212	23683	65883	29884	79426	36027	116760	52961	202226	91728
360	24.82	5694	2583	9330	4232	14561	6605	23873	10829	34131	15482	52921	24005	66778	30290	80504	36516	118345	53680	204971	92973
365	25.17	5770	2617	9455	4289	14756	6693	24192	10973	34588	15689	53630	24326	67672	30696	81582	37005	119930	54399	207716	94218
370	25.51	5847	2652	9580	4345	14951	6782	24512	11118	35045	15896	54339	24648	68566	31101	82660	37494	121515	55118	210461	95464
375	25.86	5923	2687	9705	4402	15146	6870	24832	11264	35502	16103	55047	24969	69460	31507	83739	37983	123100	55837	213206	96709
380	26.20	5999	2721	9830	4459	15341	6959	25151	11408	35959	16311	55756	25290	70355	31912	84817	38472	124685	56556	215951	97954
385	26.54	6075	2756	9955	4516	15536	7047	25471	11553	36416	16518	56465	25612	71249	32318	85895	38961	126269	57275	218696	99199
390	26.89	6152	2791	10080	4572	15731	7135	25791	11699	36873	16725	57173	25933	72143	32724	86973	39450	127854	57994	221441	100444
395	27.23	6228	2825	10205	4629	15926	7224	26111	11844	37330	16933	57882	26255	73038	33129	88051	39939	129439	58713	224186	101689
400	27.58	6304	2859	10329	4685	16121	7312	26430	11988	37787	17140	58591	26576	73932	33535	89129	40428	131024	59431	226931	102934
405	27.92	6381	2894	10454	4742	16316	7401	26750	12134	38244	17347	59300	26898	74826	33941	90207	40917	132609	60150	229676	104179
410	28.27	6457	2929	10579	4799	16511	7489	27070	12279	38701	17554	60008	27219	75720	34346	91285	41406	134194	60869	232420	105424
415	28.61	6533	2963	10704	4855	16706	7578	27389	12423	39158	17762	60717	27541	76615	34752	92363	41895	135779	61588	235165	106669
420	28.96	6609	2998	10829	4912	16901	7666	27709	12569	39615	17969	61426	27862	77509	35157	93441	42384	137363	62307	237910	107914
425	29.30	6686	3033	10954	4969	17096	7755	28029	12714	40072	18176	62134	28184	78403	35563	94520	42874	138948	63026	240655	109159
430	29.65	6762	3067	11079	5025	17291	7843	28349	12859	40530	18384	62843	28505	79297	35969	95598	43363	140533	63745	243400	110404
435	29.99	6838	3102	11204	5082	17486	7932	28668	13004	40987	18591	63552	28827	80192	36374	96676	43851	142118	64464	246145	111649
440	30.34	6914	3136	11329	5139	17681	8020	28988	13149	41444	18799	64261	29148	81086	36780	97754	44340	143703	65183	248890	112895
445	30.68	6991	3171	11454	5195	17876	8108	29308	13294	41901	19006	64969	29469	81980	37186	98832	44829	145288	65902	251635	114140
450	31.03	7067	3206	11579	5252	18071	8197	29627	13439	42358	19213	65678	29791	82875	37591	99910	45318	146873	66620	254380	115385
455	31.37	7143	3240	11704	5309	18266	8285	29947	13584	42815	19421	66387	30113	83769	37997	100988	45807	148457	67339	257125	116630
460	31.72	7219	3274	11829	5366	18461	8374	30267	13729	43272	19628	67095	30434	84663	38402	102066	46296	150042	68058	259870	117875
465	32.06	7296	3309	11954	5422	18656	8462	30586	13874	43729	19835	67804	30755	85557	38808	103144	46785	151627	68777	262615	119120
470	32.41	7372	3344	12079	5479	18851	8551	30906	14019	44186	20042	68513	31077	86452	39214	104222	47274	153212	69496	265360	120365
475	32.75	7448	3378	12204	5536	19046	8639	31226	14164	44643	20250	69222	31399	87346	39619	105301	47764	154797	70215	268105	121610
480	33.09	7524	3413	12329	5592	19241	8728	31546	14309	45100	20457	69930	31720	88240	40025	106379	48253	156382	70934	270850	122855
485	33.44	7601	3448	12454	5649	19436	8816	31865	14454	45557	20664	70639	32041	89135	40431	107457	48742	157967	71653	273594	124100
490	33.78	7677	3482	12579	5706	19631	8904	32185	14599	46014	20872	71348	32363	90029	40836	108535	49231	159551	72371	276339	125345
495	34.13	7753	3517	12704	5762	19826	8993	32505	14744	46472	21079	72056	32684	90923	41242	109613	49720	161136	73090	279084	126590
500	34.47	7830	3552	12828	5819	20021	9081	32824	14889	46929	21287	72765	33006	91817	41647	110691	50209	162721	73809	281829	127835
505	34.82	7906	3586	12953	5875	20216	9170	33144	15034	47386	21494	73474	33327	92712	42053	111769	50698	164306	74528	284574	129081
510	35.16	7982	3621	13078	5932	20411	9258	33464	15179	47843	21701	74183	33649	93606	42459	112847	51187	165891	75247	287319	130326

