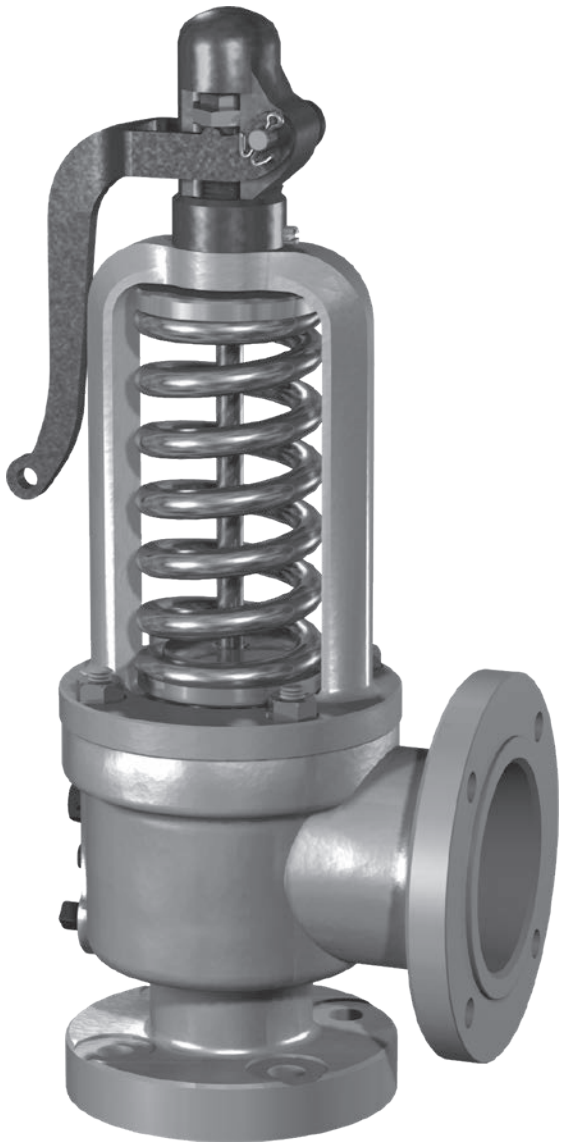
Technical Specification
Rev. E 02/2022

Consolidated™ 1811 Series Safety Valve

Cost effective, high-capicity flanged steel safety valve designed for steam service



VaporTec®
Especialistas en Vapor

Baker Hughes

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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	0.02831685	m^3/min
gal/min	3.785412	L/min
lb/hr	0.4535924	kg/hr
psig	0.06894757	barg
ft lb	1.3558181	Nm
°F	5/9 (°F-32)	°C

Scope of Design

Flanged Inlet - Type 1811, class 300										
Inlet[2]			Outlet			Type Numbers		Orifice		
ASME Std. R.F. Flange			ASME Std. R.F. Flange			Maximum Temperature[1]		Discharge area		Designa-tion
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[2]			Outlet			Type Numbers		Orifice		
ASME Std. R.F. Flange			ASME Std. R.F. Flange			Maximum Temperature[1]		Discharge area		Designa-tion
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

1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available with ASME B16.5 flange facings. See page 16 and 17 for selections.

Scope of Design (Cont.)

Flanged Inlet - Type 1811, class 300
alternate inlet and outlet sizes for replacement valves only

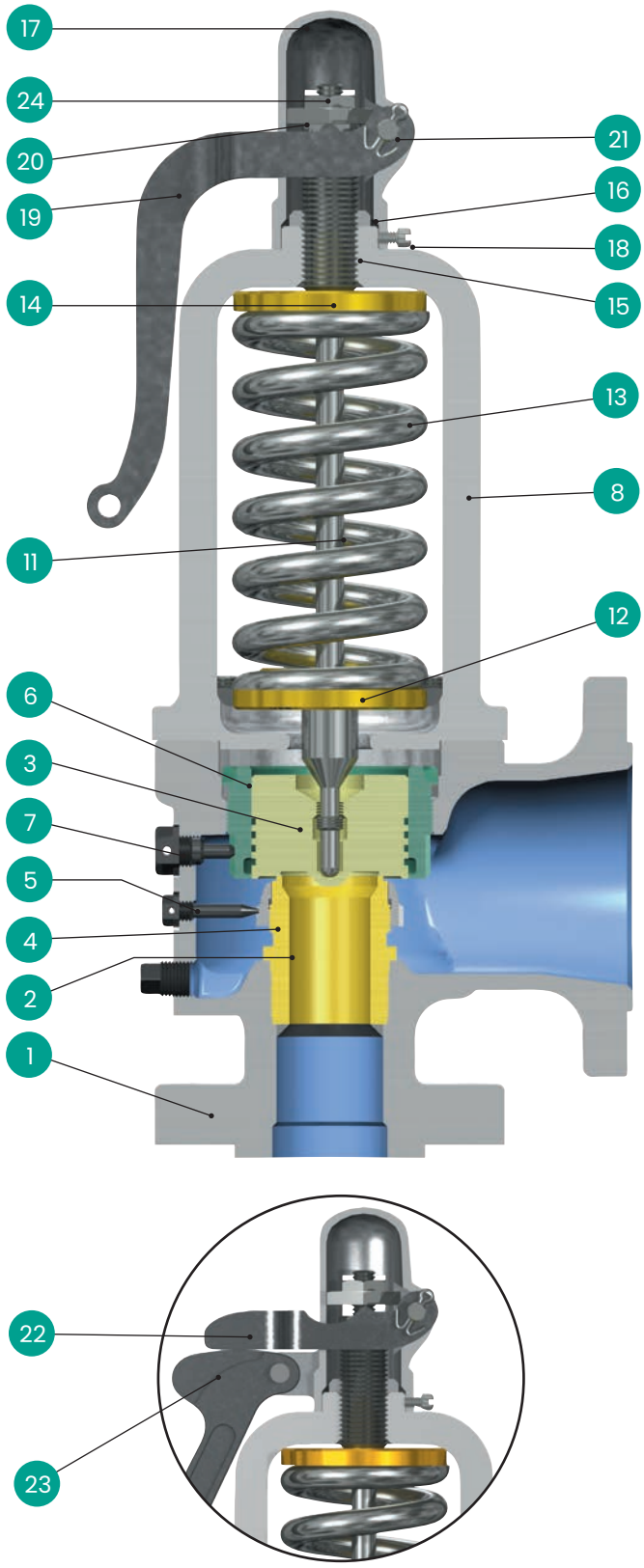
Inlet			Outlet			Type Numbers		Orifice		
ASME Std. R.F. Flange			ASME Std. R.F. Flange			Maximum Temperature		Discharge area		Desig-nation
Size		Class	Size		Class	750°F (399°C)	1000°F (538°C)			
in.	mm		in.	mm				in²	cm²	
1.50	38.1	300	1.50	38.1	150	1811FB	1811FD	.307	1.981	F
2.00	50.8	300	1.50	38.1	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		
ASME Std. R.F. Flange			ASME Std. R.F. Flange			Maximum Temperature		Discharge area		Desig-nation
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

Scope of Design (Cont.)

