1900
Safety Relief Valve

Consolidated®

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Introduction

The comprehensive line of spring loaded **Consolidated** safety relief valves represents over one hundred years of valve manufacturing experience in meeting and solving industry problems involving a wide scope of valve applications.

The flanged **Consolidated** safety relief valve line consists of valves in a variety of sizes and materials. Each product offering is unique and judgements are required in selecting the proper option.

To accomplish the selection process start with the General Information section of this catalog and follow the prescribed steps necessary to finalize the selection.

This Section, 1900 SRV, should be reviewed against the user's specifications and product offerings selected. Beyond this step, proceed with sizing and then confirmation of the pressure and temperature limits (API or ASME).

1900 Flanged Series safety relief valves are supplied in many variations to suit specific applications.

Product variations covered in subsequent pages are noted below:

Product Variation	Description
1900	Conventional
1900-30	Bellows Construction
1900-35	Balanced Bellows with Auxiliary Balancing Piston
1900HA	Special Materials for Hydrofluoric Acid Service
1900SG	Sour Gas Trim
1900DA	Soft Seat
1900LA	Liquid Trim with Metallic Seats
1900DA-LA	Liquid Trim with Soft Seats
1900TD	Special Trim for Steam & Organic Heat Transfer Media

The Consolidated 1900 series is compliant with the following codes and standards:

ASME B & PVC, Section II - Material (Applicable as required by ASME B & PVC, Section III or VIII)

ASME B & PVC, Section III, class 2 and 3 (Gas, Vapor, and Liquid Service)

ASME B & PVC, Section VIII (Gas, Vapor, and Liquid Service)

ASME B16.34 and ASME B16.5

API 520, 526 and 527

ISO 4126

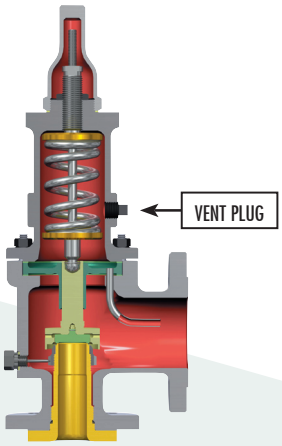
NACE MR0103-2003 Standard Material Requirements

API Standard 526-2002

Pressure Relief Valves specified within this catalog comply with API Standard 526 Fifth edition, 2002.

When required for replacement, Consolidated 1900 valves are also available with connections and dimensions in accordance with supplanted API Standard Third edition 1984 and prior editions.

1900 Series Overview



Type 1900 Series
Conventional

1900 Series Conventional Safety Relief Valves

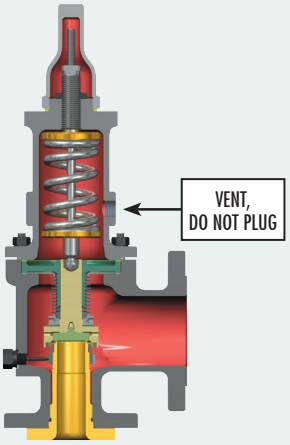
Steel, Flat Seat, Top Guided, High Capacity, Stainless Steel Trim

This standard rugged configuration is equipped with corrosion resistant trim and a carbon steel body, bonnet and cap. The components are top guided, providing for free and repeatable action.

The flat disc seat provides for easy maintenance and remachining.

The exclusive "Eductor Tube" minimizes bonnet cavity pressure so that product performance is predictable.

The nozzle is bottom inserted and rigidly held in position, providing a corrosion resistant path of flow to the valve and corrosion resistant seating surfaces.



Type 1900-30 Series
Balanced Bellows

1900-30 Series Bellows Construction

This valve is the same as the conventional design except that a bellows has been added. When the bellows is installed, the eductor tube is removed.

Caution: It is important that the bonnet be vented to the atmosphere.

A bellows is added to the conventional valve to deal with any of several situations:

(1) Back pressure entering the valve through the valve outlet is excessive or variable. If back pressure fluctuates with ±10% of a nominal value, a bellows is required.

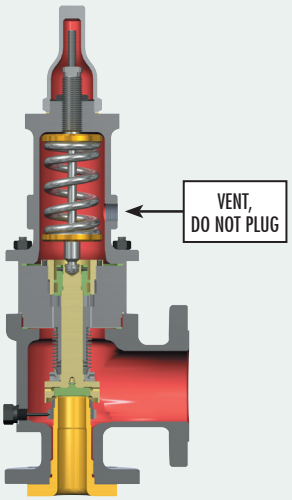
If a built up back pressure exceeds 10% of the set pressure or cold differential set pressure, a bellows must be used.

(2) If the entering fluid is a slurry, highly viscous, or of a nature that it can enter the critical clearances between the guides/disc holder, protect that area with a bellows.

(3) If the fluid being handled is corrosive to the upper works of the valve, isolate the bonnet chamber through use of a bellows.

Conventional valves can be easily converted to a bellows design or vice versa through the use of retrofit kits.

All Consolidated 1900-30 Series valves are balanced bellows designs, meaning that they fully compensate for the effects of back pressure.



Type 1900-35 Series
Balanced Bellows
with Auxiliary Balancing Piston

1900-35 Series Balanced Bellows (with Auxiliary Balancing Piston)

The Balanced Bellows seals the body and fluid stream from the bonnet and working parts. Auxiliary balancing piston assures proper valve performance by compensating for back pressure in case of bellows failure.

The use of an auxiliary balanced piston is indicated when:

(1) back pressure (either constant or variable) exists and;

(2) excessive pressure may build in the bonnet as a result of pressure build-up in the bonnet vent piping and;

(3) resultant build-up of pressure in the bonnet would cause a dangerous condition.

Caution: It is important that the bonnet be vented to the atmosphere.

NOTE: Unless otherwise stated the valve is always supplied with a screwed cap. The exception to this would be where ASME B & PVC, Section VIII requires levers for steam, air, and hot water service over 140°F.

Refer to Accessories for available types of caps, levers, and accessories.

1900 Series Overview

ASME API ORIFICE	1900 & 1900-30 Inlet x Outlet Size Combinations (in.) Orifice Area (Sq. in.) 0.1279 0.110 D	0.2279 0.196 E	0.3568 0.307 F	0.5849 0.503 G	Inlet Flange Rating ASME B16.5	Outlet Flange Rating ASME B16.5
1905	1 x 2	1 x 2	1-1/2 x 2	1-1/2 x 3	150	150
1906	1 x 2	1 x 2	1-1/2 x 2	1-1/2 x 3	300	
1910	1 x 2	1 x 2	1-1/2 x 2	1-1/2 x 3	300	
1912	1 x 2	1 x 2	1-1/2 x 2	1-1/2 x 3	600	
1914	1-1/2 x 2	1-1/2 x 2	1-1/2 x 3	1-1/2 x 3	900	300
1916	1-1/2 x 2	1-1/2 x 2	1-1/2 x 3	2 x 3	1500	
1918	1-1/2 x 3	1-1/2 x 3	1-1/2 x 3	2 x 3	2500	
1920	1 x 2	1 x 2	1-1/2 x 2	1-1/2 x 3	300	150
1922	1 x 2	1 x 2	1-1/2 x 2	1-1/2 x 3	600	
1923	—	—	—	—	—	
1924	1-1/2 x 2	1-1/2 x 2	1-1/2 x 3	1-1/2 x 3	900	300
1926	1-1/2 x 2	1-1/2 x 2	1-1/2 x 3	2 x 3	1500	
1928	1-1/2 x 3	1-1/2 x 3	1-1/2 x 3	2 x 3	2500	

ASME API ORIFICE	1900 & 1900-30 Inlet x Outlet Size Combinations (in.) Orifice Area (Sq. in.) 0.9127 0.785 H	1.496 1.287 J	2.138 1.838 K	3.317 2.853 L	4.186 3.6 M	5.047 4.34 N	7.417 6.38 P	12.85 11.05 Q	18.6 16 R	30.21 26 T	50.26 N/A V	78.996 N/A W	Inlet Flange Rating ASME B16.5	Outlet Flange Rating ASME B16.5
1905	1-1/2 x 3	2 x 3	3 x 4	3 x 4	4 x 6	4 x 6	4 x 6	6 x 8	6 x 8	8 x 10	10 x 14	12 x 16	150	
1906	1-1/2 x 3	2 x 3	3 x 4	3 x 4	4 x 6	4 x 6	4 x 6	6 x 8	6 x 8	8 x 10	10 x 14	12 x 16	300	
1910	2 x 3	3 x 4	3 x 4	4 x 6	4 x 6	4 x 6	4 x 6	6 x 8	6 x 10	8 x 10	10 x 14	12 x 16	300	150
1912	2 x 3	3 x 4	3 x 4	4 x 6	4 x 6	4 x 6	4 x 6	6 x 8	6 x 10	8 x 10	—	—	600	
1914	2 x 3	3 x 4	3 x 6	4 x 6	4 x 6	4 x 6	4 x 6	—	—	—	—	—	900	
1916	2 x 3	3 x 4	3 x 6	4 x 6	—	—	—	—	—	—	—	—	1500	300
1918	—	—	—	—	—	—	—	—	—	—	—	—	2500	
1920	2 x 3	3 x 4	3 x 4	4 x 6	4 x 6	4 x 6	4 x 6	6 x 8	6 x 8	8 x 10	10 x 14	12 x 16	300	
1922	2 x 3	3 x 4	3 x 4	4 x 6	4 x 6	4 x 6	-	6 x 8	6 x 10	8 x 10	—	—	600	150
1923	—	—	—	—	—	—	4 x 6	—	—	—	—	—	600	
1924	2 x 3	3 x 4	3 x 6	4 x 6	4 x 6	4 x 6	4 x 6	—	—	—	—	—	900	
1926	2 x 3	3 x 4	3 x 6	4 x 6	—	—	—	—	—	—	—	—	1500	300
1928	—	—	—	—	—	—	—	—	—	—	—	—	2500	

How Pressure Relief Valves Operate

All pressure relief valves operate on the principle of inlet system pressure overcoming a spring load, allowing the valve to relieve a defined capacity.

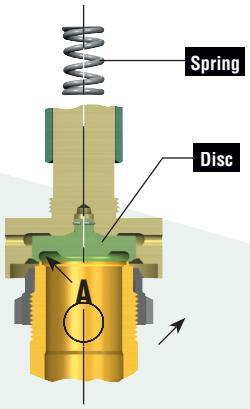


Figure 1900.1 - Closed

When the valve is closed during normal operation (See Figure 1900.1), the vessel pressure acting against the seating surfaces (area "A") is resisted by the spring force. As vessel pressure increases, the pressure at "A" tends to equalize the spring force and the pressure holding the seats together approaches zero.

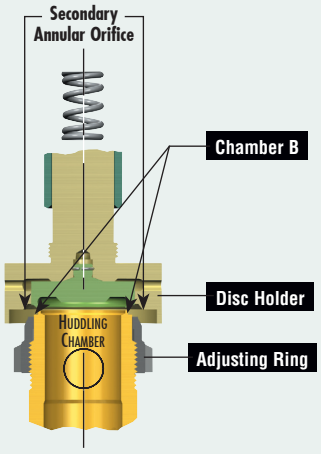


Figure 1900.2 - Partially Open

In vapor or gas service the valve may "simmer" before it will "pop". When the vessel pressure increases to within one to two percent of the set pressure, media will audibly move past the seating surfaces into chamber "B". As a result of restriction of flow in the secondary annular orifice, pressure builds up in chamber "B" (See Figure 1900.2). Since pressure can now act over a larger area, an additional force is available to overcome the spring force. By adjusting the "adjusting ring" the opening in the secondary annular orifice can be altered, thus controlling pressure build-up in chamber "B". This controlled pressure build-up in chamber "B" will overcome the spring force causing the disc to move away from the nozzle seat and the valve to "pop" open.

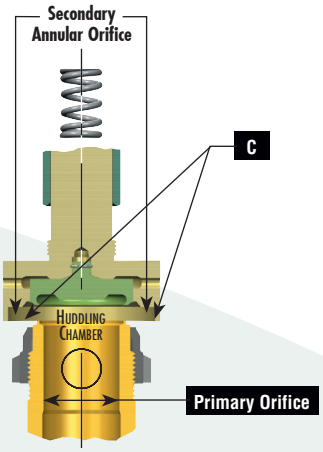


Figure 1900.3 - Fully Open

Once the valve has opened an additional pressure build-up at "C" occurs. (See Figure 1900.3.) This is due to the sudden flow increase and the restriction to flow through another annular orifice formed between the inner edge of the disc holder and the outside diameter of the adjusting ring. These additional forces at "C" cause the disc to lift substantially at "pop".

Flow is restricted by the opening between the nozzle seat and disc seat until the disc seat has been lifted from the nozzle seat approximately one-quarter of the nozzle throat diameter. After the disc has attained this degree of lift, flow is then restricted by the primary orifice rather than by the area between the seating surfaces.

Blowdown (the difference between opening and closing pressure) can be controlled within limits by positioning the single adjusting ring. Blowdown is caused by the result of the spring force not being able to overcome the summation of the forces at "A", "B", and "C" until the pressure at "A" drops below the set pressure.

How Pressure Relief Valves Operate

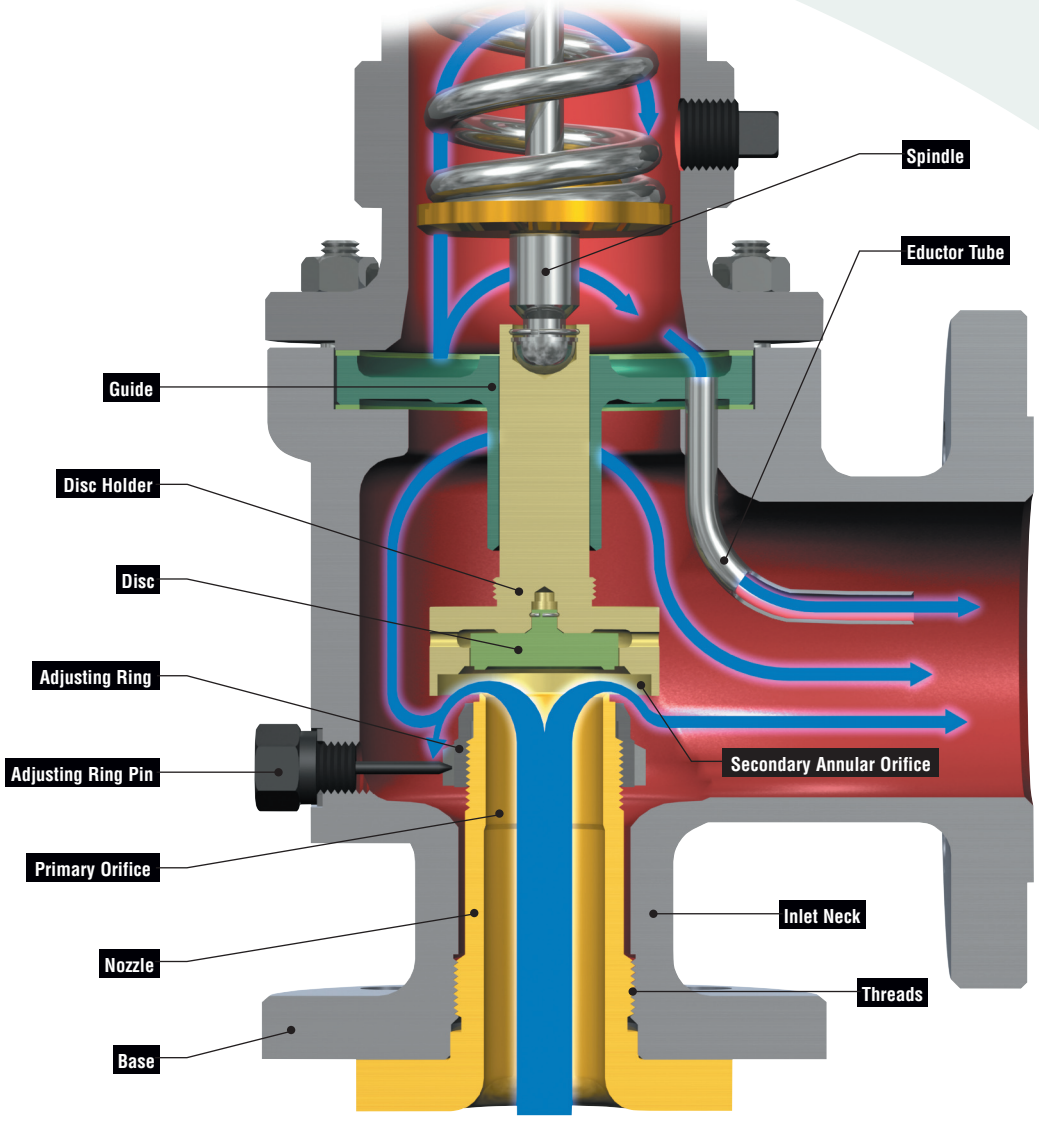


Figure 1900.4

Figure 1900.4 reflects the flow path of fluid through the valve. It is significant to recognize that the system pressure enters through the nozzle and remains at a high pressure until it expands through the secondary annular orifice. Pressure downstream of the secondary annular orifice is much lower than the system pressure. The upper portion of the valve base plus the outlet flange are of a lower pressure rating than the inlet side of the valve.

NOTE: BLOWDOWN SETTINGS - Production testing required by Manufacturers of safety relief valves is governed by ASME Section VIII, UG-136 (d), which does not require the setting of blowdown during production test. Adjusting rings on the 1900 flanged safety relief valve series are factory adjusted to predetermined ring settings. This will provide a consistent opening and closing pressure on the safety relief valve.

Product Features - 1900 Flanged Series

Adjusting Ring

The adjusting ring in the CONSOLIDATED safety relief valve is preset to predetermined positions prior to putting the valve in service. Presetting reduces the necessity of popping the valve in service to ascertain that the ring has been set properly for attaining the necessary lift and relieving capacity.

Simple Blowdown Adjustment

Adjustment of CONSOLIDATED safety relief valve blowdown, or reseating pressure, is by means of a single adjusting ring. When moved upward, blowdown is increased (lowering the reseating pressure), or when moved downward, the blowdown is decreased (raising the reseating pressure). The simplicity and advantages of this adjustment are obvious when comparing valves having two or more adjusting rings each of which affect valve action as well as blowdown.

Minimum Guiding Area

Guiding areas greater than those required to align the seating surfaces are undesirable in a safety relief valve, especially those used in the process industries. The smaller the guiding area of the valve (when corrosion or contamination from the flowing medium build up in the valve guiding surfaces) the less tendency the guiding area will have to stick and hinder valve operation.

Nozzle

The nozzle is a pressure containing component in constant contact with the process media in both the open and closed valve positions. To ensure maximum reliability and safety, CONSOLIDATED flanged SRV nozzles are made from forgings, investment castings, or centrifugal castings.

Spindle Pocket Connection

The connection between the spindle and disc holder in a CONSOLIDATED safety relief valve is a positive method of attachment. The Inconel snap ring and groove design make it virtually impossible to remove the spindle from the disc holde, unless the ring is compressed intentionally. This design requires a minimum amount of effort to disassemble during maintenance.

Design Simplicity

CONSOLIDATED safety relief valves embody a minimum number of component parts which results in a savings by minimizing spare parts inventory and simplifying valve maintenance.

Maximum Seat Tightness

Seat finish in a safety relief valve is of the utmost importance; otherwise, valve leakage will occur.

CONSOLIDATED safety relief valve seats are precision machined and lapped. This ensures positive seating and prevents loss of contained media.

The Thermodisc™ design provides a tighter closure and compensates for temperature variations around the periphery of the nozzle. Thermal distortion, which produces seat leakage, is minimized in steam service.

