

Consolidated™ 1900/P Series Safety Valve

The Educator Tube Advantage™

The highly adaptable
1900/P Series Safety Valve is
designed to meet numerous
application requirements



Table of Contents

Scope of Design5-7

Materials8-13

Optional Material – Stainless Steel13

Accessories14

Cap and Lever Options.....14

Accessories15

Cap Options15

Dimensions & Weights16-21

Pressure and Temperature.....22-35

Capacities36-38

Valve Configuration Code39-40

Ordering a 1900/P Safety Valve.....41

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

Standard Valve Connection – D Orifice						
	ASME					
Orifice Area	in²	0.128		cm²	0.825	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	1.00	25.4	150	2.00	50.8	150
1906	1.00	25.4	300	2.00	50.8	150
1910	1.00	25.4	300	2.00	50.8	150
1912	1.00	25.4	600	2.00	50.8	150
1914	1.50	38.1	900	2.00	50.8	300
1916	1.50	38.1	1500	2.00	50.8	300
1918	1.50	38.1	2500	3.00	76.2	300
1920	1.00	25.4	300	2.00	50.8	150
1922	1.00	25.4	600	2.00	50.8	150
1924	1.50	38.1	900	2.00	50.8	300
1926	1.50	38.1	1500	2.00	50.8	300
1928	1.50	38.1	2500	3.00	76.2	300

Standard Valve Connection – E Orifice						
	ASME					
Orifice Area	in²	0.228		cm²	1.470	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	1.00	25.4	150	2.00	50.8	150
1906	1.00	25.4	300	2.00	50.8	150
1910	1.00	25.4	300	2.00	50.8	150
1912	1.00	25.4	600	2.00	50.8	150
1914	1.50	38.1	900	2.00	50.8	300
1916	1.50	38.1	1500	2.00	50.8	300
1918	1.50	38.1	2500	3.00	76.2	300
1920	1.00	25.4	300	2.00	50.8	150
1922	1.00	25.4	600	2.00	50.8	150
1924	1.50	38.1	900	2.00	50.8	300
1926	1.50	38.1	1500	2.00	50.8	300
1928	1.50	38.1	2500	3.00	76.2	300

Standard Valve Connection – F Orifice						
	ASME					
Orifice Area	in ²	0.357		cm ²	2.303	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	1.50	38.1	150	2.00	50.8	150
1906	1.50	38.1	300	2.00	50.8	150
1910	1.50	38.1	300	2.00	50.8	150
1912	1.50	38.1	600	2.00	50.8	150
1914	1.50	38.1	900	3.00	76.2	300
1916	1.50	38.1	1500	3.00	76.2	300
1918	1.50	38.1	2500	3.00	76.2	300
1920	1.50	38.1	300	2.00	50.8	150
1922	1.50	38.1	600	2.00	50.8	150
1924	1.50	38.1	900	3.00	76.2	300
1926	1.50	38.1	1500	3.00	76.2	300
1928	1.50	38.1	2500	3.00	76.2	300

Standard Valve Connection – G Orifice						
	ASME					
Orifice Area	in²	0.585		cm²	3.774	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	1.50	38.1	150	3.00	76.2	150
1906	1.50	38.1	300	3.00	76.2	150
1910	1.50	38.1	300	3.00	76.2	150
1912	1.50	38.1	600	3.00	76.2	150
1914	1.50	38.1	900	3.00	76.2	300
1916	2.00	50.8	1500	3.00	76.2	300
1918	2.00	50.8	2500	3.00	76.2	300
1920	1.50	38.1	300	3.00	76.2	150
1922	1.50	38.1	600	3.00	76.2	150
1924	1.50	38.1	900	3.00	76.2	300
1926	2.00	50.8	1500	3.00	76.2	300
1928	2.00	50.8	2500	3.00	76.2	300

Scope of Design

Standard Valve Connection – H Orifice						
	ASME					
Orifice Area	in²	0.913		cm²	5.888	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	1.50	38.1	150	3.00	76.2	150
1906	1.50	38.1	300	3.00	76.2	150
1910	2.00	50.8	300	3.00	76.2	150
1912	2.00	50.8	600	3.00	76.2	150
1914	2.00	50.8	900	3.00	76.2	150
1916	2.00	50.8	1500	3.00	76.2	300
1920	2.00	50.8	300	3.00	76.2	150
1922	2.00	50.8	600	3.00	76.2	150
1924	2.00	50.8	900	3.00	76.2	150
1926	2.00	50.8	1500	3.00	76.2	300

Standard Valve Connection – J Orifice						
	ASME					
Orifice Area	in ²	1.496		cm ²	9.652	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	2.00	50.8	150	3.00	76.2	150
1906	2.00	50.8	300	3.00	76.2	150
1910	3.00	76.2	300	4.00	101.6	150
1912	3.00	76.2	600	4.00	101.6	150
1914	3.00	76.2	900	4.00	101.6	150
1916	3.00	76.2	1500	4.00	101.6	300
1920	3.00	76.2	300	4.00	101.6	150
1922	3.00	76.2	600	4.00	101.6	150
1924	3.00	76.2	900	4.00	101.6	150
1926	3.00	76.2	1500	4.00	101.6	300

Standard Valve Connection – K Orifice						
	ASME					
Orifice Area	in ²	2.138		cm ²	13.794	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	3.00	76.2	150	4.00	101.6	150
1906	3.00	76.2	300	4.00	101.6	150
1910	3.00	76.2	300	4.00	101.6	150
1912	3.00	76.2	600	4.00	101.6	150
1914	3.00	76.2	900	6.00	152.4	150
1916	3.00	76.2	1500	6.00	152.4	300
1920	3.00	76.2	300	4.00	101.6	150
1922	3.00	76.2	600	4.00	101.6	150
1924	3.00	76.2	900	6.00	152.4	150
1926	3.00	76.2	1500	6.00	152.4	300

Standard Valve Connection – L Orifice						
	ASME					
Orifice Area	in²	3.317		cm²	21.400	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	3.00	76.2	150	4.00	101.6	150
1906	3.00	76.2	300	4.00	101.6	150
1910	4.00	101.6	300	6.00	152.4	150
1912	4.00	101.6	600	6.00	152.4	150
1914	4.00	101.6	900	6.00	152.4	150
1916	4.00	101.6	1500	6.00	152.4	300
1920	4.00	101.6	300	6.00	152.4	150
1922	4.00	101.6	600	6.00	152.4	150
1924	4.00	101.6	900	6.00	152.4	150
1926	4.00	101.6	1500	6.00	152.4	300

Scope of Design

Standard Valve Connection – M Orifice						
	ASME					
Orifice Area	in²	4.186		cm²	27.006	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	4.00	101.6	150	6.00	152.4	150
1906	4.00	101.6	300	6.00	152.4	150
1910	4.00	101.6	300	6.00	152.4	150
1912	4.00	101.6	600	6.00	152.4	150
1914	4.00	101.6	900	6.00	152.4	150
1920	4.00	101.6	300	6.00	152.4	150
1922	4.00	101.6	600	6.00	152.4	150
1924	4.00	101.6	900	6.00	152.4	150

Standard Valve Connection – P Orifice						
	ASME					
Orifice Area	in²	7.417		cm²	47.852	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	4.00	101.6	150	6.00	152.4	150
1906	4.00	101.6	300	6.00	152.4	150
1910	4.00	101.6	300	6.00	152.4	150
1912	4.00	101.6	600	6.00	152.4	150
1914	4.00	101.6	900	6.00	152.4	150
1920	4.00	101.6	300	6.00	152.4	150
1923	4.00	101.6	600	6.00	152.4	150
1924	4.00	101.6	900	6.00	152.4	150

Standard Valve Connection – R Orifice						
	ASME					
Orifice Area	in²	18.600		cm²	120.00	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	6.00	152.4	150	8.00	203.2	150
1906	6.00	152.4	300	8.00	203.2	150
1910	6.00	152.4	300	10.00	254.0	150
1912	6.00	152.4	600	10.00	254.0	150
1920	6.00	152.4	300	8.00	203.2	150
1922	6.00	152.4	600	10.00	254.0	150

Standard Valve Connection – N Orifice						
	ASME					
Orifice Area	in ²	5.047		cm ²	32.561	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	4.00	101.6	150	6.00	152.4	150
1906	4.00	101.6	300	6.00	152.4	150
1910	4.00	101.6	300	6.00	152.4	150
1912	4.00	101.6	600	6.00	152.4	150
1914	4.00	101.6	900	6.00	152.4	150
1920	4.00	101.6	300	6.00	152.4	150
1922	4.00	101.6	600	6.00	152.4	150
1924	4.00	101.6	900	6.00	152.4	150

Standard Valve Connection – Q Orifice						
	ASME					
Orifice Area	in²	12.850		cm²	82.903	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	6.00	152.4	150	8.00	203.2	150
1906	6.00	152.4	300	8.00	203.2	150
1910	6.00	152.4	300	8.00	203.2	150
1912	6.00	152.4	600	8.00	203.2	150
1920	6.00	152.4	300	8.00	203.2	150
1922	6.00	152.4	600	8.00	203.2	150

Standard Valve Connection – T Orifice						
	ASME					
Orifice Area	in²	30.210		cm²	194.903	
Valve Type	Inlet			Outlet		
	Size		ASME Std. Class	Size		ASME Std. Class
	in.	mm		in.	mm	
1905	8.00	203.2	150	10.00	254.0	150
1906	8.00	203.2	300	10.00	254.0	150
1910	8.00	203.2	300	10.00	254.0	150
1912 ⁽¹⁾	8.00	203.2	300	10.00	254.0	150
1920	8.00	203.2	300	10.00	254.0	150
1922 ⁽¹⁾	8.00	203.2	300	10.00	254.0	150

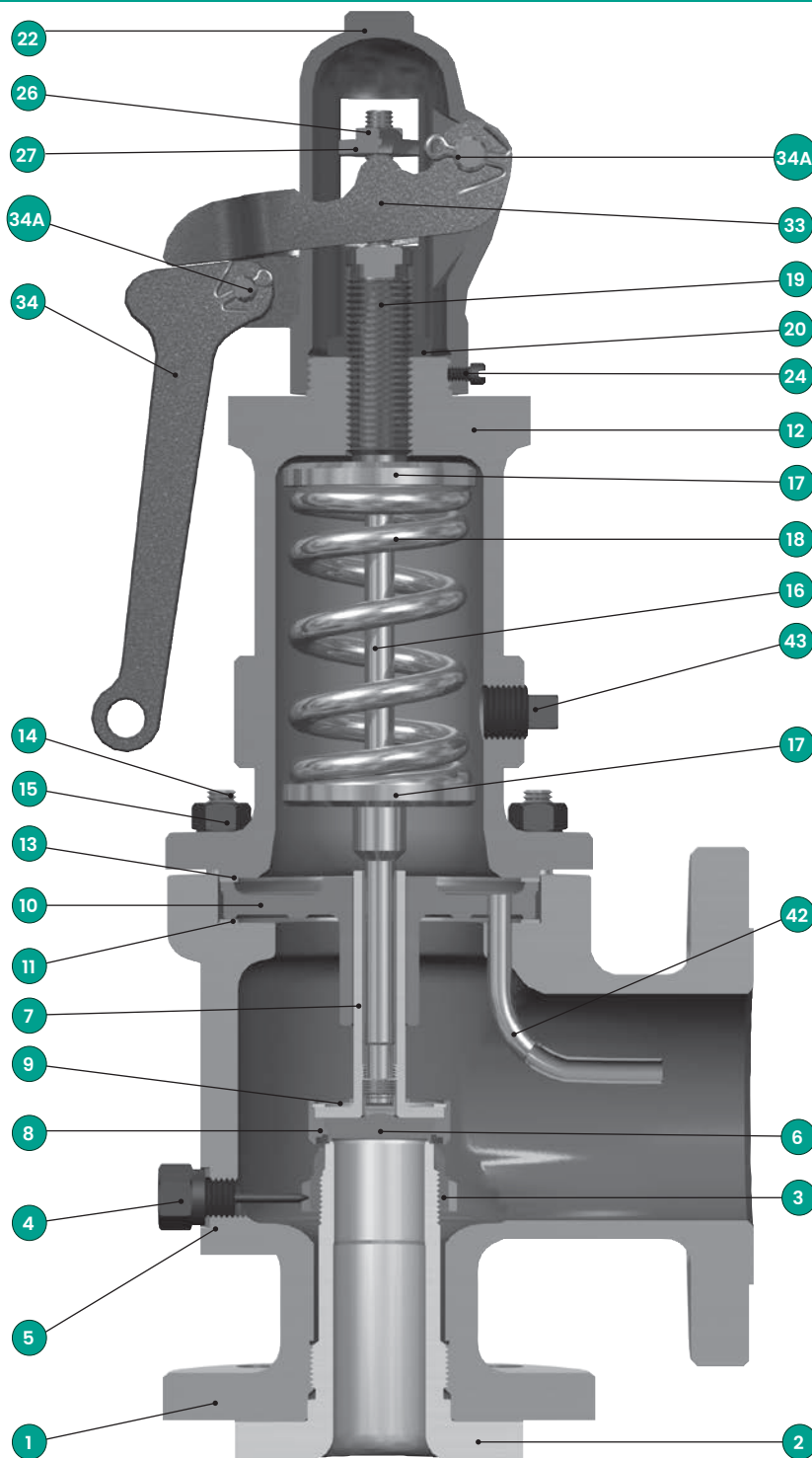
1. 1912/1922 with 300# inlet

Materials

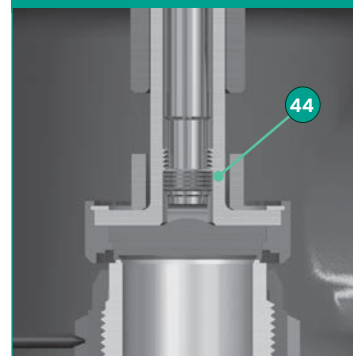
SRV 1900/P1 Series (Conventional)

1900/P1 Series Safety Valve (Conventional)

ASME B&PVC Section 1 Organic Fluid and Steam Economizer Applications.
For liquid only Economizers, refer to the 1900 and 2900 LA1 option.



D & E Orifice only Restricted Lift



The D and E valves are restricted lift versions of the "F" orifice valve. The lift is restricted by a limit washer to provide the equivalent effective orifice area for a "D" or "E" orifice. This design is available with a balanced bellows configuration and is designed for back pressure applications.

Note: For available Cap options, see pages 14 and 15.

Materials

For Steam and Organic Fluids 1900/P1 Series (Conventional)

SRV 1900/P1 (Conventional)		
Ref. No.	Nomenclature	Material
1	Base	
	(1905-1918)	ASME SA216 WCC CS
	(1920-1928)	ASME SA217 WC6 Alloy Steel
1A	Base Plug	
	(1905-1918)	Carbon Steel
	(1920-1928)	316 Stainless Steel
2	Nozzle	316 Stainless Steel
3	Adjusting Ring	316 Stainless Steel
4	Adjusting Ring Pin	316 Stainless Steel
5	Adjusting Ring Pin Gasket	Soft Iron
6	Disc	
	(D - K Orifices)	Inconel X-750
	(L - T Orifices)	616 Stainless Steel
7	Disc Holder	316 Stainless Steel
8	Holder Ring	410 Stainless Steel
9	Holder Ring Retainer	Carbon Steel - Nickel Plated
10	Guide	Alloy C97800
11	Guide Gasket	Soft Iron
12	Bonnet	ASME SA216 WCC CS
13	Bonnet Gasket	Soft Iron
14	Base Stud	ASME SA193 B7 Alloy Steel
15	Stud Nut	ASME SA194 2H Carbon Steel
16	Spindle	
	Spindle Stem	416 Stainless Steel
	Spindle Head	
	(D - K Orifices)	Inconel X-750
	(L - T Orifices)	410 Stainless Steel
17	Spring Washer	Carbon Steel
18	Spring	
	(1905 - 1918)	Alloy Steel
	(1920-1928)	Tungsten Steel or Inconel X-750
19	Adjusting Screw	416 Stainless Steel
20	Adjusting Screw Nut	416 Stainless Steel

1. With Flexible Graphite Filler (Spiral Wound).

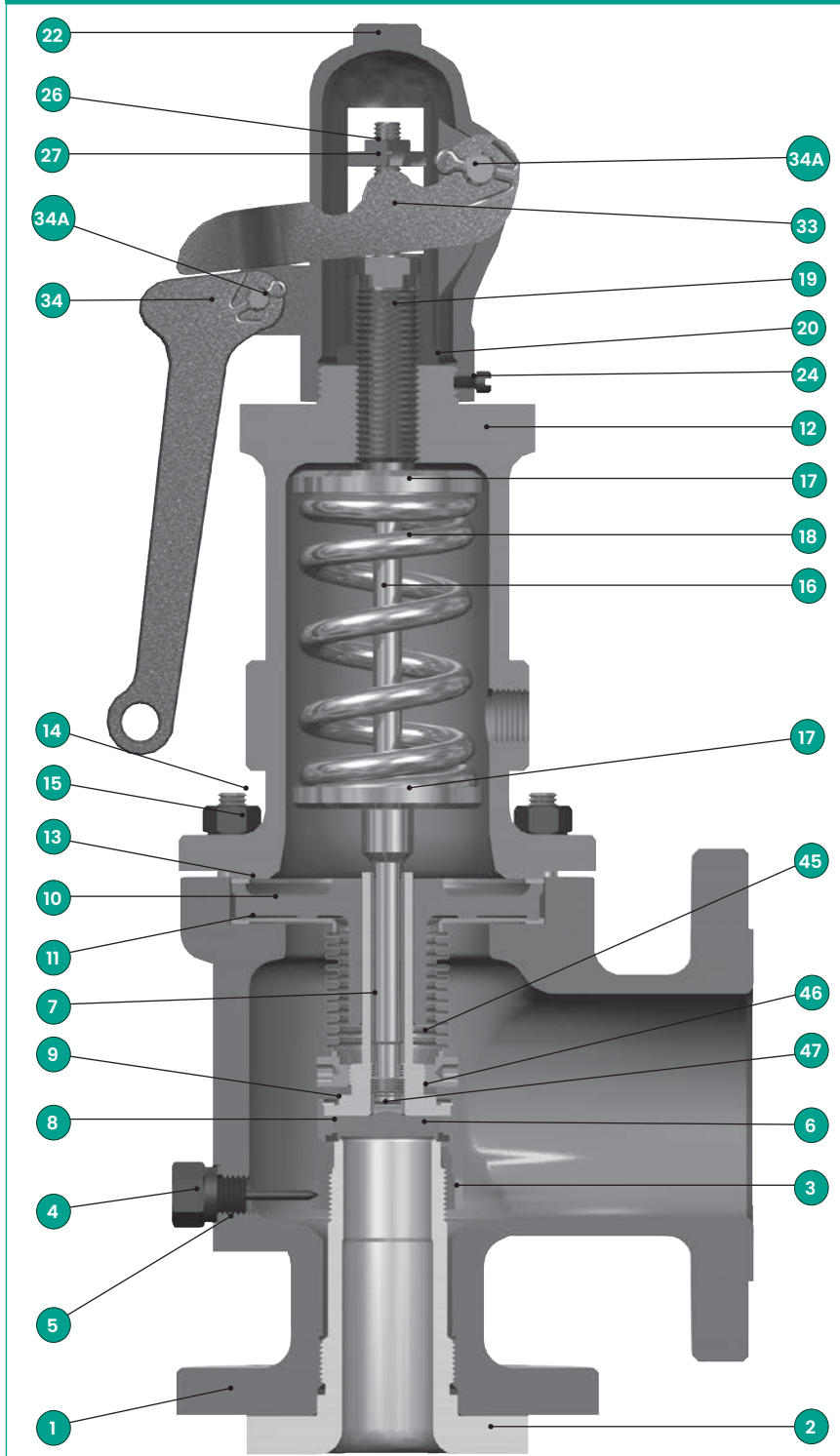
SRV 1900/P1 (Conventional)		
Ref. No.	Nomenclature	Material
Packed Cap Assembly		
21	Packed Cap	Carbon Steel
23	Cap Screw	Carbon Steel
25	Cap Gasket	Soft Iron
26	Release Nut	Carbon Steel
27	Release Locknut	Carbon Steel
28	Lever	Malleable Iron
29	Lifting Fork	Malleable Iron
30	Lever Shaft	410/416 Stainless Steel
31	Packing	316 Stainless Steel ⁽¹⁾
32	Packing Nut	410/416 Stainless Steel
Plain Cap Assembly		
22	Plain Cap	Malleable Iron
24	Cap Set Screw	Carbon Steel
26	Release Nut	Carbon Steel
27	Release Locknut	Carbon Steel
33	Top Lever	Malleable Iron
33A	Top Lever Pin	Carbon Steel
34	Drop Lever	Malleable Iron
34A	Drop Lever Pin	Carbon Steel
Bolted Cap Assembly		
35	Bolted Cap	Carbon Steel
23	Cap Screw	Carbon Steel
25	Cap Gasket	Soft Iron
Gag Assembly		
38	Gag Bolt	Carbon Steel
39	Sealing Plug	Carbon Steel
40	Sealing Plug Gasket	Soft Iron
Screwed Cap Assembly		
41	Screwed Cap	Carbon Steel
25	Cap Gasket	Soft Iron
	Collar (Not Shown)	410 Stainless Steel
	Retainer Ring (Not Shown)	302 Stainless Steel
42	Eductor Tube	316 Stainless Steel
43	Bonnet Plug	Carbon Steel
44	Limit Washer (D & E)	316 Stainless Steel