Orifice Capacities (Contd.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.14. Review pressure/ temperature limits on page 1811.1.

W=51.5KAP
K=.877
A= flow area in in^2.
P= (1.10 x set pressure) + 14.7 or
P= (3 psig + set pressure) + 14.7

ASME, B & PVC, Section VIII rating - 2010 Edition

lb/hr (kg/hr) saturated steam at 10% overpressure or 3 psig (0.21 barg), whichever is greater, 90% of actual capacity

Orifice Designation		F		G		H		J		K		L		M		N		P		Q	
Orifice Area		in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
		0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.000	6.380	41.160	11.050	71.290
Set Pressure		Orifice Capacity																			
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
515	35.51	8058	3655	13203	5989	20606	9347	33783	15324	48300	21909	74891	33970	94500	42864	113925	51676	167476	75966	290064	131571
520	35.85	8135	3690	13328	6045	20801	9435	34103	15469	48757	22116	75600	34292	95394	43270	115003	52164	169061	76685	292809	132816
525	36.20	8211	3724	13453	6102	20996	9524	34423	15614	49214	22323	76309	34613	96289	43676	116082	52654	170645	77403	295554	134061
530	36.54	8287	3759	13578	6159	21191	9612	34743	15759	49671	22530	77017	34934	97183	44081	117160	53143	172230	78122	298299	135306
535	36.89	8363	3793	13703	6216	21386	9701	35062	15904	50128	22738	77726	35256	98077	44487	118238	53632	173815	78841	301044	136551
540	37.23	8440	3828	13828	6272	21581	9789	35382	16049	50585	22945	78435	35578	98972	44893	119316	54121	175400	79560	303789	137796
545	37.58	8516	3863	13953	6329	21776	9877	35702	16194	51042	23152	79144	35899	99866	45298	120394	54610	176985	80279	306534	139041
550	37.92	8592	3897	14078	6386	21971	9966	36021	16339	51499	23360	79852	36220	100760	45704	121472	55099	178570	80998	309279	140287
555	38.27	8668	3932	14203	6442	22166	10054	36341	16484	51956	23567	80561	36542	101654	46109	122550	55588	180155	81717	312024	141532
560	38.61	8745	3967	14328	6499	22361	10143	36661	16629	52414	23775	81270	36863	102549	46515	123628	56077	181739	82435	314768	142776
565	38.96	8821	4001	14453	6556	22556	10231	36981	16774	52871	23982	81978	37185	103443	46921	124706	56566	183324	83154	317513	144021
570	39.30	8897	4036	14578	6612	22751	10320	37300	16919	53328	24189	82687	37506	104337	47326	125784	57055	184909	83873	320258	145267
575	39.64	8973	4070	14703	6669	22946	10408	37620	17064	53785	24396	83396	37828	105232	47732	126863	57544	186494	84592	323003	146512
580	39.99	9050	4105	14828	6726	23141	10497	37940	17209	54242	24604	84105	38149	106126	48138	127941	58033	188079	85311	325748	147757
585	40.33	9126	4139	14953	6783	23336	10585	38259	17354	54699	24811	84813	38471	107020	48543	129019	58522	189664	86030	328493	149002
590	40.68	9202	4174	15078	6839	23531	10673	38579	17499	55156	25018	85522	38792	107914	48949	130097	59011	191249	86749	331238	150247
595	41.02	9278	4208	15203	6896	23726	10762	38899	17644	55613	25226	86231	39114	108809	49355	131175	59500	192833	87468	333983	151492
600	41.37	9355	4243	15328	6953	23921	10850	39218	17789	56070	25433	86939	39435	109703	49760	132253	59989	194418	88187	336728	152737
605	41.71	9431	4278	15452	7009	24116	10939	39538	17934	56527	25640	87648	39756	110597	50166	133331	60478	196003	88905	339473	153982