Cap and Lever Interchangeability

Many times it is necessary to change the type of cap or lever in the field after a valve has been installed. All CONSOLIDATED safety relief valves are supplied so they can be converted to any type of lever or cap desired. It is not necessary to remove the valve from the installation, nor will the set pressure be affected when making such a change.

Valve Interchangeability

A CONSOLIDATED safety relief valve may be converted from the standard, conventional type valve to the bellows type, or to the O-Ring seat seal type, Thermodisc™ seat Liquid Trim, or vice versa, requiring a minimum number of new parts. This results in lower costs.

Quality Material

All CONSOLIDATED safety relief valve castings and forgings are made to ASTM/ASME specifications and are subject to many rigid inspections, ensuring the highest degree of quality.

Coupled with the highest quality workmanship, this ensures continuous protection and long, trouble-free valve life.

Product Features - 1900 Flanged Series

Reduction of Valve Bonnet Pressure

Closed bonnet valves are subject to variable pressure past the guiding surfaces when the valve is open, which adds a variable force to that of the spring, affecting valve performance. To eliminate excess bonnet pressure and ensure good valve opening and closing action, an Eductor Tube is provided.

The Eductor Tube reduces bonnet pressure by pulling discharging fluids out of the bonnet faster than it is possible for the discharging fluids to enter past the guiding surfaces, acting as a siphon due to the drawing effect of the flow through the outlet side of the valve.

Eductor Tube Reduces Bonnet Pressure

An exclusive with **Consolidated** valves! During valve discharge, media flows through the clearance between the disc holder and guide, building up bonnet pressure. This adds a variable force to the spring force, which inhibits valve lift. Bonnet pressure is reduced by the eductor effect of the medium flowing at high velocity at the valve outlet.

The greater lifting force (resulting from a reduction in bonnet pressure) introduces important advantages:

(1) Response to blowdown control adjustment is uniform

(2) Positive, full-rated capacity at low overpressures is assured

(3) Better operation at higher back pressures with Eductor Tube.

(4) Complete stability (of valve lift and capacity) is assured during operation.

(5) Increases the lifting force when the valve opens and tends to break slight corrosive deposits or surface film which accumulate on the guiding surfaces and retard valve action. (For severe corrosion applications, a bellows valve is recommended.)

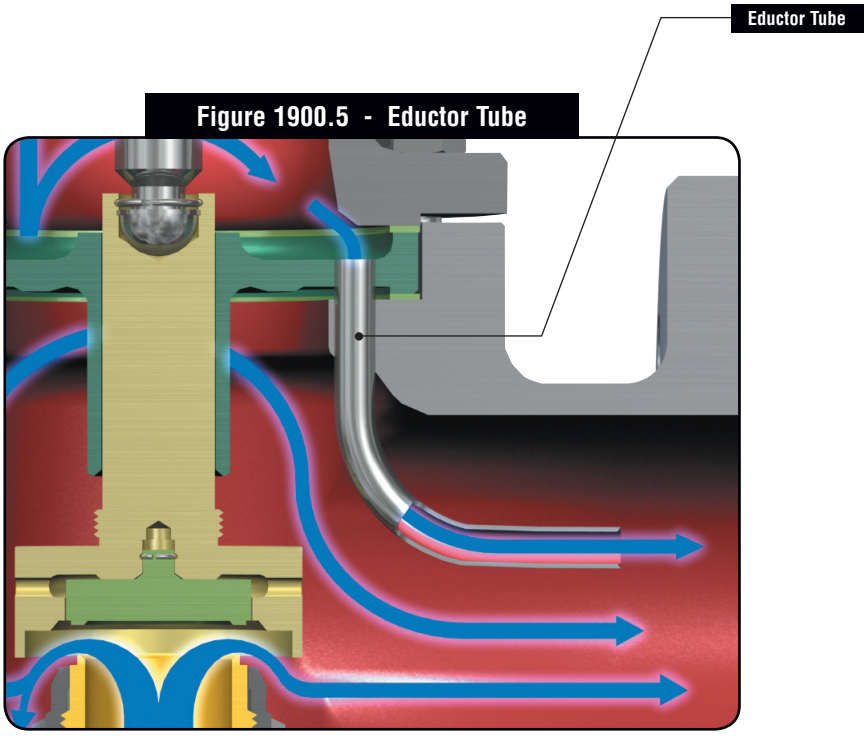


Figure 1900.5 - Eductor Tube

1900 Steam Trim (TD) Valves

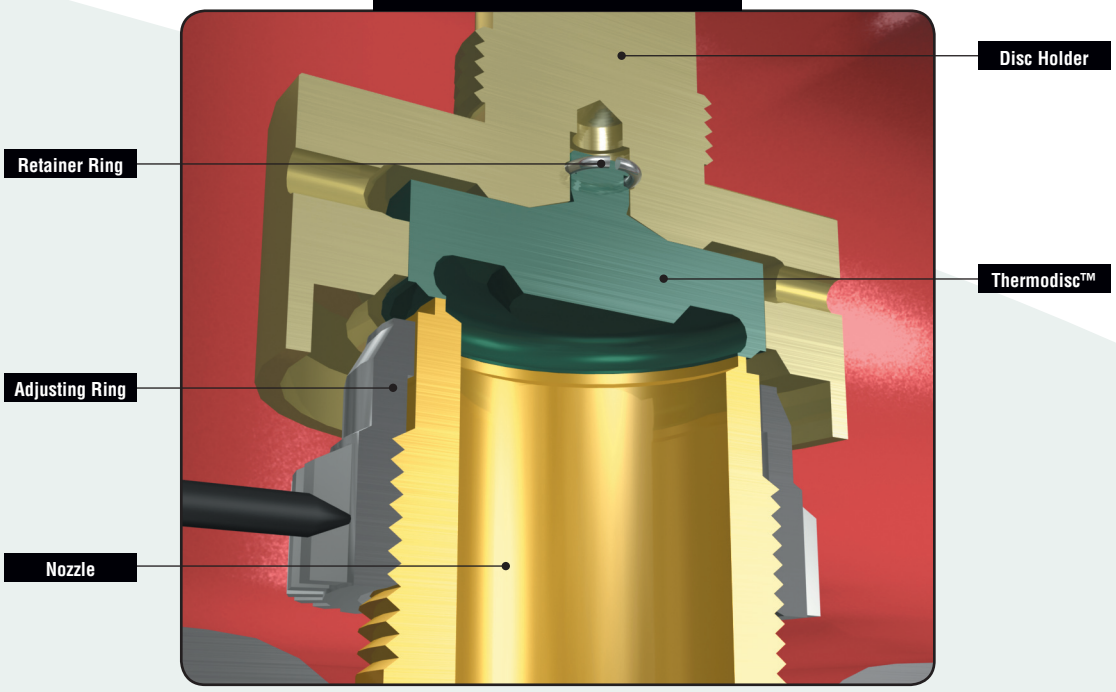
The 1900 TD is specifically designed for steam service and organic heat transfer media and is certified to ASME Code Section VIII.

Thermodisc™ – this is a specifically designed disc for use on high temperature fluids. This concept has more than 40 years of field proven performance that ensures the tightest valves in the world.

A Thermodisc™ is required for steam service.

The Martensitic stainless steel disc construction allows for high strength and toughness. As the set point of the valve is approached, the pressure sealing effect of the Thermodisc™ assists in the tightness of the seat as does the rapid thermal equalization that occurs due to the thin sealing section.

1900 Steam Trim Internals



1900 Disc Design Availability

Valve Type	Disc Design										ASME Code Section
	Standard Solid Disc					Thermodisc[1]					
	Steam	Liquid	Liquid Organic Heat Transfer Media	Vapor Organic Heat Transfer Media	Vapor	Steam	Liquid	Liquid Organic Heat Transfer Media	Vapor Organic Heat Transfer Media	Vapor	
1900	-	X	X	X	X	X	-	-	X	-	VIII
1900-30	-	X	X	X	X	X	-	-	X	-	VIII
1900-35	-	X	X	X	X	X	-	-	X	-	VIII
1900/P1[2]	-	-	-	-	-	X[3]	X[4]	-	X	-	I or VIII
1900/P3[2]	-	-	-	-	-	X[3]	-	-	X	-	I or VIII

NOTES: 1 Thermodisc™ is provided in one material only, a specially heat treated martenistic stainless steel.
2 Refer to the 1900/P Series section for product information.
3 1900/P Series are not intended for overpressure protection of power boiler drum, superheater or reheater equipment.
4 Consult the factory for special conditions that require the use of an ASME Code Section I pressure relief valve. Except for liquid thermal relief applications, the "P" Series are not intended for liquid service.

1900 Liquid Trim (LA) Valves

The Liquid Trim LA (liquid application) represents the second generation of ASME B & PVC, Section VIII certified liquid trim valves and must be used for all liquid applications for both ASME B & PVC, Section VIII certified and non-certified valves. Liquid applications have been defined as follows:

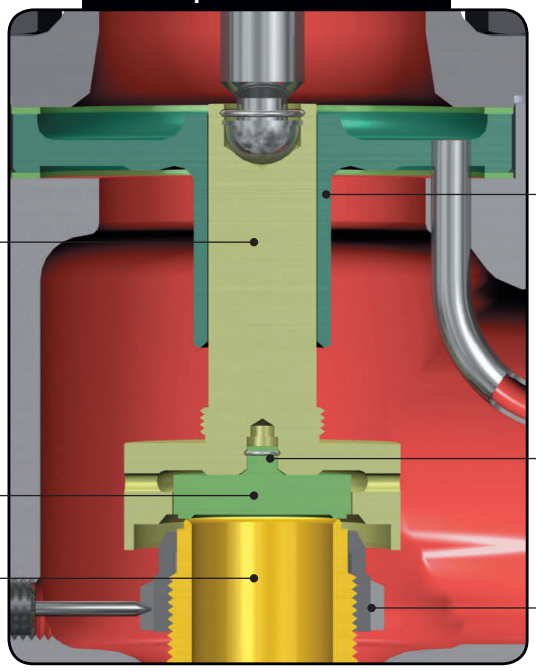
(1) if the fluid remains liquid while flowing through the valve

(2) if flowing fluid flashes going through the valve

(3) for ASME B & PVC, Section VIII certified and non-certified thermal relief applications. (Thermal Relief is to prevent excessive pressure caused by thermal expansion of trapped liquids). The LA trim provides blowdown performance with ranges from 7% to 12% below the set pressure. This valuable feature provides conservation of media, a positive lift and a smooth chatter-free operation. Because of the short blowdown performance of this design, it is critical that the inlet connection always provide for a pressure drop of 3% or less from the vessel to the valve as recommended by API 520.

Conversion of existing 1900 Series valves to liquid trim is available through the factory or your local Green Tag Center.

1900 Liquid Service Internals



Disc Holder
Single piece disc holder for maximum rigidity and part integrity.

Disc

Nozzle

Guide

Disc Retainer

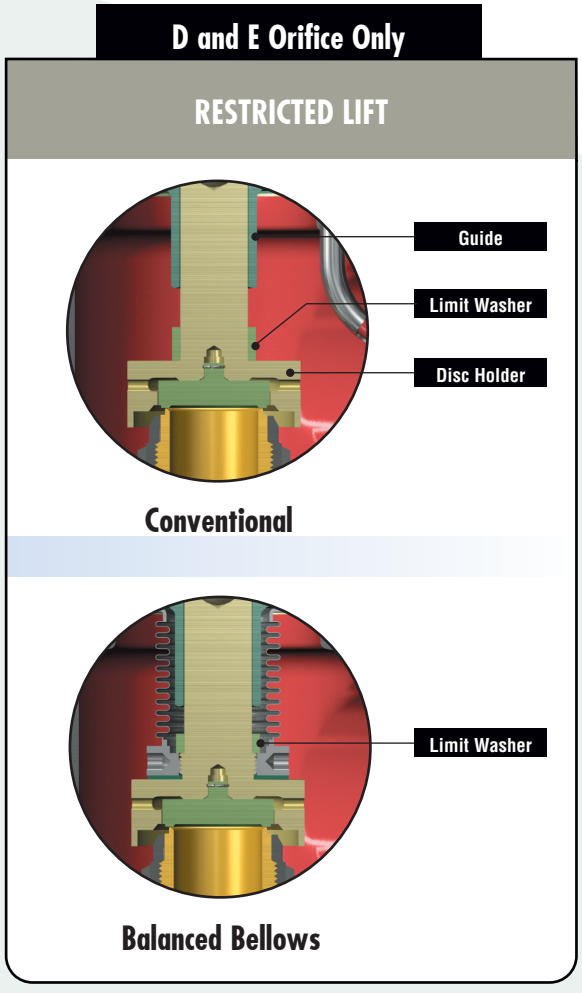
Adjusting Ring
Designed to provide high lift and capacity with stable operation on liquid media.

1900 Restricted Lift Valves

The 1900 series is offered in orifice sizes ranging from the smallest "D" size to the largest "W" size. In order to accomplish certain valve functions some special considerations have to be made. Such a case is the D and E orifice designs noted below.

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.

The standard 1900 Series are available with restricted lifts in orifices ranging from "F" to "W" for compressible media only.



Soft Seat Applications

Closeness of Operating Pressure to Set Pressure

Where the operating pressure is close to the set pressure, seat tightness can be maintained at relatively higher operating pressures.

Compressor Discharge and Positive Displacement Pump Service

Mechanical vibration and pressure waves could lift the valve disc with each stroke and may cause flat metal-to-metal seats to rub together and become damaged.

The 45° metal-to-metal load bearing seats in the Consolidated O-Ring seat seal assure true alignment, aided by full system pressure behind the O-Ring, which effectively seals against leakage.

Corrosive Services

In some services, corrosion of the seating surfaces is the cause of valve leakage. In this type of service, the Consolidated O-Ring seat seal will protect the metal seat on the nozzle against contact of the corrosive fluid thereby maintaining greater tightness.

Foreign Matter and Slurry Service

Many times foreign material such as pipe scale, welding beads, sand dust particles, etc. may damage the metal-to-metal seating surfaces in a valve of this type when it is open and flowing.

The Consolidated O-Ring seat seal is designed to absorb the impact of most foreign particles without damage.

Hot Water Boiler Service

When a safety relief valve opens hot water flashes into steam at the seating surfaces and solid particles which float to the water surface are driven against the seating surfaces at steam velocities. Consolidated O-Ring seat seal valves can withstand this type of service and remain tight to a greater degree than metal-to-metal seat valves.

Consolidated uses proven quality Teflon® O-Ring seats for this service. In some pressure/temperature applications, Teflon® is not resilient, and leakage may occur.

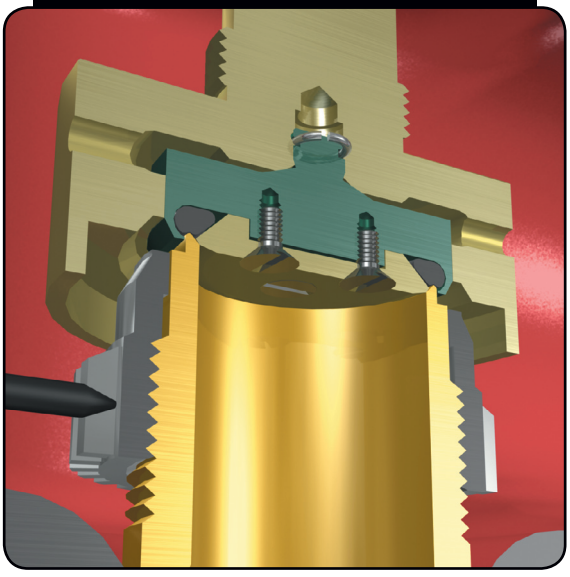
Benefits

Safety Relief Valve leakage which is aggravated by any cause is usually costly. In many cases, expensive product is lost and maintenance costs increased. Consolidated O-Ring seat seal valves are designed to eliminate leakage in troublesome applications and reduce overall costs. Should leakage occur, it is much simpler and less expensive to replace the O-Ring than to maintain metal-to-metal seats.

O-Ring Conversion

1900 Series Consolidated metal seated valves can be converted to O-Ring seat seals by installing a few basic parts provided in a conversion kit.

1900-DA soft seats without bellows



1900 Soft Seat (DA) Option

The Double Seal Soft Seat

The double seal design incorporates the merits of both a soft seat and a metal seat design valve. The 45° metal seat provides the load bearing surface to transmit spring force, the slotted O-Ring retainer allows the O-Ring to be pressurized and accomplish the primary sealing function. This O-Ring seal design can be used throughout the full pressure range of the valve. For pressure/temperature ratings of the seal, refer to O-Ring Selection Table in this section (pages 1900.35 and 1900.36).

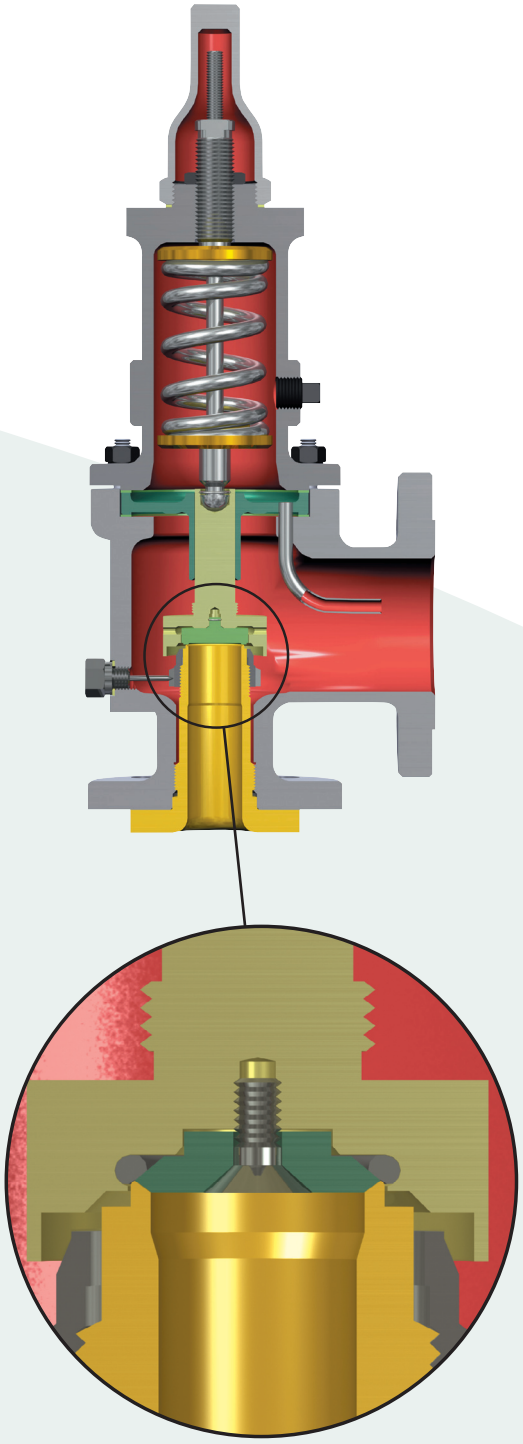
Tightness: CONSOLIDATED O-Ring seat seal valves are bubble tight at 95% of set pressures over 100 psig.

The following table reflects the percent of set pressure (popping pressure) at which the valve will be bubble tight on air.