Materials

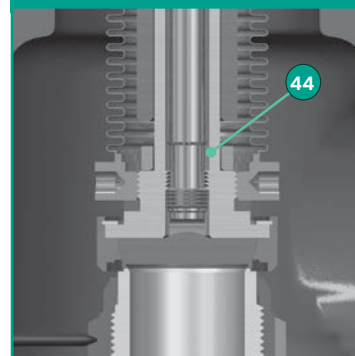
SRV 1900-30/P1 Series (Balanced Bellows)

1900-30/P1 Series Safety Valve (Balanced Bellows Type)

ASME B&PVC Section 1 Organic Fluid and Steam Economizer Applications.
For liquid only Economizers, refer to the 1900 and 2900 LA1 option.



D & E Orifice only Restricted Lift



The D and E valves are restricted lift versions of the "F" orifice valve. The lift is restricted by a limit washer to provide the equivalent effective orifice area for a "D" or "E" orifice. This design is available with a balanced bellows configuration and is designed for back pressure applications.

Note: For available Cap options, see pages 14 and 15.

Materials

For Steam and Organic Fluids 1900-30/P1 Series (Balanced Bellows)

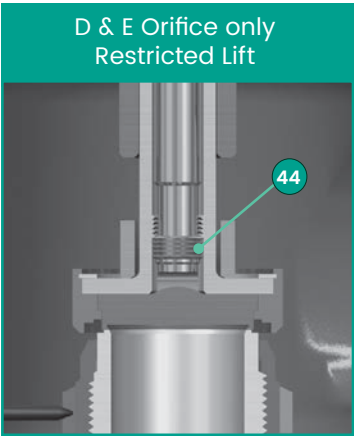
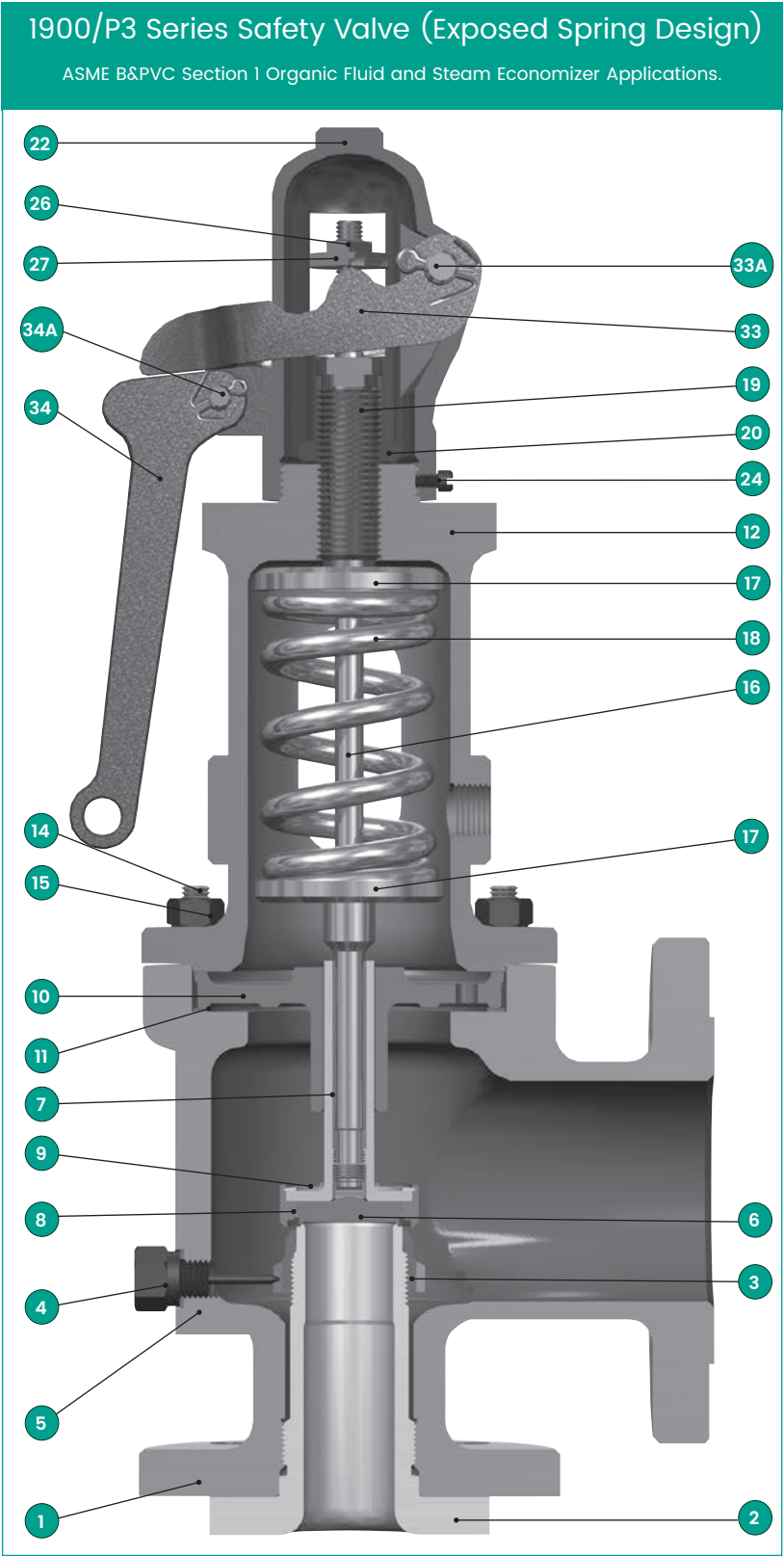
SRV 1900-30/P1 Series (Balanced Bellows)		
Ref. No.	Nomenclature	Material (P1 only)
1	Base	
	(1905-1918)	ASME SA216 WCC CS
	(1920-1928)	ASME SA217 WC6 Alloy Steel
1A	Base Plug	
	(1905-1918)	Carbon Steel
	(1920-1928)	316 Stainless Steel
2	Nozzle	316 Stainless Steel
3	Adjusting Ring	316 Stainless Steel
4	Adjusting Ring Pin	316 Stainless Steel
5	Adjusting Ring Pin Gasket	Soft Iron
6	Disc	
	(D - K Orifices)	Inconel X-750
	(L - T Orifices)	616 Stainless Steel
7	Disc Holder	316 Stainless Steel
8	Holder Ring	410 Stainless Steel
9	Holder Ring Retainer	Carbon Steel - Nickel Plated
10	Guide	Alloy C97800
11	Guide Gasket	Soft Iron
12	Bonnet	ASME SA216 WCC CS
13	Bonnet Gasket	Soft Iron
14	Base Stud	ASME SA193 B7 Alloy Steel
15	Stud Nut	ASME SA194 2H Carbon Steel
16	Spindle	
	Spindle Stem	416 Stainless Steel
	Spindle Head	
	(D - K Orifices)	Inconel X-750
	(L - T Orifices)	410 Stainless Steel
17	Spring Washer	Carbon Steel
18	Spring	
	(1905 - 1918)	Alloy Steel
	(1920-1928)	Tungsten Steel or Inconel X-750
19	Adjusting Screw	416 Stainless Steel
20	Adjusting Screw Nut	416 Stainless Steel
Packed Cap Assembly		
21	Packed Cap	Carbon Steel

1. With Flexible Graphite Filler (Spiral Wound).

SRV 1900-30/P1 Series (Balanced Bellows)		
Ref. No.	Nomenclature	Material (P1 only)
23	Cap Screw	Carbon Steel
25	Cap Gasket	Soft Iron
26	Release Nut	Carbon Steel
27	Release Locknut	Carbon Steel
28	Lever	Malleable Iron
29	Lifting Fork	Malleable Iron
30	Lever Shaft	410/416 Stainless Steel
31	Packing	316 Stainless Steel ⁽¹⁾
32	Packing Nut	410/416 Stainless Steel
Plain Cap Assembly		
22	Plain Cap	Malleable Iron
24	Cap Set Screw	Carbon Steel
26	Release Nut	Carbon Steel
27	Release Locknut	Carbon Steel
33	Top Lever	Malleable Iron
33A	Top Lever Pin	Carbon Steel
34	Drop Lever	Malleable Iron
34A	Drop Lever Pin	Carbon Steel
Bolted Cap Assembly		
35	Bolted Cap	Carbon Steel
23	Cap Screw	Carbon Steel
25	Cap Gasket	Soft Iron
Gag Assembly		
38	Gag Bolt	Carbon Steel
39	Sealing Plug	Carbon Steel
40	Sealing Plug Gasket	Soft Iron
Screwed Cap Assembly		
41	Screwed Cap	Carbon Steel
25	Cap Gasket	Soft Iron
	Collar (Not Shown)	410 Stainless Steel
	Retainer Ring (Not Shown)	302 Stainless Steel
44	Limit Washer (D & E)	316 Stainless Steel
45	Bellows	Inconel 625
	Bellows Nut	316L Stainless Steel
	Bellows Flange	316L Stainless Steel
46	Bellows Gasket	Soft Iron
47	Seal Plate	304L Stainless Steel

Materials

SRV 1900/P3 Series (Exposed Spring Design)



The D and E valves are restricted lift versions of the "F" orifice valve. The lift is restricted by a limit washer to provide the equivalent effective orifice area for a "D" or "E" orifice.

Note: For available Cap options, see pages 14 and 15.

SRV 1900/P3 Series (Conventional)		
Ref. No.	Nomenclature	Material (P3) ⁽¹⁾
10	Guide	Alloy C97800
12	Bonnet (P3-Slotted)	ASME SA216 WCC CS
13	Bonnet Gasket	N/A
18	Spring	Alloy Steel
25	Cap Gasket	N/A
25	Cap Gasket	N/A
25	Cap Gasket	N/A
42	Eductor Tube	N/A

1. All other materials are same as 1900/P1 construction.

Materials

Optional Material – Stainless Steel

Stainless Steel Material Variation		
Ref. No.	Nomenclature	Conventional Material (P1 & P3)
1	Base	
	(1905-1918)	ASME SA351 CF8M St.St.
	(1920-1928)	ASME SA351 CF8M St.St.
1A	Base Plug	
	(1905-1918)	316 Stainless Steel
	(1920-1928)	316 Stainless Steel
2	Nozzle	316 Stainless Steel
3	Adjusting Ring	316 Stainless Steel
4	Adjusting Ring Pin	316 Stainless Steel
5	Adjusting Ring Pin Gasket	Monel
6	Disc	
	(D – K Orifices)	Inconel X-750
	(L – T Orifices)	616 Stainless Steel
7	Disc Holder	316 Stainless Steel
8	Holder Ring	316 Stainless Steel
9	Holder Ring Retainer	PH 15-7 MO Stainless Steel
10	Guide	
	(P1)	CF8M 316 SS Boronized
	(P3) ⁽¹⁾	CF8M 316 SS Boronized
11	Guide Gasket	Monel
12	Bonnet	
	(P1)	ASME SA351 CF8M St.St.
	(P3-Slotted) ⁽¹⁾	ASME SA351 CF8M St.St.
13	Bonnet Gasket (P1 Only)	Monel
14	Base Stud	ASME SA194 B8M St.St.
15	Stud Nut	ASME SA194 8M S.St.
16	Spindle	
	Spindle Stem	316 Stainless Steel
	Spindle Head	
	(D – K Orifices)	Inconel X-750
	(L – T Orifices)	Inconel X-750
17	Spring Washer	316 Stainless Steel
18	Spring	
	(1905 – 1918)	Stainless Steel
	(1920-1928)	Tungsten Steel or Inconel X-750
	(All P3) ⁽¹⁾	17-4 PH
19	Adjusting Screw	17-4 PH
20	Adjusting Screw Nut	316 Stainless Steel
Packed Cap Assembly		
21	Packed Cap	316 Stainless Steel
23	Cap Screw	ASME SA193 B8M St.St.
25	Cap Gasket (P1 Only)	B8M Stainless Steel
26	Release Nut	316 Stainless Steel
27	Release Locknut	316 Stainless Steel

Stainless Steel Material Variation		
Ref. No.	Nomenclature	Conventional Material (P1 & P3)
28	Lever	Malleable Iron
29	Lifting Fork	316 Stainless Steel
30	Lever Shaft	316 Stainless Steel
31	Packing	316 Stainless Steel ⁽²⁾
32	Packing Nut	316 Stainless Steel
Plain Cap Assembly		
22	Plain Cap	Malleable Iron
24	Cap Set Screw	316 Stainless Steel
26	Release Nut	316 Stainless Steel
27	Release Locknut	316 Stainless Steel
33	Top Lever	Malleable Iron
33A	Top Lever Pin	316 Stainless Steel
34	Drop Lever	Malleable Iron
34A	Drop Lever Pin	316 Stainless Steel
Bolted Cap Assembly		
35	Bolted Cap	316 Stainless Steel
23	Cap Screw	ASME SA193 B8M St.st.
25	Cap Gasket (P1 Only)	Monel
Gag Assembly		
38	Gag Bolt	Carbon Steel
39	Sealing Plug	316 Stainless Steel
40	Sealing Plug Gasket	Monel
Screwed Cap Assembly		
41	Screwed Cap	316 Stainless Steel
25	Cap Gasket (P1 Only)	Monel
	Collar (Not Shown)	316 Stainless Steel
	Retainer Ring (Not Shown)	302 Stainless Steel
42	Eductor Tube (P1 Only) ⁽¹⁾	316 Stainless Steel
43	Bonnet Plug ⁽¹⁾	316 Stainless Steel
44	Limit Washer (D & E)	316 Stainless Steel

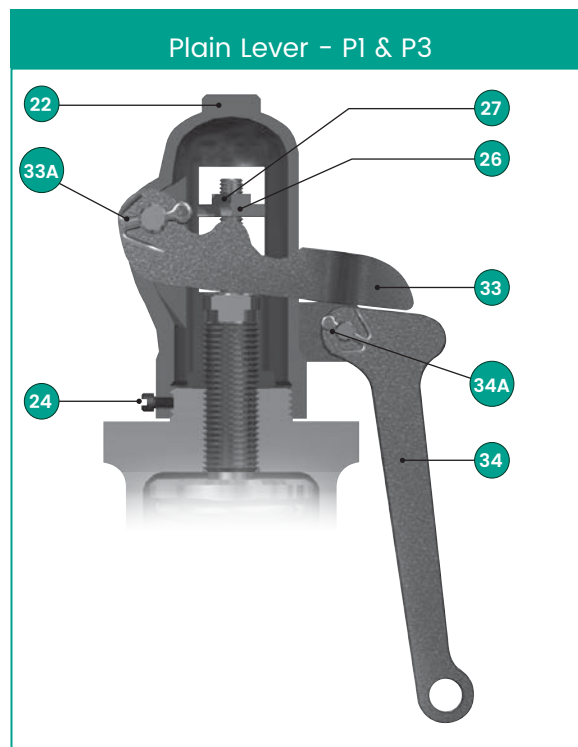
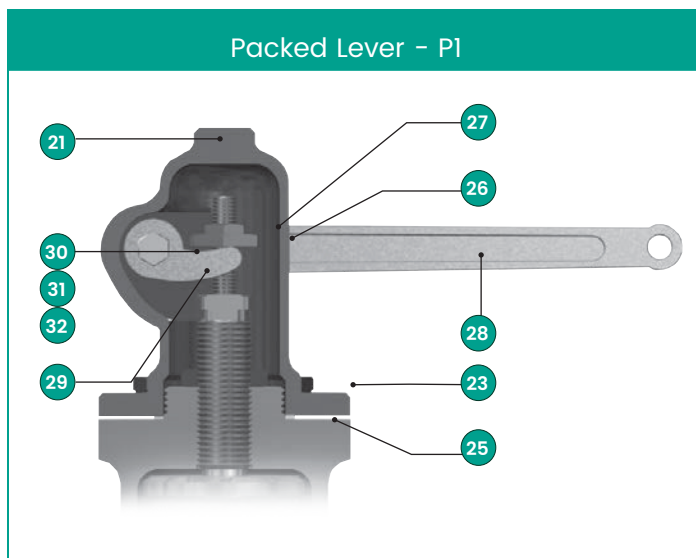
1. Not present in Bellows construction. All other materials are same for Bellows construction.
2. with Flexible Graphite Filler (Spiral Wound).