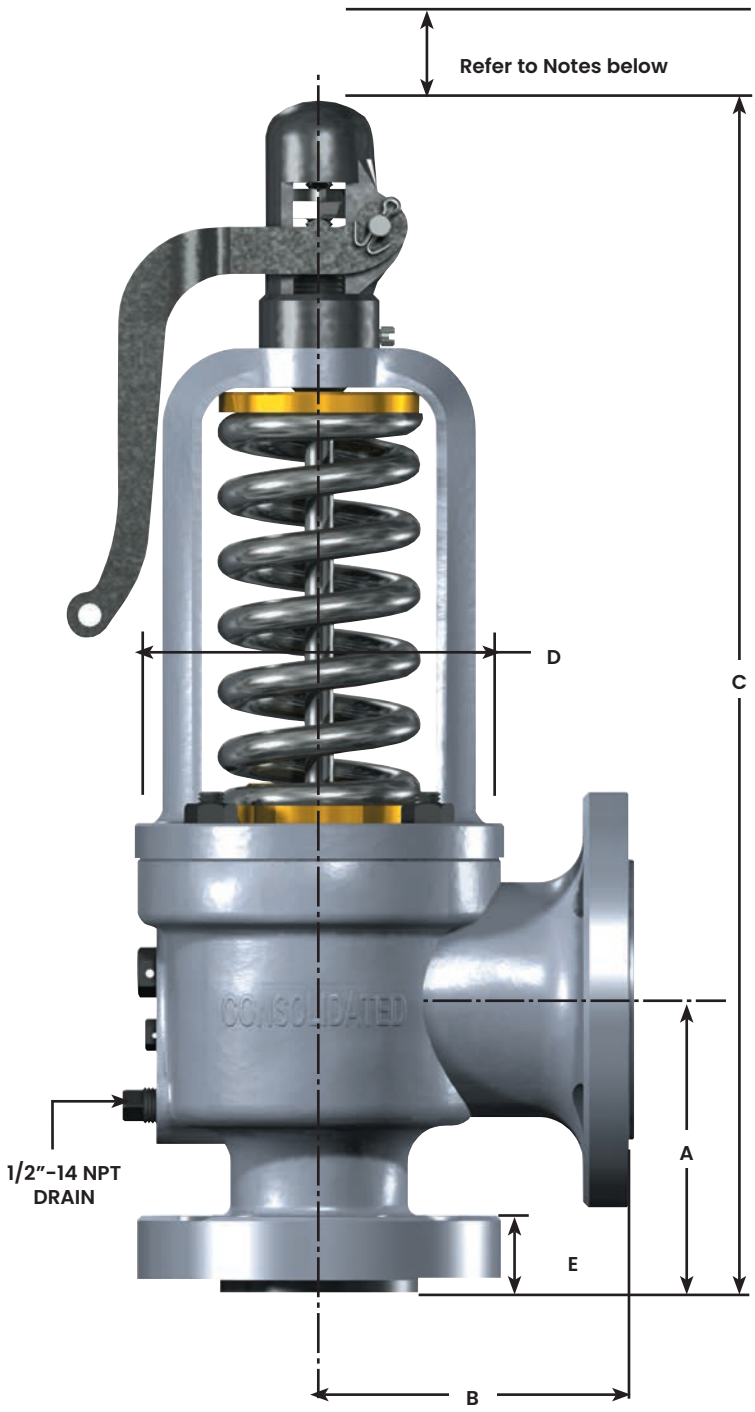
1811 Series Safety Valve



Lifting Lever for 4"x 6" sizes

300 and 600 ASME 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" and 6" Sizes)	Malleable Iron
23	Drop Lever (4" and 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 and Weights (Cont.)



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 and Weights (Cont.)

300 ASME 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
		1811QD	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

Dimensions and Weights (Cont.)

600 ASME 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	4.68	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

Pressure/Temperature

Pressure Temperature Ratings						
Temperature		Valve Temp. Class	Class 300		Class 600	
			Pressure		Pressure	
°F	°C		Psig	barg	Psig	barg
750	398.8	1811B	320	22.06	725	49.98
950	510.0	1811D	320	22.06	640	44.12
1000	537.7	1811D	215	14.82	430	29.64

Orifice Capacities

capacities on superheated steam. Correction factor tables begin on page 18.
Review pressure/ temperature limits on page 11.

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
Apply correction factor for

ASME, B and PVC, Section I rating - Latest Edition

lb/hr (kg/hr) saturated steam at 3 percent overpressure or 2 psig (0.14 barg), whichever is greater, 90 percent 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	326	1123	509	1842	835	2634	1194	4084	1852	5154	2337	6213	2818	9134	4143	15820	7175
20	1.37	508	230	833	377	1301	590	2133	967	3049	1383	4729	2145	5967	2706	7193	3262	10575	4796	18316	8307
25	1.72	578	262	947	429	1478	670	2423	1099	3465	1571	5373	2437	6780	3075	8173	3707	12016	5450	20811	9439
30	2.06	647	293	1060	480	1655	750	2714	1231	3880	1759	6017	2729	7593	3444	9154	4152	13456	6103	23306	10571
35	2.41	716	324	1174	532	1833	831	3005	1363	4296	1948	6661	3021	8406	3812	10134	4596	14897	6757	25802	11703
40	2.75	786	356	1288	584	2010	911	3295	1494	4712	2137	7306	3313	9219	4181	11114	5041	16338	7410	28297	12835
45	3.10	855	387	1401	635	2187	992	3586	1626	5127	2325	7950	3606	10032	4550	12094	5485	17779	8064	30793	13967
50	3.44	924	419	1515	687	2364	1072	3877	1758	5543	2514	8594	3898	10845	4919	13074	5930	19219	8717	33288	15099
55	3.79	994	450	1628	738	2542	1153	4167	1890	5958	2702	9239	4190	11658	5287	14054	6374	20660	9371	35783	16230
60	4.13	1063	482	1742	790	2719	1233	4458	2022	6374	2891	9883	4482	12471	5656	15034	6819	22101	10024	38279	17363
65	4.48	1132	513	1856	841	2896	1313	4749	2154	6789	3079	10527	4774	13284	6025	16014	7263	23542	10678	40774	18494
70	4.82	1203	545	1971	894	3077	1395	5045	2288	7213	3271	11184	5072	14113	6401	17014	7717	25011	11344	43320	19649
75	5.17	1274	577	2088	947	3260	1478	5344	2423	7641	3465	11848	5374	14950	6781	18023	8175	26495	12017	45890	20815
80	5.51	1346	610	2205	1000	3442	1561	5644	2560	8069	3660	12512	5675	15788	7161	19033	8633	27979	12691	48460	21981
85	5.86	1417	642	2322	1053	3625	1644	5943	2695	8497	3854	13175	5976	16625	7540	20042	9090	29463	13364	51030	23146
90	6.20	1489	675	2439	1106	3807	1726	6242	2831	8925	4048	13839	6277	17462	7920	21052	9549	30947	14037	53601	24313
95	6.55	1560	707	2556	1159	3990	1809	6542	2967	9353	4242	14502	6577	18300	8300	22061	10006	32431	14710	56171	25478
100	6.89	1632	740	2673	1212	4173	1892	6841	3103	9781	4436	15166	6879	19137	8680	23071	10464	33915	15383	58741	26644
105	7.23	1703	772	2790	1265	4355	1975	7141	3239	10209	4630	15830	7180	19974	9060	24080	10922	35399	16056	61311	27810
110	7.58	1774	804	2907	1318	4538	2058	7440	3374	10637	4824	16493	7481	20812	9440	25090	11380	36883	16729	63882	28976
115	7.92	1846	837	3024	1371	4720	2140	7739	3510	11065	5018	17157	7782	21649	9819	26099	11838	38367	17402	66452	30142
120	8.27	1917	869	3141	1424	4903	2223	8039	3646	11493	5213	17820	8083	22486	10199	27109	12296	39851	18076	69022	31307
125	8.61	1989	902	3258	1477	5086	2306	8338	3782	11921	5407	18484	8384	23324	10579	28118	12754	41335	18749	71592	32473
130	8.96	2060	934	3375	1530	5268	2389	8637	3917	12349	5601	19148	8685	24161	10959	29128	13212	42819	19422	74163	33639
135	9.30	2131	966	3492	1583	5451	2472	8937	4053	12777	5795	19811	8986	24999	11339	30137	13669	44303	20095	76733	34805
140	9.65	2203	999	3609	1637	5633	2555	9236	4189	13205	5989	20475	9287	25836	11719	31147	14128	45787	20768	79303	35971
145	9.99	2274	1031	3726	1690	5816	2638	9535	4325	13633	6183	21139	9588	26673	12098	32156	14585	47271	21441	81873	37136
150	10.34	2346	1064	3843	1743	5998	2720	9835	4461	14061	6377	21802	9889	27511	12478	33166	15043	48755	22114	84444	38303
155	10.68	2417	1096	3960	1796	6181	2803	10134	4596	14489	6572	22466	10190	28348	12858	34175	15501	50239	22788	87014	39468
160	11.03	2488	1128	4077	1849	6364	2886	10433	4732	14917	6766	23129	10491	29185	13238	35185	15959	51723	23461	89584	40634
165	11.37	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	7154	24457	11093	30860	13997	37204	16875	54691	24807	94725	42966
175	12.06	2703	1226	4428	2008	6911	3134	11332	5140	16201	7348	25120	11394	31698	14377	38213	17333	56175	25480	97295	44132
180	12.41	2774	1258	4545	2061	7094	3217	11631	5275	16629	7542	25784	11695	32535	14757	39223	17791	57659	26153	99865	45298
185	12.75	2845	1290	4662	2114	7277	3300	11930	5411	17057	7736	26447	11996	33372	15137	40232	18248	59143	26826	102435	46463
190	13.10	2917	1323	4779	2167	7459	3383	12230	5547	17485	7931	27111	12297	34210	15517	41242	18707	60627	27499	105006	47629
195	13.44	2988	1355	4896	2220	7642	3466	12529	5683	17913	8125	27775	12598	35047	15897	42251	19164	62112	28173	107576	48795
200	13.78	3060	1387	5013	2273	7824	3548	12828	5818	18341	8319	28438	12899	35884	16276	43261	19622	63596	28846	110146	49961
205	14.13	3131	1420	5130	2326	8007	3631	13128	5954	18769	8513	29102	13200	36722	16656	44270	20080	65080	29519	112716	51127
210	14.47	3203	1452	5247	2379	8190	3714	13427	6090	19197	8707	29766	13501	37559	17036	45280	20538	66564	30192	115287	52293
215	14.82	3274	1485	5364	2433	8372	3797	13726	6226	19625	8901	30429	13802	38396	17416	46289	20996	68048	30866	117857	53459
220	15.16	3345	1517	5481	2486	8555	3880	14026	6362	20053	9095	31093	14103	39234	17796	47299	21454	69532	31539	120427	54624
225	15.51	3417	1549	5598	2539	8737	3963	14325	6497	20481	9290	31756	14404	40071	18175	48308	21912	71016	32212	122997	55790
230	15.85	3488	1582	5715	2592	8920	4046	14625	6633	20909	9484	32420	14705	40909	18556	49318	22370	72500	32885	125568	56956
235	16.20	3560	1614	5832	2645	9103	4129	14924	6769	21337	9678	33084	15006	41746	18935	50327	22827	73984	33558	128138	58122
240	16.54	3631	1646	5949	2698	9285	4211	15223	6905	21765	9872	33747	15307	42583	19315	51337	23286	75468	34231	130708	59288
245	16.89	3702	1679	6066	2751	9468	4294	15523	7041	22193	10066	34411	15608	43421	19695	52346	23743	76952	34904	133278	60453
250	17.23	3774	1711	6183	2804	9650	4377	15822	7176	22621	10260	35074	15909	44258	20075	53356	24201	78436	35577	135849	61620
255	17.58	3845	1744	6300	2857	9833	4460	16121	7312	23049	10454	35738	16210	45095	20454	54365	24659	79920	36251	138419	62785
260	17.92	3917	1776	6417	2910	10016	4543	16421	7448	23477	10648	36402	16511	45933	20834	55375	25117	81404	36924	140989	63951