Set Pressure (psig)	Percent of Set Pressure
5 to 30	90%
31 to 50	92%
51 to 100	94%
101 to Max rating of valve	95%

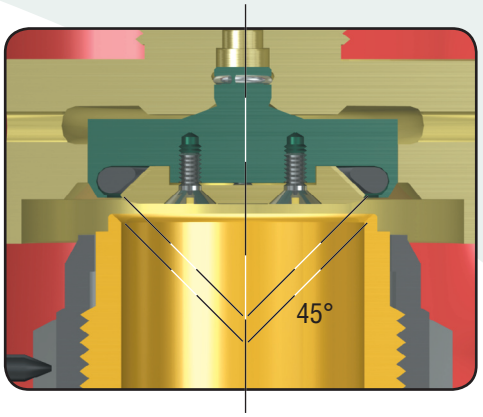
CONSOLIDATED O-Ring seat seals provide positive closure at service pressures closer to the set pressure than is possible with metal-to-metal seats assuring continuous, trouble-free service, and complete valve tightness after numerous "pops".

NOTE: The CONSOLIDATED 1900 O-Ring design features a secondary metal-to-metal seat which becomes effective if O-Ring integrity is lost due to external fire or other causes. The retainer is lapped to the nozzle at assembly assuring seat tightness.

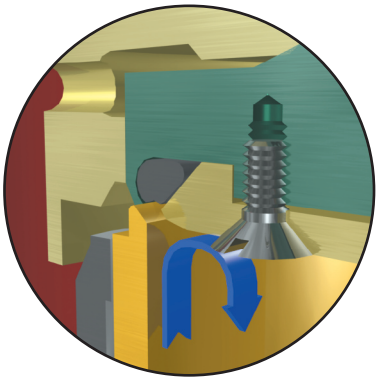


1900 Soft Seat (DA) Option
How the Double Seal Works

Two unique features distinguish the Consolidated O-Ring seat seal safety valve from other designs. These are the 45° metal-to-metal load bearing seats and the slotted O-Ring retainer.

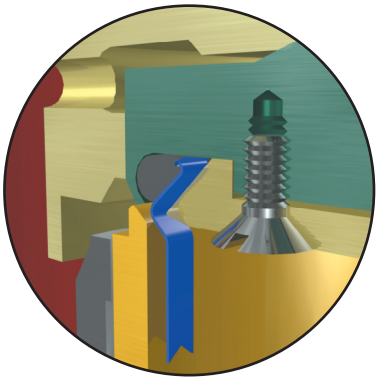


Three Essentials to a Tighter and More Secure Seal:



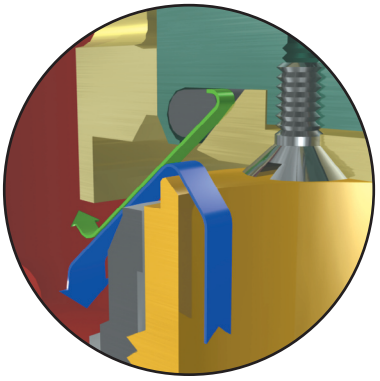
1) Concentric Alignment

The nozzle bore and O-Ring retainer are both machined to an angle of 45°. This ensures that as the valve disc opens and closes, the O-Ring is aligned concentrically against the lip of the nozzle. Close tolerance between the nozzle and the body, or the body and the disc guide and disc holder, also help to ensure a tight seal when the valve is closed. Accurate alignment coupled with the load bearing function of the O-Ring retainer virtually eliminates O-Ring abrasion from valve action.



2) Maximum Sealing Force

On the back side of the O-Ring retainer there are two small slots. When the valve is closed, process media enters between the machined seat of the nozzle and the O-Ring retainer and proceeds up the slots behind the O-Ring. This pressure forces the O-Ring against the lip of the nozzle and the curved recess of the disc holder. As the pressure within the valve rises to set point, the O-Ring is pressed tightly against the nozzle to maintain maximum sealing force until break-away pressure is reached.



3) O-Ring Retention

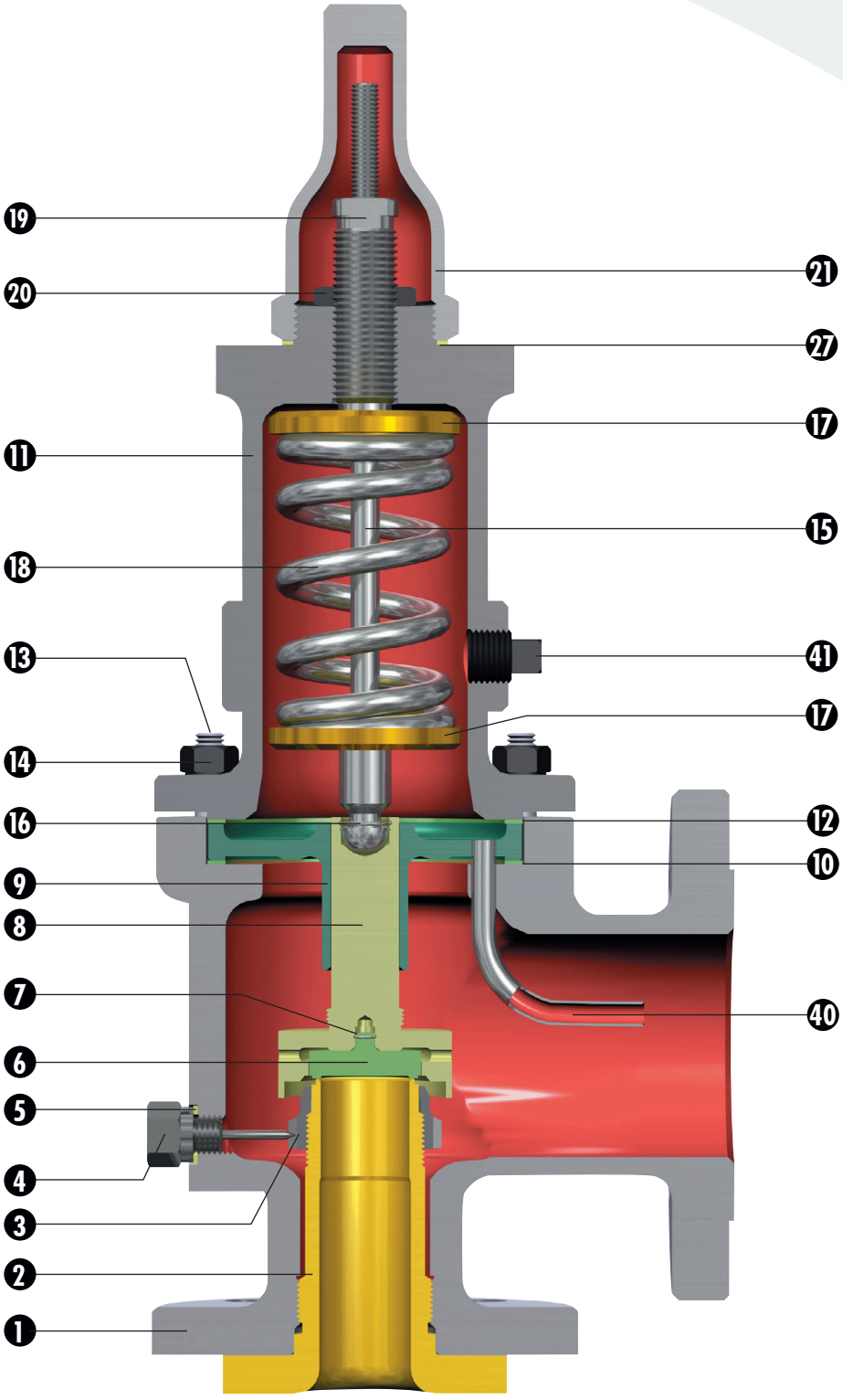
When the valve opens, the pressure behind the O-Ring escapes from the same two slots on the O-Ring retainer. This prevents the O-Ring from being ejected. Additionally, the O-Ring encapsulating retainer prevents the O-Ring from being pulled from its setting by the high velocity, low pressure discharge inside the upper valve body.

Conventional Safety Relief Valves
1900 Series

Standard Material for Conventional Type Safety Relief Valves

	Part	Material
1	Base: Types 1905 thru 1918	SA216 Grade WCC Carbon Steel
	Base: Types 1920 thru 1928	SA217 Grade WC6 Alloy Steel
2	Nozzle	316 SS
3	Adjusting Ring	316 SS
4	Adjusting Ring Pin	316 SS
5	Adjusting Ring Pin Gasket	Soft Iron
6	Disc	316 SS
7	Disc Retainer Ring	Inconel X750
8	Disc Holder	316 SS
9	Guide	316 SS
10	Guide Gasket	Soft Iron
11	Bonnet	SA216 Grade WCC Carbon Steel
12	Bonnet Gasket	Soft Iron
13	Base Stud	B7 Alloy Steel
14	Base Stud Nut	2H Carbon Steel
15	Spindle	400 Series SS
16	Spindle Retainer	Inconel X750
17	Spring Washer	Carbon Steel
18	Spring - types 1900 (-75°F to 800°F)	Alloy Steel
	Spring - types 1920 (801°F to 1000°F)	Inconel X750 or Tungsten
19	Adjusting Screw	416 SS
20	Adjusting Screw Locknut	416 SS
21	Screwed Cap	Carbon Steel
27	Cap Gasket	Soft Iron
40	Eductor Tube	304 SS
41	Vent Pipe Plug	Carbon Steel

For Gas, Vapor, and Liquid Service
1900 Series

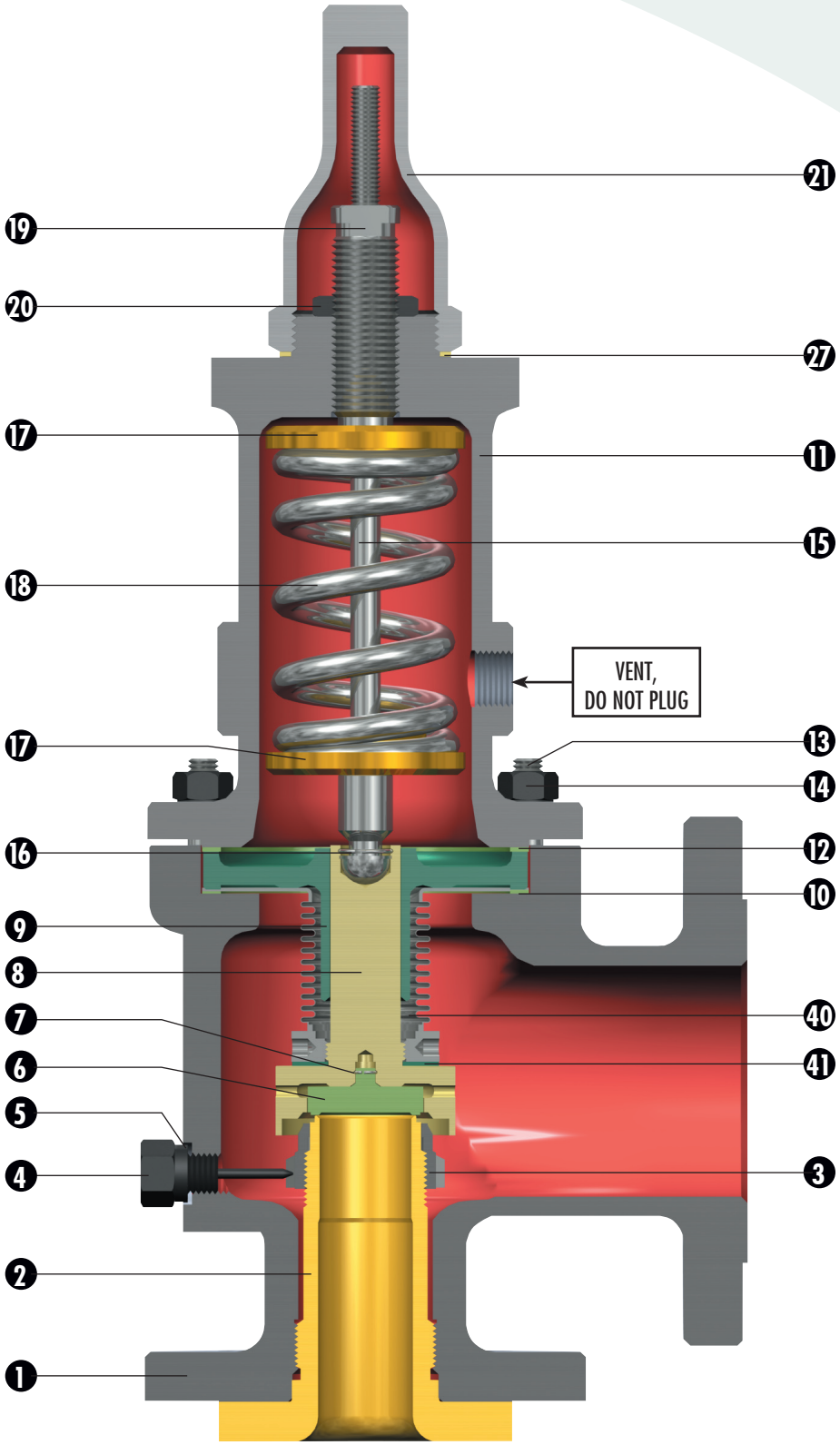


1900-30 Series Bellows Assembly

Standard Material for Bellows Type Safety Relief Valves

	Part	Material
1	Base: Types 1905-30 thru 1918-30	SA216 Grade WCC Carbon Steel
	Base: Types 1920-30 thru 1928-30	SA217 Grade WC6 Alloy Steel
2	Nozzle	316 SS
3	Adjusting Ring	316 SS
4	Adjusting Ring Pin	316 SS
5	Adjusting Ring Pin Gasket	Soft Iron
6	Disc	316 SS
7	Disc Retainer Ring	Inconel X750
8	Disc Holder	316 SS
9	Guide	316 SS
10	Guide Gasket	Soft Iron
11	Bonnet	SA216 Grade WCC Carbon Steel
12	Bonnet Gasket	Soft Iron
13	Base Stud	B7 Alloy Steel
14	Base Stud Nut	2H Carbon Steel
15	Spindle	400 Series SS
16	Spindle Retainer	Inconel X750
17	Spring Washer	Carbon Steel
18	Spring - types 1900 (-75°F to 800°F)	Alloy Steel
	Spring - types 1920 (801°F to 1000°F)	Inconel X750 or Tungsten
19	Adjusting Screw	416 SS
20	Adjusting Screw Locknut	416 SS
21	Screwed Cap	Carbon Steel
27	Cap Gasket	Soft Iron
40	Bellows Assembly	—
	Bellows	Inconel 625 LCF
	Bellows Ring & Bellows Flange	316L SS
41	Bellows Gasket	Soft Iron

For Gas, Vapor, and Liquid Service
1900-30 Series

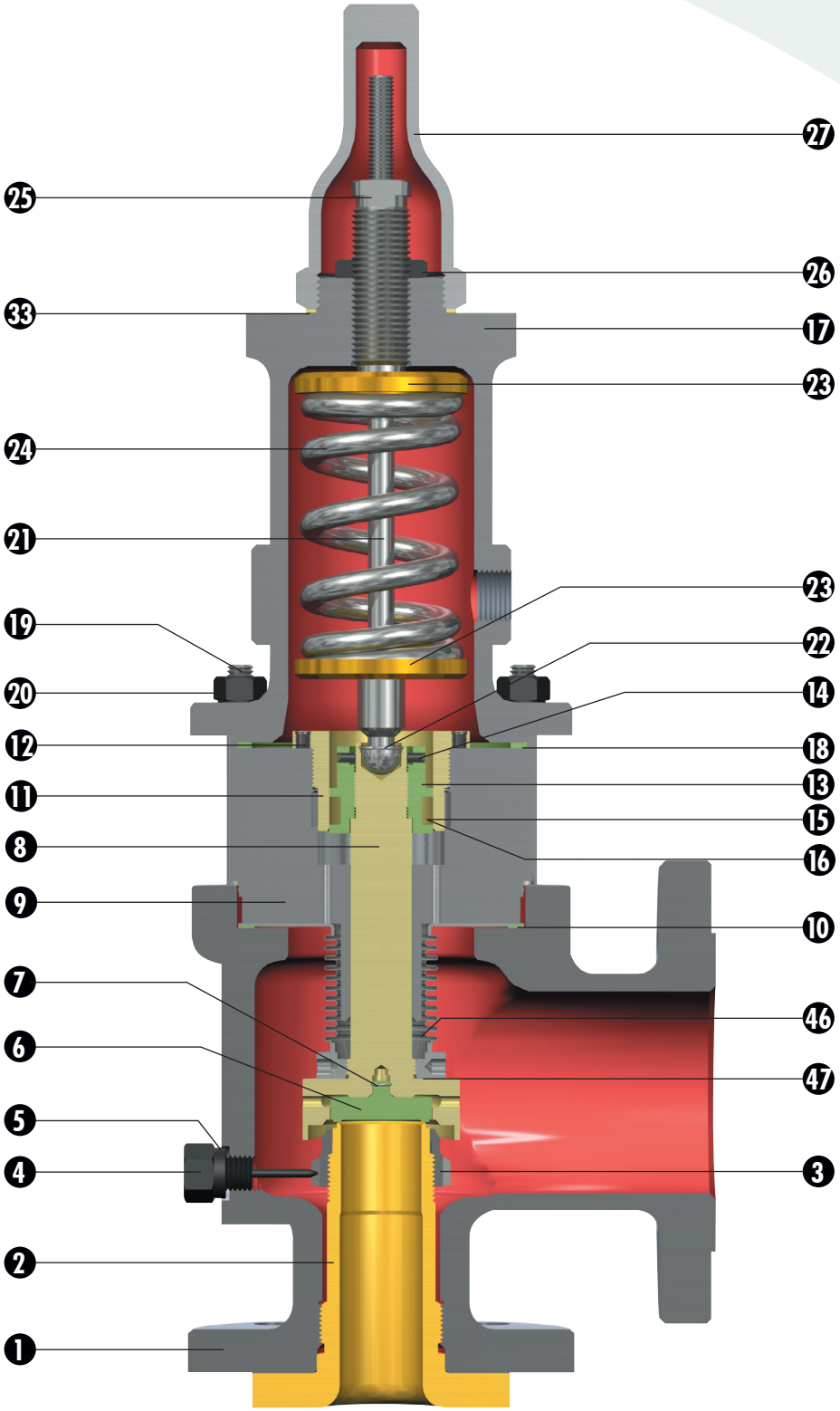


1900-35 Balanced Bellows
with Auxiliary Balancing Piston

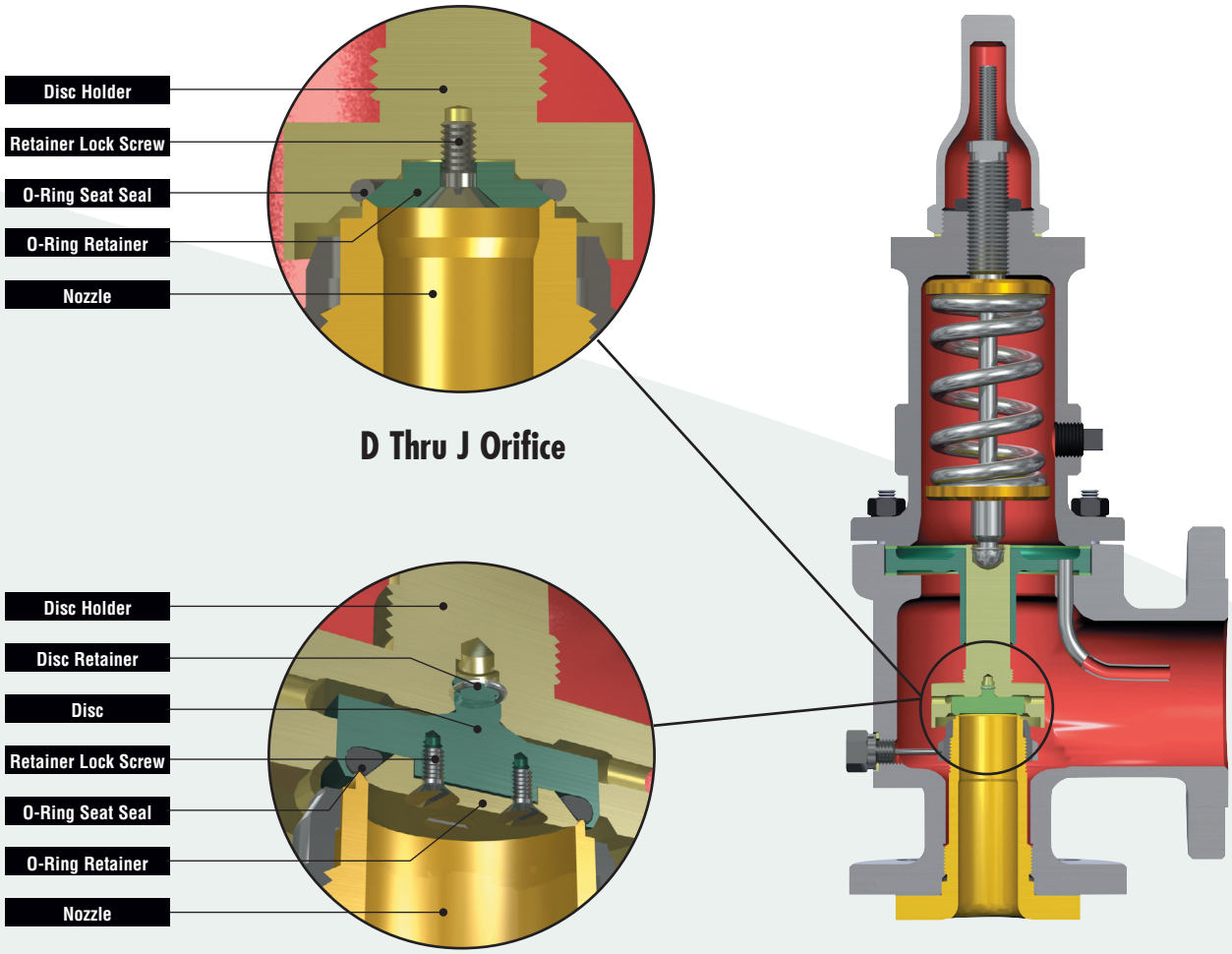
Standard Material for Balanced Piston Type Safety Relief Valves