610	42.06	9507	4312	15577	7066	24311	11027	39858	18079	56984	25848	88357	40078	111491	50571	134409	60967	197588	89624	342218	155227
615	42.40	9584	4347	15702	7122	24506	11116	40178	18224	57441	26055	89066	40400	112386	50977	135487	61456	199173	90343	344963	156473
620	42.75	9660	4382	15827	7179	24701	11204	40497	18369	57898	26262	89774	40721	113280	51383	136565	61945	200758	91062	347708	157718
625	43.09	9736	4416	15952	7236	24896	11293	40817	18514	58355	26469	90483	41042	114174	51788	137644	62434	202343	91781	350453	158963
630	43.44	9812	4451	16077	7292	25091	11381	41137	18659	58813	26677	91192	41364	115069	52194	138722	62923	203927	92500	353198	160208
635	43.78	9889	4486	16202	7349	25286	11470	41456	18804	59270	26884	91900	41685	115963	52600	139800	63412	205512	93219	355942	161453
640	44.13	9965	4520	16327	7406	25481	11558	41776	18949	59727	27092	92609	42007	116857	53005	140878	63901	207097	93938	358687	162698
645	44.47	10041	4555	16452	7463	25676	11646	42096	19094	60184	27299	93318	42328	117751	53411	141956	64390	208682	94657	361432	163943
650	44.82	10117	4589	16577	7519	25871	11735	42416	19240	60641	27506	94027	42650	118646	53817	143034	64879	210267	95376	364177	165188
655	45.16	10194	4624	16702	7576	26066	11823	42735	19384	61098	27714	94735	42971	119540	54222	144112	65368	211852	96094	366922	166433
660	45.51	10270	4658	16827	7633	26261	11912	43055	19529	61555	27921	95444	43293	120434	54628	145190	65857	213437	96813	369667	167678
665	45.85	10346	4693	16952	7689	26456	12000	43375	19675	62012	28128	96153	43614	121328	55033	146268	66346	215021	97532	372412	168923
670	46.19	10422	4727	17077	7746	26651	12089	43694	19819	62469	28335	96861	43935	122223	55439	147346	66835	216606	98251	375157	170168
675	46.54	10499	4762	17202	7803	26846	12177	44014	19964	62926	28543	97570	44257	123117	55845	148425	67324	218191	98970	377902	171413
680	46.88	10575	4797	17327	7859	27041	12266	44334	20110	63383	28750	98279	44579	124011	56250	149503	67813	219776	99689	380647	172659
685	47.23	10651	4831	17452	7916	27236	12354	44653	20254	63840	28957	98988	44900	124906	56656	150581	68302	221361	100408	383392	173904
690	47.57	10727	4866	17577	7973	27431	12442	44973	20399	64297	29165	99696	45221	125800	57062	151659	68791	222946	101127	386137	175149
695	47.92	10804	4901	17702	8029	27626	12531	45293	20545	64755	29372	100405	45543	126694	57467	152737	69280	224531	101846	388882	176394
700	48.26	10880	4935	17827	8086	27821	12619	45613	20690	65212	29580	101114	45865	127588	57873	153815	69769	226115	102564	391627	177639
705	48.61	10956	4970	17951	8142	28016	12708	45932	20834	65669	29787	101822	46186	128483	58279	154893	70258	227700	103283	394372	178884
710	48.95	11033	5004	18076	8199	28211	12796	46252	20980	66126	29994	102531	46507	129377	58684	155971	70747	229285	104002	397116	180129
715	49.30	11109	5039	18201	8256	28406	12885	46572	21125	66583	30202	103240	46829	130271	59090	157049	71236	230870	104721	399861	181374
720	49.64	11185	5073	18326	8313	28601	12973	46891	21269	67040	30409	103949	47150	131166	59496	158127	71725	232455	105440	402606	182619
725	49.99	11261	5108	18451	8369	28796	13062	47211	21415	67497	30616	104657	47472	132060	59901	159206	72215	234040	106159	405351	183864