Orifice Capacities (Cont.)

ASME, B and PVC, Section I rating - Latest Edition lb/hr (kg/hr) saturated steam at 3 percent overpressure or 2 psig (0.14 barg), whichever is greater, 90 percent 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	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	1808	6534	2963	10198	4625	16720	7584	23905	10843	37065	16812	46770	21214	56384	25575	82888	37597	143560	65117	
270	18.61	4059	1841	6651	3016	10381	4708	17019	7719	24333	11037	37729	17113	47608	21594	57394	26033	84372	38270	146130	66283	
275	18.96	4131	1873	6768	3069	10563	4791	17319	7855	24760	11230	38392	17414	48445	21974	58403	26491	85856	38943	148700	67449	
280	19.30	4202	1905	6885	3122	10746	4874	17618	7991	25188	11425	39056	17715	49282	22353	59413	26949	87340	39616	151270	68614	
285	19.65	4274	1938	7002	3176	10928	4956	17917	8127	25616	11619	39720	18016	50120	22734	60422	27406	88824	40289	153841	69781	
290	19.99	4345	1970	7119	3229	11111	5039	18217	8263	26044	11813	40383	18317	50957	23113	61432	27865	90308	40963	156411	70946	
295	20.33	4416	2003	7236	3282	11294	5122	18516	8398	26472	12007	41047	18618	51794	23493	62441	28322	91792	41636	158981	72112	
300	20.68	4488	2035	7353	3335	11476	5205	18816	8534	26900	12201	41711	18919	52632	23873	63451	28780	93276	42309	161551	73278	
305	21.02	4559	2067	7470	3388	11659	5288	19115	8670	27328	12395	42374	19220	53469	24253	64460	29238	94760	42982	164122	74444	
310	21.37	4631	2100	7587	3441	11841	5370	19414	8806	27756	12589	43038	19521	54306	24632	65470	29696	96244	43655	166692	75610	
315	21.71	4702	2132	7704	3494	12024	5453	19714	8942	28184	12784	43701	19822	55144	25012	66479	30154	97728	44328	169262	76775	
320	22.06	4773	2164	7821	3547	12207	5537	20013	9077	28612	12978	44365	20123	55981	25392	67489	30612	99212	45001	171832	77941	
325	22.40	4845	2197	7938	3600	12389	5619	20312	9213	29040	13172	45029	20424	56819	25772	68498	31070	100696	45674	174403	79107	
330	22.75	4916	2229	8055	3653	12572	5702	20612	9349	29468	13366	45692	20725	57656	26152	69508	31528	102180	46348	176973	80273	
335	23.09	4988	2262	8172	3706	12754	5785	20911	9485	29896	13560	46356	21026	58493	26531	70517	31985	103664	47021	179543	81439	
340	23.44	5059	2294	8289	3759	12937	5868	21210	9620	30324	13754	47019	21327	59331	26912	71527	32444	105148	47694	182113	82605	
345	23.78	5131	2327	8406	3812	13120	5951	21510	9756	30752	13948	47683	21628	60168	27291	72536	32901	106632	48367	184684	83771	
350	24.13	5202	2359	8523	3865	13302	6033	21809	9892	31180	14143	48347	21929	61005	27671	73546	33359	108116	49040	187254	84936	
355	24.47	5273	2391	8640	3919	13485	6116	22108	10028	31608	14337	49010	22230	61843	28051	74555	33817	109600	49713	189824	86102	
360	24.82	5345	2424	8757	3972	13667	6199	22408	10164	32036	14531	49674	22531	62680	28431	75565	34275	111084	50386	192394	87268	
365	25.16	5416	2456	8874	4025	13850	6282	22707	10299	32464	14725	50338	22832	63518	28811	76574	34733	112568	51059	194965	88434	
370	25.51	5488	2489	8991	4078	14033	6365	23007	10435	32892	14919	51001	23133	64355	29190	77584	35191	114052	51733	197535	89600	
375	25.85	5559	2521	9108	4131	14215	6447	23306	10571	33320	15113	51665	23434	65192	29570	78593	35649	115536	52406	200105	90766	
380	26.20	5630	2553	9225	4184	14398	6530	23605	10707	33748	15307	52328	23735	66030	29950	79603	36107	117020	53079	202675	91931	
385	26.54	5702	2586	9342	4237	14580	6613	23905	10843	34176	15501	52992	24036	66867	30330	80612	36564	118504	53752	205246	93098	
390	26.88	5773	2618	9459	4290	14763	6696	24204	10978	34604	15696	53656	24337	67704	30710	81622	37023	119988	54425	207816	94263	
395	27.23	5845	2651	9576	4343	14946	6779	24503	11114	35032	15890	54319	24638	68542	31090	82631	37480	121472	55098	210386	95429	
400	27.57	5916	2683	9693	4396	15128	6861	24803	11250	35460	16084	54983	24939	69379	31469	83640	37938	122956	55771	212956	96595	
405	27.92	5987	2715	9810	4449	15311	6944	25102	11386	35888	16278	55646	25240	70216	31849	84650	38396	124440	56445	215527	97761	
410	28.26	6059	2748	9927	4502	15493	7027	25401	11521	36316	16472	56310	25541	71054	32229	85659	38854	125924	57118	218097	98927	
415	28.61	6130	2780	10044	4555	15676	7110	25701	11657	36744	16666	56974	25842	71891	32609	86669	39312	127408	57791	220667	100092	
420	28.95	6202	2813	10161	4608	15858	7193	26000	11793	37172	16860	57637	26143	72729	32989	87678	39770	128892	58464	223237	101258	
425	29.30	6273	2845	10278	4662	16041	7276	26300	11929	37600	17055	58301	26444	73566	33368	88688	40228	130376	59137	225808	102424	
430	29.64	6344	2877	10395	4715	16224	7359	26599	12065	38028	17249	58965	26746	74403	33748	89697	40685	131860	59810	228378	103590	
435	29.99	6416	2910	10512	4768	16406	7441	26898	12200	38456	17443	59628	27046	75241	34128	90707	41144	133344	60483	230948	104756	
440	30.33	6487	2942	10629	4821	16589	7524	27198	12336	38884	17637	60292	27347	76078	34508	91716	41601	134828	61156	233518	105921	
445	30.68	6559	2975	10746	4874	16771	7607	27497	12472	39312	17831	60955	27648	76915	34888	92726	42059	136312	61830	236089	107088	
450	31.02	6630	3007	10863	4927	16954	7690	27796	12608	39740	18025	61619	27949	77753	35268	93735	42517	137796	62503	238659	108253	
455	31.37	6702	3039	10980	4980	17137	7773	28096	12744	40168	18219	62283	28251	78590	35647	94745	42975	139280	63176	241229	109419	
460	31.71	6773	3072	11097	5033	17319	7855	28395	12879	40596	18414	62946	28551	79428	36027	95754	43433	140764	63849	243799	110585	
465	32.06	6844	3104	11214	5086	17502	7938	28694	13015	41024	18608	63610	28853	80265	36407	96764	43891	142248	64522	246370	111751	
470	32.40	6916	3137	11331	5139	17684	8021	28994	13151	41452	18802	64273	29153	81102	36787	97773	44349	143732	65195	248940	112917	
475	32.75	6987	3169	11448	5192	17867	8104	29293	13287	41880	18996	64937	29454	81940	37167	98783	44807	145216	65868	251510	114083	
480	33.09	7059	3201	11565	5245	18050	8187	29592	13422	42308	19190	65601	29756	82777	37547	99792	45264	146700	66542	254081	115249	
485	33.43	7130	3234	11682	5298	18232	8269	29892	13558	42736	19384	66264	30056	83614	37926	100802	45723	148184	67215	256651	116414	
490	33.78	7201	3266	11799	5351	18415	8352	30191	13694	43164	19578	66928	30358	84452	38306	101811	46180	149668	67888	259221	117580	
495	34.12	7273	3298	11916	5405	18597	8435	30491	13830	43592	19772	67592	30659	85289	38686	102821	46638	151152	68561	261791	118746	
500	34.47	7344	3331	12033	5458	18780	8518	30790	13966	44020	19967	68255	30959	86126	39066	103830	47096	152636	69234	264362	119912	
505	34.81	7416	3363	12150	5511	18963	8601	31089	14101	44448	20161	68919	31261	86964	39446	104840	47554	154120	69907	266932	121078	
510	35.16	7487	3396	12267	5564	19145	8684	31389	14237	44876	20355	69582	31561	87801	39825	105849	48012	155604	70580	269502	122244	