	Part	Material
1	Base: Types 1905-35 Thru 1918-35	SA216 Grade WCC Carbon Steel
	Base: Types 1920-35 Thru 1928-35	SA217 Grade WC6 Alloy Steel
2	Nozzle	316 SS
3	Adjusting Ring	316 SS
4	Adjusting Ring Pin	316 SS
5	Adjusting Ring Pin Gasket	Soft Iron
6	Disc	316 SS
7	Disc Retainer Ring	Inconel X750
8	Disc Holder	316 SS
9	Guide	316 SS
10	Guide Gasket	Soft Iron
11	Piston Guide	304 SS
12	Piston Guide Lockscrew	Carbon Steel
13	Piston	304 SS
14	Piston Lockscrew	Carbon Steel
15	Seal Ring	Graphitar Grade 67
16	Seal Ring Expander	400 Series SS
17	Bonnet	SA216 Grade WCC Carbon Steel
18	Bonnet Gasket	Soft Iron
19	Base Stud	B7 Alloy Steel
20	Base Stud Nut	2H Carbon Steel
21	Spindle	400 Series SS
22	Spindle Retainer	Inconel X750
23	Spring Washer	Carbon Steel
24	Spring - types 1900 (-75°F to 800°F)	Alloy Steel
	Spring - types 1900 (801°F to 1000°F)	Inconel X750 or Tungsten
25	Adjusting Screw	416 SS
26	Adjusting Screw Locknut	416 SS
27	Screwed Cap	Carbon Steel
33	Cap Gasket	Soft Iron
46	Bellows Assembly	—
	Bellows	Inconel 625 LCF
	Bellows Ring and Bellows Flange	316 L SS
47	Bellows Gasket	Soft Iron

For Gas, Vapor, and Liquid Service
1900-35 Series



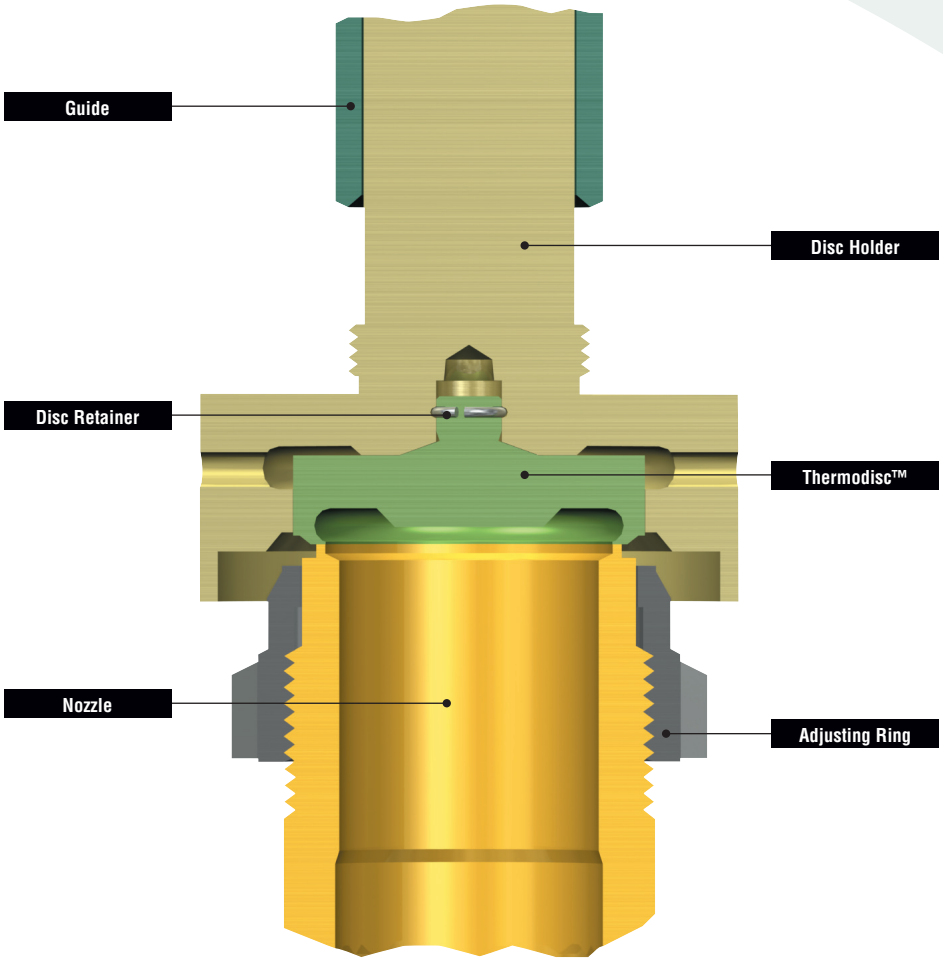
1900 Soft Seat (DA) Option



Part Name	Materials[2]
Nozzle	316 SS
Disc	316 SS
Disc Holder	316 SS
Disc Retainer	Inconel X750
O-Ring Retainer	316 SS
Retainer Lock Screw(s)	316 SS
O-Ring Seat Seal	Select[1]

NOTES: 1 Refer to pages 1900.35 & 1900.36 for O-Ring Selection (Durometer and Temperature Limits). See Technical Information Section for application.
2 Balance of Materials same as 1900 standard construction

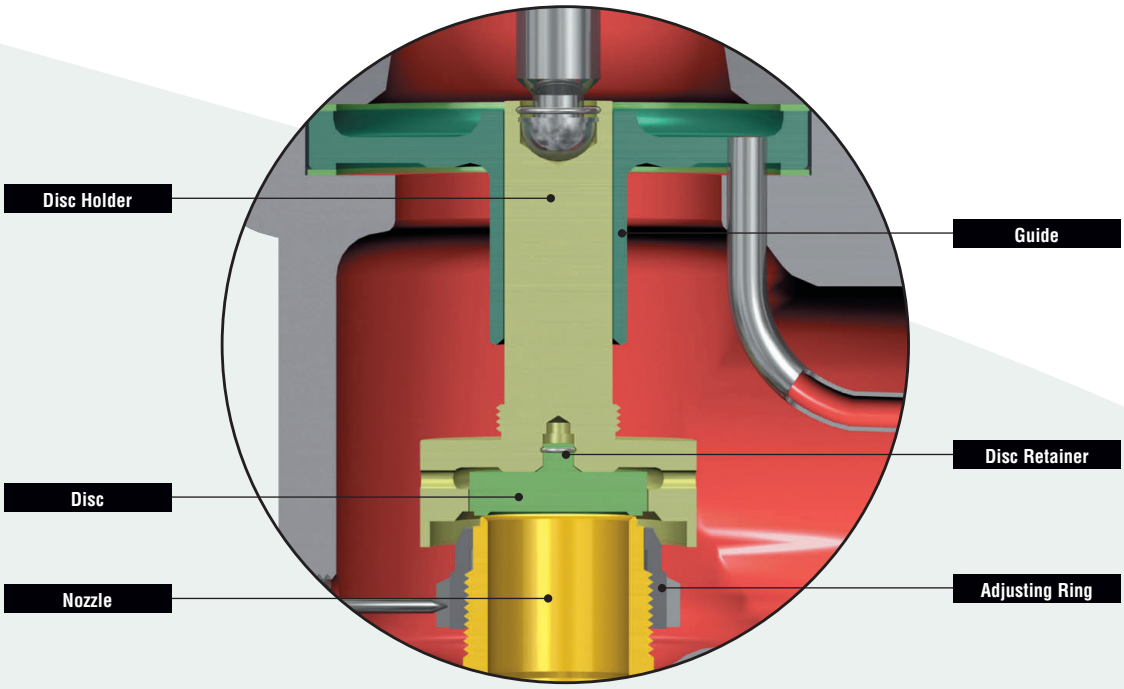
1900 Steam Trim (TD) Option



Part Name	Materials[1]
Nozzle	316 SS
Thermodisc™	616 SS
Disc Retainer	Inconel X750
Disc Holder	316 SS
Guide	316 SS
Adjusting Ring	316 SS

NOTE: 1 Balance of materials same as 1900 standard construction.

1900 Liquid Trim (LA) Option



Part Name	Materials[1]
Nozzle	316 SS
Disc	316 SS
Disc Retainer	Inconel X750
Disc Holder	316 SS
Guide	316 SS
Adjusting Ring	316 SS

NOTE 1: Balance of materials same as 1900 standard construction.

1900 Special Material & Service Options

The 1900 Flanged Series offers various material options to satisfy customer needs and API standards. The most common options are listed in this section.

These material options are not the only available options however. Inquire of Dresser Consolidated for options not listed here.

Specify the material construction classification using the construction variations such as: S2, H4, etc.

Options included are:

Many other special options are available not necessarily of a material nature. These include, but are not limited to, special facings on connections or special connections. Contact the factory for any special requirements you may have.

1900 Sour Gas (SG) Trims

Material requirements of NACE Standard MR0103-2003 are applicable to systems handling sour gas if the total operating pressure of the system is 65 psia or greater and if the partial pressure of H2S in the gas is 0.05 psia or greater.

The SG10 (non-bellows) and SG15 (bellows) material selections are satisfactory for applications in which the valve secondary pressure (outlet side) does not exceed 65 psia (50 psig). Under valve relieving conditions, 50 psig secondary pressure would not normally be exceeded until the valve set pressure exceeds 450 psig (31.0 Bar).

The SG1 (non-bellows) and SG5 (bellows) material selections comply with NACE standard MR0103-2003.

Specific applications may be referred to the factory for recommendations.

Special Materials, Sour Gas Service[1]

Component	Construction Variation			
	Conventional Valves		Bellows Valves	
	SG1[4]	SG10[3]	SG5[4]	SG15[3]
Base: Types 1905 thru 1918	SA216 WCC Carbon Steel	SA216 WCC Carbon Steel	SA216 WCC Carbon Steel	SA216 WCC Carbon Steel
Base: Types 1920 thru 1928	SA217 WC6 Alloy Steel	SA217 WC6 Alloy Steel	SA217 WC6 Alloy Steel	SA217 WC6 Alloy Steel
Nozzle	316 SS	316 SS	316 SS	316 SS
Disc	316 SS	316 SS	316 SS	316 SS
Bellows Assembly	—	—	—	—
Flange	N/A	N/A	316L SS	316L SS
Bellows	N/A	N/A	Inconel 625 LCF[5]	Inconel 625 LCF
Ring	N/A	N/A	316L SS	316L SS
Adjusting Ring	316 SS	316 SS	316 SS	316 SS
Adjusting Ring Pin	316 SS	316 SS	316 SS	316 SS
Disc Holder	316 SS	316 SS	316 SS	316 SS
Guide	316 SS	316 SS	316 SS	316 SS
Spindle	316 SS	400 Series SS	400 Series SS	400 Series SS
Spindle Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Bonnet	SA216 WCC Carbon Steel	SA216 WCC Carbon Steel	SA216 WCC Carbon Steel	SA216 WCC Carbon Steel
Base Stud	B7 Alloy Steel	B7 Alloy Steel	B7 Alloy Steel	B7 Alloy Steel
Base Stud Nut	2H Carbon Steel	2H Carbon Steel	2H Carbon Steel	2H Carbon Steel
Spring	Inconel X750	2	2	2
Spring Washer	316 SS	Carbon Steel	Carbon Steel	Carbon Steel
Adjusting Screw	316 SS	416 SS	416 SS	416 SS
Adjusting Screw Locknut	316 SS	416 SS	416 SS	416 SS
Disc Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Cap	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
Cap Gasket	Soft Iron	Soft Iron	Soft Iron	Soft Iron
Bonnet Gasket	Soft Iron	Soft Iron	Soft Iron	Soft Iron
Bellows Gasket	N/A	N/A	Soft Iron	Soft Iron
Guide Gasket	Soft Iron	Soft Iron	Soft Iron	Soft Iron
Adj. Ring Pin Gasket	Soft Iron	Soft Iron	Soft Iron	Soft Iron
Eductor Tube	304 SS	304 SS	N/A	N/A
Base Plug: Types 1905 thru 1918	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
Base Plug: Types 1920 thru 1928	316 SS	316 SS	316 SS	316 SS
Bonnet Plug	Carbon Steel	Carbon Steel	N/A	N/A

NOTES: 1 The materials in red denote variation from standard material construction.
2 Alloy springs are used for temperatures up to 800°F (426.7°C) and are aluminum metallized.
3 SG10 and SG15 are the same as standard valves except for springs being aluminum metallized.
4 SG1 and SG5 are NACE MR0103 and MR0175-2002 and prior editions compliant.
5 Heat treated.
6 Compliance with NACE MR0175-2003 requires media and materials evaluation. Please contact factory sales.

1900 Hydrofluoric Acid (HA) Service

To meet the demanding requirements of the extremely corrosive HF Alky service, Dresser Measurement has, in conjunction with major designers and users in this industry, developed the 1900 HA variation. Extensive use of Monel Alloy 400, in the stress relieved condition for critical components, has been utilized for this option.

NACE document 5A171 states, "In practice, occurrence of stress corrosion cracking may either be avoided by complete exclusion of oxygen or may be minimized by stress relieving welded or cold formed parts." The HA materials should not be confused with the M1 through the M4 materials used for other corrosive applications.

In addition to the special stress relieved conditioned Monel 400 materials, a bellows seal and litharged cured soft seat has been incorporated into this option. Long term applications have provided excellent results in the most severe, moist, aerated, HF Alky service.

Special Materials, Hydrofluoric Acid Service[1,2]

Component	Construction Variation
	HA
Base	SA216 WCC (radiographed per supplement S5)
Nozzle	Monel 400 (stressed relieved)
Adjusting Ring	Monel 400
Adjusting Ring pin	Monel 400
Adj. Ring Pin Gasket	Monel 400
Disc	Monel 400 (stressed relieved)
Disc Retainer	Inconel X750
O-Ring	Viton A (litharge cured)
O-Ring Retainer	Monel 400 (stressed relieved)
Retainer Lock Screw	Monel 400
Disc Holder	Monel 400 (stressed relieved)
Guide	Monel 400
Guide Gasket	Monel 400
Bellows Assembly	Monel 400 (stressed relieved)
Flange	Monel 400
Bellows	Monel 400
Ring	Monel 400
Bellows Gasket	Garlock Gylon 35101
Bonnet	SA216 WCC Carbon Steel
Bonnet Gasket	Monel 400
Base Stud	K Monel
Base Stud Nut	K Monel
Spindle	Monel 400
Spindle Retainer	Inconel X750
Spring (-20°F to 800°F)	Alloy Steel (nickel plated)
Spring Washer	Carbon Steel
Adjusting Screw	Monel 400
Adjusting Screw Locknut	Monel 400
Cap	Carbon Steel
Cap Gasket	Monel 400
Limit Washer	Monel 400

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1910L/HA or 1910-30L/HA.

Corrosive Service

Corrosive Service, Stainless Steel Material[1,2]

Component	Construction Variation		
	S2	S3	S4
Common Components			
Nozzle	316 SS	316 SS	316 SS
Disc	316 SS	316 SS	316 SS
Disc Retainer	Inconel X750	Inconel X750	Inconel X750
Disc Holder	316 SS	316 SS	316 SS
Adjusting Ring	316 SS	316 SS	316 SS
Adjusting Ring Pin	316 SS	316 SS	316 SS
Spindle Retainer	Inconel X750	Inconel X750	Inconel X750
Adjusting Ring Pin Gasket	Monel	Monel	Monel
Guide Gasket	Monel	Monel	Monel
Base, Bonnet, Cap	Carbon Steel	316 SS	316 SS
Base Studs	B7 Alloy Steel	Gr. B8M	Gr. B8M
Base Stud Nuts	2H Carbon Steel	Gr. 8M	Gr. 8M
Non-Bellows Valve Components			
Guide	316 SS	316 SS	316 SS
Spindle	316 SS	316 SS	316 SS
Adjusting Screw	316 SS	316 SS	316 SS
Adjusting Screw Locknut	316 SS	316 SS	316 SS
Spring	Alloy Steel	Alloy Steel	316 SS
Spring Washers	Carbon Steel	Carbon Steel	316 SS
Eductor Tube	304 SS	316 SS	316 SS
Bonnet Gasket	Monel	Monel	Monel
Cap Gasket	Monel	Monel	Monel
Bellows Valve Components			
Guide	316 SS	316 SS	316 SS
Spindle	400 Series SS	316 SS	316 SS
Adjusting Screw	416 SS	316 SS	316 SS
Adjusting Screw Locknut	416 SS	316 SS	316 SS
Bellows Assembly	—	—	—
Flange	316L SS	316L SS	316L SS
Bellows	Inconel 625 LCF	Inconel 625 LCF	Inconel 625 LCF
Ring	316L SS	316L SS	316L SS
Bellows Gasket	Monel	Monel	Monel
Spring	Alloy Steel	Alloy Steel	316 SS
Spring Washer	Carbon Steel	Carbon Steel	316 SS
Bonnet Gasket	Soft Iron	Monel	Monel
Cap Gasket	Monel	Monel	Monel

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1910L/S3 or 1910-30L/S3.