Stainless Steel Material Variation		
Ref. No.	Nomenclature	Bellows Material ⁽¹⁾ (P1 only)
45	Bellows	Inconel 625
	Bellows Nut	316L Stainless Steel
	Bellows Flange	316L Stainless Steel
46	Bellows Gasket	Monel
47	Seal Plate	316L Stainless Steel

1. All other materials same as Stainless Steel Conventional Material Construction (Only P1)

Accessories

Cap Lever Options



Cap Selection						
Safety Valve Application	Valve Type	Screwed Cap ⁽¹⁾	Bolted Cap ⁽¹⁾	Packed Lever	Plain Lever	Gag ⁽²⁾
Steam Service	1900/P1			X	X	X
Steam Service Steam Generator	1900/P3				X	X
Organic Fluid Vapor ¹	1900/P1	X	X			X

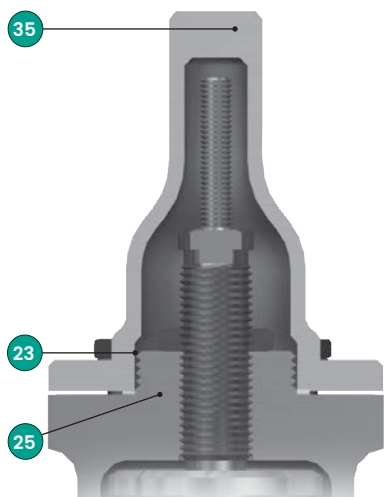
1. ASME B&PVC, Section I (Part PVG-12) requires the safety valve to be a totally enclosed type that is designed so that vapors escaping beyond the valve seat shall not discharge into atmosphere. Safety valves used to protect organic fluid vaporizers are not to be equipped with lifting levers.

2. All caps may be supplied with a gag.

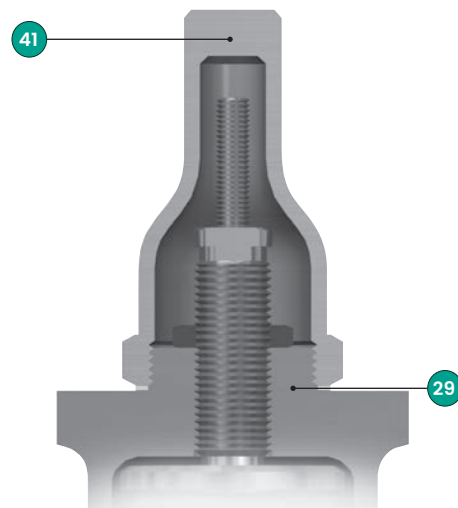
Accessories

Cap Lever Options

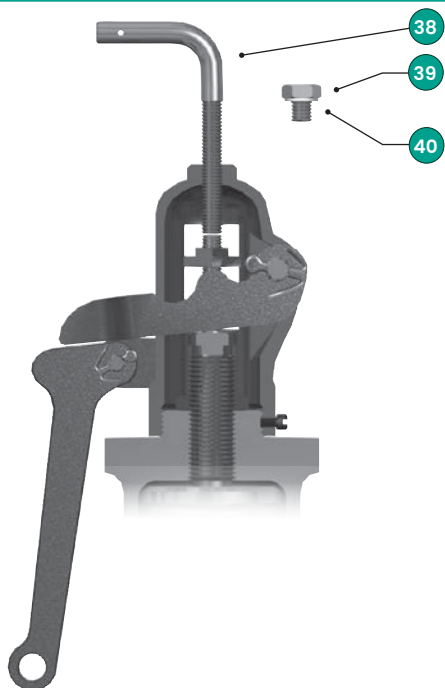
Bolted Cap
Organic Fluid Vaporizer Application



Screwed Cap
Organic Fluid Vaporizer Application

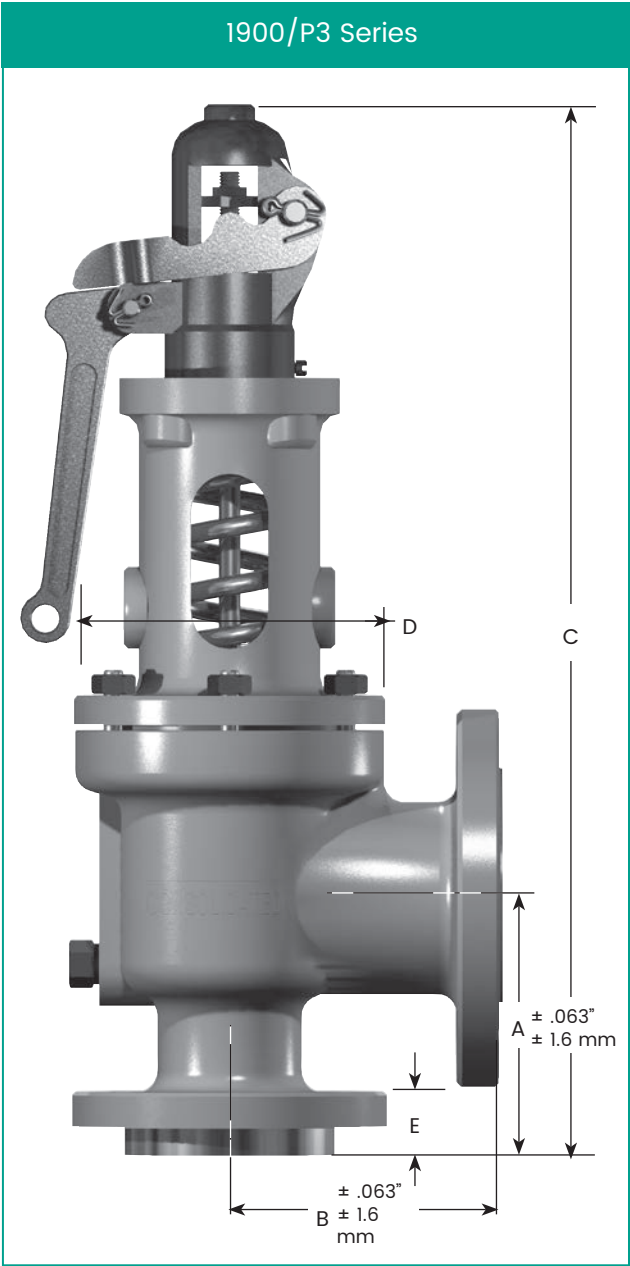
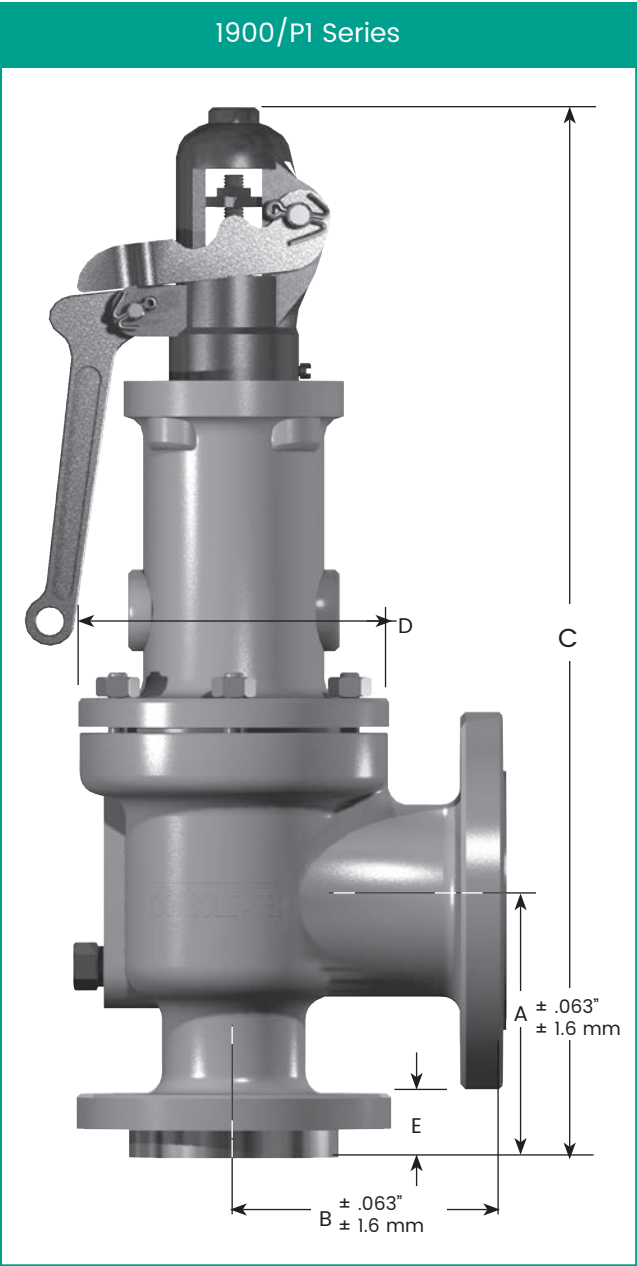


Cap with Gag



Dimensions & Weights

This table applies to the standard 1900/P Series regardless of materials of construction. If the valve you are reviewing has an inlet or outlet size different from that stated, the dimensions (A) through (E) and weight may not apply.



Dimensions & Weights

Valve Data - D Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	4.13	104.9	4.50	114.3	17.00	431.8	18.00	457.2	5.44	138.2	1.13	28.7	40	18.1
1906	4.13	104.9	4.50	114.3	17.00	431.8	18.00	457.2	5.44	138.2	1.38	35.1	40	18.1
1910	4.13	104.9	4.50	114.3	17.50	444.5	18.50	469.9	5.44	138.2	1.38	35.1	50	22.7
1912	4.13	104.9	4.50	114.3	18.25	463.6	19.25	489.0	6.31	160.3	1.38	35.1	55	24.9
1914	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1916	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1918	5.50	139.7	7.00	177.8	26.50	673.1	27.50	698.5	8.88	225.6	2.44	62.0	150	68.0
1920	4.13	104.9	4.50	114.3	17.50	444.5	18.50	469.9	5.44	138.2	1.38	35.1	50	22.7
1922	4.13	104.9	4.50	114.3	17.50	444.5	18.50	469.9	5.44	138.2	1.38	35.1	50	22.7
1924	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1926	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1928	5.50	139.7	7.00	177.8	26.50	673.1	27.50	698.5	8.88	225.6	2.44	62.0	150	68.0

Valve Data - E Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	4.13	104.9	4.50	114.3	17.00	431.8	18.00	457.2	5.44	138.2	1.13	28.7	40	18.1
1906	4.13	104.9	4.50	114.3	17.00	431.8	18.00	457.2	5.44	138.2	1.38	35.1	40	18.1
1910	4.13	104.9	4.50	114.3	17.50	444.5	18.50	469.9	5.44	138.2	1.38	35.1	50	22.7
1912	4.13	104.9	4.50	114.3	18.25	463.6	19.25	489.0	6.31	160.3	1.38	35.1	55	24.9
1914	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1916	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1918	5.50	139.7	7.00	177.8	26.50	673.1	27.50	698.5	8.88	225.6	2.44	62.0	150	68.0
1920	4.13	104.9	4.50	114.3	17.50	444.5	18.50	469.9	5.44	138.2	1.38	35.1	50	22.7
1922	4.13	104.9	4.50	114.3	17.50	444.5	18.50	469.9	5.44	138.2	1.38	35.1	50	22.7
1924	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1926	4.13	104.9	5.50	139.7	21.75	552.5	22.75	577.9	7.81	198.4	1.94	49.3	95	43.1
1928	5.50	139.7	7.00	177.8	26.50	673.1	27.50	698.5	8.88	225.6	2.44	62.0	150	68.0

Dimensions & Weights

Valve Data – F Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	4.88	124.0	4.75	120.7	17.75	450.9	18.75	476.3	5.44	138.2	1.25	31.8	40	18.1
1906	4.88	124.0	4.75	120.7	17.75	450.9	18.75	476.3	5.44	138.2	1.50	38.1	45	20.4
1910	4.88	124.0	6.00	152.4	18.25	463.6	19.25	489.0	5.44	138.2	1.56	39.6	50	22.7
1912	4.88	124.0	6.00	152.4	19.00	482.6	20.00	508.0	6.31	160.3	1.56	39.6	60	27.2
1914	4.88	124.0	6.50	165.1	22.50	571.5	23.50	596.9	7.81	198.4	1.94	49.3	100	45.4
1916	4.88	124.0	6.50	165.1	22.50	571.5	23.50	596.9	7.81	198.4	1.94	49.3	100	45.4
1918	5.50	139.7	7.00	177.8	26.50	673.1	27.50	698.5	8.88	225.6	2.44	62.0	150	68.0
1920	4.88	124.0	6.00	152.4	18.25	463.6	19.25	489.0	5.44	138.2	1.56	39.6	50	22.7
1922	4.88	124.0	6.00	152.4	18.25	463.6	19.25	489.0	5.44	138.2	1.56	39.6	50	22.7
1924	4.88	124.0	6.50	165.1	22.50	571.5	23.50	596.9	7.81	198.4	1.94	49.3	100	45.4
1926	4.88	124.0	6.50	165.1	22.50	571.5	23.50	596.9	7.81	198.4	1.94	49.3	100	45.4
1928	5.50	139.7	7.00	177.8	26.50	673.1	27.50	698.5	8.88	225.6	2.44	62.0	150	68.0

Valve Data – G Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	4.88	124.0	7.75	196.9	17.75	450.9	19.00	482.6	5.44	138.2	1.25	31.8	55	24.9
1906	4.88	124.0	4.75	120.7	17.75	450.9	19.00	482.6	5.44	138.2	1.50	38.1	55	24.9
1910	4.88	124.0	6.00	152.4	18.25	463.6	19.50	495.3	5.44	138.2	1.56	39.6	60	27.2
1912	4.88	124.0	6.00	152.4	19.00	482.6	20.25	514.4	6.31	160.3	1.56	39.6	65	29.5
1914	4.88	124.0	6.50	165.1	22.50	571.5	23.75	603.3	7.81	198.4	1.94	49.3	95	43.1
1916	6.13	155.7	6.75	171.5	23.75	603.3	25.00	635.0	7.81	198.4	2.19	55.6	100	45.4
1918	6.13	155.7	6.75	171.5	23.75	603.3	25.00	635.0	7.81	198.4	2.69	68.3	110	49.9
1920	4.88	124.0	6.00	152.4	18.25	463.6	19.50	495.3	5.44	138.2	1.56	39.6	60	27.2
1922	4.88	124.0	6.00	152.4	19.00	482.6	20.25	514.4	6.31	160.3	1.56	39.6	65	29.5
1924	4.88	124.0	6.50	165.1	22.50	571.5	23.75	603.3	7.81	198.4	1.94	49.3	95	43.1
1926	6.13	155.7	6.75	171.5	23.75	603.3	25.00	635.0	7.81	198.4	2.19	55.6	100	45.4
1928	6.13	155.7	6.75	171.5	23.75	603.3	25.00	635.0	7.81	198.4	2.69	68.3	110	49.9

Dimensions & Weights

Valve Data – H Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	5.13	130.3	4.88	124.0	19.50	495.3	19.50	495.3	6.31	160.3	1.25	31.8	60	27.2
1906	5.13	130.3	4.88	124.0	19.50	495.3	19.50	495.3	6.31	160.3	1.56	39.6	60	27.2
1910	5.13	130.3	4.88	124.0	20.25	514.4	20.25	514.4	6.31	160.3	1.69	42.9	65	29.5
1912	6.06	153.9	6.38	162.1	23.00	584.2	23.00	584.2	7.00	177.8	1.69	42.9	85	38.6
1914	6.06	153.9	6.38	162.1	26.00	660.4	26.00	660.4	8.25	209.6	2.19	55.6	130	59.0
1916	6.06	153.9	6.38	162.1	26.00	660.4	26.00	660.4	8.25	209.6	2.19	55.6	140	63.5
1920	5.13	130.3	4.88	124.0	20.25	514.4	20.25	514.4	6.31	160.3	1.69	42.9	65	29.5
1922	5.13	130.3	4.88	124.0	20.25	514.4	20.25	514.4	6.31	160.3	1.69	42.9	65	29.5
1924	6.06	153.9	6.38	162.1	23.00	584.2	23.00	584.2	7.00	177.8	2.19	55.6	90	40.8
1926	6.06	153.9	6.38	162.1	26.00	660.4	26.00	660.4	8.25	209.6	2.19	55.6	140	63.5

Valve Data – J Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	5.38	136.7	4.88	124.0	21.25	539.8	21.25	539.8	6.88	174.8	1.31	33.3	75	34.0
1906	5.38	136.7	4.88	124.0	21.25	539.8	21.25	539.8	6.88	174.8	1.56	39.6	75	34.0
1910	7.25	184.2	7.13	181.1	25.63	651.0	25.63	651.0	7.38	187.5	1.81	46.0	100	45.4
1912	7.25	184.2	7.13	181.1	29.88	759.0	29.88	759.0	9.00	228.6	1.81	46.0	170	77.1
1914	7.25	184.2	7.13	181.1	29.75	755.7	29.75	755.7	9.00	228.6	2.19	55.6	195	88.5
1916	7.25	184.2	7.13	181.1	29.75	755.7	29.75	755.7	9.00	228.6	2.56	65.0	220	99.8
1920	7.25	184.2	7.13	181.1	25.63	651.0	25.63	651.0	7.38	187.5	1.81	46.0	100	45.4
1922	7.25	184.2	7.13	181.1	25.63	651.0	25.63	651.0	7.38	187.5	1.81	46.0	100	45.4
1924	7.25	184.2	7.13	181.1	29.88	759.0	29.88	759.0	9.00	228.6	2.31	58.7	180	81.6
1926	7.25	184.2	7.13	181.1	29.75	755.7	29.75	755.7	9.00	228.6	2.56	65.0	220	99.8

Valve Data – K Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	6.13	155.7	6.38	162.1	25.50	647.7	24.50	622.3	7.38	187.5	1.44	36.6	110	49.9
1906	6.13	155.7	6.75	171.5	24.50	622.3	24.50	622.3	7.38	187.5	1.81	46.0	115	52.2
1910	6.13	155.7	6.38	162.1	28.00	711.2	28.00	711.2	7.75	196.9	1.94	49.3	140	63.5
1912	7.25	184.2	7.13	181.1	29.25	743.0	29.25	743.0	7.75	196.9	1.94	49.3	150	68.0
1914	7.81	198.4	8.50	215.9	35.25	895.4	35.25	895.4	10.50	266.7	2.19	55.6	300	136.1
1916	7.75	196.9	8.50	215.9	35.25	895.4	35.25	895.4	10.50	266.7	2.56	65.0	320	145.1
1920	6.13	155.7	6.38	162.1	28.00	711.2	28.00	711.2	7.75	196.9	1.94	49.3	140	63.5
1922	6.13	155.7	6.38	162.1	28.00	711.2	28.00	711.2	7.75	196.9	1.94	49.3	140	63.5
1924	7.81	198.4	8.50	215.9	35.25	895.4	35.25	895.4	10.50	266.7	2.19	55.6	300	136.1
1926	7.75	196.9	8.50	215.9	35.25	895.4	35.25	895.4	10.50	266.7	2.56	65.0	320	145.1

Dimensions & Weights

Valve Data - L Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	6.13	155.7	6.50	165.1	28.75	730.3	28.75	730.3	8.88	225.6	1.44	36.6	140	63.5
1906	6.13	155.7	6.50	165.1	28.75	730.3	28.75	730.3	8.88	225.6	1.81	46.0	145	65.8
1910	7.06	179.3	7.13	181.1	32.00	812.8	32.00	812.8	9.50	241.3	1.94	49.3	220	99.8
1912	7.06	179.3	8.00	203.2	32.00	812.8	32.00	812.8	9.50	241.3	2.19	55.6	230	104.3
1914	7.75	196.9	8.75	222.3	37.25	946.2	37.25	946.2	12.25	311.2	2.44	62.0	360	163.3
1916	7.75	196.9	8.75	222.3	37.25	946.2	37.25	946.2	12.25	311.2	2.81	71.4	370	167.8
1920	7.06	179.3	7.13	181.1	32.00	812.8	32.00	812.8	9.50	241.3	1.94	49.3	220	99.8
1922	7.06	179.3	8.00	203.2	32.00	812.8	32.00	812.8	9.50	241.3	2.19	55.6	230	104.3
1924	7.75	196.9	8.75	222.3	37.25	946.2	37.25	946.2	12.25	311.2	2.44	62.0	360	163.3
1926	7.75	196.9	8.75	222.3	37.25	946.2	37.25	946.2	12.25	311.2	2.81	71.4	370	167.8