Orifice Capacities (Cont.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 18. Review pressure/ temperature limits on page 11.

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 and PVC, Section I rating - Latest Edition

lb/hr (kg/hr) saturated steam at 3 percent overpressure or 2 psig (0.14 barg), whichever is greater, 90 percent 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	35.50	7558	3428	12384	5617	19328	8767	31688	14373	45304	20549	70246	31863	88639	40205	106859	48470	157088	71253	272072	123409
520	35.85	7630	3460	12501	5670	19510	8849	31987	14509	45732	20743	70910	32164	89476	40585	107868	48928	158572	71927	274643	124575
525	36.19	7701	3493	12618	5723	19693	8932	32287	14645	46160	20937	71573	32464	90313	40965	108878	49386	160056	72600	277213	125741
530	36.54	7773	3525	12735	5776	19876	9015	32586	14780	46588	21131	72237	32766	91151	41345	109887	49843	161540	73273	279783	126907
535	36.88	7844	3557	12852	5829	20058	9098	32885	14916	47016	21326	72900	33066	91988	41725	110897	50302	163024	73946	282353	128073
540	37.23	7915	3590	12969	5882	20241	9181	33185	15052	47444	21520	73564	33368	92825	42104	111906	50759	164508	74619	284924	129239
545	37.57	7987	3622	13086	5935	20423	9263	33484	15188	47872	21714	74228	33669	93663	42484	112916	51217	165992	75292	287494	130405
550	37.92	8058	3655	13203	5988	20606	9346	33783	15323	48300	21908	74891	33969	94500	42864	113925	51675	167476	75965	290064	131570
555	38.26	8130	3687	13320	6041	20788	9429	34083	15459	48728	22102	75555	34271	95338	43244	114935	52133	168960	76638	292634	132736
560	38.61	8201	3719	13437	6094	20971	9512	34382	15595	49156	22296	76219	34572	96175	43624	115944	52591	170444	77312	295205	133902
565	38.95	8273	3752	13554	6147	21154	9595	34682	15731	49584	22490	76882	34873	97012	44003	116954	53049	171928	77985	297775	135068
570	39.30	8344	3784	13671	6201	21336	9677	34981	15867	50012	22685	77546	35174	97850	44384	117963	53507	173412	78658	300345	136234
575	39.64	8415	3816	13788	6254	21519	9760	35280	16002	50440	22879	78209	35475	98687	44763	118973	53965	174896	79331	302915	137399
580	39.98	8487	3849	13905	6307	21701	9843	35580	16138	50868	23073	78873	35776	99524	45143	119982	54422	176380	80004	305486	138566
585	40.33	8558	3881	14022	6360	21884	9926	35879	16274	51296	23267	79537	36077	100362	45523	120992	54881	177864	80677	308056	139731
590	40.67	8630	3914	14139	6413	22067	10009	36178	16410	51724	23461	80200	36378	101199	45903	122001	55338	179348	81350	310626	140897
595	41.02	8701	3946	14256	6466	22249	10091	36478	16546	52152	23655	80864	36679	102036	46282	123011	55796	180832	82024	313196	142063
600	41.36	8772	3978	14373	6519	22432	10174	36777	16681	52580	23849	81527	36980	102874	46662	124020	56254	182316	82697	315767	143229
605	41.71	8844	4011	14490	6572	22614	10257	37076	16817	53008	24044	82191	37281	103711	47042	125030	56712	183800	83370	318337	144395
610	42.05	8915	4043	14607	6625	22797	10340	37376	16953	53436	24238	82855	37582	104549	47422	126039	57170	185284	84043	320907	145560
615	42.40	8987	4076	14724	6678	22980	10423	37675	17089	53864	24432	83518	37883	105386	47802	127049	57628	186768	84716	323477	146726
620	42.74	9058	4108	14841	6731	23162	10506	37975	17225	54292	24626	84182	38184	106223	48181	128058	58086	188252	85389	326048	147892
625	43.09	9129	4140	14958	6784	23345	10589	38274	17360	54720	24820	84846	38485	107061	48562	129068	58544	189736	86062	328618	149058
630	43.43	9201	4173	15075	6837	23527	10671	38573	17496	55148	25014	85509	38786	107898	48941	130077	59001	191220	86735	331188	150224
635	43.78	9272	4205	15192	6890	23710	10754	38873	17632	55576	25208	86173	39087	108735	49321	131087	59460	192704	87409	333758	151390
640	44.12	9344	4238	15309	6944	23893	10837	39172	17768	56004	25402	86836	39388	109573	49701	132096	59917	194188	88082	336329	152556
645	44.47	9415	4270	15426	6997	24075	10920	39471	17903	56432	25597	87500	39689	110410	50081	133106	60375	195672	88755	338899	153722
650	44.81	9486	4302	15543	7050	24258	11003	39771	18039	56860	25791	88164	39990	111248	50461	134115	60833	197156	89428	341469	154887
655	45.16	9558	4335	15660	7103	24440	11085	40070	18175	57288	25985	88827	40291	112085	50840	135125	61291	198640	90101	344039	156053
660	45.50	9629	4367	15777	7156	24623	11168	40369	18311	57716	26179	89491	40592	112922	51220	136134	61749	200124	90774	346610	157219
665	45.85	9701	4400	15894	7209	24806	11251	40669	18447	58144	26373	90154	40893	113760	51600	137144	62207	201608	91447	349180	158385
670	46.19	9772	4432	16011	7262	24988	11334	40968	18582	58572	26567	90818	41194	114597	51980	138153	62665	203092	92120	351750	159551
675	46.53	9844	4465	16128	7315	25171	11417	41267	18718	59000	26761	91482	41495	115434	52359	139163	63123	204576	92794	354320	160716
680	46.88	9915	4497	16245	7368	25353	11499	41567	18854	59428	26956	92145	41796	116272	52740	140172	63580	206060	93467	356891	161883
685	47.22	9986	4529	16362	7421	25536	11582	41866	18990	59856	27150	92809	42097	117109	53119	141182	64039	207544	94140	359461	163048
690	47.57	10058	4562	16479	7474	25718	11665	42166	19126	60284	27344	93472	42398	117946	53499	142191	64496	209028	94813	362031	164214
695	47.91	10129	4594	16596	7527	25901	11748	42465	19261	60712	27538	94136	42699	118784	53879	143201	64954	210512	95486	364601	165380
700	48.26	10201	4627	16713	7580	26084	11831	42764	19397	61139	27732	94800	43000	119621	54259	144210	65412	211996	96159	367172	166546
705	48.60	10272	4659	16830	7633	26266	11914	43064	19533	61567	27926	95463	43301	120459	54639	145220	65870	213480	96832	369742	167712
710	48.95	10343	4691	16947	7687	26449	11997	43363	19669	61995	28120	96127	43602	121296	55018	146229	66328	214964	97506	372312	168877
715	49.29	10415	4724	17064	7740	26631	12079	43662	19804	62423	28314	96791	43903	122133	55398	147239	66786	216448	98179	374883	170044
720	49.64	10486	4756	17181	7793	26814	12162	43962	19940	62851	28508	97454	44204	122971	55778	148248	67244	217932	98852	377453	171209
725	49.98	10558	4789	17298	7846	26997	12245	44261	20076	63279	28702	98118	44505	123808	56158	149258	67702	219416	99525	380023	172375