Orifice Capacities (Contd.)

Superheat Correction Factor

Total Temperature (°F)	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Flowing Pressure psia*	Superheat Correction Factor K_{sh}																
50	0.987	0.957	0.930	0.905	0.882	0.861	0.841	0.823	0.805	0.789	0.774	0.759	0.745	0.732	0.719	0.708	0.696
100	0.998	0.963	0.935	0.909	0.885	0.864	0.843	0.825	0.807	0.790	0.775	0.760	0.746	0.733	0.720	0.708	0.697
150	0.984	0.970	0.940	0.913	0.888	0.866	0.846	0.826	0.808	0.792	0.776	0.761	0.747	0.733	0.721	0.709	0.697
200	0.979	0.977	0.945	0.917	0.892	0.869	0.848	0.828	0.810	0.793	0.777	0.762	0.748	0.734	0.721	0.709	0.698
250	-	0.972	0.951	0.921	0.895	0.871	0.850	0.830	0.812	0.794	0.778	0.763	0.749	0.735	0.722	0.710	0.698
300	-	0.968	0.957	0.926	0.898	0.874	0.852	0.832	0.813	0.796	0.780	0.764	0.750	0.736	0.723	0.710	0.699
350	-	0.968	0.963	0.930	0.902	0.877	0.854	0.834	0.815	0.797	0.781	0.765	0.750	0.736	0.723	0.711	0.699
400	-	-	0.963	0.935	0.906	0.880	0.857	0.836	0.816	0.798	0.782	0.766	0.751	0.737	0.724	0.712	0.700
450	-	-	0.961	0.940	0.909	0.883	0.859	0.838	0.818	0.800	0.783	0.767	0.752	0.738	0.725	0.712	0.700
500	-	-	0.961	0.946	0.914	0.886	0.862	0.840	0.820	0.801	0.784	0.768	0.753	0.739	0.725	0.713	0.701
550	-	-	0.962	0.952	0.918	0.889	0.864	0.842	0.822	0.803	0.785	0.769	0.754	0.740	0.726	0.713	0.701
600	-	-	0.964	0.958	0.922	0.892	0.867	0.844	0.823	0.804	0.787	0.770	0.755	0.740	0.727	0.714	0.702
650	-	-	0.968	0.958	0.927	0.896	0.869	0.846	0.825	0.806	0.788	0.771	0.756	0.741	0.728	0.715	0.702
700	-	-	-	0.958	0.931	0.899	0.872	0.848	0.827	0.807	0.789	0.772	0.757	0.742	0.728	0.715	0.703
750	-	-	-	0.958	0.936	0.903	0.875	0.850	0.828	0.809	0.790	0.774	0.758	0.743	0.729	0.716	0.703
800	-	-	-	0.960	0.942	0.906	0.878	0.852	0.830	0.810	0.792	0.774	0.759	0.744	0.730	0.716	0.704
850	-	-	-	0.962	0.947	0.910	0.880	0.855	0.832	0.812	0.793	0.776	0.760	0.744	0.730	0.717	0.704

***Notes:**

1. For capacity on superheated steam, multiply saturated steam capacity by correction factor.
2. Convert set pressure from (psig) to (psia) flowing pressure.