Valve Data – M Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	7.00	177.8	7.25	184.2	29.75	755.7	29.75	755.7	9.38	238.3	1.63	41.4	185	83.9
1906	7.00	177.8	7.25	184.2	29.75	755.7	29.75	755.7	9.38	238.3	1.94	49.3	190	86.2
1910	7.00	177.8	7.25	184.2	32.00	812.8	32.00	812.8	9.38	238.3	1.94	49.3	230	104.3
1912	7.00	177.8	8.00	203.2	36.25	920.8	36.25	920.8	10.75	273.1	2.19	55.6	300	136.1
1914	7.75	196.9	8.75	222.3	37.00	939.8	37.00	939.8	10.75	273.1	2.44	62.0	340	154.2
1920	7.00	177.8	7.25	184.2	32.00	812.8	32.00	812.8	9.38	238.3	1.94	49.3	230	104.3
1922	7.00	177.8	8.00	203.2	36.25	920.8	36.25	920.8	10.75	273.1	2.19	55.6	300	136.1
1924	7.75	196.9	8.75	222.3	37.00	939.8	37.00	939.8	10.75	273.1	2.44	62.0	340	154.2

Valve Data – N Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	7.75	196.9	8.25	209.6	33.00	838.2	33.00	838.2	10.13	257.3	1.63	41.4	220	99.8
1906	7.75	196.9	8.25	209.6	33.00	838.2	33.00	838.2	10.13	257.3	1.94	49.3	225	102.1
1910	7.75	196.9	8.25	209.6	34.25	870.0	34.25	870.0	10.50	266.7	1.94	49.3	260	117.9
1912	7.75	196.9	8.75	222.3	39.00	990.6	39.00	990.6	11.75	298.5	2.19	55.6	360	163.3
1914	7.75	196.9	8.75	222.3	39.00	990.6	39.00	990.6	11.75	298.5	2.44	62.0	380	172.4
1920	7.75	196.9	8.25	209.6	34.25	870.0	34.25	870.0	10.50	266.7	1.94	49.3	260	117.9
1922	7.75	196.9	8.75	222.3	39.00	990.6	39.00	990.6	11.75	298.5	2.19	55.6	360	163.3
1924	7.75	196.9	8.75	222.3	39.00	990.6	39.00	990.6	11.75	298.5	2.44	62.0	380	172.4

Dimensions & Weights

Valve Data - P Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	7.13	181.1	9.00	228.6	34.25	870.0	34.25	870.0	11.00	279.4	1.63	41.4	260	117.9
1906	7.13	181.1	9.00	228.6	24.25	616.0	34.25	870.0	11.00	279.4	1.94	49.3	270	122.5
1910	8.88	225.6	10.00	254.0	41.00	1041.4	41.00	1041.4	11.50	292.1	1.94	49.3	350	158.8
1912	8.88	225.6	10.00	254.0	43.50	1104.9	43.50	1104.9	13.88	352.6	2.19	55.6	530	240.4
1914	8.88	225.6	10.00	254.0	43.50	1104.9	43.50	1104.9	13.88	352.6	2.44	62.0	545	247.2
1920	8.88	225.6	10.00	254.0	41.00	1041.4	41.00	1041.4	11.50	292.1	1.94	49.3	350	158.8
1923	8.88	225.6	10.00	254.0	43.50	1104.9	43.50	1104.9	13.88	352.6	2.19	55.6	530	240.4
1924	8.88	225.6	10.00	254.0	43.50	1104.9	43.50	1104.9	13.88	352.6	2.44	62.0	545	247.2

Valve Data – Q Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	9.44	239.8	9.50	241.3	41.00	1041.4	41.00	1041.4	13.63	346.2	1.81	46.0	430	195.0
1906	9.44	239.8	9.50	241.3	41.00	1041.4	41.00	1041.4	13.63	346.2	13.63	346.2	445	201.8
1910	9.44	239.8	9.50	241.3	43.25	1098.6	43.25	1098.6	14.00	355.6	2.25	57.2	530	240.4
1912	9.44	239.8	9.50	241.3	46.00	1168.4	46.00	1168.4	14.25	362.0	2.69	68.3	645	292.6
1920	9.44	239.8	9.50	241.3	41.00	1041.4	41.00	1041.4	13.63	346.2	2.25	57.2	445	201.8
1922	9.44	239.8	9.50	241.3	46.00	1168.4	46.00	1168.4	14.25	362.0	2.69	68.3	645	292.6

Valve Data - R Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	9.44	239.8	9.50	241.3	43.00	1092.2	43.00	1092.2	14.50	368.3	1.81	46.0	495	224.5
1906	9.44	239.8	9.50	241.3	43.00	1092.2	43.00	1092.2	14.50	368.3	2.25	57.2	510	231.3
1910	9.44	239.8	10.50	266.7	45.50	1155.7	45.50	1155.7	14.50	368.3	2.25	57.2	550	249.5
1912	9.44	239.8	10.50	266.7	47.50	1206.5	47.50	1206.5	15.13	384.3	2.69	68.3	675	306.2
1920	9.44	239.8	9.50	241.3	43.00	1092.2	43.00	1092.2	14.50	368.3	2.25	57.2	510	231.3
1922	9.44	239.8	10.50	266.7	47.50	1206.5	47.50	1206.5	15.13	384.3	2.69	68.3	675	306.2

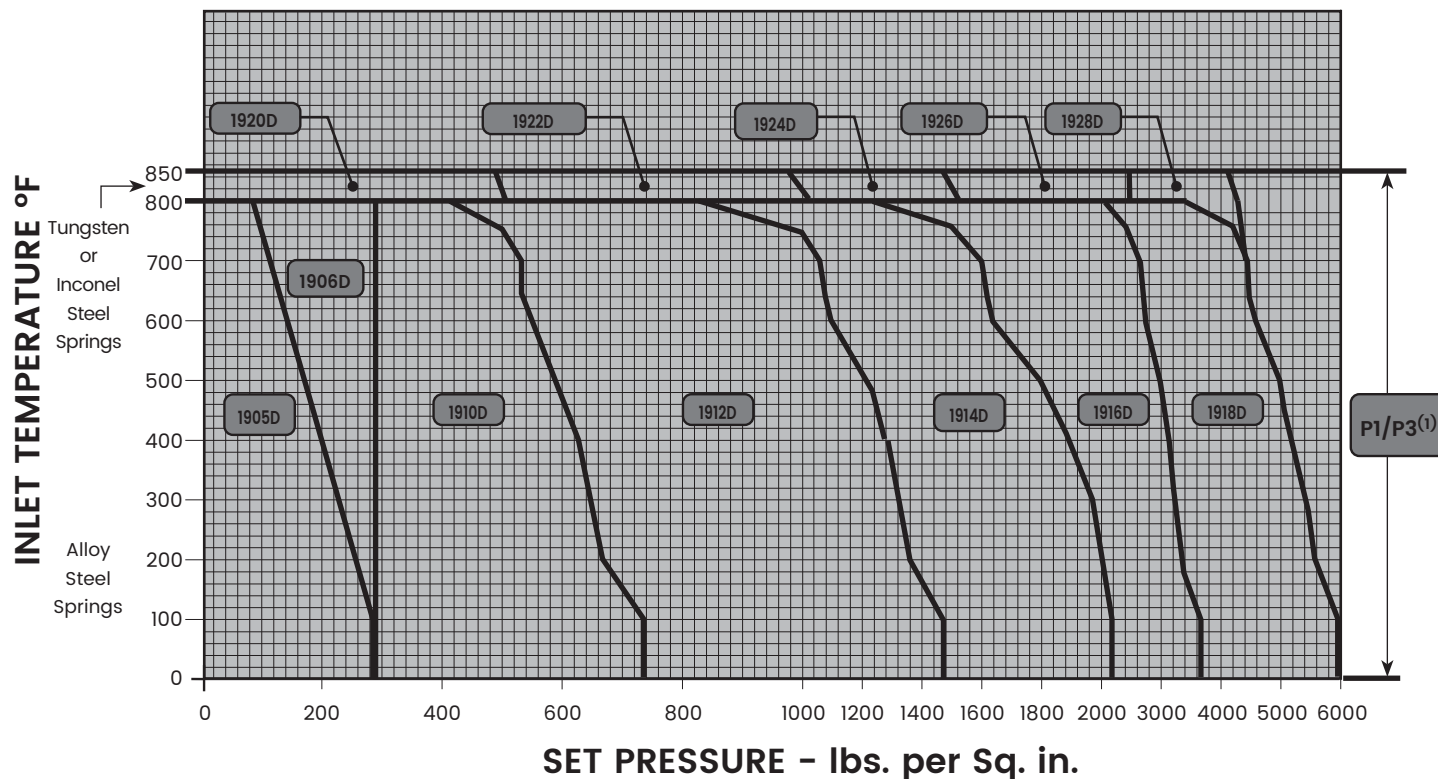
Valve Data – T Orifice														
Valve Type	A		B		C				D		E		Approximate Weight	
					Conventional (P1 & P3)		Bellows (P1)							
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
1905	10.88	276.4	11.00	279.4	47.50	1206.5	47.50	1206.5	16.50	419.1	1.94	49.3	620	281.2
1906	10.88	276.4	11.00	279.4	47.25	1200.2	47.25	1200.2	16.50	419.1	2.44	62.0	640	290.3
1910	10.88	276.4	11.00	279.4	53.38	1355.9	53.38	1355.9	16.50	419.1	2.44	62.0	840	381.0
1912	10.88	276.4	11.00	279.4	53.38	1355.9	53.38	1355.9	16.50	419.1	2.44	62.0	840	381.0
1920	10.88	276.4	11.00	279.4	53.38	1355.9	53.38	1355.9	16.50	419.1	2.44	62.0	840	381.0
1922	10.88	276.4	11.00	279.4	53.38	1355.9	53.38	1355.9	16.50	419.1	2.44	62.0	840	381.0

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series D Orifice

Pressure Temperature Ratings for “D” Orifice												
API Ratings, D Orifice - 0.110 in ² (0.710 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905D	285	19.65	210	14.47	80	5.51	-	-	285	19.65	230	15.85
1906D	285	19.65	285	19.65	285	19.65	-	-	285	19.65	230	15.85
1910D	740	51.02	625	43.09	410	28.26	-	-	285	19.65	230	15.85
1912D	1480	102.04	1205	83.08	825	56.88	-	-	285	19.65	230	15.85
1914D	2220	153.06	1740	119.96	1235	85.15	-	-	600	41.36	500	34.47
1916D	3705	255.45	2735	188.57	2060	142.03	-	-	600	41.36	500	34.47
1918D	6000	413.68	4460	307.50	3430	236.49	-	-	740	51.02	500	34.47
1920D	-	-	-	-	510	35.16	485	33.43	285	19.65	230	15.85
1922D	-	-	-	-	1015	69.98	975	67.22	285	19.65	230	15.85
1924D	-	-	-	-	1525	105.14	1460	100.66	600	41.36	500	34.47
1926D	-	-	-	-	2540	175.12	2435	167.88	600	41.36	500	34.47
1928D	-	-	-	-	4230	291.64	4060	279.92	740	51.02	500	34.47



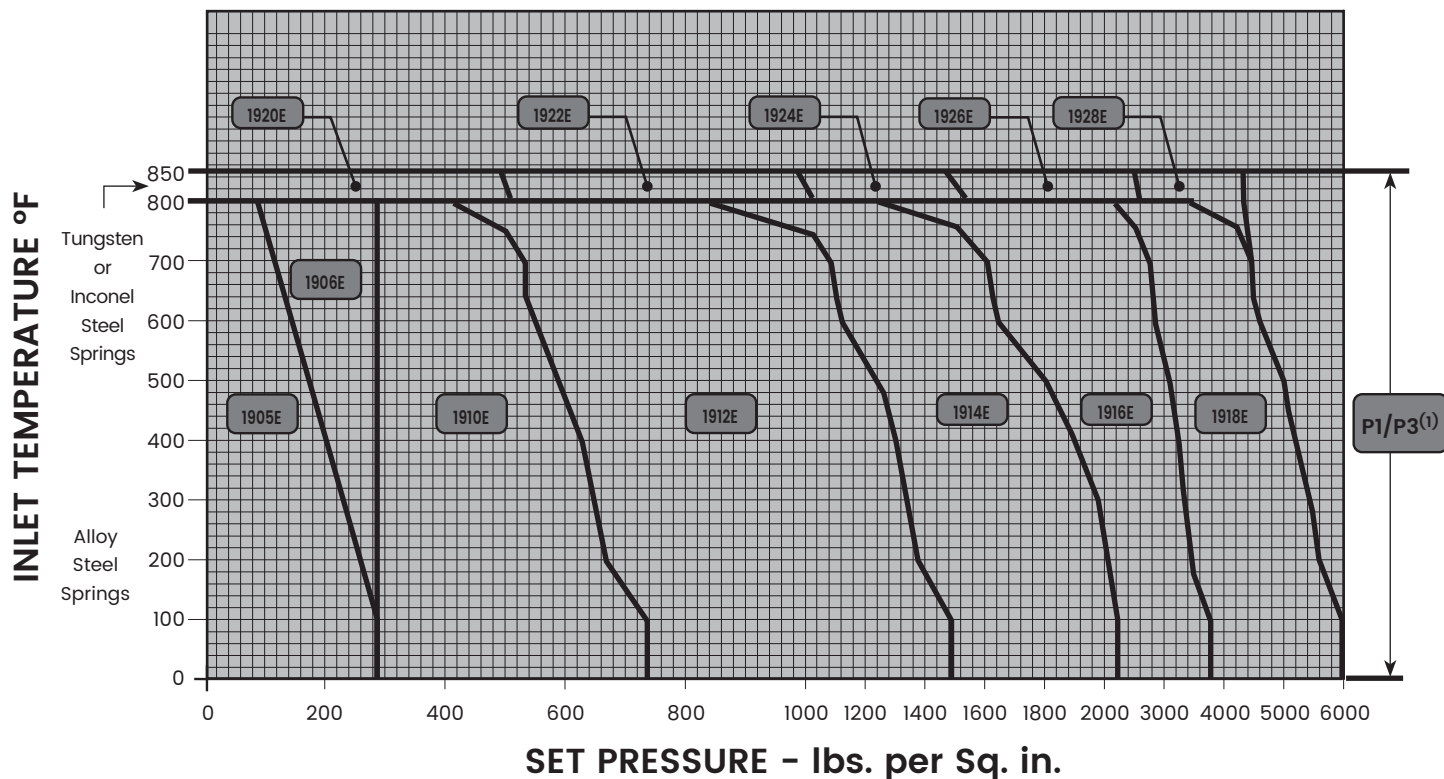
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series E Orifice

Pressure Temperature Ratings for “E” Orifice												
API Ratings, E Orifice – 0.196 in ² (1.265 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905E	285	19.65	210	14.47	80	5.51	–	–	285	19.65	230	15.85
1906E	285	19.65	285	19.65	285	19.65	–	–	285	19.65	230	15.85
1910E	740	51.02	625	43.09	410	28.26	–	–	285	19.65	230	15.85
1912E	1480	102.04	1205	83.08	825	56.88	–	–	285	19.65	230	15.85
1914E	2220	153.06	1740	119.96	1235	85.15	–	–	600	41.36	500	34.47
1916E	3705	255.45	2735	188.57	2060	142.03	–	–	600	41.36	500	34.47
1918E	6000	413.68	4460	307.50	3430	236.49	–	–	740	51.02	500	34.47
1920E	–	–	–	–	510	35.16	485	33.43	285	19.65	230	15.85
1922E	–	–	–	–	1015	69.98	975	67.22	285	19.65	230	15.85
1924E	–	–	–	–	1525	105.14	1460	100.66	600	41.36	500	34.47
1926E	–	–	–	–	2540	175.12	2435	167.88	600	41.36	500	34.47
1928E	–	–	–	–	4230	291.64	4060	279.92	740	51.02	500	34.47



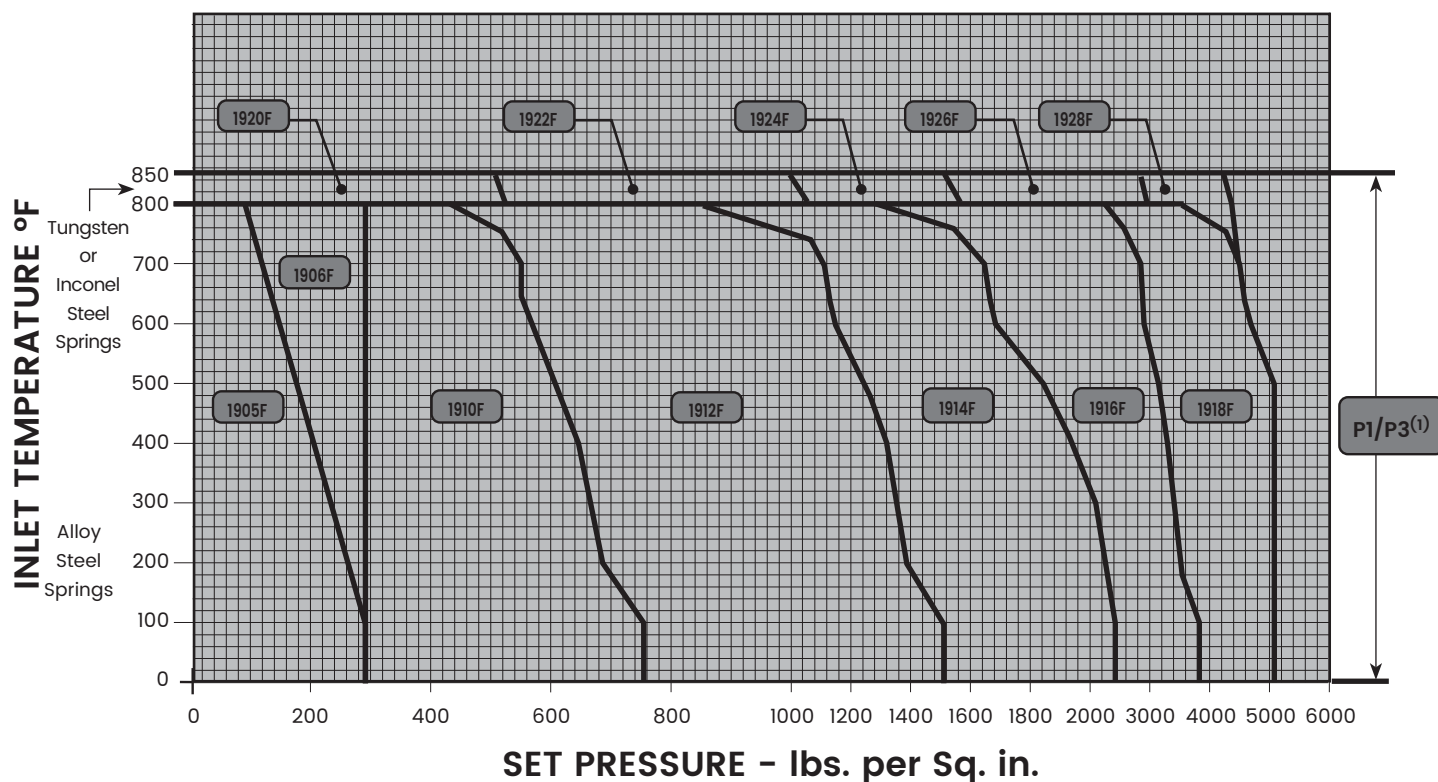
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series F Orifice