Orifice Capacities (Cont.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 18. Review pressure/ temperature limits on page 11.

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 and PVC, Section XIII (UV) rating - Latest Edition

lb/hr (kg/hr) saturated steam at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, 90 percent 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	336	1159	525	1900	861	2717	1232	4213	1910	5316	2411	6409	2907	9422	4273	16319	7402
20	1.37	522	236	856	388	1336	605	2191	993	3133	1421	4857	2203	6129	2780	7389	3351	10863	4927	18815	8534
25	1.72	592	268	970	439	1513	686	2482	1125	3548	1609	5502	2495	6942	3148	8369	3796	12304	5581	21310	9666
30	2.06	661	299	1083	491	1691	767	2772	1257	3964	1798	6146	2787	7755	3517	9350	4241	13745	6234	23806	10798
35	2.41	737	334	1208	547	1886	855	3092	1402	4421	2005	6855	3109	8650	3923	10428	4730	15329	6953	26550	12042
40	2.75	813	368	1333	604	2081	943	3412	1547	4878	2212	7563	3430	9544	4329	11506	5219	16914	7672	29295	13287
45	3.10	890	403	1458	661	2276	1032	3731	1692	5335	2419	8272	3752	10438	4734	12584	5708	18499	8391	32040	14533
50	3.44	966	438	1583	718	2471	1120	4051	1837	5792	2627	8981	4073	11332	5140	13662	6196	20084	9109	34785	15778
55	3.79	1042	472	1708	774	2666	1209	4371	1982	6249	2834	9690	4395	12227	5546	14740	6685	21669	9828	37530	17023
60	4.13	1118	507	1833	831	2861	1297	4690	2127	6706	3041	10398	4716	13121	5951	15818	7174	23254	10547	40275	18268
65	4.48	1195	542	1958	888	3056	1386	5010	2272	7163	3249	11107	5038	14015	6357	16896	7663	24839	11266	43020	19513
70	4.82	1271	576	2083	944	3251	1474	5330	2417	7620	3456	11816	5359	14910	6763	17974	8152	26423	11985	45765	20758
75	5.17	1347	610	2208	1001	3446	1563	5650	2562	8077	3663	12524	5680	15804	7168	19052	8641	28008	12704	48510	22003
80	5.51	1424	645	2333	1058	3641	1651	5969	2707	8534	3870	13233	6002	16698	7574	20131	9131	29593	13423	51255	23248
85	5.86	1500	680	2458	1114	3836	1739	6289	2852	8991	4078	13942	6323	17592	7979	21209	9620	31178	14142	54000	24493
90	6.20	1576	714	2583	1171	4031	1828	6609	2997	9448	4285	14651	6645	18487	8385	22287	10109	32763	14861	56745	25739
95	6.55	1652	749	2708	1228	4226	1916	6928	3142	9906	4493	15359	6966	19381	8791	23365	10598	34348	15579	59490	26984
100	6.89	1729	784	2832	1284	4421	2005	7248	3287	10363	4700	16068	7288	20275	9196	24443	11087	35933	16298	62235	28229
105	7.23	1805	818	2957	1341	4616	2093	7568	3432	10820	4907	16777	7609	21169	9602	25521	11576	37517	17017	64980	29474
110	7.58	1881	853	3082	1397	4811	2182	7887	3577	11277	5115	17485	7931	22064	10008	26599	12065	39102	17736	67724	30719
115	7.92	1957	887	3207	1454	5006	2270	8207	3722	11734	5322	18194	8252	22958	10413	27677	12554	40687	18455	70469	31964
120	8.27	2034	922	3332	1511	5201	2359	8527	3867	12191	5529	18903	8574	23852	10819	28755	13043	42272	19174	73214	33209
125	8.61	2110	957	3457	1568	5396	2447	8847	4012	12648	5737	19612	8895	24747	11225	29833	13532	43857	19893	75959	34454
130	8.96	2186	991	3582	1624	5591	2536	9166	4157	13105	5944	20320	9216	25641	11630	30912	14021	45442	20612	78704	35699
135	9.30	2262	1026	3707	1681	5786	2624	9486	4302	13562	6151	21029	9538	26535	12036	31990	14510	47027	21331	81449	36944
140	9.65	2339	1060	3832	1738	5981	2712	9806	4447	14019	6358	21738	9860	27429	12441	33068	14999	48611	22049	84194	38189
145	9.99	2415	1095	3957	1794	6176	2801	10125	4592	14476	6566	22446	10181	28324	12847	34146	15488	50196	22768	86939	39434
150	10.34	2491	1129	4082	1851	6371	2889	10445	4737	14933	6773	23155	10502	29218	13253	35224	15977	51781	23487	89684	40679
155	10.68	2567	1164	4207	1908	6566	2978	10765	4882	15390	6980	23864	10824	30112	13658	36302	16466	53366	24206	92429	41925
160	11.03	2644	1199	4332	1964	6761	3066	11085	5028	15848	7188	24573	11146	31007	14064	37380	16955	54951	24925	95174	43170
165	11.37	2720	1233	4457	2021	6956	3155	11404	5172	16305	7395	25281	11467	31901	14470	38458	17444	56536	25644	97919	44415
170	11.72	2796	1268	4582	2078	7151	3243	11724	5317	16762	7603	25990	11788	32795	14875	39536	17933	58121	26363	100664	45660
175	12.06	2872	1302	4707	2135	7346	3332	12044	5463	17219	7810	26699	12110	33689	15281	40614	18422	59705	27081	103409	46905
180	12.41	2949	1337	4832	2191	7541	3420	12363	5607	17676	8017	27407	12431	34584	15687	41693	18911	61290	27800	106154	48150
185	12.75	3025	1372	4957	2248	7736	3508	12683	5752	18133	8224	28116	12753	35478	16092	42771	19400	62875	28519	108898	49395
190	13.10	3101	1406	5082	2305	7931	3597	13003	5898	18590	8432	28825	13074	36372	16498	43849	19889	64460	29238	111643	50640
195	13.44	3178	1441	5207	2361	8126	3685	13322	6042	19047	8639	29534	13396	37266	16903	44927	20378	66045	29957	114388	51885
200	13.78	3254	1475	5331	2418	8321	3774	13642	6187	19504	8846	30242	13717	38161	17309	46005	20867	67630	30676	117133	53130
205	14.13	3330	1510	5456	2474	8516	3862	13962	6333	19961	9054	30951	14039	39055	17715	47083	21356	69215	31395	119878	54375
210	14.47	3406	1544	5581	2531	8711	3951	14282	6478	20418	9261	31660	14360	39949	18120	48161	21845	70799	32113	122623	55620
215	14.82	3483	1579	5706	2588	8906	4039	14601	6622	20875	9468	32368	14681	40844	18526	49239	22334	72384	32832	125368	56865
220	15.16	3559	1614	5831	2644	9101	4128	14921	6768	21332	9676	33077	15003	41738	18932	50317	22823	73969	33551	128113	58111
225	15.51	3635	1648	5956	2701	9296	4216	15241	6913	21790	9883	33786	15325	42632	19337	51395	23312	75554	34270	130858	59356
230	15.85	3711	1683	6081	2758	9491	4305	15560	7057	22247	10091	34495	15646	43526	19743	52474	23801	77139	34989	133603	60601
235	16.20	3788	1718	6206	2814	9686	4393	15880	7203	22704	10298	35203	15967	44421	20149	53552	24290	78724	35708	136348	61846
240	16.54	3864	1752	6331	2871	9881	4481	16200	7348	23161	10505	35912	16289	45315	20554	54630	24779	80309	36427	139093	63091
245	16.89	3940	1787	6456	2928	10076	4570	16519	7492	23618	10712	36621	16611	46209	20960	55708	25268	81893	37146	141838	64336
250	17.23	4016	1821	6581	2985	10271	4658	16839	7638	24075	10920	37329	16932	47104	21366	56786	25757	83478	37864	144583	65581
255	17.58	4093	1856	6706	3041	10466	4747	17159	7783	24532	11127	38038	17253	47998	21771	57864	26246	85063	38583	147328	66826
260	17.92	4169	1891	6831	3098	10661	4835	17479	7928	24989	11334	38747	17575	48892	22177	58942	26735	86648	39302	150072	68071