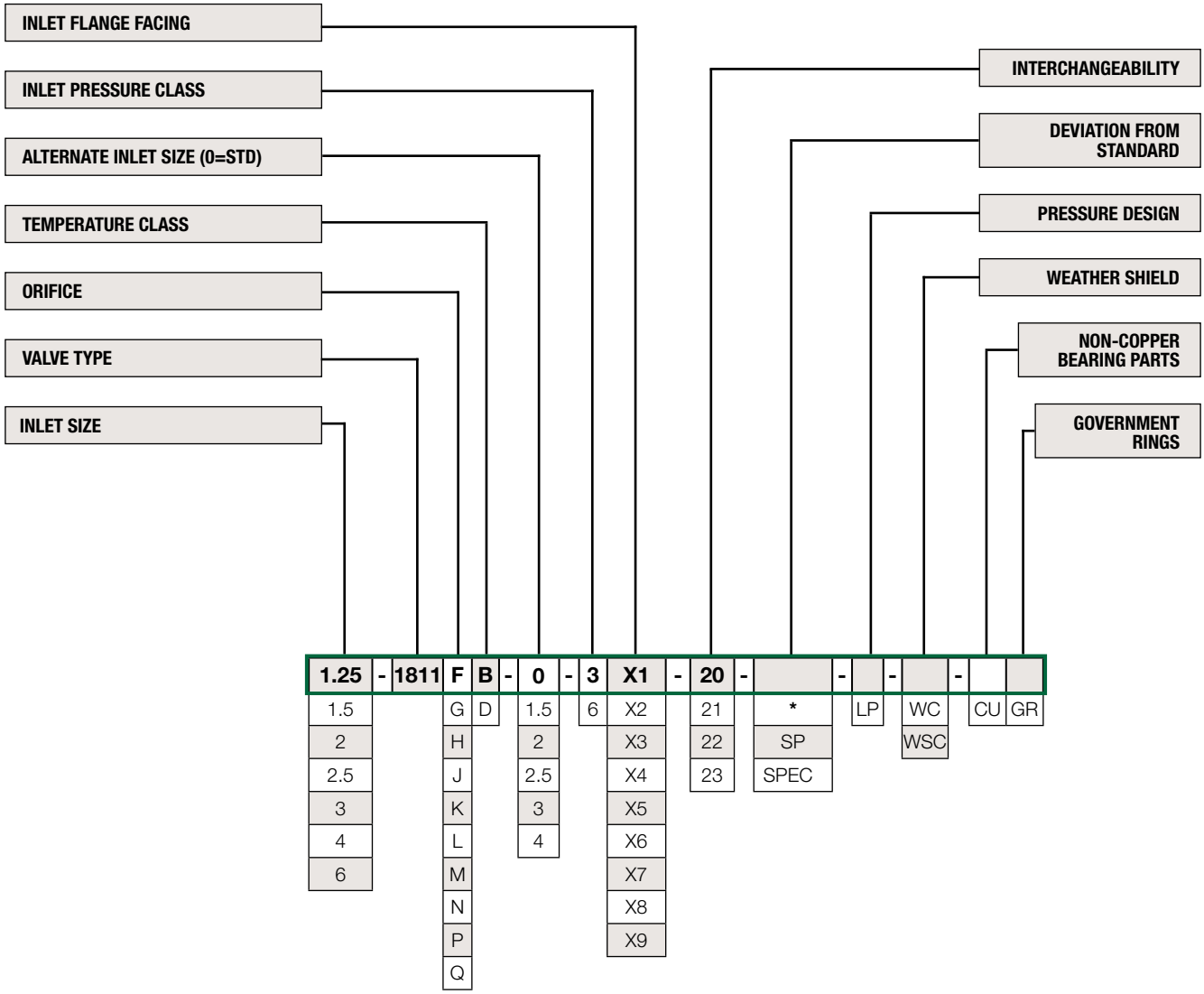
   * PSIA flowing =
   [set pressure psig x overpressure] + 14.7