Pressure Temperature Ratings for “F” Orifice												
API Ratings, F Orifice – 0.307 in (1.981 cm²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905F	285	19.65	210	14.47	80	5.51	–	–	285	19.65	230	15.85
1906F	285	19.65	285	19.65	285	19.65	–	–	285	19.65	230	15.85
1910F	740	51.02	625	43.09	410	28.26	–	–	285	19.65	230	15.85
1912F	1480	102.04	1205	83.08	825	56.88	–	–	285	19.65	230	15.85
1914F	2220	153.06	1740	119.96	1235	85.15	–	–	740	51.02	500	34.47
1916F	3705	255.45	2735	188.57	2060	142.03	–	–	740	51.02	500	34.47
1918F	5000	344.73	4460	307.50	3430	236.49	–	–	740	51.02	500	34.47
1920F	–	–	–	–	510	35.16	485	33.43	285	19.65	230	15.85
1922F	–	–	–	–	1015	69.98	975	67.22	285	19.65	230	15.85
1924F	–	–	–	–	1525	105.14	1460	100.66	285	19.65	500	34.47
1926F	–	–	–	–	2540	175.12	2435	167.88	740	51.02	500	34.47
1928F	–	–	–	–	4230	291.64	4060	279.92	740	51.02	500	34.47



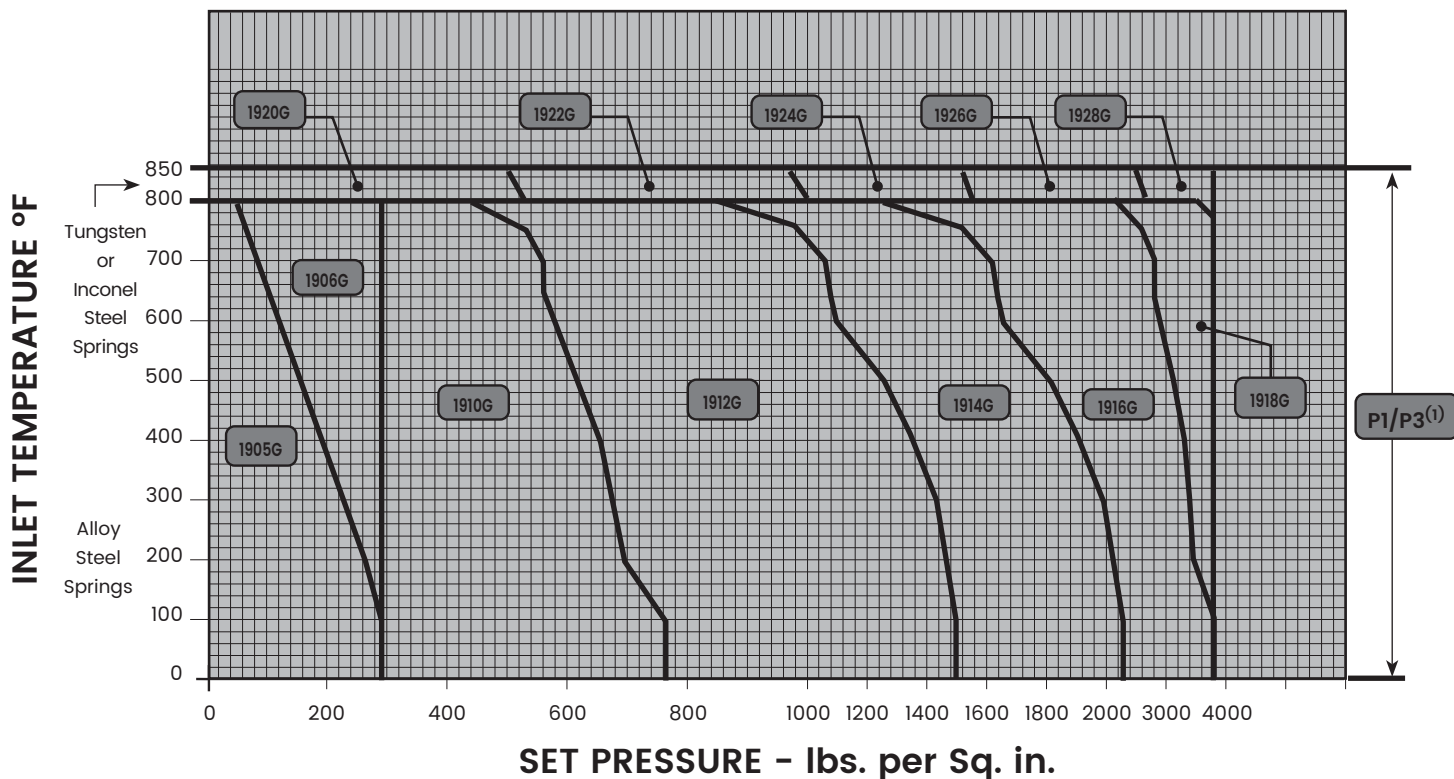
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series G Orifice

Pressure Temperature Ratings for “G” Orifice												
API Ratings, G Orifice - 0.503 in ² (3.245 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905G	285	19.65	210	14.47	80	5.51	-	-	285	19.65	230	15.85
1906G	285	19.65	285	19.65	285	19.65	-	-	285	19.65	230	15.85
1910G	740	51.02	625	43.09	410	28.26	-	-	285	19.65	230	15.85
1912G	1480	102.04	1205	83.08	825	56.88	-	-	285	19.65	230	15.85
1914G	2220	153.06	1740	119.96	1235	85.15	-	-	740	51.02	470	32.40
1916G	3705	255.45	2735	188.57	2060	142.03	-	-	740	51.02	470	32.40
1918G	3705	255.45	3705	255.45	3430	236.49	-	-	740	51.02	470	32.40
1920G	-	-	-	-	510	35.16	485	33.43	285	19.65	230	15.85
1922G	-	-	-	-	1015	69.98	975	67.22	285	19.65	230	15.85
1924G	-	-	-	-	1525	105.14	1460	100.66	740	51.02	500	34.47
1926G	-	-	-	-	2540	175.12	2435	167.88	740	51.02	500	34.47
1928G	-	-	-	-	3750	258.55	3750	258.55	740	51.02	500	34.47



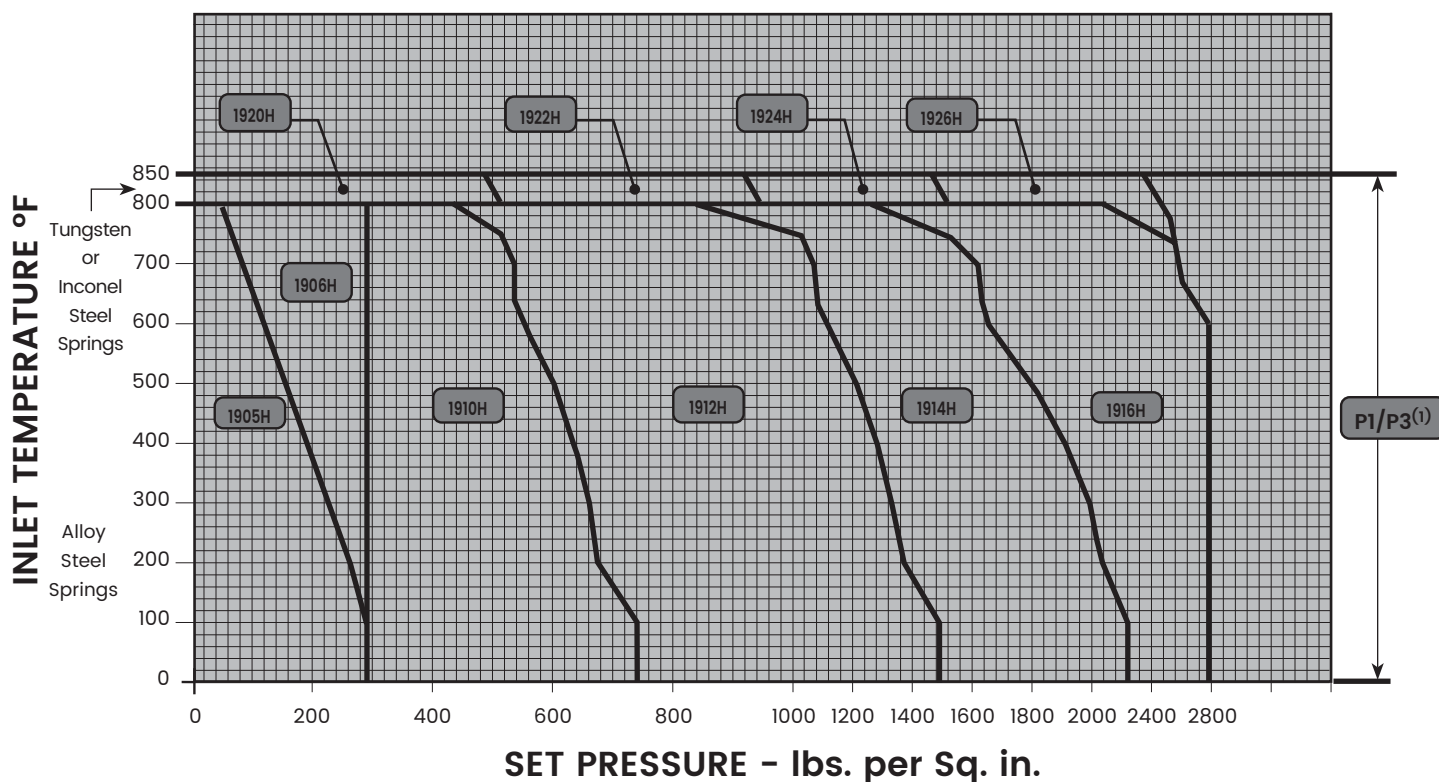
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series H Orifice

Pressure Temperature Ratings for “H” Orifice												
API Ratings, H Orifice - 0.785 in ² (5.065 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905H	285	19.65	210	14.47	80	5.51	-	-	285	19.65	230	15.85
1906H	285	19.65	285	19.65	285	19.65	-	-	285	19.65	230	15.85
1910H	740	51.02	625	43.09	410	28.26	-	-	285	19.65	230	15.85
1912H	1480	102.04	1205	83.08	825	56.88	-	-	285	19.65	230	15.85
1914H	2220	153.06	1740	119.96	1235	85.15	-	-	285	19.65	230	15.85
1916H	2750	189.60	2735	188.57	2060	142.03	-	-	740	51.02	415	28.61
1920H	-	-	-	-	510	35.16	485	33.43	285	19.65	230	15.85
1922H	-	-	-	-	1015	69.98	975	67.22	285	19.65	230	15.85
1924H	-	-	-	-	1525	105.14	1460	100.66	285	19.65	230	15.85
1926H	-	-	-	-	2540	175.12	2435	167.88	740	51.02	415	28.61



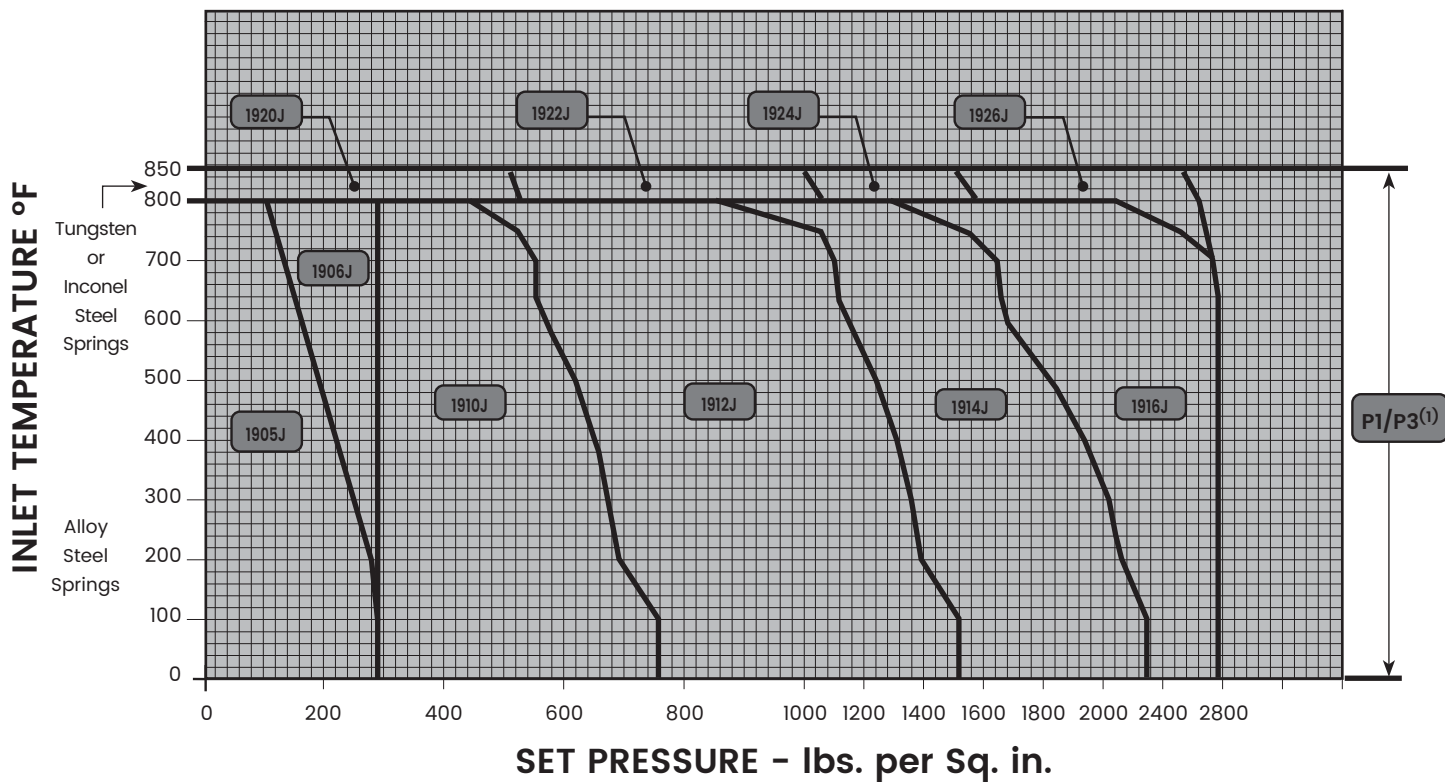
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series J Orifice

Pressure Temperature Ratings for “J” Orifice												
API Ratings, J Orifice - 1.287 in² (8.303 cm²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905J	285	19.65	210	14.47	80	5.51	-	-	285	19.65	230	15.85
1906J	285	19.65	285	19.65	285	19.65	-	-	285	19.65	230	15.85
1910J	740	51.02	625	43.09	410	28.26	-	-	285	19.65	230	15.85
1912J	1480	102.04	1205	83.08	825	56.88	-	-	285	19.65	230	15.85
1914J	2220	153.06	1740	119.96	1235	85.15	-	-	285	19.65	230	15.85
1916J	2700	186.15	2700	186.15	2060	142.03	-	-	600	41.36	230	15.85
1920J	-	-	-	-	510	35.16	485	33.43	285	19.65	230	15.85
1922J	-	-	-	-	1015	69.98	975	67.22	285	19.65	230	15.85
1924J	-	-	-	-	1525	105.14	1460	100.66	285	19.65	230	15.85
1926J	-	-	-	-	2540	175.12	2435	167.88	600	41.36	230	15.85



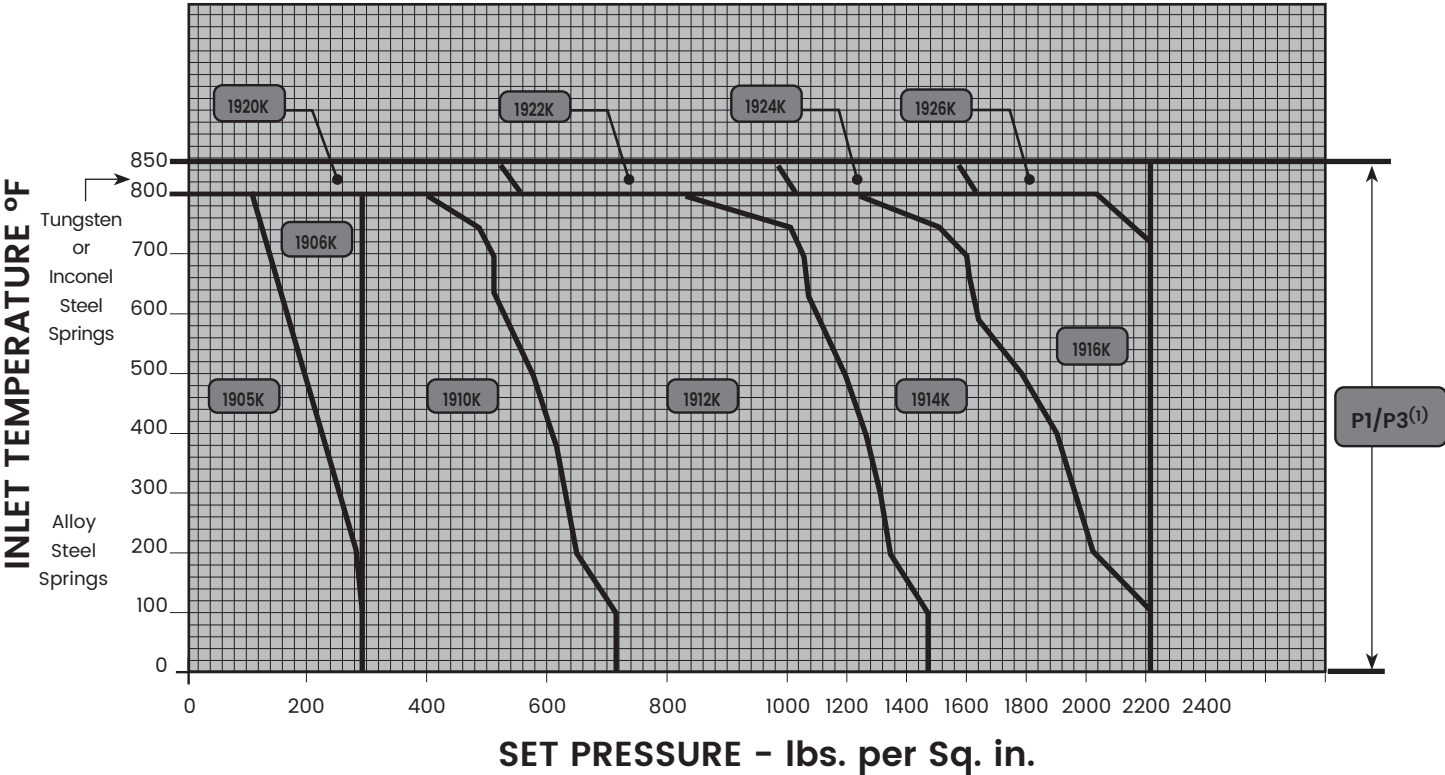
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series K Orifice