Corrosive Service

Corrosive Service, Alloy 20 Material[1,2]

Component	Construction Variation			
	A1	A2	A3	A4
Common Components				
Nozzle	Alloy 20	Alloy 20	Alloy 20	Alloy 20
Disc	Alloy 20	Alloy 20	Alloy 20	Alloy 20
Disc Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Disc Holder	316 SS	Alloy 20	Alloy 20	Alloy 20
Adjusting Ring	316 SS	Alloy 20	Alloy 20	Alloy20
Adjusting Ring Pin	316 SS	Alloy 20	Alloy 20	Alloy 20
Spindle Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Adjusting Ring Pin Gasket	Soft Iron	Monel	Monel	Monel
Guide Gasket	Soft Iron	Monel	Monel	Monel
Base, Bonnet, Cap	Carbon Steel	Carbon Steel	3	3
Base Studs	B7 Alloy Steel	B7 Alloy Steel	Alloy 20	Alloy 20
Base Stud Nuts	2H Carbon Steel	2H Carbon Steel	Alloy 20	Alloy 20
Non-Bellows Valve Components				
Guide	316 SS	Alloy 20	Alloy 20	Alloy 20
Spindle	400 Series SS	Alloy 20	Alloy 20	Alloy 20
Adjusting Screw	416 SS	Alloy 20	Alloy 20	Alloy 20
Adjusting Screw Locknut	416 SS	Alloy 20	Alloy 20	Alloy 20
Spring	Alloy Steel	Alloy Steel	Alloy Steel	Alloy 20
Spring Washers	Carbon Steel	Carbon Steel	Carbon Steel	Alloy 20
Eductor Tube	304 SS	304 SS	Alloy 20	Alloy 20
Bonnet Gasket	Soft Iron	Monel	Monel	Monel
Cap Gasket	Soft Iron	Monel	Monel	Monel
Bellows Valve Components				
Guide	316 SS	316 SS	Alloy 20	Alloy 20
Spindle	400 Series SS	400 Series SS	Alloy 20	Alloy 20
Adjusting Screw	416 SS	416 SS	Alloy 20	Alloy 20
Adjusting Screw Locknut	416 SS	416 SS	Alloy 20	Alloy 20
Bellows Assembly	—	—	—	—
Flange	316L SS	Alloy 20	Alloy 20	Alloy 20
Bellows	Inconel 625 LCF	Alloy 20	Alloy 20	Alloy 20
Ring	316L SS	Alloy 20	Alloy 20	Alloy 20
Bellows Gasket	Soft Iron	Monel	Monel	Monel
Spring	Alloy Steel	Alloy Steel	Alloy Steel	Alloy 20
Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Alloy 20
Bonnet Gasket	Soft Iron	Soft Iron	Monel	Monel
Cap Gasket	Soft Iron	Monel	Monel	Monel

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1910L/A3 or 1910-30L/A3.
3 ASME SA351 grade CN7M alloy steel.

Corrosive Service

Corrosive Service, Monel Material[1,2]

Component	Construction Variation				
	M1	MB (M 1½)	M2	M3	M4
Common Components					
Nozzle	Monel	Monel	Monel	Monel	Monel
Disc	Monel	Monel	Monel	Monel	Monel
Disc Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Disc Holder	316 SS	Monel	Monel	Monel	Monel
Adjusting Ring	316 SS	Monel	Monel	Monel	Monel
Adjusting Ring Pin	316 SS	Monel	Monel	Monel	Monel
Spindle Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Adjusting Ring Pin Gasket	Soft Iron	Monel	Monel	Monel	Monel
Guide Gasket	Soft Iron	Monel	Monel	Monel	Monel
Base, Bonnet, Cap	Carbon Steel	Carbon Steel	Carbon Steel	Monel	Monel
Base Studs	B7 Alloy Steel	B7 Alloy Steel	B7 Alloy Steel	K Monel	K Monel
Base Stud Nuts	2H Carbon Steel	2H Carbon Steel	2H Carbon Steel	K Monel	K Monel
Non-Bellows Valve Components					
Guide	316 SS	316 SS	Monel	Monel	Monel
Spindle	400 Series SS	400 Series SS	Monel	Monel	Monel
Adjusting Screw	416 SS	416 SS	Monel	Monel	Monel
Adjusting Screw Locknut	416 SS	416 SS	Monel	Monel	Monel
Spring	Alloy Steel	Alloy Steel	Alloy Steel	Alloy Steel	Inconel
Spring Washers	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Monel
Eductor Tube	304 SS	304 SS	304 SS	Monel	Monel
Bonnet Gasket	Soft Iron	Monel	Monel	Monel	Monel
Cap Gasket	Soft Iron	Monel	Monel	Monel	Monel
Bellows Valve Components					
Guide	316 SS	316 SS	316 SS	Monel	Monel
Spindle	400 Series SS	400 Series SS	400 Series SS	Monel	Monel
Adjusting Screw	416 SS	416 SS	416 SS	Monel	Monel
Adjusting Screw Locknut	416 SS	416 SS	416 SS	Monel	Monel
Bellows Assembly	—	—	—	—	—
Flange	316L SS	316L SS	Monel	Monel	Monel
Bellows	Inconel 625 LCF	Inconel 625 LCF	Monel	Monel	Monel
Ring	316L SS	316L SS	Monel	Monel	Monel
Bellows Gasket	Soft Iron	Monel	Monel	Monel	Monel
Spring	Alloy Steel	Alloy Steel	Alloy Steel	Alloy Steel	Inconel
Spring Washers	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel	Monel
Bonnet Gasket	Soft Iron	Soft Iron	Soft Iron	Monel	Monel
Cap Gasket	Soft Iron	Monel	Monel	Monel	Monel

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1910L/M3 or 1910-30L/M3.

Corrosive Service

Corrosive Service, Hastelloy Material[1,2]

Component	Construction Variation			
	H1	H2	H3	H4
Common Components				
Nozzle	Hastelloy C	Hastelloy C	Hastelloy C	Hastelloy C
Disc	Hastelloy C	Hastelloy C	Hastelloy C	Hastelloy C
Disc Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Disc Holder	316 SS	Hastelloy C	Hastelloy C	Hastelloy C
Adjusting Ring	316 SS	Hastelloy C	Hastelloy C	Hastelloy C
Adjusting Ring Pin	316 SS	Hastelloy C	Hastelloy C	Hastelloy C
Spindle Retainer	Inconel X750	Inconel X750	Inconel X750	Inconel X750
Adjusting Ring Pin Gasket	Soft Iron	Monel	Monel	Monel
Guide Gasket	Soft Iron	Monel	Monel	Monel
Base, Bonnet, Cap	Carbon Steel	Carbon Steel	Hastelloy C	Hastelloy C
Base Studs	B7 Alloy Steel	B7 Alloy Steel	Hastelloy C	Hastelloy C
Base Stud Nuts	2H Carbon Steel	2H Carbon Steel	Hastelloy C	Hastelloy C
Non-Bellows Valve Components				
Guide	316 SS	Hastelloy C	Hastelloy C	Hastelloy C
Spindle	400 Series SS	Hastelloy C	Hastelloy C	Hastelloy C
Adjusting Screw	416 SS	Hastelloy C	Hastelloy C	Hastelloy C
Adjusting Screw Locknut	416 SS	Hastelloy C	Hastelloy C	Hastelloy C
Spring	Alloy Steel	Alloy Steel	Alloy Steel	Hastelloy C
Spring Washers	Carbon Steel	Carbon Steel	Carbon Steel	Hastelloy C
Eductor Tube	304 SS	304 SS	Hastelloy C	Hastelloy C
Bonnet Gasket	Soft Iron	Monel	Monel	Monel
Cap Gasket	Soft Iron	Monel	Monel	Monel
Bellows Valve Components				
Guide	316 SS	316 SS	Hastelloy C	Hastelloy C
Spindle	400 Series SS	400 Series SS	Hastelloy C	Hastelloy C
Adjusting Screw	416 SS	416 SS	Hastelloy C	Hastelloy C
Adjusting Screw Locknut	416 SS	416 SS	Hastelloy C	Hastelloy C
Bellows Assembly	—	—	—	—
Flange	316L SS	Hastelloy C	Hastelloy C	Hastelloy C
Bellows	Inconel 625 LCF	Hastelloy C	Hastelloy C	Hastelloy C
Ring	316L SS	Hastelloy C	Hastelloy C	Hastelloy C
Bellows Gasket	Soft Iron	Monel	Monel	Monel
Spring	Alloy Steel	Alloy Steel	Alloy Steel	Hastelloy C
Spring Washer	Carbon Steel	Carbon Steel	Carbon Steel	Hastelloy C
Bonnet Gasket	Soft Iron	Soft Iron	Monel	Monel
Cap Gasket	Soft Iron	Monel	Monel	Monel

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1910L/H3 or 1910-30L/H3.

Low Temperature

Component	Special Materials for Low Process Fluid Temperature[1,2] -21°F to -75°F -29°C to -59°C L1[3]	 -76°F to -150°F -60°C to -101°C L2	 -151°F to -450°F -102°C to -268°C L3
Common Components			
Nozzle	316 SS	316 SS	316 SS
Disc	316 SS	316 SS	316 SS
Disc Retainer	Inconel X750	Inconel X750	Inconel X750
Disc Holder	316 SS	316 SS	316 SS
Adjusting Ring	316 SS	316 SS	316 SS
Adjusting Ring Pin	316 SS	316 SS	316 SS
Spindle Retainer	Inconel X750	Inconel X750	Inconel X750
Cap Gasket	Monel	Monel	Monel
Adjusting Ring Pin Gasket	Monel	Monel	Monel
Guide Gasket	Monel	Monel	Monel
Base	316 SS	316 SS	316 SS
Bonnet	Carbon Steel	316 SS	316 SS
Cap	Carbon Steel	316 SS	316 SS
Base Studs	Gr. B8M	Gr. B8M	Gr. B8M
Base Stud Nuts	Gr. 8M	Gr. 8M	Gr. 8M
Non-Bellows Valve Components			
Guide	316 SS	316 SS	316 SS
Spindle	400 Series SS	316 SS	316 SS
Adjusting Screw	416 SS	316 SS	316 SS
Adjusting Screw Nut	416 SS	316 SS	316 SS
Spring	Alloy Steel	316 SS	316 SS
Spring Washers	316 SS	316 SS	316 SS
Eductor Tube	304 SS	316 SS	316 SS
Bonnet Gasket	Monel	Monel	Monel
Bellows Valve Components			
Guide	316 SS	316 SS	316 SS
Spindle	400 Series SS	316 SS	316 SS
Adjusting Screw	416 SS	316 SS	316 SS
Adjusting Screw Nut	416 SS	316 SS	316 SS
Bellows Assembly	—	—	—
Flange	316L SS	316L SS	316L SS
Bellows	Inconel 625 LCF	Inconel 625 LCF	316L SS
Ring	316L SS	316L SS	316L SS
Bellows Gasket	Monel	Monel	Monel
Spring	Alloy Steel	316 SS	316 SS
Spring Washer	Carbon Steel	316 SS	316 SS
Bonnet Gasket	Monel	Monel	Monel

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1910L/L3 or 1910-30L/L3.
3 SA 352LCC material can be utilized down to -50°F (-45°C) for bases, bonnets, or caps when requested.

Low Temperature

Special Materials for Low Ambient Temperatures (to -50°F or -45°C[1,2])

Component	Construction Variation
	C1[3]
Common Components	
Nozzle	316 SS
Disc	316 SS
Disc Retainer	Inconel X750
Disc Holder	316 SS
Adjusting Ring	316 SS
Adjusting Ring Pin	316 SS
Spindle Retainer	Inconel X750
Adjusting Ring Pin Gasket	Soft Iron
Guide Gasket	Soft Iron
Base, Bonnet, Cap	LCC Carbon Steel
Base Studs	B8M
Base Stud Nuts	8M
Non-Bellows Valve Components	
Guide	316 SS
Spindle	400 Series SS
Adjusting Screw	416 SS
Adjusting Screw Nut	416 SS
Spring	Alloy Steel
Spring Washers	316 SS
Eductor Tube	304 SS
Bonnet Gasket	Soft Iron
Cap Gasket	Soft Iron
Bellows Valve Components	
Guide	316 SS
Spindle	400 Series SS
Adjusting Screw	416 SS
Adjusting Screw Nut	416 SS
Bellows Assembly	—
Flange	316L SS
Bellows	Inconel 625 LCF
Ring	316L SS
Bellows Gasket	Soft Iron
Spring	Alloy Steel
Spring Washers	316 SS
Bonnet Gasket	Soft Iron
Cap Gasket	Soft Iron

NOTES: 1 The materials in red denote variation from standard material construction.
2 Media temperature may impact valve temperature. Contact factory for assistance.
3 To specify valves, add material designation to the valve type, 1910L/C1 or 1910-30L/C1.

High Temperature

Special Materials for High Process Fluid Temperature[1,2]

Component	1001°F to 1200°F 538°C to 649°C **T1**	1201°F to 1500°F 649°C to 815°C **T2[3,4]**
Common Components		
Nozzle	316 SS	316 SS/Stellited
Disc	316 SS	Inconel X750
Disc Retainer	Inconel X750	Inconel X750
Disc Holder	316 SS Glide-Aloy Treated	316 SS Glide-Aloy Treated
Adjusting Ring	316 SS	316 SS
Adjusting Ring Pin	316 SS	316 SS
Spindle Retainer	Inconel X750	Inconel X750
Cap Gasket	Monel	N/A
Adjusting Ring Pin Gasket	Monel	Monel
Guide Gasket	Monel	Monel
Base	316 SS	316 SS
Bonnet	316 SS	Slotted 316 SS
Cap	Carbon Steel	Carbon Steel
Base Studs	Gr. B8M	Gr. B8M
Base Stud Nuts	Gr. 8M	Gr. 8M
Deflector Plate	N/A	304 SS
Non-Bellows Valve Components		
Guide	316 SS	316 SS Glide-Aloy Treated
Spindle	400 Series SS	316 SS/Stellited
Adjusting Screw	416 SS	416 SS
Adjusting Screw Locknut	416 SS	416 SS
Spring	Inconel X750 or Tungsten	Inconel X750 or Tungsten
Spring Washers	Carbon Steel	410 SS
Eductor Tube	304 SS	N/A
Bonnet Gasket	Monel	N/A
Bellows Valve Components		
Guide	316 SS	316 SS Glide-Aloy Treated
Spindle	400 Series SS	316 SS/Stellited
Adjusting Screw	416 SS	416 SS
Adjusting Screw Locknut	416 SS	416 SS
Bellows Assembly		
Flange	Inconel 625	Inconel 625
Bellows	Inconel 625 LCF	Inconel 625 LCF
Ring	Inconel 625	Inconel 625
Bellows Gasket	Monel	Monel
Spring	Inconel X750 or Tungsten	Inconel X750 or Tungsten
Spring Washer	Carbon Steel	410 SS
Bonnet Gasket	Monel	N/A

NOTES: 1 The materials in red denote variation from standard material construction.
2 To specify valves, add material designation to the valve type, 1920L/T2 or 1920-30L/T2.
3 All T2 valves have ANSI Class 300 outlet flanges.
4 Consult factory for temperatures above 1500°F (815°C).

1900 Valves for Lethal Service

In some industries served by **CONSOLIDATED**, there are lethal service applications. These applications require special consideration as detailed below. Should you feel that your application may be for lethal service, please review this information. **"LETHAL SERVICE"** should be prominently indicated in your discussions, inquiries, or purchase orders.

I. Definition

ASME B & PVC, Section VIII (Division 1) states that it is the responsibility of the user to state that the valve will be in lethal service.

IMPORTANT

CONSOLIDATED does not determine if a fluid is lethal. The customer must specify the fluid is lethal and his paperwork should be clearly stamped, identifying the application as a lethal fluid.

The ASME Code definition is as follows:

Lethal Substance - Poisonous gases or liquids of such a nature that a very small amount of the gas or the vapor of the liquid, mixed or unmixed with air, is dangerous to life when inhaled.

ASME B31.3, a chemical plant and petroleum refining piping standard, supplies a similar definition, which they call a "Category M Fluid Service".

II. Valve Requirements for Lethal Service Application

A. Only closed bonnet valves with a screwed or bolted cap or packed lever can be used for lethal service.
B. Valve model numbers that are acceptable for lethal service after modification are 1905/1910 conventional and bellows flanged valves.
C. It is recommended that a soft seat design be used for improved tightness.
D. When service temperature exceeds 450°F (232°C), bolting material review is required by Dresser Measurement Engineering.
E. Use non-sparking material for flammable media. Examples are Bronze, 316 Stainless Steel, and Monel.

III. Base, Bonnet, and Cap Casting Requirements

A. Each casting requires 100% visual inspection
B. Each casting requires complete surface examination either by magnetic particle for steel castings or liquid penetrant for stainless castings.
C. Each casting shall have radiographic examination.
D. All repairs to base, bonnet, and cap castings must be documented.
E. All threads must be inspected for continuity of threads
F. Hydrotest hold time for ten (10) minutes.
G. The base drain plug is to be sealed by seal welding a plug of the same material as the base.
H. The bonnet vent is to be sealed in accordance with paragraph G for conventional valves (non-bellows). Bellows valves are to have the vent connection vented to a safe location.

IV. Additional Requirements

A. Each bellows requires a mass spectrometer leak test to 1 x 10^{-7} cc/sec to be imposed.
B. It is necessary to seal the nozzle-base joint. The customer must state their preference between a seal weld or O-Ring joint, depending on conformance of their maintenance practice.
C. The nozzle and disc require hydrotesting with a hold time for a minimum of ten (10) minutes.
D. Cleaning procedures and lubricants used shall be acceptable for lethal service.
E. Back pressure testing is required. Documentation of test is required.

O-Ring Selection

O-Ring Selection Table - Durometer (USCS Units)

Valve Type	Set Pressure Range (psig)				
	50[1]	70 - 75[1]	90[2]	Teflon[3] -300°F to 200°F	Teflon[3] 201°F to 500°F
1900D & E	5 to 350	120 to 800	265 to 2000	2000 to 6000	285 to 6000
1900F	5 to 350	120 to 800	265 to 2000	2000 to 6000	285 to 6000
1900G	5 to 375	125 to 780	375 to 1900	1900 to 3705	285 to 3705
1900H	5 to 375	140 to 780	330 to 1900	1900 to 2750	285 to 2750
1900J	5 to 315	45 to 780	150 to 1900	1900 to 2700	285 to 2700
1900K	5 to 235	125 to 580	255 to 1400	1400 to 2220	250 to 2220
1900L	5 to 235	75 to 580	155 to 1400	1400 to 1500	155 to 1500
1900M	5 to 235	70 to 580	140 to 1100	–	140 to 1100
1900N	5 to 235	40 to 580	90 to 1000	–	90 to 1000
1900P	5 to 200	30 to 500	75 to 1000	–	75 to 1000
1900Q	5 to 170	40 to 420	80 to 600	–	80 to 600
1900R	5 to 120	25 to 300	60 to 300	–	60 to 300
1900T	5 to 80	15 to 200	30 to 300	–	30 to 300
1900V	–	15 to 300	15 to 300	15 to 300	15 to 300
1900W	–	7 to 300	7 to 300	15 to 300	15 to 300

NOTES: 1 Maximum set pressure for silicone compounds is half of the maximum value.
2 The E962-90D O-Ring can be used in steam service in applications down to 15 psig.
3 Teflon will not be supplied for conditions that deviate from these ranges.