How to Order a 1811 Safety Valve

How to Order a 1811 Safety Valve

Please Specify:		
Type of Application		
a) Boiler Drum		
b) Superheater		
c) Reheater		
d) Other	_____	(identify)
Applicable ASME Code		
a) Section I - Power Boiler		
b) Section VIII - Pressure Vessels		
Single Valve System	_____	
Multiple Valve System	_____	
System Parameters (For drum, superheater, or reheater)		
a) Design Pressure	_____	psig (barg)
b) Design Temperature	_____	°F (°C)
c) Operating Pressure	_____	psig (barg)
d) Operating Temperature	_____	°F (°C)
Valve Specifications		
a) Valve Set Pressure	_____	psig (barg)
b) Allowable Overpressure on Valve	_____	%
c) Relieving Capacity	_____	lb/hr (kg/hr)
d) Buttweld Valves		
Inlet Size		
Inlet Specifications		
Outlet Size & Flange Rating		
e) Flanged Valves		
Inlet Size & Flange Rating		
Outlet Size & Flange Rating		
f) Other Type Connections Other Than		
Buttweld or Flange		
g) Special Codes or Standards		
Valve Supplemental Data		
a) Gag Required		
b) Weathershield Required		
c) Hydrostatic Test Plug Required		
d) Special Cleaning		
e Special Boxing		
f) Export Boxing		
g) Special Painting		

Valve Configuration Code



Standard Valve Connection

Inlet Size		Orifice	Area	
in.	mm		in²	cm²
1.25	31.7	F	.307	1.981
1.25	31.7	G	.503	3.245
1.50	38.1	H	.785	5.065
1.50	38.1	J	1.287	8.303
2.00	50.8	K	1.840	11.871
2.50	63.5	L	2.853	18.406
3.00	76.2	M	3.600	23.226
4.00	101.6	N	4.340	28.000
4.00	101.6	P	6.380	41.161
6.00	152.4	Q	11.050	71.290

Valve Configuration Code (Contd.)

Alternate Inlet Size

Inlet		Outlet		Orifice
in.	mm	in.	mm	
1.50	38.1	1.50	38.1	F
2.00	50.8	1.50	38.1	F
2.50	63.5	1.50	38.1	G
2.00	50.8	1.50	38.1	G
2.00	50.8	2.50	63.5	H
2.50	63.5	2.50	63.5	H
2.00	50.8	2.50	63.5	J
2.50	63.5	2.50	63.5	J
2.00	50.8	4.00	101.6	K
2.50	63.5	3.00	76.2	K
2.50	63.5	4.00	101.6	K
3.00	76.2	3.00	76.2	K
3.00	76.2	4.00	101.6	K
2.50	63.5	6.00	152.4	L
3.00	76.2	4.00	101.6	L
3.00	76.2	6.00	152.4	L
4.00	101.6	6.00	152.4	L
3.00	76.2	6.00	152.4	M

Highlighted Cells Indicate Standard Size Connections

Inlet Flange Facing

Designation	Facing
X1	Raised Face Serrated
X2	Raised Face Smooth
X3	Ring Joint
X4	Large Tongue
X5	Large Groove
X6	Small Tongue
X7	Small Groove
X8	Large Female
X9	Large Male

Interchangeability Number

Designation	Description
20	Std Outlet - Flat Seat
21	Oversize Outlet - Flat Seat
22	Std Outlet - Thermodisc Seat
23	Oversize Outlet - Thermodisc Seat

Weather Shield

Designation	Description
WSC	Spring & Lifting Gear Cover
WC	Spring Cover Only

Temperature Class

Designation	Range
B	To 750°F (398.89°C)
D	To 1000°F (537.78°C)

Pressure Class

Designation	Class
3	300# ANSI
6	600# ANSI

Material Trim

Designation	Trim
	Standard
CU	Non-Copper Bearing Internal Parts

Pressure Design

Designation	Pressure Range
	Set ≥ 125 psig (86.18 barg) (All Orifice)
LP	5 To 124 psig (0.34 To 8.54 barg) (F, G, & H Only)