Pressure Temperature Ratings for “K” Orifice												
API Ratings, K Orifice - 1.838 in ² (11.858 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905K	285	19.65	210	14.47	80	5.51	-	-	285	19.65	150	10.34
1906K	285	19.65	285	19.65	285	19.65	-	-	285	19.65	150	10.34
1910K	740	51.02	625	43.09	410	28.26	-	-	285	19.65	150	10.34
1912K	1480	102.04	1205	83.08	825	56.88	-	-	285	19.65	200	13.78
1914K	2220	153.06	1740	119.96	1235	85.15	-	-	285	19.65	200	13.78
1916K	2220	153.06	2220	153.06	2060	142.03	-	-	600	41.36	200	13.78
1920K	-	-	-	-	510	35.16	485	33.43	285	19.65	230	15.85
1922K	-	-	-	-	1015	69.98	975	67.22	285	19.65	230	15.85
1924K	-	-	-	-	1525	105.14	1460	100.66	285	19.65	230	15.85
1926K	-	-	-	-	2220	153.06	2220	153.06	600	41.36	230	15.85

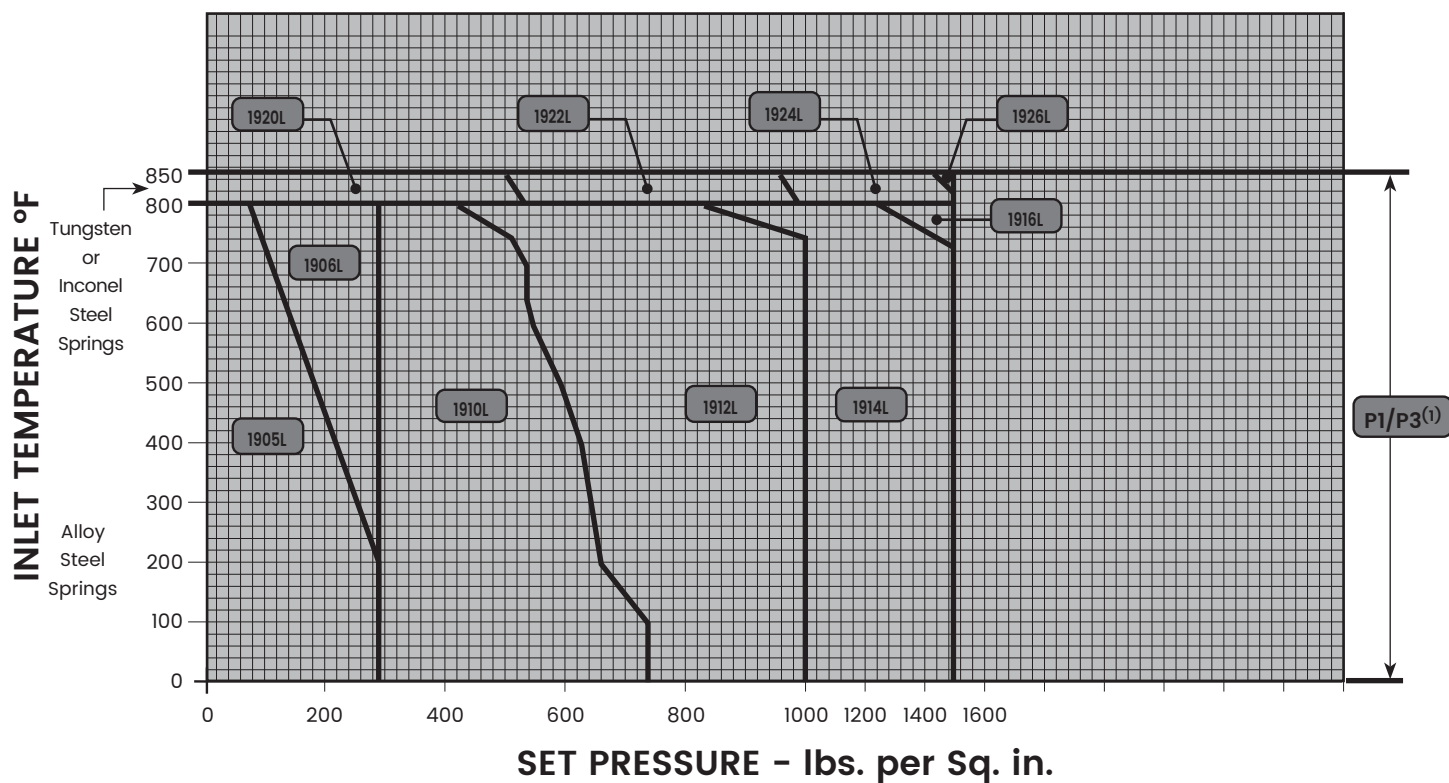


Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series L Orifice

Pressure Temperature Ratings for “L” Orifice												
API Ratings, L Orifice – 2.853 in² (18.406 cm²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905L	285	19.65	210	14.47	80	5.51	–	–	285	19.65	100	6.89
1906L	285	19.65	285	19.65	285	19.65	–	–	285	19.65	100	6.89
1910L	740	51.02	625	43.09	410	28.26	–	–	285	19.65	170	11.72
1912L	1000	68.94	1000	68.94	825	56.88	–	–	285	19.65	170	11.72
1914L	1500	103.42	1500	103.42	1235	85.15	–	–	285	19.65	170	11.72
1916L	1500	103.42	1500	103.42	1500	103.42	–	–	285	19.65	170	11.72
1920L	–	–	–	–	510	35.16	485	33.43	285	19.65	170	11.72
1922L	–	–	–	–	1000	68.94	975	67.22	285	19.65	170	11.72
1924L	–	–	–	–	1500	103.42	1460	100.66	285	19.65	170	11.72
1926L	–	–	–	–	1500	103.42	1500	103.42	285	19.65	170	11.72

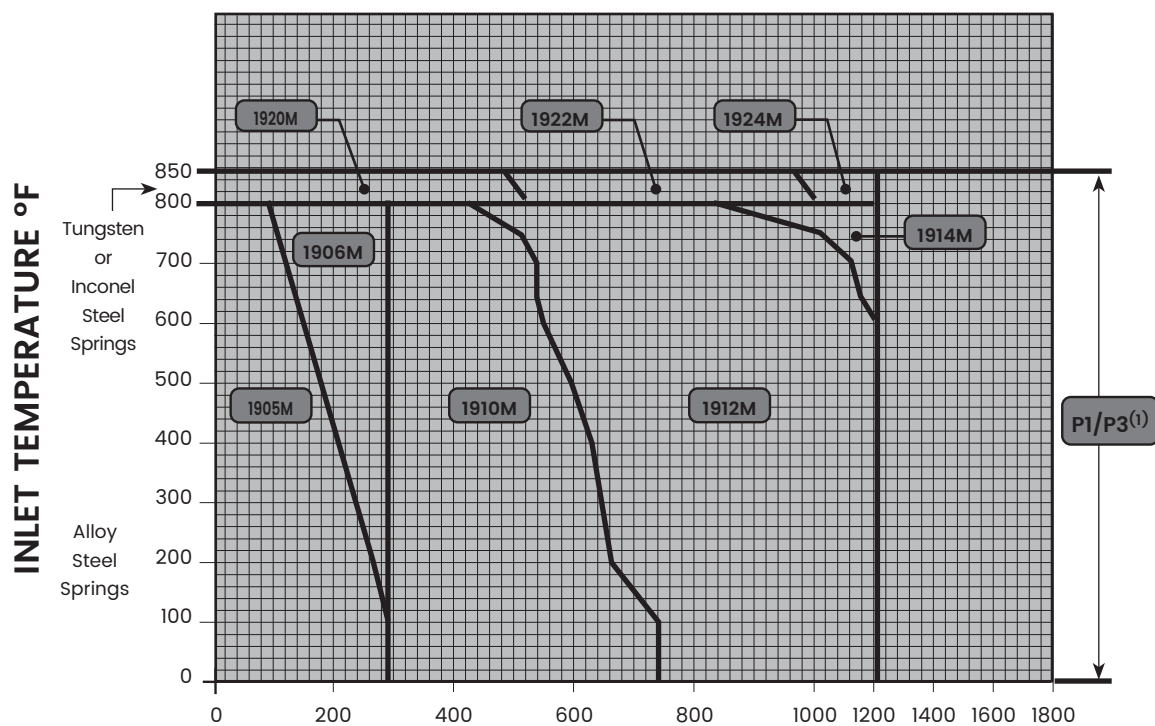


Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series M Orifice

Pressure Temperature Ratings for “M” Orifice												
API Ratings, M Orifice – 3.600 in ² (23.226 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905M	285	19.65	210	14.47	80	5.51	–	–	285	19.65	80	5.51
1906M	285	19.65	285	19.65	285	19.65	–	–	285	19.65	80	5.51
1910M	740	51.02	625	43.09	410	28.26	–	–	285	19.65	160	11.03
1912M	1100	75.84	1100	75.84	825	56.88	–	–	285	19.65	160	11.03
1914M	1100	75.84	1100	75.84	1100	75.84	–	–	285	19.65	160	11.03
1920M	–	–	–	–	510	35.16	485	33.43	285	19.65	160	11.03
1922M	–	–	–	–	1000	68.94	975	67.22	285	19.65	160	11.03
1924M	–	–	–	–	1100	75.84	1100	75.84	285	19.65	160	11.03



SET PRESSURE - lbs. per Sq. in.

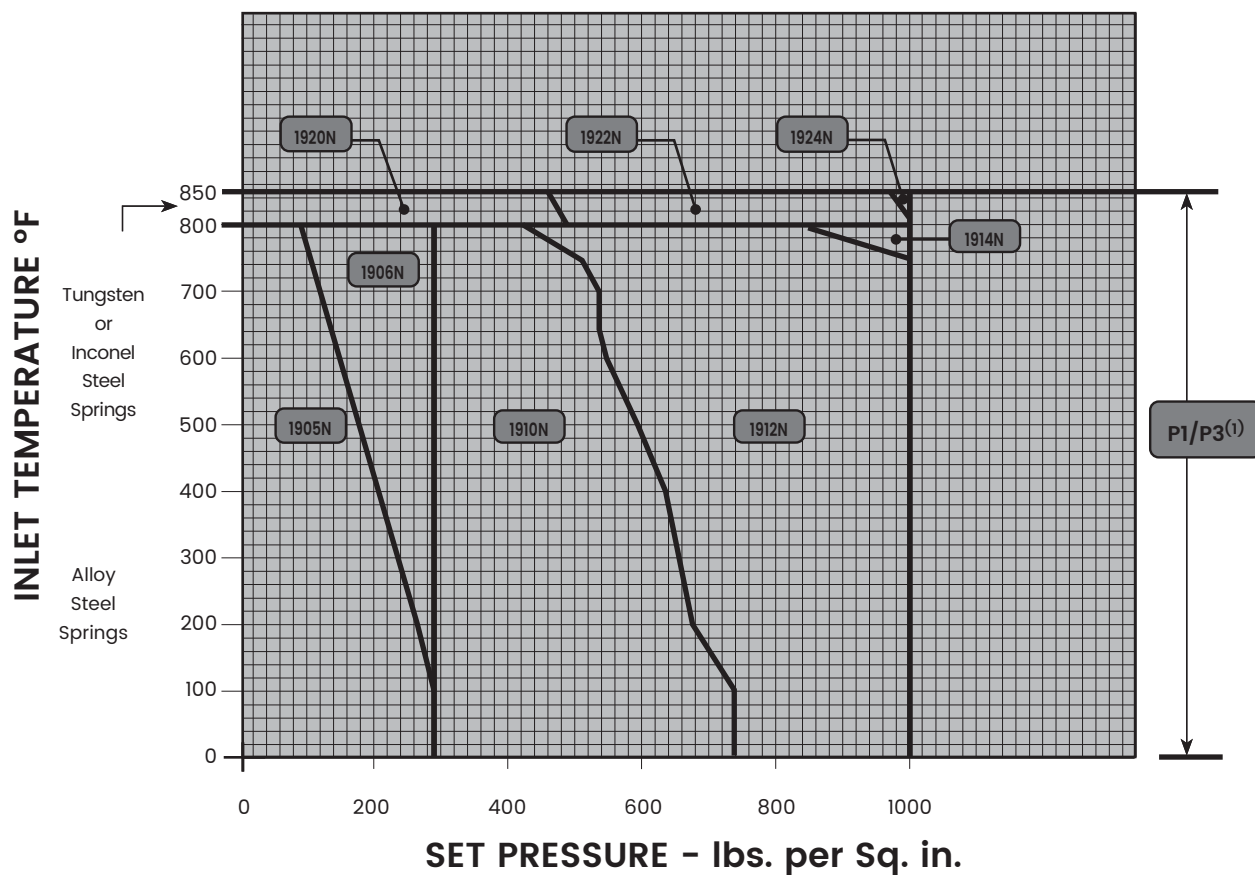
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series N Orifice

Pressure Temperature Ratings for “N” Orifice												
API Ratings, N Orifice – 4.340 in² (28.000 cm²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905N	285	19.65	210	14.47	80	5.51	–	–	285	19.65	80	5.51
1906N	285	19.65	285	19.65	285	19.65	–	–	285	19.65	80	5.51
1910N	740	51.02	625	43.09	410	28.26	–	–	285	19.65	160	11.03
1912N	1000	68.94	1000	68.94	825	56.88	–	–	285	19.65	160	11.03
1914N	1000	68.94	1000	68.94	1000	68.94	–	–	285	19.65	160	11.03
1920N	–	–	–	–	510	35.16	485	33.43	285	19.65	160	11.03
1922N	–	–	–	–	1000	68.94	975	67.22	285	19.65	160	11.03
1924N	–	–	–	–	1000	68.94	1000	68.94	285	19.65	160	11.03

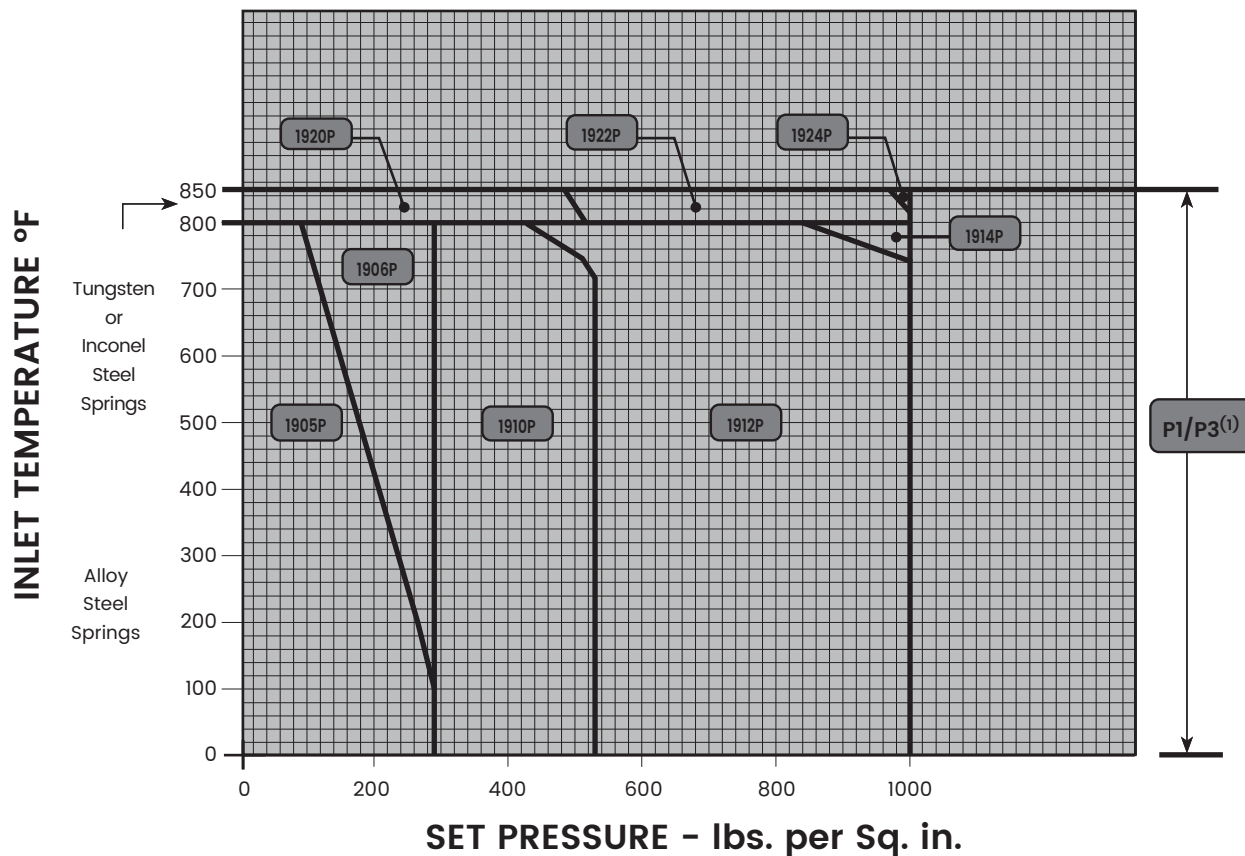


Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series P Orifice

Pressure Temperature Ratings for “P” Orifice												
API Ratings, P Orifice - 6.380 in ² (41.161 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905P	285	19.65	210	14.47	80	5.51	-	-	285	19.65	80	5.51
1906P	285	19.65	285	19.65	285	19.65	-	-	285	19.65	80	5.51
1910P	525	36.19	525	36.19	410	28.26	-	-	285	19.65	150	10.34
1912P	1000	68.94	1000	68.94	825	56.88	-	-	285	19.65	150	10.34
1914P	1000	68.94	1000	68.94	1000	68.94	-	-	285	19.65	150	10.34
1920P	-	-	-	-	510	35.16	485	33.43	285	19.65	160	11.03
1923P	-	-	-	-	1000	68.94	975	67.22	285	19.65	160	11.03
1924P	-	-	-	-	1000	68.94	1000	68.94	285	19.65	160	11.03