Orifice Capacities (Cont.)

P= (3 psig + set pressure) + 14.7
Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 18. Review pressure/ temperature limits on page 11.

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

ASME, B and PVC, Section XIII (UV) rating - Latest Edition

lb/hr (kg/hr) saturated steam at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, 90 percent 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	17896	49786	22582	60020	27224	88233	40021	152817	69316
270	18.61	4321	1959	7081	3211	11051	5012	18118	8218	25903	11749	40164	18218	50681	22988	61098	27713	89818	40740	155562	70561
275	18.96	4398	1994	7206	3268	11246	5101	18438	8363	26360	11956	40873	18539	51575	23394	62176	28202	91403	41459	158307	71806
280	19.30	4474	2029	7331	3325	11441	5189	18757	8508	26817	12163	41582	18861	52469	23799	63255	28691	92987	42178	161052	73051
285	19.65	4550	2063	7456	3381	11636	5278	19077	8653	27274	12371	42290	19182	53363	24205	64333	29180	94572	42897	163797	74297
290	19.99	4627	2098	7581	3438	11831	5366	19397	8798	27731	12578	42999	19504	54258	24611	65411	29669	96157	43616	166542	75542
295	20.33	4703	2133	7706	3495	12026	5454	19717	8943	28189	12786	43708	19825	55152	25016	66489	30158	97742	44335	169287	76787
300	20.68	4779	2167	7830	3551	12221	5543	20036	9088	28646	12993	44417	20147	56046	25422	67567	30647	99327	45053	172032	78032
305	21.02	4855	2202	7955	3608	12416	5631	20356	9233	29103	13200	45125	20468	56941	25828	68645	31136	100912	45772	174777	79277
310	21.37	4932	2237	8080	3665	12611	5720	20676	9378	29560	13408	45834	20789	57835	26233	69723	31625	102497	46491	177522	80522
315	21.71	5008	2271	8205	3721	12806	5808	20995	9523	30017	13615	46543	21111	58729	26639	70801	32114	104081	47210	180267	81767
320	22.06	5084	2306	8330	3778	13001	5897	21315	9668	30474	13822	47251	21432	59623	27044	71879	32603	105666	47929	183012	83012
325	22.40	5160	2340	8455	3835	13196	5985	21635	9813	30931	14030	47960	21754	60518	27450	72958	33093	107251	48648	185757	84257
330	22.75	5237	2375	8580	3891	13391	6074	21954	9958	31388	14237	48669	22075	61412	27856	74036	33582	108836	49367	188502	85503
335	23.09	5313	2409	8705	3948	13586	6162	22274	10103	31845	14444	49378	22397	62306	28261	75114	34071	110421	50086	191246	86747
340	23.44	5389	2444	8830	4005	13781	6250	22594	10248	32302	14651	50086	22718	63200	28667	76192	34560	112006	50805	193991	87992
345	23.78	5465	2478	8955	4061	13976	6339	22914	10393	32759	14859	50795	23040	64095	29073	77270	35049	113591	51524	196736	89237
350	24.13	5542	2513	9080	4118	14171	6427	23233	10538	33216	15066	51504	23361	64989	29478	78348	35538	115175	52242	199481	90483
355	24.47	5618	2548	9205	4175	14366	6516	23553	10683	33673	15273	52212	23682	65883	29884	79426	36027	116760	52961	202226	91728
360	24.82	5694	2582	9330	4232	14561	6604	23873	10828	34131	15481	52921	24004	66778	30289	80504	36516	118345	53680	204971	92973
365	25.16	5770	2617	9455	4288	14756	6693	24192	10973	34588	15688	53630	24326	67672	30695	81582	37004	119930	54399	207716	94218
370	25.51	5847	2652	9580	4345	14951	6781	24512	11118	35045	15896	54339	24647	68566	31101	82660	37493	121515	55118	210461	95463
375	25.85	5923	2686	9705	4402	15146	6870	24832	11263	35502	16103	55047	24968	69460	31506	83739	37983	123100	55837	213206	96708
380	26.20	5999	2721	9830	4458	15341	6958	25151	11408	35959	16310	55756	25290	70355	31912	84817	38472	124685	56556	215951	97953
385	26.54	6075	2755	9955	4515	15536	7047	25471	11553	36416	16518	56465	25612	71249	32318	85895	38961	126269	57274	218696	99198
390	26.88	6152	2790	10080	4572	15731	7135	25791	11698	36873	16725	57173	25933	72143	32723	86973	39450	127854	57993	221441	100443
395	27.23	6228	2824	10205	4628	15926	7223	26111	11843	37330	16932	57882	26254	73038	33129	88051	39939	129439	58712	224186	101689
400	27.57	6304	2859	10329	4685	16121	7312	26430	11988	37787	17139	58591	26576	73932	33534	89129	40428	131024	59431	226931	102934
405	27.92	6381	2894	10454	4741	16316	7400	26750	12133	38244	17347	59300	26898	74826	33940	90207	40917	132609	60150	229676	104179
410	28.26	6457	2928	10579	4798	16511	7489	27070	12278	38701	17554	60008	27219	75720	34346	91285	41406	134194	60869	232420	105423
415	28.61	6533	2963	10704	4855	16706	7577	27389	12423	39158	17761	60717	27540	76615	34751	92363	41895	135779	61588	235165	106669
420	28.95	6609	2997	10829	4911	16901	7666	27709	12568	39615	17969	61426	27862	77509	35157	93441	42384	137363	62306	237910	107914
425	29.30	6686	3032	10954	4968	17096	7754	28029	12713	40072	18176	62134	28183	78403	35563	94520	42873	138948	63025	240655	109159
430	29.64	6762	3067	11079	5025	17291	7843	28349	12858	40530	18384	62843	28505	79297	35968	95598	43362	140533	63744	243400	110404
435	29.99	6838	3101	11204	5082	17486	7931	28668	13003	40987	18591	63552	28826	80192	36374	96676	43851	142118	64463	246145	111649
440	30.33	6914	3136	11329	5138	17681	8019	28988	13148	41444	18798	64261	29148	81086	36779	97754	44340	143703	65182	248890	112894
445	30.68	6991	3171	11454	5195	17876	8108	29308	13293	41901	19005	64969	29469	81980	37185	98832	44829	145288	65901	251635	114139
450	31.02	7067	3205	11579	5252	18071	8196	29627	13438	42358	19213	65678	29791	82875	37591	99910	45318	146873	66620	254380	115384
455	31.37	7143	3240	11704	5308	18266	8285	29947	13583	42815	19420	66387	30112	83769	37996	100988	45807	148457	67338	257125	116629
460	31.71	7219	3274	11829	5365	18461	8373	30267	13728	43272	19627	67095	30433	84663	38402	102066	46296	150042	68057	259870	117875
465	32.06	7296	3309	11954	5422	18656	8462	30586	13873	43729	19835	67804	30755	85557	38808	103144	46785	151627	68776	262615	119120
470	32.40	7372	3343	12079	5478	18851	8550	30906	14018	44186	20042	68513	31076	86452	39213	104222	47274	153212	69495	265360	120365
475	32.75	7448	3378	12204	5535	19046	8639	31226	14163	44643	20249	69222	31398	87346	39619	105301	47763	154797	70214	268105	121610
480	33.09	7524	3412	12329	5592	19241	8727	31546	14309	45100	20457	69930	31719	88240	40024	106379	48252	156382	70933	270850	122855
485	33.43	7601	3447	12454	5649	19436	8816	31865	14453	45557	20664	70639	32041	89135	40430	107457	48741	157967	71652	273594	124100
490	33.78	7677	3482	12579	5705	19631	8904	32185	14598	46014	20871	71348	32362	90029	40836	108535	49230	159551	72371	276339	125345
495	34.12	7753	3516	12704	5762	19826	8992	32505	14744	46472	21079	72056	32684	90923	41241	109613	49719	161136	73090	279084	126590
500	34.47	7830	3551	12828	5818	20021	9081	32824	14888	46929	21286	72765	33005	91817	41647	110691	50208	162721	73809	281829	127835
505	34.81	7906	3586	12953	5875	20216	9169	33144	15033	47386	21493	73474	33327	92712	42053	111769	50697	164306	74527	284574	129080
510	35.16	7982	3620	13078	5932	20411	9258	33464	15179	47843	21701	74183	33648	93606	42458	112847	51186	165891	75246	287319	130325