O-Ring Selection

O-Ring Temperature Limits

Materials	Durometer	Description[5]	Temp. Limits (°F)	Temp. Limits (°C)
Nitrile	50	N299-50 or N1009-50	-45 to +225	-43 to +107
	70	N674-70	-40 to +250	-40 to +121
	90	N552-90	-40 to +350	-40 to +177
	70[4]	N1173-70	-25 to +300	-31 to +149
Ethylene/Propylene	50	E981-50	-65 to +212	-53 to +100
	70	E603-70	-65 to +212	-53 to +100
	75 & 80[2]	E740-75 & E515-80	-70 to +250	-57 to +121
	90	E962-90[1]	-70 to +500	-57 to +260
	75	E962-75	-60 to +250/400	-51 to +121/204
Fluorocarbon	50	V986-50	-15 to +400	-26 to +204
	75	V747-75 or V884-75	-15 to +400	-26 to +204
	90	V894-90 or V709-90	-15 to +400	-26 to +204
Neoprene	50	C267-50	-45 to +300	-43 to +149
	70	C944-70 or C873-70	-45 to +300	-43 to +149
Silicone	50	S595-50	-65 to +437	-53 to +225
	70	S604-70	-65 to +437	-53 to +225
Teflon	N/A	Teflon	-300 to +500	-184 to +260
Kalrez[3]	82	1050LF	-42 to +550	-41 to +288
	75	4079	-58 to +601	-50 to +316
	91	3018	-35 to +601	-37 to +316
	65	1058	-40 to +500	-40 to +260

NOTES: 1 EPR962-90D can be used on steam service to lower pressure limit of 15 psig.
2 Set pressure ranges from durometer table shall apply to these compounds (for nuclear service, radiation environment).
3 Consult factory before selecting.
4 Consult factory before using. For use with freon 134A/ester oil service.
5 Refer to Technical Section for O-Ring Selection Tables for various fluids.

1900 Caps, Levers, and Accessories

Lifting Mechanisms

The purpose of the lifting mechanism is to open the valve when the pressure under the valve disc is lower than the set pressure. These mechanisms are made in three basic types: plain lever, packed lever, and air-operated lifting device. The lifting lever may be used as follows:

(1) to lift the disc from the valve seat periodically during the operation of equipment to be sure that the disc holder is not frozen in the guide as a result of corrosion, coking, sulphur deposits, etc. This will ensure protection of the unit at all times. Operating pressure under the disc should be approximately 75% of the set pressure when lifting in accordance with the ASME Code; otherwise the lever assembly could be damaged.

(2) to remove foreign particles which are sometimes trapped under the seat as the valve closes. Immediate cleaning of the valve seat with the pressure of the media, by use of the lifting lever, will correct an otherwise leaking valve, save maintenance costs at a later date and in some cases will avoid a shutdown of the equipment.

(3) to vent equipment to the atmosphere or discharge piping.

Plain Lever

This lever assembly is not pressure-tight and should not be used where back pressure is present or where the escape of vapor discharging from an open valve is undesirable around the lever assembly.

Packed Lever

As indicated by the name, this lifting lever assembly is packed around the lever shaft, so that leakage will not occur around the upper part of the valve when the valve is open or when back pressure is present. The packed lifting lever should be used when positive protection against leakage is required.

Bolted Cap

CONSOLIDATED Standard Safety Relief Valves are supplied with screwed caps but bolted caps are available.

Gag

The purpose of the gag is to hold the safety relief valve closed while equipment is being subjected to an operational hydrostatic test. This is the only purpose for which the gag is intended, and it can be accomplished by pulling the gag hand-tight. Force should never be used. The gag should never be left in the valve during the operation of the equipment. It should be removed each time after using and hung in a safe, convenient location and the sealing plug reinstated and properly torqued.

ASME B & PVC, Section VIII, Lever

ASME Codes require that a lifting lever must be supplied with the valve for steam, air, and hot water service over 140°F (60°C) applications. However, it need not be a sealed lifting mechanism. The ASME Codes do recommend that sealed lifting mechanisms be used; however, they are not mandatory. The lifting lever may be omitted under Code Case 2203. However, Dresser requires that all orders for pressure relief valves without levers or blowdown valves for steam, air, and water over 140°F (60°C) state specifically that the valves are being purchased per Code Case 2203. The purchaser is responsible for obtaining jurisdictional authorization for use of Code Case 2203.

Thermal Relief Valves: When ASME Code stamped valves are used for thermal relief applications, the ASME Code guidelines shall be followed in regard to lifting levers.

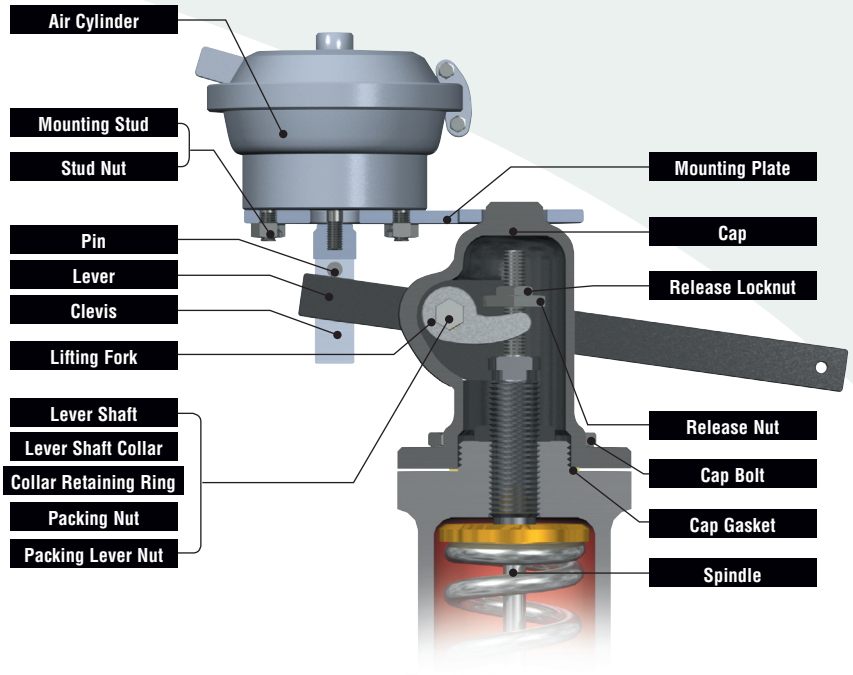
Air-Operated Lifting Device

The Air Operated Lifting Device uses an air cylinder to obtain lifting power to open the valve from a remote control station. Normal operation of the safety relief valve is independent of the lifting device.

Please specify actual required conditions, otherwise the device will be supplied to operate with at least 75% of set pressure under the disc in accordance with the ASME Code.

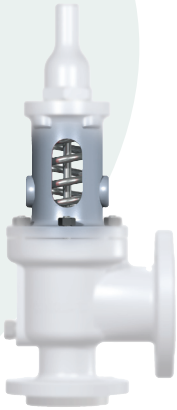
Requirements for special application: valve size, set pressure, minimum pressure at which the valve must be kept open, air pressure for operator, or electrical characteristics for solenoid operation.

Regulated air, not to exceed 100 psig, is required for operation.



Valve Position Indicators

Valve Position Indicators in general, are a micro switch apparatus used for remote indication of the opening of a Safety Relief Valve. It is designed to activate warning devices such as control panel lights or auditory indicators. This option enhances control function of operators located in remote control stations. Please advise voltage requirements for proper selection of micro switch when ordering.



Slotted Bonnet

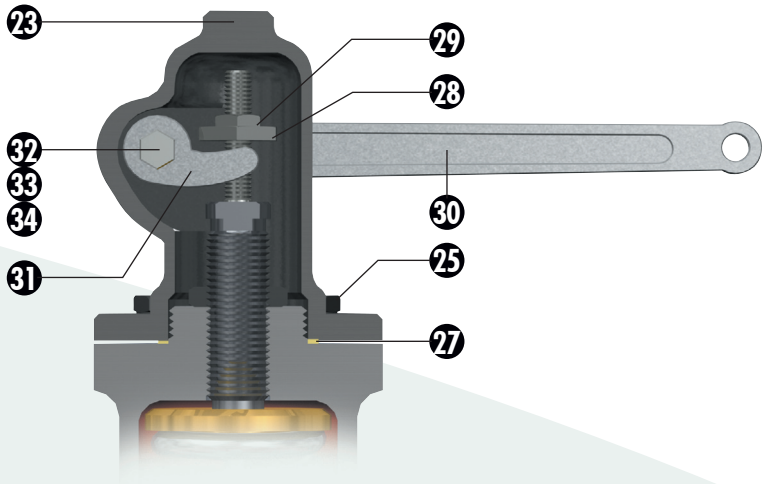
Steam Jacket

Vent Bug Screen
(Available in 1900-30 bellows valve only)

Forged Body
(Sevier Service, Speical Materials, Special Dimensions)

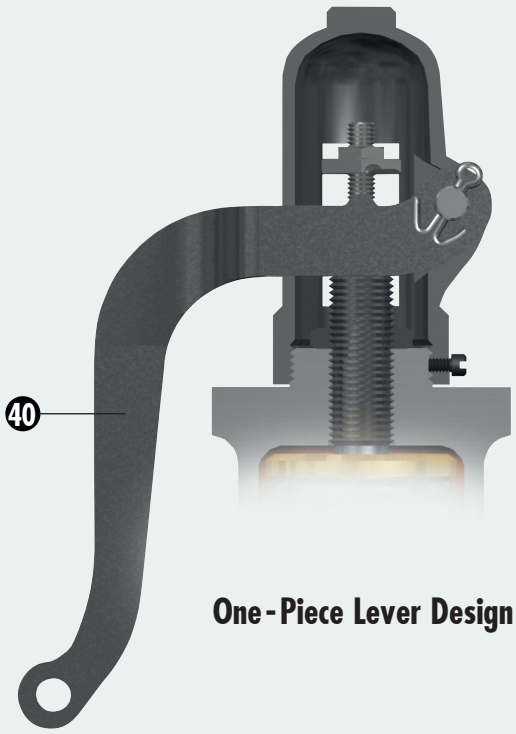
Packed Lever

As indicated by the name, this lifting lever assembly is packed around the lever shaft, so that leakage will not occur around the upper part of the valve when the valve is open or when back pressure is present. The packed lifting lever should be used when positive protection against leakage is required.

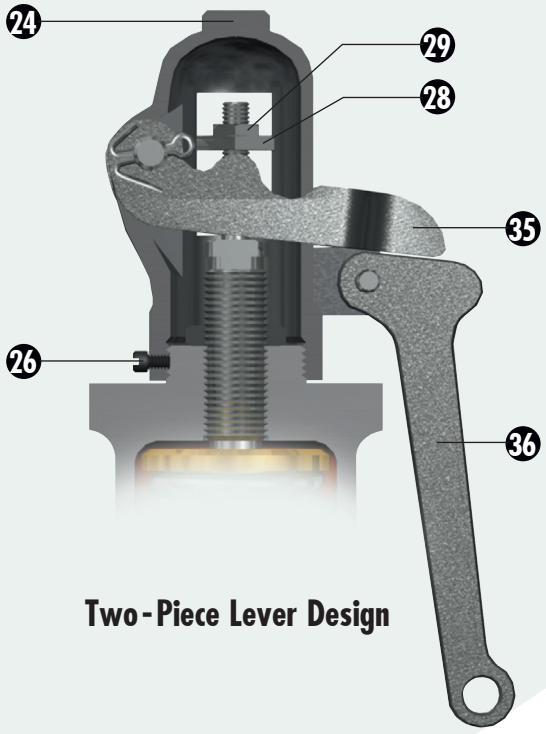


Plain Lever

This lever assembly is not pressure-tight and should not be used where back pressure is present or where the escape of vapor discharging from an open valve is undesirable around the lever assembly. It is designed with either a one or two-piece lever as illustrated below. The design is based on valve size and/or valve set pressure.



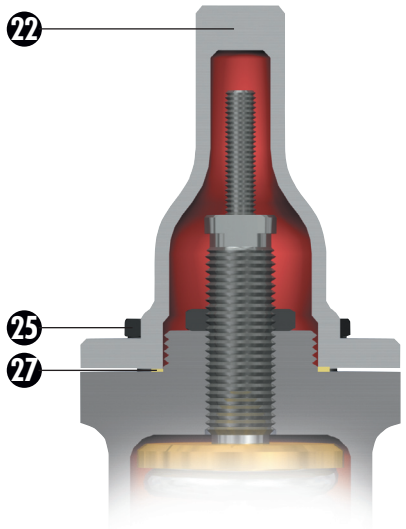
One-Piece Lever Design



Two-Piece Lever Design

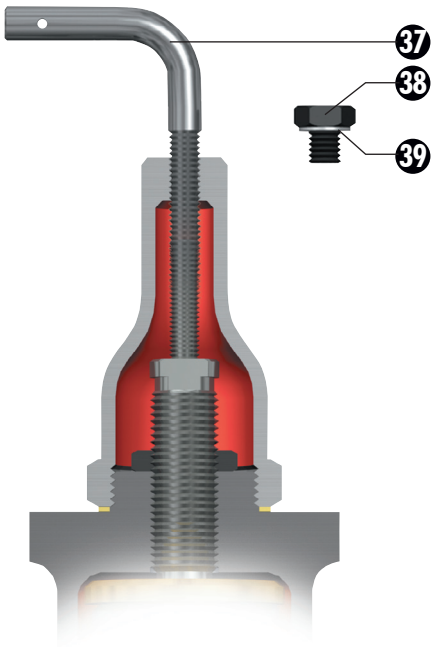
Bolted Cap

Consolidated standard safety relief valves are supplied with screwed caps, but bolted caps are available.



Cap with Gag

The purpose of the gag is to hold the safety relief valve closed while equipment is being subjected to an operational hydrostatic test. This is the only purpose for which the gag is intended, and it can be accomplished by pulling the gag hand-tight. Force should never be used. The gag should never be left in the valve during the operation of the equipment. It should be removed each time after using and hung in a safe, convenient location.



Cap and Lever Construction[1]
Standard, Alloy, and Hastelloy Material

Cap Type		Component	Construction Variation			
			Standard, A1, A2, H1, H2, L1, M1, MB, M2, S2, T1, T2	Alloy 20 *A3 and A4*	Hastelloy *H3 and H4*	HF Alky *HA*
Packed Lever	23	Cap	Carbon Steel	Alloy 20	Hastelloy C	Carbon Steel
	25	Cap Bolts	Carbon Steel	Alloy 20	Hastelloy C	Carbon Steel
	27	Cap Gasket[2]	Soft Iron	Monel	Monel	Monel
	30	Lever	Malleable Iron	Malleable Iron	Malleable Iron	Malleable Iron
	32	Lever Shaft	410/416 SS	410/416 SS	410/416 SS	410/416 SS
	33	Packing	Grafoil	Grafoil	Grafoil	Grafoil or Graphlock
	34	Packing Nut	410/416 SS	410/416 SS	410/416 SS	410/416 SS
	31	Lifting Fork	Malleable Iron	Malleable Iron	Malleable Iron	Malleable Iron
	28	Release Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
	29	Release Lock Nut	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
Plain Lever	24	Cap	Malleable Iron	N/A	N/A	Malleable Iron
	26	Cap Set Screw	Carbon Steel	N/A	N/A	Carbon Steel
	35	Top Lever	Malleable Iron	N/A	N/A	Malleable Iron
	36	Drop Lever	Malleable Iron	N/A	N/A	Malleable Iron
	28	Release Nut	Carbon Steel	N/A	N/A	Carbon Steel
	29	Release Lock Nut	Carbon Steel	N/A	N/A	Carbon Steel
	40	Plain Lever (One Piece)	Malleable Iron	N/A	N/A	Malleable Iron
Bolted Cap	22	Cap	Carbon Steel	Alloy 20	Hastelloy C	Carbon Steel
	25	Cap Bolts	Carbon Steel	Alloy 20	Hastelloy C	Carbon Steel
	27	Cap Gasket[2]	Soft Iron	Monel	Monel	Monel
Gag	37	Gag Bolt	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
	38	Sealing Plug	Carbon Steel	Alloy 20	Hastelloy C	Carbon Steel
	39	Plug Gasket[2]	Soft Iron	Monel	Monel	Monel

NOTES: 1 The materials in red denote variation from standard material construction.
2 Gasket material is Monel for A2, H2, MB, M2 and S2 construction.

Cap and Lever Construction[1]
Monel, Stainless, and Low Temperature Material

Cap Type		Component	Construction Variation		
			Monel *M3 and M4*	Stainless *S3 and S4*	Low Temperature *L2 and L3*
Packed Lever	23	Cap	Monel	316 SS	316 SS
	25	Cap Bolts	Monel K500	B8M	B8M
	27	Cap Gasket	Monel	Monel	Monel
	30	Lever	Malleable Iron	Malleable Iron	Malleable Iron
	32	Lever Shaft	410/416 SS	316 SS	410/416 SS
	33	Packing	Grafoil	Grafoil	Grafoil
	34	Packing Nut	410/416 SS	316 SS	410/416 SS
	31	Lifting Fork	Malleable Iron	316 SS	316 SS
	28	Release Nut	Carbon Steel	316 SS	316 SS
	29	Release Lock Nut	Carbon Steel	316 SS	316 SS
Plain Lever	24	Cap	N/A	316 SS	316 SS
	26	Cap Set Screw	N/A	316 SS	316 SS
	35	Top Lever	N/A	Malleable Iron	Malleable Iron
	36	Drop Lever	N/A	Malleable Iron	Malleable Iron
	28	Release Nut	N/A	Carbon Steel	Carbon Steel
	29	Release Lock Nut	N/A	Carbon Steel	Carbon Steel
	40	Plain Lever	N/A	Malleable Iron	Malleable Iron
Bolted Cap	22	Cap	Monel	316 SS	316 SS
	25	Cap Bolts	Monel K500	B8M	B8M
	27	Cap Gasket	Monel	Monel	Monel
Gag	37	Gag Bolt	Carbon Steel	Carbon Steel	Carbon Steel
	38	Sealing Plug	Monel	316 SS	316 SS
	39	Plug Gasket	Monel	Monel	Monel

NOTE: 1 The materials in red denote variation from standard material construction.

Bolt-on Jackets

Jacketing of Relief Valves

CONSOLIDATED valve offers simple solutions to your heating problems: Bolt-on Jackets.

Viscous materials that freeze or harden in relief valve nozzles create hazardous conditions. Process pipe jacketing or tracing may not provide sufficient heat to the area in and around the relief valve seat. During a pressure surge, some of the solid materials may stick in and around the seating area, keeping the valve from functioning and re-seating properly. This would result in leakage around the valve seating surface.

The solution to this problem is the Bolt-on Jacket. This jacket is a two piece aluminum casting with a steel pressure chamber embedded in the aluminum jacket casting. The pressure chamber is fabricated of standard pressure vessel materials for various heating fluids and service temperatures. The chamber is designed and tested in accordance with the ASME B & PVC, Section VIII, Div. I. The jacket casting conducts heat from the pressure chamber and rapidly distributes it evenly over the outer surface of the relief valve.

The aluminum casting distributes heat only. It carries no pressure load at any time. Heating fluid is transferred from one half of the jacket to the other by an external connector. A thin layer of heat transfer cement is used between the jacket and the relief valve to promote effective heat transfer by filling any air gaps between the jacket and the relief valve.