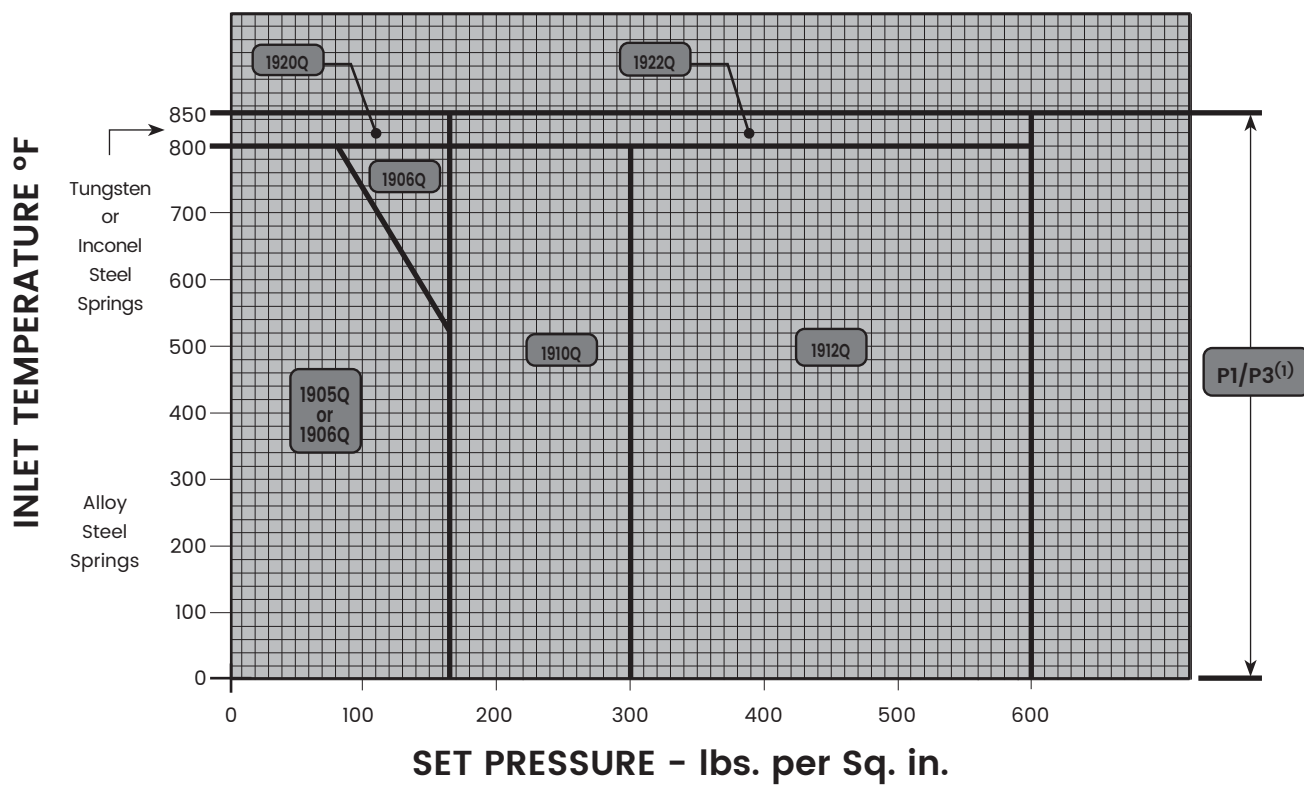
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series Q Orifice

Pressure Temperature Ratings for “Q” Orifice												
API Ratings, Q Orifice - 11.050 in ² (71.290 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905Q	165	11.37	165	11.37	80	5.51	-	-	115	7.92	70	4.82
1906Q	165	11.37	165	11.37	165	11.37	-	-	115	7.92	70	4.82
1910Q	300	20.68	300	20.68	300	20.68	-	-	115	7.92	115	7.92
1912Q	600	41.36	600	41.36	600	41.36	-	-	115	7.92	115	7.92
1920Q	-	-	-	-	165	11.37	165	11.37	115	7.92	115	7.92
1922Q	-	-	-	-	600	41.36	600	41.36	115	7.92	115	7.92



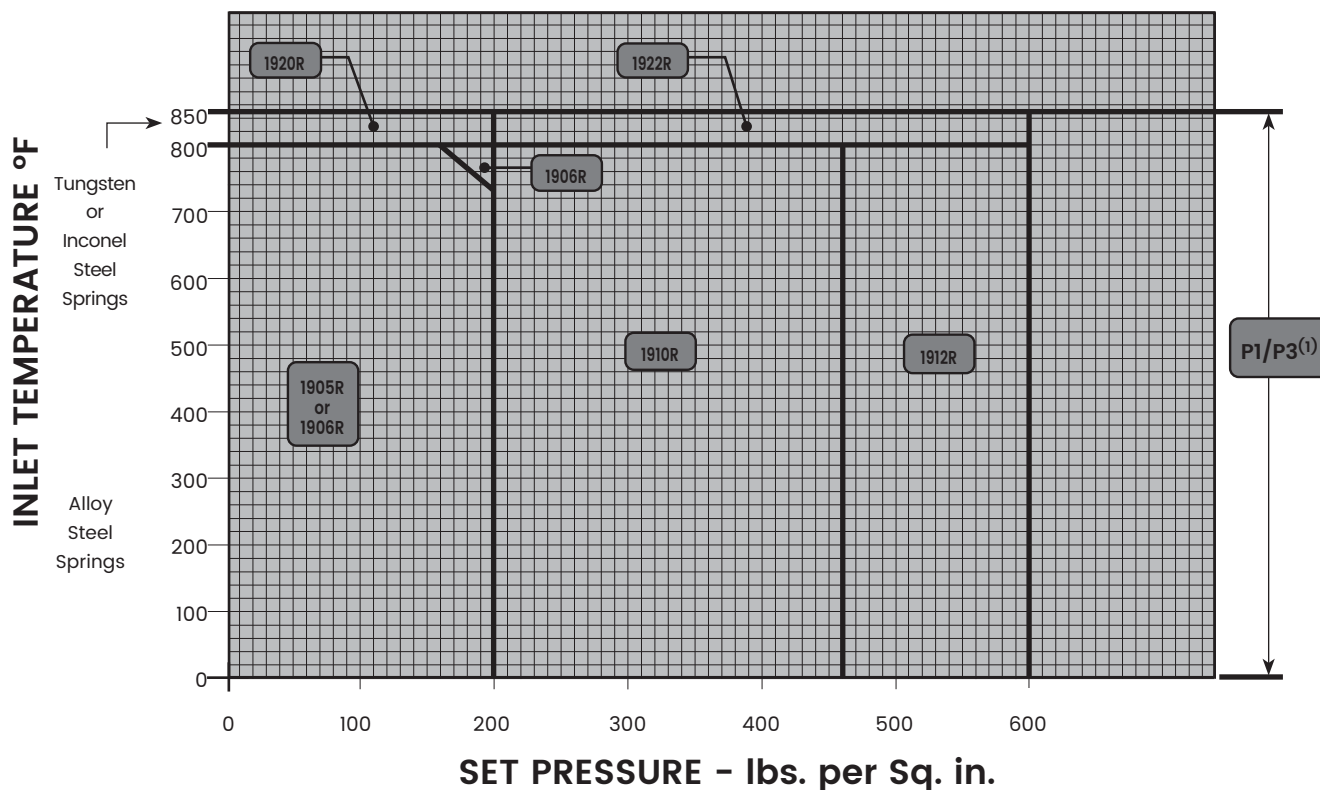
1. P3 Alloy Steel Spring - all temperature ratings

Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series R Orifice

Pressure Temperature Ratings for “R” Orifice												
API Ratings, R Orifice – 16.000 in ² (103.226 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905R	100	6.89	100	6.89	80	5.51	–	–	60	4.13	60	4.13
1906R	100	6.89	100	6.89	100	6.89	–	–	60	4.13	60	4.13
1910R	230	15.85	230	15.85	230	15.85	–	–	100	6.89	100	6.89
1912R	300	20.68	300	20.68	300	20.68	–	–	100	6.89	100	6.89
1920R	–	–	–	–	100	6.89	100	6.89	100	6.89	100	6.89
1922R	–	–	–	–	300	20.68	300	20.68	100	6.89	100	6.89

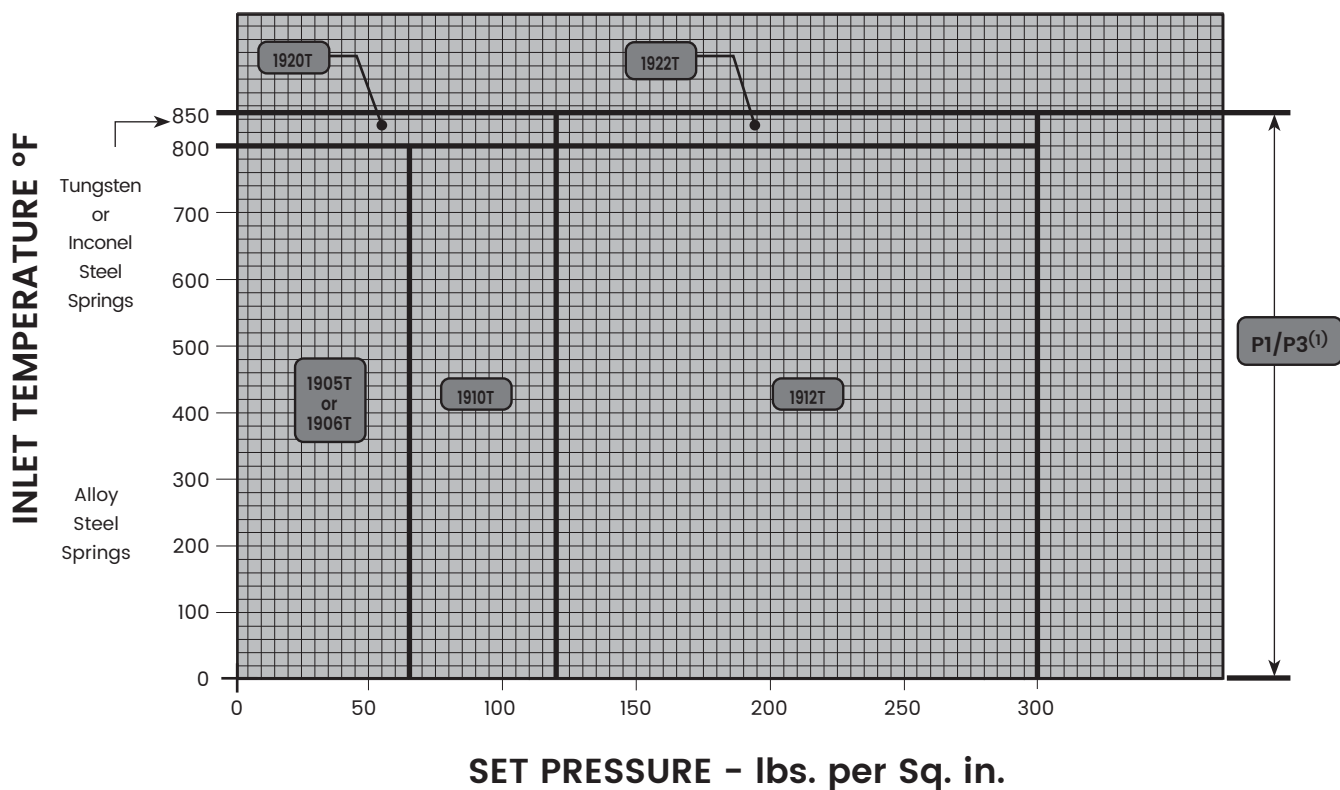


Pressure and Temperature

Selection Chart for Steam Service

1900 & 1900-30 P1 & P3 Series T Orifice

Pressure Temperature Ratings for “T” Orifice												
API Ratings, T Orifice - 26.000 in ² (167.742 cm ²)									Backpressure Ratings @ 100°F (37.8°C)			
Valve Type	Standard Material of Construction								Conventional (P1 and P3)		Bellows (P1 Only)	
	100°F (37.8°C)		Saturated Steam		800°F (426.7°C)		850°F (454.4°C)					
	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg	psig	barg
1905T	65	4.48	65	4.48	65	4.48	-	-	30	2.06	30	2.06
1906T	65	4.48	65	4.48	65	4.48	-	-	30	2.06	30	2.06
1910T	120	8.27	120	8.27	120	8.27	-	-	60	4.13	60	4.13
1912T	300	20.68	300	20.68	300	20.68	-	-	100	6.89	100	6.89
1920T	-	-	-	-	120	8.27	100	6.89	60	4.13	60	4.13
1922T	-	-	-	-	300	20.68	300	20.68	100	6.89	100	6.89



1. P3 Alloy Steel Spring - all temperature ratings

Capacities

Valve Capacity for ASME B&PV Code Section I, for Saturated Steam⁽¹⁾

Capacities based on Set Pressure plus 3% or 2 psi (0.14 barg) over pressure, whichever is greater, 90% of actual capacity.

Orifice Designation		D		E		F		G		H		J		K	
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
		0.128	0.825	0.228	1.470	0.357	2.302	0.585	3.774	0.913	5.888	1.496	9.652	2.138	13.794
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
15	1.03	177	80	316	143	495	224	812	368	1268	575	2078	942	2970	1347
20	1.37	205	92	366	166	573	259	940	426	1468	665	2406	1091	3438	1559
30	2.06	261	118	466	211	730	331	1197	542	1868	847	3061	1388	4375	1984
40	2.75	317	143	566	256	886	401	1453	659	2268	1028	3717	1686	5312	2409
50	3.44	373	169	666	302	1043	473	1709	775	2668	1210	4373	1983	6249	2834
60	4.13	429	194	766	347	1199	543	1966	891	3068	1391	5028	2280	7186	3259
70	4.82	486	220	866	392	1357	615	2225	1009	3472	1574	5690	2580	8133	3689
80	5.51	544	246	969	439	1518	688	2489	1128	3884	1761	6366	2887	9098	4126
90	6.20	602	273	1072	486	1679	761	2753	1248	4296	1948	7041	3193	10063	4564
100	6.89	659	298	1175	532	1840	834	3017	1368	4708	2135	7716	3499	11028	5002
120	8.27	775	351	1381	626	2162	980	3545	1607	5532	2509	9067	4112	12958	5877
140	9.65	890	403	1587	719	2484	1126	4073	1847	6356	2883	10418	4725	14889	6753
160	11.03	1006	456	1792	812	2806	1272	4601	2086	7180	3256	11768	5337	16819	7628
180	12.41	1121	508	1998	906	3129	1419	5129	2326	8004	3630	13119	5950	18749	8504
200	13.78	1237	561	2204	999	3451	1565	5657	2565	8828	4004	14470	6563	20679	9379
220	15.16	1352	613	2410	1093	3773	1711	6185	2805	9652	4378	15820	7175	22610	10255
240	16.54	1468	665	2615	1186	4095	1857	6713	3044	10476	4751	17171	7788	24540	11131
260	17.92	1583	718	2821	1279	4417	2003	7241	3284	11300	5125	18521	8400	26470	12006
280	19.30	1698	770	3027	1373	4739	2149	7769	3523	12124	5499	19872	9013	28400	12882
300	20.68	1814	822	3233	1466	5061	2295	8297	3763	12948	5873	21223	9626	30331	13757
320	22.06	1929	874	3438	1559	5383	2441	8825	4002	13772	6246	22573	10238	32261	14633
340	23.44	2045	927	3644	1652	5706	2588	9353	4242	14596	6620	23924	10851	34191	15508
360	24.82	2160	979	3850	1746	6028	2734	9881	4481	15420	6994	25275	11464	36121	16384
380	26.20	2276	1032	4056	1839	6350	2880	10410	4721	16244	7368	26625	12076	38051	17259
400	27.57	2391	1084	4261	1932	6672	3026	10938	4961	17068	7741	27976	12689	39982	18135
420	28.95	2507	1137	4467	2026	6994	3172	11466	5200	17892	8115	29326	13302	41912	19010
440	30.33	2622	1189	4673	2119	7316	3318	11994	5440	18716	8489	30677	13914	43842	19886
460	31.71	2738	1241	4879	2213	7638	3464	12522	5679	19540	8863	32028	14527	45772	20761
480	33.09	2853	1294	5084	2306	7960	3610	13050	5919	20364	9236	33378	15140	47703	21637
500	34.47	2969	1346	5290	2399	8283	3757	13578	6158	21188	9610	34729	15752	49633	22513
600	41.36	3546	1608	6319	2866	9893	4487	16218	7356	25308	11479	41482	18815	59284	26890
700	48.26	4123	1870	7348	3332	11504	5218	18859	8554	29428	13348	48235	21879	68935	31268
800	55.15	4701	2132	8376	3799	13114	5948	21499	9751	33548	15217	54988	24942	78587	35646
900	62.05	5278	2394	9405	4266	14725	6679	24139	10949	37668	17085	61742	28005	88238	40024
1000	68.94	5855	2655	10434	4732	16336	7409	26779	12146	41788	18954	68495	31068	97889	44401
1100	75.84	6433	2917	11463	5199	17946	8140	29420	13344	45908	20823	75248	34131	107540	48779
1200	82.73	7010	3179	12492	5666	19557	8870	32060	14542	50028	22692	82001	37195	117191	53156
1300	89.63	7588	3441	13520	6132	21168	9601	34700	15739	54148	24561	88754	40258	126843	57535
1400	96.52	8165	3703	14549	6599	22778	10331	37341	16937	58268	26429	95507	43321	136494	61912
1500	103.42	8742	3965	15578	7066	24389	11062	39981	18135	62388	28298	102260	46384	146145	66290
1520 ²	1048.14	8858	4017	15784	7159	24711	11208	40509	18374	63212	28672	103611	46997	148075	67165
2000	137.89	12008	5446	21397	9705	33500	15195	54916	24909	85693	38869	140460	63711	200738	91053
2500	172.36	15726	7133	28022	12710	43871	19899	71918	32621	112223	50903	183944	83435	—	—
3000	206.84	20333	9222	36232	16434	56725	25730	92989	42179	145103	65817	237838	107881	—	—
3100	213.73	21447	9728	38216	17334	59831	27138	98080	44488	153049	69421	250861	113788	—	—

1. Refer to page 38 for correction factor applied for superheated steam.

2. The following Napier factor is applied to the capacity of pressures greater than 1520 psig (104.80 barg):

$$\frac{.1906 \times P_{\text{psia}} - 1000}{.2292 \times P_{\text{psia}} - 1061}$$

Capacities

Valve Capacity for ASME B&PV Code Section I, for Saturated Steam⁽¹⁾

Capacities based on Set Pressure plus 3% or 2 psi (0.14 barg) over pressure, whichever is greater, 90% of actual capacity.