Orifice Capacities (Cont.)

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 18. Review pressure/ temperature limits on page 11.

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 and PVC, Section XIII (UV) rating - Latest Edition

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

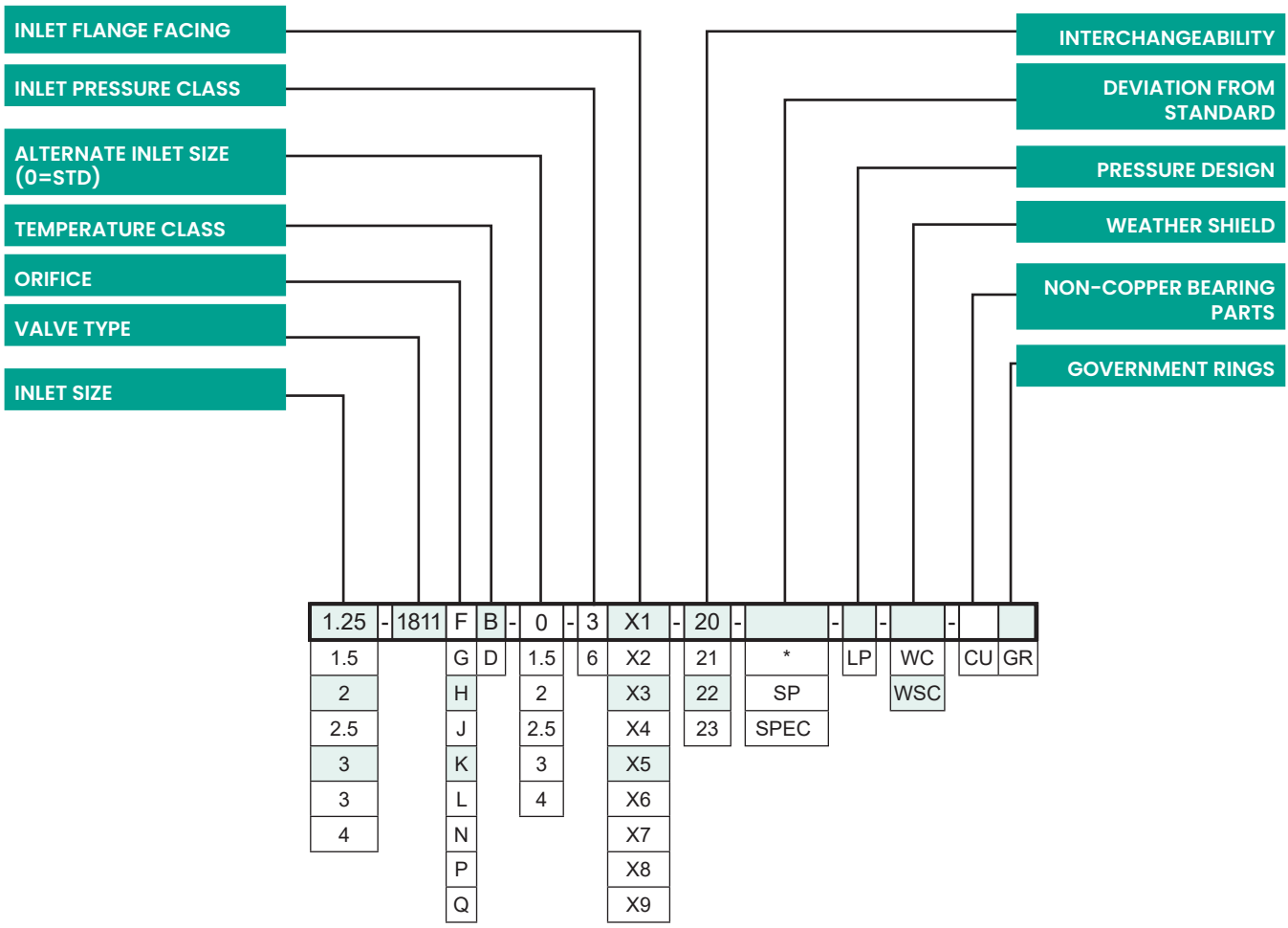
Orifice Designation		F		G		H		J		K		L		M		N		P		Q	
Orifice Area		in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2	in^2	cm^2
		0.307	1.980	0.503	3.250	0.785	5.060	1.287	8.300	1.840	11.870	2.853	18.410	3.600	23.230	4.340	28.000	6.380	41.160	11.050	71.290
Set Pressure		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	35.50	8058	3655	13203	5988	20606	9346	33783	15323	48300	21908	74891	33969	94500	42864	113925	51675	167476	75965	290064	131570
520	35.85	8135	3689	13328	6045	20801	9435	34103	15468	48757	22115	75600	34291	95394	43269	115003	52164	169061	76684	292809	132815
525	36.19	8211	3724	13453	6102	20996	9523	34423	15614	49214	22323	76309	34613	96289	43675	116082	52653	170645	77403	295554	134061
530	36.54	8287	3758	13578	6158	21191	9612	34743	15759	49671	22530	77017	34934	97183	44081	117160	53142	172230	78122	298299	135306
535	36.88	8363	3793	13703	6215	21386	9700	35062	15903	50128	22737	77726	35255	98077	44486	118238	53631	173815	78841	301044	136551
540	37.23	8440	3828	13828	6272	21581	9788	35382	16049	50585	22944	78435	35577	98972	44892	119316	54120	175400	79560	303789	137796
545	37.57	8516	3862	13953	6328	21776	9877	35702	16194	51042	23152	79144	35899	99866	45298	120394	54609	176985	80279	306534	139041
550	37.92	8592	3897	14078	6385	21971	9965	36021	16338	51499	23359	79852	36220	100760	45703	121472	55098	178570	80997	309279	140286
555	38.26	8668	3931	14203	6442	22166	10054	36341	16484	51956	23566	80561	36541	101654	46109	122550	55587	180155	81716	312024	141531
560	38.61	8745	3966	14328	6499	22361	10142	36661	16629	52414	23774	81270	36863	102549	46515	123628	56076	181739	82435	314768	142776
565	38.95	8821	4001	14453	6555	22556	10231	36981	16774	52871	23981	81978	37184	103443	46920	124706	56565	183324	83154	317513	144021
570	39.30	8897	4035	14578	6612	22751	10319	37300	16918	53328	24189	82687	37506	104337	47326	125784	57054	184909	83873	320258	145266
575	39.64	8973	4070	14703	6669	22946	10408	37620	17064	53785	24396	83396	37827	105232	47732	126863	57544	186494	84592	323003	146511
580	39.98	9050	4105	14828	6725	23141	10496	37940	17209	54242	24603	84105	38149	106126	48137	127941	58033	188079	85311	325748	147756
585	40.33	9126	4139	14953	6782	23336	10585	38259	17353	54699	24811	84813	38470	107020	48543	129019	58522	189664	86030	328493	149001
590	40.67	9202	4173	15078	6839	23531	10673	38579	17499	55156	25018	85522	38792	107914	48948	130097	59011	191249	86749	331238	150247
595	41.02	9278	4208	15203	6895	23726	10761	38899	17644	55613	25225	86231	39113	108809	49354	131175	59499	192833	87467	333983	151492
600	41.36	9355	4243	15328	6952	23921	10850	39218	17788	56070	25432	86939	39434	109703	49760	132253	59988	194418	88186	336728	152737
605	41.71	9431	4277	15452	7008	24116	10938	39538	17934	56527	25640	87648	39756	110597	50165	133331	60477	196003	88905	339473	153982
610	42.05	9507	4312	15577	7065	24311	11027	39858	18079	56984	25847	88357	40078	111491	50571	134409	60966	197588	89624	342218	155227
615	42.40	9584	4347	15702	7122	24506	11115	40178	18224	57441	26054	89066	40399	112386	50977	135487	61455	199173	90343	344963	156472
620	42.74	9660	4381	15827	7179	24701	11204	40497	18369	57898	26262	89774	40720	113280	51382	136565	61944	200758	91062	347708	157717
625	43.09	9736	4416	15952	7235	24896	11292	40817	18514	58355	26469	90483	41042	114174	51788	137644	62434	202343	91781	350453	158962
630	43.43	9812	4450	16077	7292	25091	11381	41137	18659	58813	26677	91192	41363	115069	52194	138722	62923	203927	92499	353198	160207
635	43.78	9889	4485	16202	7349	25286	11469	41456	18804	59270	26884	91900	41685	115963	52599	139800	63412	205512	93218	355942	161452
640	44.12	9965	4520	16327	7405	25481	11557	41776	18949	59727	27091	92609	42006	116857	53005	140878	63901	207097	93937	358687	162697