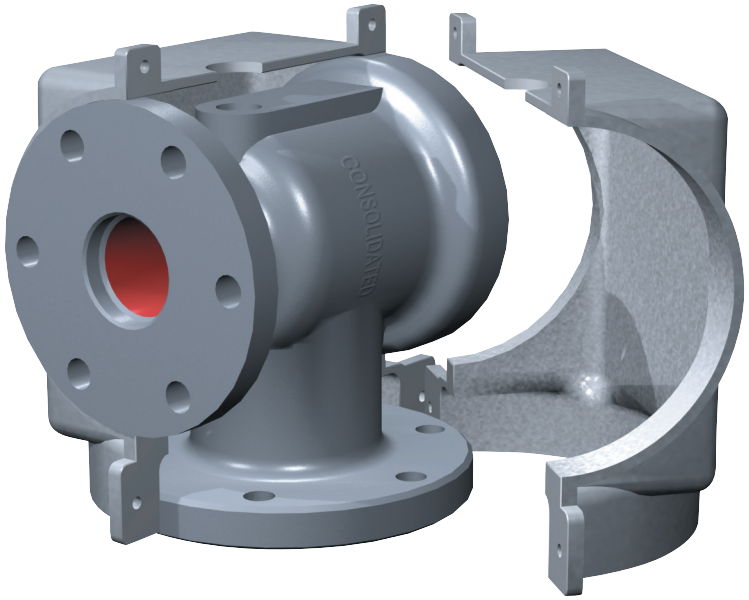
Bolt-on Jacket halves bolt together for quick installation and unbolt for ready access to the relief valve for easy maintenance. The jackets cover the jacket fully from flange to flange providing uniform heat to all process wetted surfaces. Standard service ratings for the jacket are 150 psig and 500°F. Higher ratings are available upon request.

Bolt-on Jackets may be ordered with adjacent flange coverage and with a variety of heating medium connections. Canadian Registration is available for all provinces.

Bolt-on Jackets are operating successfully on relief valves in many different process service applications world wide. Customers should consider jacketing the relief valves whenever the adjacent vessel or piping is heated in some manner. The following lists process applications that typically require jacketing of the relief valve.

- Acrylic Acid
- Ammonium Nitrate
- Coal Tars
- Caprolactam
- Cyanuric Chloride
- DMT
- DNT
- Fluoropolymers
- LLDPE
- Olefins
- Phosphorous
- Polypropylene
- Polystyrene Resins
- Phthalic Anhydride
- Sulphuric Acid
- Sulphur Dioxide
- Some Surfactants
- Tall Oils
- TMA

Typical Bolt-on Jacket



To ensure we provide the proper jacket coverage; please answer the following questions:

(1) Is the process operating at elevated temperatures?
(2) What is the process?
(3) What is the temperature of the process being maintained?
(4) What heating medium is being used in your jacket? What pressure and temperature is this medium?
(5) What type of jacket connections are required?
(6) How is the temperature being maintained on the process piping and other equipment (valves, pumps, meters, etc.)?

The relief valve will probably need a Bolt-on Jacket if it is operating in one of the process services listed above or if the adjacent piping and equipment is heated.

Contact the Factory for assistance.

1900 Flanged Series

This table applies to the standard 1900 Series regardless of materials of construction.

The tables state the inlet flange size of the valve and the flange rating followed by the outlet flange size and the flange rating.

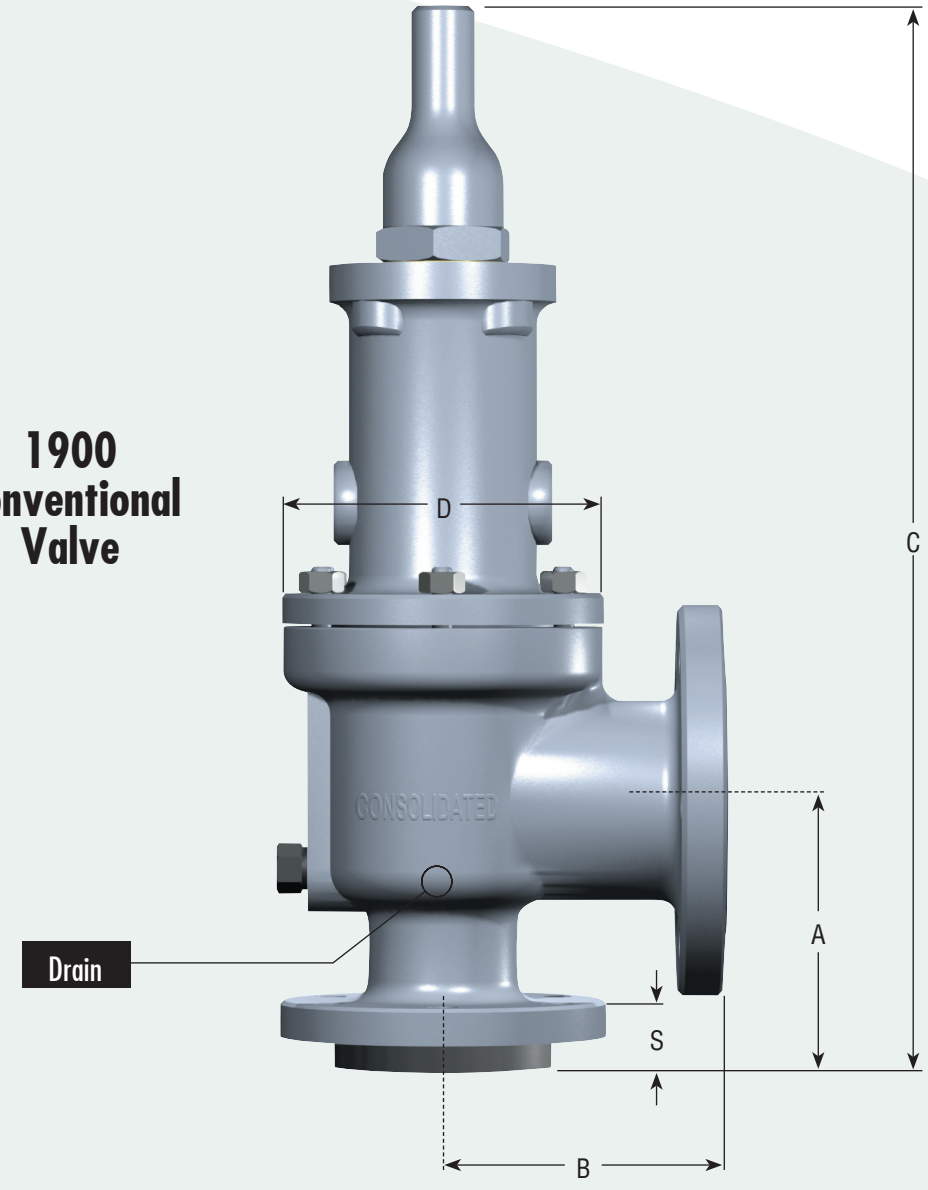
EXAMPLE: 1 - 150 x 2 - 150

Inlet is 1" size with a Class 150 flange. Outlet is 2" size with a Class 150 flange.

If the valve you are reviewing has an inlet or outlet size different from that stated, the dimensions "A" through "S" and weight may not apply.

NOTE: "USCS" Units refers to "U.S. Customary System" Units, the adapted U.S. standard formerly recognized as "English" Units.

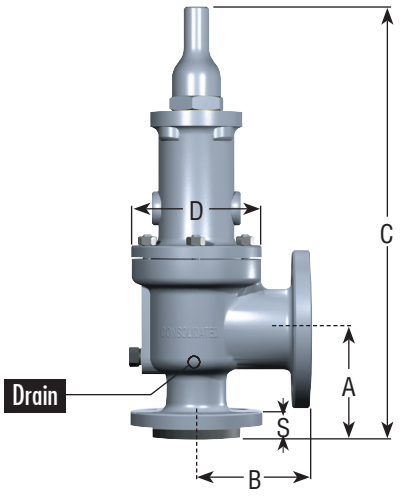
1900 Conventional Valve



1900 Series Valves
USCS Dimensions (in.) and Weights (lbs.)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (lbs.)
				STD	Bellows			
1 - 150 x 2 - 150	1905D	4-1/8	4-1/2	17	18	5-7/16	1-1/8	40
1 - 150 x 2 - 150	1905E	4-1/8	4-1/2	17	18	5-7/16	1-1/8	40
1-1/2 - 150 x 2 - 150	1905F	4-7/8	4-3/4	17-3/4	18-3/4	5-7/16	1-1/4	45
1-1/2 - 150 x 3 - 150*	1905G	4-7/8	4-3/4	17-3/4	19	5-7/16	1-1/4	55
1-1/2 - 150 x 3 - 150	1905H	5-1/8	4-7/8	19-1/2	19-1/2	6-5/16	1-1/4	60
2 - 150 x 3 - 150	1905J	5-3/8	4-7/8	21-1/4	21-1/4	6-7/8	1-5/16	75
3 - 150 x 4 - 150	1905K	6-1/8	6-3/8	24-1/2	24-1/2	7-3/8	1-7/16	110
3 - 150 x 4 - 150	1905L	6-1/8	6-1/2	28-3/4	28-3/4	8-7/8	1-7/16	140
4 - 150 x 6 - 150	1905M	7	7-1/4	29-3/4	29-3/4	9-3/8	1-5/8	185
4 - 150 x 6 - 150	1905N	7-3/4	8-1/4	33	33	10-1/8	1-5/8	220
4 - 150 x 6 - 150	1905P	7-1/8	9	34-1/4	34-1/4	11	1-5/8	260
6 - 150 x 8 - 150	1905Q	9-7/16	9-1/2	41	41	13-5/8	1-13/16	430
6 - 150 x 8 - 150	1905R	9-7/16	9-1/2	43	43	14-1/2	1-13/16	495
8 - 150 x 10 - 150	1905T	10-7/8	11	47-1/2	47-1/2	16-1/2	1-15/16	620
10 - 150 x 14 - 150	1905V	12	16	62	62	21-3/4	2	1600
12 - 150 x 16 - 150	1905W	14	16	70	70	24-1/2	2-13/16	2800
1 - 300 x 2 - 150	1906D	4-1/8	4-1/2	17	18	5-7/16	1-3/8	40
1 - 300 x 2 - 150	1906E	4-1/8	4-1/2	17	18	5-7/16	1-3/8	40
1-1/2 - 300 x 2 - 150	1906F	4-7/8	4-3/4	17-3/4	18-3/4	5-7/16	1-1/2	45
1-1/2 - 300 x 3 - 150*	1906G	4-7/8	4-3/4	17-3/4	19	5-7/16	1-1/2	55
1-1/2 - 300 x 3 - 150	1906H	5-1/8	4-7/8	19-1/2	19-1/2	6-5/16	1-9/16	60
2 - 300 x 3 - 150	1906J	5-3/8	4-7/8	21-1/4	21-1/4	6-7/8	1-9/16	75
3 - 300 x 4 - 150	1906K	6-1/8	6-3/8	24-1/2	24-1/2	7-3/8	1-13/16	115
3 - 300 x 4 - 150	1906L	6-1/8	6-1/2	28-3/4	28-3/4	8-7/8	1-13/16	145
4 - 300 x 6 - 150	1906M	7	7-1/4	29-3/4	29-3/4	9-3/8	1-15/16	190
4 - 300 x 6 - 150	1906N	7-3/4	8-1/4	33	33	10-1/8	1-15/16	225
4 - 300 x 6 - 150	1906P	7-1/8	9	34-1/4	34-1/4	11	1-15/16	270
6 - 300 x 8 - 150	1906Q	9-7/16	9-1/2	41	41	13-5/8	2-1/4	445
6 - 300 x 8 - 150	1906R	9-7/16	9-1/2	43	43	14-1/2	2-1/4	510
8 - 300 x 10 - 150	1906T	10-7/8	11	47-1/4	47-1/4	16-1/2	2-7/16	640
10 - 300 x 14 - 150	1906V	12	16	62	62	21-3/4	2-11/16	1700
12 - 300 x 16 - 150	1906W	14	16	70	70	24-1/2	2-15/16	2860

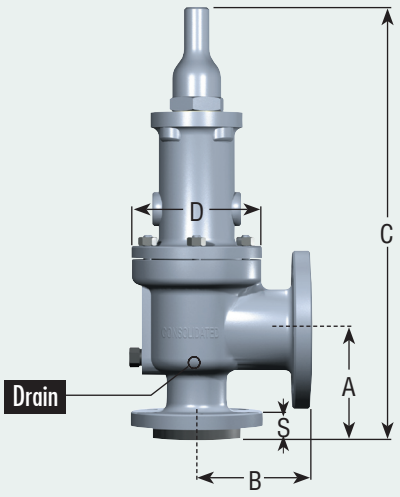
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
USCS Dimensions (in.) and Weights (lbs.)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (lbs.)
				STD	Bellows			
1 - 300 x 2 - 150	1910D	4-1/8	4-1/2	17-1/2	18-1/2	5-7/16	1-3/8	50
1 - 300 x 2 - 150	1910E	4-1/8	4-1/2	17-1/2	18-1/2	5-7/16	1-3/8	50
1-1/2 - 300 x 2 - 150	1910F	4-7/8	6	18-1/4	19-1/4	5-7/16	1-9/16	50
1-1/2 - 300 x 3 - 150*	1910G	4-7/8	6	18-1/4	19-1/2	5-7/16	1-9/16	60
2 - 300 x 3 - 150	1910H	5-1/8	4-7/8	20-1/4	20-1/4	6-5/16	1-11/16	65
3 - 300 x 4 - 150*	1910J	7-1/4	7-1/8	25-5/8	25-5/8	7-3/8	1-13/16	100
3 - 300 x 4 - 150	1910K	6-1/8	6-3/8	28	28	7-3/4	1-15/16	140
4 - 300 x 6 - 150	1910L	7-1/16	7-1/8	32	32	9-1/2	1-15/16	220
4 - 300 x 6 - 150	1910M	7	7-1/4	32	32	9-3/8	1-15/16	230
4 - 300 x 6 - 150	1910N	7-3/4	8-1/4	34-1/4	34-1/4	10-1/2	1-15/16	260
4 - 300 x 6 - 150	1910P	8-7/8	10	41	41	11-1/2	1-15/16	350
6 - 300 x 8 - 150	1910Q	9-7/16	9-1/2	43-1/4	43-1/4	14	2-1/4	530
6 - 300 x 10 - 150	1910R	9-7/16	10-1/2	45-1/2	45-1/2	14-1/2	2-1/4	550
8 - 300 x 10 - 150	1910T	10-7/8	11	53-3/8	53-3/8	16-1/2	2-7/16	840
10 - 300 x 14 - 150	1910V	12	16	66	66	24-1/2	2-11/16	2000
12 - 300 x 16 -150	1910W	14	16	70	70	24v1/2	2-15/16	2860
1 - 600 x 2 - 150	1912D	4-1/8	4-1/2	18-1/4	19-1/4	6-5/16	1-3/8	55
1 - 600 x 2 - 150	1912E	4-1/8	4-1/2	18-1/4	19-1/4	6-5/16	1-3/8	55
1-1/2 - 600 x 2 - 150	1912F	4-7/8	6	19	20	6-5/16	1-9/16	60
1-1/2 - 600 x 3 - 150*	1912G	4-7/8	6	19	20-1/4	6-5/16	1-9/16	65
2 - 600 x 3 - 150	1912H	6-1/16	6-3/8	23	23	7	1-11/16	85
3 - 600 x 4 - 150*	1912J	7-1/4	7-1/8	29-7/8	29-7/8	9	1-13/16	170
3 - 600 x 4 - 150	1912K	7-1/4	7-1/8	29-1/4	29-1/4	7-3/4	1-15/16	150
4 - 600 x 6 - 150	1912L	7-1/16	8	32	32	9-1/2	2-3/16	230
4 - 600 x 6 - 150	1912M	7	8	36-1/4	36-1/4	10-3/4	2-3/16	300
4 - 600 x 6 - 150	1912N	7-3/4	8-3/4	39	39	11-3/4	2-3/16	360
4 - 600 x 6 - 150	1912P	8-7/8	10	43-1/2	43-1/2	13-7/8	2-3/16	530
6 - 600 x 8 - 150	1912Q	9-7/16	9-1/2	46	46	14-1/4	2-11/16	645
6 - 600 x 10 - 150	1912R	9-7/16	10-1/2	47-1/2	47-1/2	15-1/8	2-11/16	675

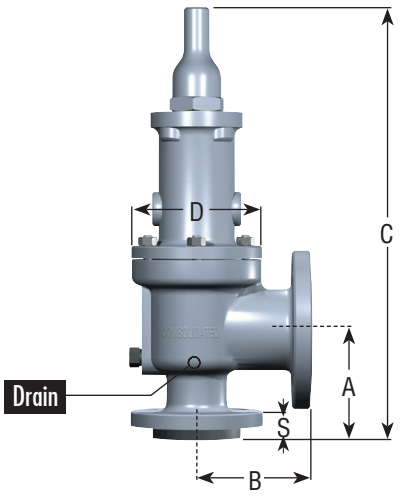
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
USCS Dimensions (in.) and Weights (lbs.)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (lbs.)
				STD	Bellows			
1-1/2 - 900 x 2 - 300	1914D	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 900 x 2 - 300	1914E	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 900 x 3 - 300*	1914F	4-7/8	6-1/2	22-1/2	23-1/2	7-13/16	1-15/16	100
1-1/2 - 900 x 3 - 300*	1914G	4-7/8	6-1/2	22-1/2	23-3/4	7-13/16	1-15/16	95
2 - 900 x 3 - 150	1914H	6-1/16	6-3/8	26	26	8-1/4	2-3/16	130
3 - 900 x 4 - 150	1914J	7-1/4	7-1/8	29-3/4	29-3/4	9	2-3/16	195
3 - 900 x 6 - 150	1914K	7-13/16	8-1/2	35-1/4	35-1/4	10-1/2	2-3/16	300
4 - 900 x 6 - 150	1914L	7-3/4	8-3/4	37-1/4	37-1/4	12-1/4	2-7/16	360
4 - 900 x 6 - 150	1914M	7-3/4	8-3/4	37	37	10-3/4	2-7/16	340
4 - 900 x 6 - 150	1914N	7-3/4	8-3/4	39	39	11-3/4	2-7/16	380
4 - 900 x 6 - 150	1914P	8-7/8	10	43-1/2	43-1/2	13-7/8	2-7/16	545
1-1/2 - 1500 x 2 - 300	1916D	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 1500 x 2 - 300	1916E	4-1/8	51/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 1500 x 3 - 300*	1916F	4-7/8	6-1/2	22-1/2	23-1/2	7-13/16	1-15/16	100
2 - 1500 x 3 - 300	1916G	6-1/8	6-3/4	23-3/4	25	7-13/16	2-3/16	100
2 - 1500 x 3 - 300	1916H	6-1/16	6-3/8	26	26	8-1/4	2-3/16	140
3 - 1500 x 4 - 300	1916J	7-1/4	7-1/8	29-3/4	29-3/4	9	2-9/16	220
3 - 1500 x 6 - 300	1916K	7-3/4	8-1/2	35-1/4	35-1/4	10-1/2	2-9/16	320
4 - 1500 x 6 - 150	1916L	7-3/4	8-3/4	37-1/4	37-1/4	12-1/4	2-13/16	370
1-1/2 - 2500 x 3 - 300*	1918D	5-1/2	7	26-1/2	27-1/2	8-7/8	2-7/16	150
1-1/2 - 2500 x 3 - 300*	1918E	5-1/2	7	26-1/2	27-1/2	8-7/8	2-7/16	150
1-1/2 - 2500 x 3 - 300*	1918F	5-1/2	7	26-1/2	27-1/2	8-7/8	2-7/16	150
2 - 2500 x 3 - 300	1918G	6-1/8	6-3/4	23-3/4	25	7-13/16	2-11/16	110