Orifice Designation		L		M		N		P		Q		R		T	
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
Set Pressure		3.317	21.400	4.186	27.006	5.047	32.561	7.417	47.852	12.850	82.903	18.600	120.000	30.210	194.903
		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
15	1.03	4608	2090	5815	2637	7011	3180	10304	4673	17852	8097	25840	11720	41970	19037
20	1.37	5335	2419	6732	3053	8117	3681	11929	5410	20668	9374	29916	13569	48590	22040
30	2.06	6788	3078	8567	3885	10329	4685	15180	6885	26300	11929	38068	17267	61830	28045
40	2.75	8242	3738	10402	4718	12541	5688	18430	8359	31931	14483	46220	20965	75070	34051
50	3.44	9696	4398	12236	5550	14753	6691	21681	9834	37563	17038	54372	24662	88310	40056
60	4.13	11150	5057	14071	6382	16965	7695	24932	11308	43195	19592	62523	28359	101550	46062
70	4.82	12618	5723	15924	7223	19199	8708	28215	12798	48883	22172	70757	32094	114923	52128
80	5.51	14115	6402	17813	8079	21477	9741	31563	14316	54683	24803	79153	35903	128560	58313
90	6.20	15613	7081	19703	8937	23756	10775	34911	15835	60484	27435	87549	39711	142197	64499
100	6.89	17110	7760	21592	9793	26034	11808	38259	17353	66285	30066	95945	43519	155834	70685
120	8.27	20105	9119	25372	11508	30590	13875	44955	20391	77886	35328	112738	51137	183109	83056
140	9.65	23099	10477	29151	13222	35147	15942	51652	23428	89487	40590	129530	58753	210383	95428
160	11.03	26094	11836	32930	14936	39704	18009	58348	26466	101089	45853	146323	66371	237657	107799
180	12.41	29089	13194	36709	16650	44260	20075	65044	29503	112690	51115	163116	73988	264932	120171
200	13.78	32083	14552	40489	18365	48817	22143	71740	32540	124291	56377	179908	81604	292206	132542
220	15.16	35078	15911	44268	20079	53373	24209	78437	35578	135893	61640	196701	89222	319480	144913
240	16.54	38073	17269	48047	21793	57930	26276	85133	38615	147494	66902	213493	96838	346755	157285
260	17.92	41067	18627	51826	23507	62486	28343	91829	41652	159095	72164	230286	104455	374029	169656
280	19.30	44062	19986	55606	25222	67043	30410	98526	44690	170696	77426	247078	112072	401303	182027
300	20.68	47057	21344	59385	26936	71599	32476	105222	47727	182298	82688	263871	119689	428578	194399
320	22.06	50051	22702	63164	28650	76156	34543	111918	50765	193899	87951	—	—	—	—
340	23.44	53046	24061	66943	30364	80713	36610	118614	53802	205500	93213	—	—	—	—
360	24.82	56041	25419	70722	32078	85269	38677	125311	56840	217102	98475	—	—	—	—
380	26.20	59035	26777	74502	33793	89826	40744	132007	59877	228703	103737	—	—	—	—
400	27.57	62030	28136	78281	35507	94382	42810	138703	62914	240304	109000	—	—	—	—
420	28.95	65025	29494	82060	37221	98939	44877	145399	65951	251906	114262	—	—	—	—
440	30.33	68019	30852	85839	38935	103495	46944	152096	68989	263507	119524	—	—	—	—
460	31.71	71014	32211	89619	40650	108052	49011	158792	72026	275108	124786	—	—	—	—
480	33.09	74009	33569	93398	42364	112609	51078	165488	75064	286710	130049	—	—	—	—
500	34.47	77003	34927	97177	44078	117165	53145	172184	78101	298311	135311	—	—	—	—
600	41.36	91977	41720	116073	52649	139948	63479	205666	93288	356317	161622	—	—	—	—
700	48.26	106950	48511	134969	61220	162731	73813	239147	108475	—	—	—	—	—	—
800	55.15	121923	55303	153865	69791	185514	84147	272628	123661	—	—	—	—	—	—
900	62.05	136897	62095	172762	78363	208296	94481	306110	138849	—	—	—	—	—	—
1000	68.94	151870	68887	191658	86934	231079	104815	339591	154035	—	—	—	—	—	—
1100	75.84	166844	75679	210554	95505	—	—	—	—	—	—	—	—	—	—
1200	82.73	181817	82470	—	—	—	—	—	—	—	—	—	—	—	—
1300	89.63	196790	89262	—	—	—	—	—	—	—	—	—	—	—	—
1400	96.52	211764	96054	—	—	—	—	—	—	—	—	—	—	—	—
1500	103.42	226737	102846	—	—	—	—	—	—	—	—	—	—	—	—
1520 ²	1048.14	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2000	137.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2500	172.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3000	206.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3100	213.73	—	—	—	—	—	—	—	—	—	—	—	—	—	—

1. Refer to page 38 for correction factor applied for superheated steam.

2. The following Napier factor is applied to the capacity of pressures greater than 1520 psig (104.80 barg):

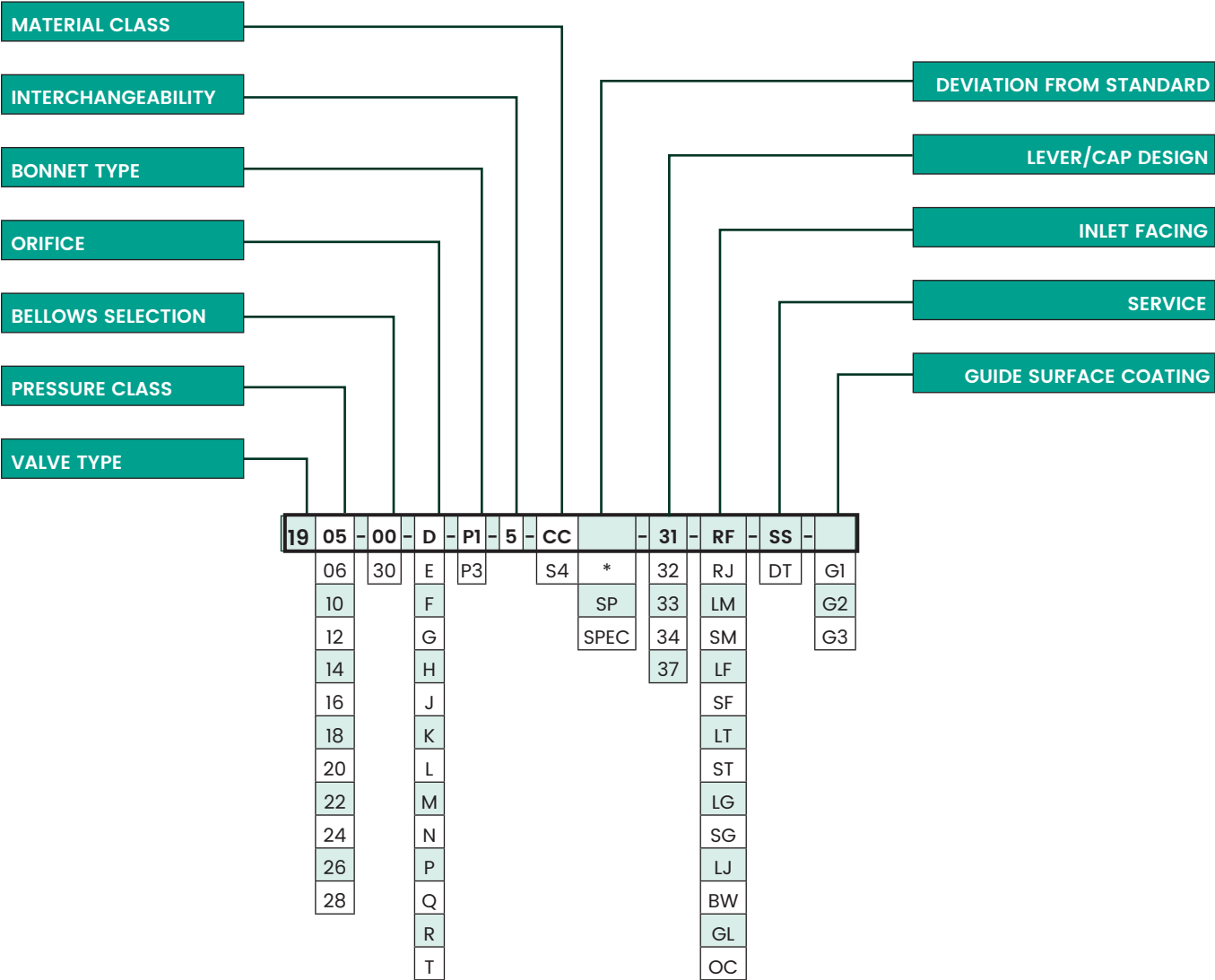
$$\frac{.1906 \times P_{psia} - 1000}{.2292 \times P_{psia} - 1061}$$

Capacities

Superheat Correction Factor ^{(1)&(2)}																	
Total Temp. (°F)	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
Flowing Pressure ⁽³⁾ (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
900	-	-	-	0.965	0.953	0.914	0.883	0.857	0.834	0.813	0.794	0.777	0.760	0.745	0.731	0.718	0.705
950	-	-	-	0.969	0.958	0.918	0.886	0.860	0.836	0.815	0.796	0.778	0.761	0.746	0.732	0.718	0.705
1000	-	-	-	0.974	0.959	0.923	0.890	0.862	0.838	0.816	0.797	0.779	0.762	0.747	0.732	0.719	0.706
1050	-	-	-	-	0.960	0.927	0.893	0.864	0.840	0.818	0.798	0.780	0.763	0.748	0.733	0.719	0.707
1100	-	-	-	-	0.962	0.931	0.896	0.867	0.842	0.820	0.800	0.781	0.764	0.749	0.734	0.720	0.707
1150	-	-	-	-	0.964	0.936	0.899	0.870	0.844	0.821	0.801	0.782	0.765	0.749	0.735	0.721	0.708
1200	-	-	-	-	0.966	0.941	0.903	0.872	0.846	0.823	0.802	0.784	0.766	0.750	0.735	0.721	0.708
1250	-	-	-	-	0.969	0.946	0.906	0.875	0.848	0.825	0.804	0.785	0.767	0.751	0.736	0.722	0.709
1300	-	-	-	-	0.973	0.952	0.910	0.878	0.850	0.826	0.805	0.786	0.768	0.752	0.737	0.723	0.709
1350	-	-	-	-	0.977	0.958	0.914	0.880	0.852	0.828	0.807	0.787	0.769	0.753	0.737	0.723	0.710
1400	-	-	-	-	0.982	0.963	0.918	0.883	0.854	0.830	0.808	0.788	0.770	0.754	0.738	0.724	0.710
1450	-	-	-	-	0.987	0.968	0.922	0.886	0.857	0.832	0.809	0.790	0.771	0.754	0.739	0.724	0.711
1500	-	-	-	-	0.993	0.970	0.926	0.889	0.859	0.833	0.811	0.791	0.772	0.755	0.740	0.725	0.711
1550	-	-	-	-	-	0.972	0.930	0.892	0.861	0.835	0.812	0.792	0.773	0.756	0.740	0.726	0.712
1600	-	-	-	-	-	0.973	0.934	0.894	0.863	0.836	0.813	0.792	0.774	0.756	0.740	0.726	0.712
1650	-	-	-	-	-	0.973	0.936	0.895	0.863	0.836	0.812	0.791	0.772	0.755	0.739	0.724	0.710
1700	-	-	-	-	-	0.973	0.938	0.895	0.863	0.835	0.811	0.790	0.771	0.754	0.738	0.723	0.709
1750	-	-	-	-	-	0.974	0.940	0.896	0.862	0.835	0.810	0.789	0.770	0.752	0.736	0.721	0.707
1800	-	-	-	-	-	0.975	0.942	0.897	0.862	0.834	0.810	0.788	0.768	0.751	0.735	0.720	0.705
1850	-	-	-	-	-	0.976	0.944	0.897	0.862	0.833	0.809	0.787	0.767	0.749	0.733	0.718	0.704
1900	-	-	-	-	-	0.977	0.946	0.898	0.862	0.832	0.807	0.785	0.766	0.748	0.731	0.716	0.702
1950	-	-	-	-	-	0.979	0.949	0.898	0.861	0.832	0.806	0.784	0.764	0.746	0.729	0.714	0.700
2000	-	-	-	-	-	0.982	0.952	0.899	0.861	0.831	0.805	0.782	0.762	0.744	0.728	0.712	0.698
2050	-	-	-	-	-	0.985	0.954	0.899	0.860	0.830	0.804	0.781	0.761	0.742	0.726	0.710	0.696
2100	-	-	-	-	-	0.988	0.956	0.900	0.860	0.828	0.802	0.779	0.759	0.740	0.724	0.708	0.694
2150	-	-	-	-	-	-	0.956	0.900	0.859	0.827	0.801	0.778	0.757	0.738	0.722	0.706	0.692
2200	-	-	-	-	-	-	0.955	0.901	0.859	0.826	0.799	0.776	0.755	0.736	0.720	0.704	0.690
2250	-	-	-	-	-	-	0.954	0.901	0.858	0.825	0.797	0.774	0.753	0.734	0.717	0.702	0.687
2300	-	-	-	-	-	-	0.953	0.901	0.857	0.823	0.795	0.772	0.751	0.732	0.715	0.699	0.685
2350	-	-	-	-	-	-	0.952	0.902	0.856	0.822	0.794	0.769	0.748	0.729	0.712	0.697	0.682
2400	-	-	-	-	-	-	0.952	0.902	0.855	0.820	0.791	0.767	0.746	0.727	0.710	0.694	0.679
2450	-	-	-	-	-	-	0.951	0.902	0.854	0.818	0.789	0.765	0.743	0.724	0.707	0.691	0.677
2500	-	-	-	-	-	-	0.951	0.902	0.852	0.816	0.787	0.762	0.740	0.721	0.704	0.688	0.674
2550	-	-	-	-	-	-	0.951	0.902	0.851	0.814	0.784	0.759	0.738	0.718	0.701	0.685	0.671
2600	-	-	-	-	-	-	0.951	0.903	0.849	0.812	0.782	0.756	0.735	0.715	0.698	0.682	0.664
2650	-	-	-	-	-	-	0.952	0.903	0.848	0.809	0.779	0.754	0.731	0.712	0.695	0.679	0.664
2700	-	-	-	-	-	-	0.952	0.903	0.846	0.807	0.776	0.750	0.728	0.708	0.691	0.675	0.661
2750	-	-	-	-	-	-	0.953	0.903	0.844	0.804	0.773	0.747	0.724	0.705	0.687	0.671	0.657
2800	-	-	-	-	-	-	0.956	0.903	0.842	0.801	0.769	0.743	0.721	0.701	0.684	0.668	0.653
2850	-	-	-	-	-	-	0.959	0.902	0.839	0.798	0.766	0.739	0.717	0.697	0.679	0.663	0.649
2900	-	-	-	-	-	-	0.963	0.902	0.836	0.794	0.762	0.735	0.713	0.693	0.675	0.659	0.645
2950	-	-	-	-	-	-	-	0.902	0.834	0.790	0.758	0.731	0.708	0.688	0.671	0.655	0.640
3000	-	-	-	-	-	-	-	0.901	0.831	0.786	0.753	0.726	0.704	0.684	0.666	0.650	0.635
3050	-	-	-	-	-	-	-	0.899	0.827	0.782	0.749	0.722	0.699	0.679	0.661	0.645	0.630
3100	-	-	-	-	-	-	-	0.896	0.823	0.777	0.744	0.716	0.693	0.673	0.656	0.640	0.625
3150	-	-	-	-	-	-	-	0.894	0.819	0.772	0.738	0.711	0.688	0.668	0.650	0.634	0.620
3200	-	-	-	-	-	-	-	0.889	0.815	0.767	0.733	0.705	0.682	0.662	0.644	0.628	0.614

- For capacity on superheated steam, multiply saturated steam capacity by correction factor.
- Convert set pressure from (psig) to (psia) flowing pressure.
- psia flowing = [set pressure psig x overpressure] + 14.7

Valve Configuration Code



Valve Configuration Code

Pressure Class	
Designation	Class
05	150
06	300
10	300
12	600
14	900
16	1500
18	2500
20	300
22	600
24	900
26	1500
28	2500

Bellows Selection	
Designation	Range
00	Non Bellows
30	Bellows

Service	
Designation	Type
SS	Steam
DT	Dowtherm

Interchangeability	
Designation	Valve Type
5	Applies to all Valve orifices

Lever/Cap Design	
Designation	Type
31	Screwed
32	Bolted
33	Packed
34	Plain
37	Air Operated

Bonnet Type	
Designation	Range
P1	Closed Bonnet
P3	Open Bonnet

Guide Surface Coating	
Designation	Part Coated
G1	Glide-Aloy™ Disc Holder
G2	Glide-Aloy™ Guide
G3	Glide-Aloy™ Disc Holder and Guide

Material Class Variations	
Designation	Variation
CC	Standard Material
S4	Stainless Steel (Complete Valve)

Standard Valve Connection				
Orifice	Area (API)		Area (ASME)	
	in ²	cm ²	in ²	cm ²
D	0.110	0.710	0.128	0.825
E	0.196	1.265	0.228	1.470
F	0.307	1.981	0.357	2.302
G	0.503	3.245	0.585	3.774
H	0.785	5.065	0.913	5.888
J	1.287	8.303	1.496	9.652
K	1.838	11.858	2.138	13.794
L	2.853	18.406	3.317	21.400
M	3.600	23.226	4.186	27.006
N	4.340	28.000	5.047	32.561
P	6.380	41.161	7.417	47.852
Q	11.050	71.290	12.850	82.903
R	16.000	103.226	18.600	120.000
T	26.000	167.742	30.210	194.903

Inlet Flange Facing	
Designation	Facing
RF	Raised Face Serrated
RJ	Ring Joint
LM	Large Male
SM	Small Male
LF	Large Female
SF	Small Female
LT	Large Tongue
ST	Small Tongue
LG	Large Groove
SG	Small Groove
LJ	Lens Joint
BW	Butt Weld
GL	Grayloc
OC	Oteco

Ordering a 1900/P Safety Valve

Specification Sheet					
		Page _____ of _____		Materials	
Requisition No.	_____		13.	Body/Bonnet:	
Job No.	_____		14.	Guide/Rings:	
Date	_____		15.	Seat Material:	
Revised By	_____			Metal:	
General				Resilient:	
1.	Item Number:		16.	Bellows:	
2.	Tag Number:		17.	Spring:	
3.	Service, Line or Equipment No:		18.	Comply with NACE MRO 175 ▼ YES ▼ NO	
4.	Number Required:		19.	▼ OTHER Specify:	
			20.	Cap and Lever Selection	
				▼ Screwed Cap (Standard) ▼ Bolted Cap	
				▼ Plain Lever ▼ Packed Lever ▼ Gag	
Basis of Selection			21.	▼ OTHER Specify:	
5.	Code:				
	▼ ASME Sec. I				
	▼ OTHER Specify:				
6.	Comply with API 526: ▼ YES ▼ NO				
7.	▼ Fire ▼ OTHER Specify:				
8.	Rupture Disk: ▼ YES ▼ NO				
			Service Conditions		
Valve Design			22.	Fluid and State:	
9.	Type: Safety Valve		23.	Required Capacity per Valve & Units:	
10.	Design: ▼ Conventional ▼ Bellows		24.	Molecular Weight or Specific Gravity:	
	▼ Closed Bonnet ▼ Yoke/Open Bonnet		25.	Viscosity at Flowing Temperature & Units:	
	▼ Metal Seat		26.	Operating Pressure & Units:	
	▼ API 527 Seat Tightness		27.	Blowdown: ▼ Standard ▼ Other	
	▼ OTHER Specify:		28.	Latent Heat of Vaporization & Units:	
			29.	Operating Temperature & Units:	
			30.	Relieving Temperature & Units:	
			31.	Built-up Back Pressure & Units:	
			32.	Superimposed Back Pressure & Units:	
			33.	Cold differential Test Pressure & Units:	
			34.	Allowable Overpressure in Percent or Units:	
			35.	Compressibility Factor, Z:	
			36.	Ratio of Specific Heats:	
Connections			Sizing and Selection		
11.	Inlet Size:	Rating:	Facing:	37.	Calculated Orifice Area: _____ in ² _____ cm ²
	Outlet Size:	Rating:	Facing:	38.	Selected Orifice Area: _____ in ² _____ cm ²
12.	▼ OTHER Specify:			39.	Orifice Designation (letter):
				40.	Manufacturer:
				41.	Model Number:
				42.	Vendor Calculations Required: ▼ YES ▼ NO

[illegible]

Notes:

[illegible]



CONTROLS SUPPLY CHAIN

VALVES ACTUATORS INSTRUMENTATIONS