645	44.47	10041	4554	16452	7462	25676	11646	42096	19094	60184	27299	93318	42328	117751	53410	141956	64390	208682	94656	361432	163942
650	44.81	10117	4588	16577	7519	25871	11734	42416	19239	60641	27506	94027	42649	118646	53816	143034	64879	210267	95375	364177	165187
655	45.16	10194	4623	16702	7575	26066	11823	42735	19384	61098	27713	94735	42971	119540	54222	144112	65368	211852	96094	366922	166433
660	45.50	10270	4658	16827	7632	26261	11911	43055	19529	61555	27920	95444	43292	120434	54627	145190	65857	213437	96813	369667	167678
665	45.85	10346	4692	16952	7689	26456	12000	43375	19674	62012	28128	96153	43614	121328	55033	146268	66346	215021	97531	372412	168923
670	46.19	10422	4727	17077	7745	26651	12088	43694	19819	62469	28335	96861	43935	122223	55439	147346	66835	216606	98250	375157	170168
675	46.53	10499	4762	17202	7802	26846	12177	44014	19964	62926	28542	97570	44257	123117	55844	148425	67324	218191	98969	377902	171413
680	46.88	10575	4796	17327	7859	27041	12265	44334	20109	63383	28750	98279	44578	124011	56250	149503	67813	219776	99688	380647	172658
685	47.22	10651	4831	17452	7916	27236	12354	44653	20254	63840	28957	98988	44900	124906	56656	150581	68302	221361	100407	383392	173903
690	47.57	10727	4865	17577	7972	27431	12442	44973	20399	64297	29164	99696	45221	125800	57061	151659	68791	222946	101126	386137	175148
695	47.91	10804	4900	17702	8029	27626	12530	45293	20544	64755	29372	100405	45542	126694	57467	152737	69280	224531	101845	388882	176393
700	48.26	10880	4935	17827	8086	27821	12619	45613	20689	65212	29579	101114	45864	127588	57872	153815	69769	226115	102564	391627	177639
705	48.60	10956	4969	17951	8142	28016	12707	45932	20834	65669	29786	101822	46185	128483	58278	154893	70258	227700	103282	394372	178884
710	48.95	11033	5004	18076	8199	28211	12796	46252	20979	66126	29994	102531	46507	129377	58684	155971	70747	229285	104001	397116	180128
715	49.29	11109	5038	18201	8255	28406	12884	46572	21124	66583	30201	103240	46828	130271	59089	157049	71236	230870	104720	399861	181373
720	49.64	11185	5073	18326	8312	28601	12973	46891	21269	67040	30408	103949	47150	131166	59495	158127	71725	232455	105439	402606	182619
725	49.98	11261	5107	18451	8369	28796	13061	47211	21414	67497	30616	104657	47471	132060	59901	159206	72214	234040	106158	405351	183864

Orifice Capacities (Cont.)

Superheat Correction Factor[1]																	
Total Temperature (°F)	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Flowing Pressure psia[2]	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

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

Valve Configuration Code
1811 Series Main Valve



Standard Valve Connection				
Inlet Size		Orifice	Area	
in.	mm		in^2	cm^2
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 (Cont.)
1811 Series Main Valve

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

Note: 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	Standard Outlet - Flat Seat
21	Oversize Outlet - Flat Seat
22	Standard Outlet - *Thermodisc*™ Seat
23	Oversize Outlet - Thermodisc Seat

Weather Shield	
Designation	Description
WSC	Spring and 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# ASME
6	600# ASME

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) (does not apply to F, G & H)

Ordering a 1811 Series 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 (V Designator) - Power Boiler		
b)	Section XIII (UV Designator) - 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	_____	percent
c)	Relieving Capacity	_____	lb/hr (kg/hr)
d)	Buttweld Valves		
	Inlet Size		
	Inlet Specifications		
	Outlet Size and Flange Rating		
e)	Flanged Valves		
	Inlet Size and Flange Rating		
	Outlet Size and 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		

Direct Sales Office Locations

Australia
Brisbane
Phone: +61-7-3001-4319

Perth
Phone: +61-8-6595-7018

Melbourne
Phone: +61-3-8807-6002

Brazil
Phone: +55-19-2104-6900

China
Phone: +86-10-8400-7888

France
Courbevoie
Phone: +33-1-4904-9000

India
Mumbai
Phone: +91-22-8354790

New Delhi
Phone: +91-11-2-6164175

Italy
Phone: +39-081-7892-111

Japan
Tokyo
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