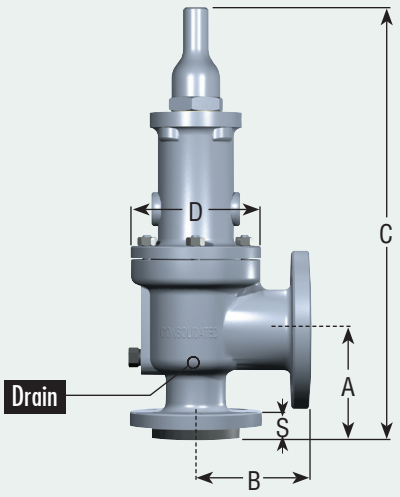
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
USCS Dimensions (in.) and Weights (lbs.)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight
				STD	Bellows			
1 - 300 x 2 - 150	1920D	4-1/8	4-1/2	17-1/2	18-1/2	5-7/16	1-3/8	50
1 - 300 x 2 - 150	1920E	4-1/8	4-1/2	17-1/2	18-1/2	5-7/16	1-3/8	50
1-1/2 - 300 x 2 - 150	1920F	4-7/8	6	18-1/4	19-1/4	5-7/16	1-9/16	50
1-1/2 - 300 x 3 - 150*	1920G	4-7/8	6	18-1/4	19-1/2	5-7/16	1-9/16	60
2 - 300 x 3 - 150	1920H	5-1/8	4-7/8	20-1/4	20-1/4	6-5/16	1-11/16	65
3 - 300 x 4 - 150*	1920J	7-1/4	7-1/8	25-5/8	25-5/8	7-3/8	1-13/16	100
3 - 300 x 4 - 150	1920K	6-1/8	6-3/8	28	28	7-3/4	1-15/16	140
4 - 300 x 6 - 150	1920L	7-1/16	7-1/8	32	32	9-1/2	1-15/16	220
4 - 300 x 6 - 150	1920M	7	7-1/4	32	32	9-3/8	1-15/16	230
4 - 300 x 6 - 150	1920N	7-3/4	8-1/4	34-1/4	34-1/4	10-1/2	1-15/16	260
4 - 300 x 6 - 150	1920P	8-7/8	10	41	41	11-1/2	1-15/16	350
6 - 300 x 8 - 150	1920Q	9-7/16	9-1/2	41	41	13-5/8	2-1/4	445
6 - 300 x 8 - 150	1920R	9-7/16	9-1/2	43	43	14-1/2	2-1/4	510
8 - 300 x 10 - 150	1920T	10-7/8	11	53-3/8	53-3/8	16-1/2	2-7/16	840
10 - 300 x 14 - 150	1920V	12	16	66	66	24-1/2	2-11/16	2000
12 - 300 x 16 - 150	1920W	14	16	70	70	24-1/2	2-15/16	2860
1 - 600 x 2 - 150	1922D	4-1/8	4-1/2	17-1/2	18-1/2	5-7/16	1-3/8	50
1 - 600 x 2 - 150	1922E	4-1/8	4-1/2	17-1/2	18-1/2	5-7/16	1-3/8	50
1-1/2 - 600 x 2 - 150	1922F	4-7/8	6	18-1/4	19-1/4	5-7/16	1-9/16	50
1-1/2 - 600 x 3 - 150*	1922G	4-7/8	6	19	20-1/4	6-5/16	1-9/16	65
2 - 600 x 3 - 150	1922H	5-1/8	4-7/8	20-1/4	20-1/4	6-5/16	1-11/16	65
3 - 600 x 4 - 150*	1922J	7-1/4	7-1/8	25-5/8	25-5/8	7-3/8	1-13/16	100
3 - 600 x 4 - 150	1922K	6-1/8	6-3/8	28	28	7-3/4	1-15/16	140
4 - 600 x 6 - 150	1922L	7-1/16	8	32	32	9-1/2	2-3/16	230
4 - 600 x 6 - 150	1922M	7	8	36-1/4	36-1/4	10-3/4	2-3/16	300
4 - 600 x 6 - 150	1922N	7-3/4	8-3/4	39	39	11-3/4	2-3/16	360
6 - 600 x 8 - 150	1922Q	9-7/16	9-1/2	46	46	14-1/4	2-11/16	645
6 - 600 x 10 - 150	1922R	9-7/16	10-1/2	47-1/2	47-1/2	15-1/8	2-11/16	675
4 - 600 x 6 - 150	1923P	8-7/8	10	43-1/2	43-1/2	13-7/8	2-3/16	530

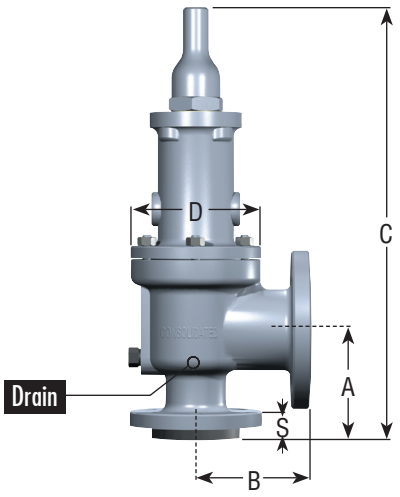
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
USCS Dimensions (in.) and Weights (lbs.)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (lbs.)
				STD	Bellows			
1-1/2 - 900 x 2 - 300	1924D	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 900 x 2 - 300	1924E	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 900 x 3 - 300*	1924F	4-7/8	6-1/2	22-1/2	23-1/2	7-13/16	1-15/16	100
1-1/2 - 900 x 3 - 300*	1924G	4-7/8	6-1/2	22-1/2	23-3/4	7-13/16	1-15/16	95
2 - 900 x 3 - 150	1924H	6-1/16	6-3/8	23	23	7	2-3/16	90
3 - 900 x 4 - 150*	1924J	7-1/4	7-1/8	29-7/8	29-7/8	9	2-5/16	180
3 - 900 x 6 - 150*	1924K	7-13/16	8-1/2	35-1/4	35-1/4	10-1/2	2-3/16	300
4 - 900 x 6 - 150	1924L	7-3/4	8-3/4	37-1/4	37-1/4	12-1/4	2-7/16	360
4 - 900 x 6 - 150	1924M	7-3/4	8-3/4	37	37	10-3/4	2-7/16	340
4 - 900 x 6 - 150	1924N	7-3/4	8-3/4	39	39	11-3/4	2-7/16	380
4 - 900 x 6 - 150	1924P	8-7/8	10	43-1/2	43-1/2	13-7/8	2-7/16	545
1-1/2 - 1500 x 2 - 300	1926D	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 1500 x 2 - 300	1926E	4-1/8	5-1/2	21-3/4	22-3/4	7-13/16	1-15/16	95
1-1/2 - 1500 x 3 - 300*	1926F	4-7/8	6-1/2	22-1/2	23-1/2	7-13/16	1-15/16	100
2 - 1500 x 3 - 300	1926G	6-1/8	6-3/4	23-3/4	25	7-13/16	2-3/16	100
2 - 1500 x 3 - 300	1926H	6-1/16	6-3/8	26	26	8-1/4	2-3/16	140
3 - 1500 x 4 - 300	1926J	7-1/4	7-1/8	29-3/4	29-3/4	9	2-9/16	220
3 - 1500 x 6 - 300	1926K	7-3/4	8-1/2	35-1/4	35-1/4	10-1/2	2-9/16	320
4 - 1500 x 6 - 150	1926L	7-3/4	8-3/4	37-1/4	37-1/4	12-1/4	2-13/16	370
1-1/2 - 2500 x 3 - 300*	1928D	5-1/2	7	26-1/2	27-1/2	8-7/8	2-7/16	150
1-1/2 - 2500 x 3 - 300*	1928E	5-1/2	7	26-1/2	27-1/2	8-7/8	2-7/16	150
1-1/2 - 2500 x 3 - 300*	1928F	5-1/2	7	26-1/2	27-1/2	8-7/8	2-7/16	150
2 - 2500 x 3 - 300	1928G	6-1/8	6-3/4	23-3/4	25	7-13/16	2-11/16	110

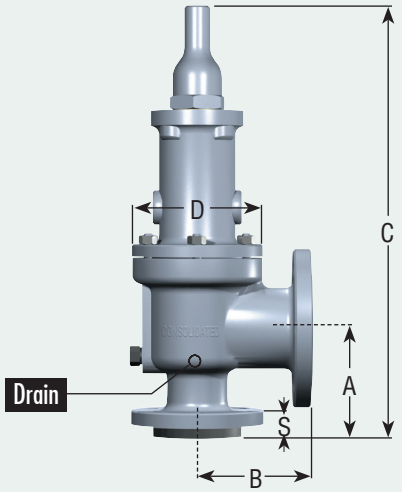
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
Metric Dimensions (mm) and Weights (Kg)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (Kg)
				STD	Bellows			
1 - 150 x 2 - 150	1905D	104.8	114.3	431.8	457.2	138.1	28.6	18.1
1 - 150 x 2 - 150	1905E	104.8	114.3	431.8	457.2	138.1	28.6	18.1
1-1/2 - 150 x 2 - 150	1905F	123.8	120.7	450.9	476.3	138.1	31.8	20.4
1-1/2 - 150 x 3 - 150	1905G	123.8	120.7	450.9	482.6	138.1	31.8	24.9
1-1/2 - 150 x 3 - 150	1905H	130.2	123.8	495.3	495.3	160.3	31.8	27.2
2 - 150 x 3 - 150	1905J	136.5	123.8	539.8	539.8	174.6	33.3	34
3 - 150 x 4 - 150	1905K	155.6	161.9	622.3	622.3	187.3	36.5	49.9
3 - 150 x 4 - 150	1905L	155.6	165.1	730.3	730.3	225.4	36.5	63.5
4 - 150 x 6 - 150	1905M	177.8	184.2	755.7	755.7	238.1	41.3	83.9
4 - 150 x 6 - 150	1905N	196.9	209.6	838.2	838.2	257.2	41.3	99.8
4 - 150 x 6 - 150	1905P	181	228.6	870	870	279.4	41.3	117.9
6 - 150 x 8 - 150	1905Q	239.7	241.3	1041.4	1041.4	346.1	46	195
6 - 150 x 8 - 150	1905R	239.7	241.3	1092.2	1092.2	368.3	46	224.5
8 - 150 x 10 - 150	1905T	276.2	279.4	1206.5	1206.5	419.1	49.2	281.2
10 - 150 x 14 - 150	1905V	304.8	406.4	1574.8	1574.8	552.5	50.8	725.8
12 - 150 x 16 - 150	1905W	355.6	406.4	1778	1778	622.3	55.6	1270.1
1 - 300 x 2 - 150	1906D	104.8	114.3	431.8	457.2	138.1	34.9	18.1
1 - 300 x 2 - 150	1906E	104.8	114.3	431.8	457.2	138.1	34.9	18.1
1-1/2 - 300 x 2 - 150	1906F	123.8	120.7	450.9	476.3	138.1	38.1	20.4
1-1/2 - 300 x 3 - 150	1906G	123.8	120.7	450.9	482.6	138.1	38.1	24.9
1-1/2 - 300 x 3 - 150	1906H	130.2	123.8	495.3	495.3	160.3	39.7	27.2
2 - 300 x 3 - 150	1906J	136.5	123.8	539.8	539.8	174.6	39.7	34
3 - 300 x 4 - 150	1906K	155.6	161.9	622.3	622.3	187.3	46	52.2
3 - 300 x 4 - 150	1906L	155.6	165.1	730.3	730.3	225.4	46	65.8
4 - 300 x 6 - 150	1906M	177.8	184.2	755.7	755.7	238.1	49.2	86.2
4 - 300 x 6 - 150	1906N	196.9	209.6	938.2	838.2	257.2	49.2	102.1
4 - 300 x 6 -150	1906P	181	228.6	870	870	279.4	49.2	122.5
6 - 300 x 8 - 150	1906Q	239.7	241.3	1041.4	1041.4	346.1	57.2	201.9
6 - 300 x 8 -150	1906R	239.7	241.3	1092.2	1092.2	368.3	57.2	231.3
8 - 300 x 10 - 150	1906T	276.2	279.4	1200.2	1200.2	419.1	61.9	290.3
10 - 300 x 14 - 150	1906V	304.8	406.4	1574.8	1574.8	552.5	68.3	770.1
12 -300 x 16 - 150	1906W	355.6	406.4	1778	1778	622.3	74.6	1300

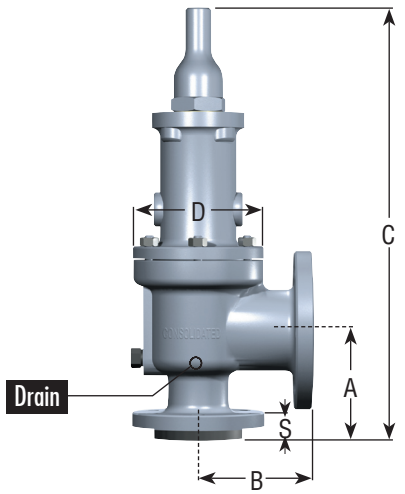
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
Metric Dimensions (mm) and Weights (Kg)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (Kg)
				STD	Bellows			
1 - 300 x 2 - 150	1910D	104.8	114.3	444.5	469.9	138.1	34.9	22.7
1 - 300 x 2 - 150	1910E	104.8	114.3	444.5	469.9	138.1	34.9	22.7
1-1/2 - 300 x 2 - 150	1910F	123.8	152.4	463.6	489	138.1	39.7	22.7
1-1/2 - 300 x 3 - 150	1910G	123.8	152.4	463.6	495.3	138.1	39.7	27.2
2 - 300 x 3 - 150	1910H	130.2	123.8	514.4	514.4	160.3	42.8	29.5
3 - 300 x 4 - 150	1910J	184.2	181	651	651	187.3	46	45.4
3 - 300 x 4 - 150	1910K	155.6	161.9	711.2	711.2	196.9	49.2	63.5
4 - 300 x 6 - 150	1910L	179.4	181	812.8	812.8	241.3	49.2	99.8
4 - 300 x 6 - 150	1910M	177.8	184.2	812.8	812.8	238.1	49.2	104.3
4 - 300 x 6 - 150	1910N	196.9	209.6	870	870	266.7	49.2	117.9
4 - 300 x 6 - 150	1910P	225.4	254	1041.4	1041.4	292.1	49.2	158.8
6 - 300 x 8 - 150	1910Q	239.7	241.3	1098.6	1098.6	355.6	57.2	240.4
6 - 300 x 10 - 150	1910R	239.7	266.7	1155.7	1155.7	368.3	57.2	249.5
8 - 300 x 10 - 150	1910T	276.2	279.4	1355.7	1355.7	419.1	61.9	381
10 - 300 x 14 - 150	1910V	304.8	406.4	1676.4	1676.4	622.3	68.3	907.2
12 - 300 x 16 -150	1910W	355.6	406.4	1778	1778	622.3	74.6	1300
1 - 600 x 2 - 150	1912D	104.8	114.3	463.6	489	160.3	34.9	25
1 - 600 x 2 - 150	1912E	104.8	114.3	463.6	489	160.3	34.9	25
1-1/2 - 600 x 2 - 150	1912F	123.8	152.4	482.6	508	160.3	39.7	27.2
1-1/2 - 600 x 3 - 150	1912G	123.8	152.4	482.6	514.4	160.3	39.7	29.5
2 - 600 x 3 - 150	1912H	154	161.9	584.2	584.2	177.8	42.8	38.6
3 - 600 x 4 - 150	1912J	184.2	181	759	759	228.6	46	77.1
3 - 600 x 4 - 150	1912K	184.2	181	743	743	196.9	49.2	68
4 - 600 x 6 - 150	1912L	179.4	203.2	812.8	812.8	241.3	55.5	104.3
4 - 600 x 6 - 150	1912M	177.8	203.2	920.8	920.8	273.1	55.5	136.1
4 - 600 x 6 - 150	1912N	196.9	222.3	990.6	990.6	298.5	55.5	163.3
4 - 600 x 6 - 150	1912P	225.4	254	1104.9	1104.9	352.4	55.5	240.4
6 - 600 x 8 - 150	1912Q	239.7	241.3	1168.4	1168.4	362	68.3	292.6
6 - 600 x 10 - 150	1912R	239.7	266.7	1206.5	1206.5	384.2	68.3	306.5

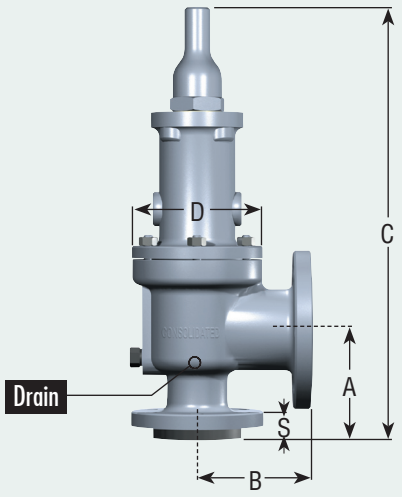
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
Metric Dimensions (mm) and Weights (Kg)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (Kg)
				STD	Bellows			
1-1/2 - 900 x 2 - 300	1914D	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 900 x 2 - 300	1914E	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 900 x 3 - 300*	1914F	123.8	165.1	571.5	596.9	198.4	49.2	45.4
1-1/2 - 900 x 3 - 300*	1914G	123.8	165.1	571.5	603.3	198.4	49.2	43.1
2 - 900 x 3 - 150	1914H	154	161.9	660.4	660.4	209.6	55.5	59
3 - 900 x 4 - 150	1914J	184.2	181	755.7	755.7	228.6	55.5	88.5
3 - 900 x 6 - 150	1914K	198.4	215.9	895.4	895.4	266.7	55.5	136.1
4 - 900 x 6 - 150	1914L	196.9	222.3	946.2	946.2	311.2	61.9	163.3
4 - 900 x 6 - 150	1914M	196.9	222.3	939.8	939.8	273.1	61.9	154.2
4 - 900 x 6 - 150	1914N	196.9	222.3	990.6	990.6	298.5	61.9	172.4
4 - 900 x 6 - 150	1914P	225.4	254	1104.9	1104.9	352.4	61.9	247.2
1-1/2 - 1500 x 2 - 300	1916D	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 1500 x 2 - 300	1916E	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 1500 x 3 - 300*	1916F	123.8	165.1	571.5	596.9	198.4	49.2	45.4
2 - 1500 x 3 - 300	1916G	155.6	171.5	603.3	635.5	198.4	55.5	45.4
2 - 1500 x 3 - 300	1916H	154	161.9	660.4	660.4	209.6	55.5	63.5
3 - 1500 x 4 - 300	1916J	184.2	181	755.7	755.7	228.6	65.1	99.8
3 - 1500 x 6 - 300	1916K	196.9	215.9	895.4	895.4	266.7	65.1	145.2
4 - 1500 x 6 - 150	1916L	196.9	222.3	946.2	946.2	311.2	71.4	167.8
1-1/2 - 2500 x 3 - 300*	1918D	139.7	177.8	673.1	698.5	225.4	61.9	68
1-1/2 - 2500 x 3 - 300*	1918E	139.7	177.8	673.1	698.5	225.4	61.9	68
1-1/2 - 2500 x 3 - 300*	1918F	139.7	177.8	673.1	698.5	225.4	61.9	68
2 - 2500 x 3 - 300	1918G	155.6	171.5	603.3	635	198.4	68.2	49.9

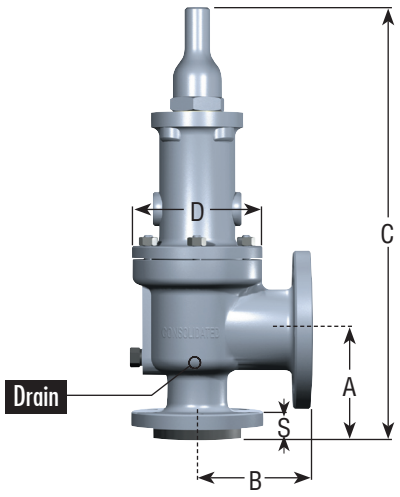
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
Metric Dimensions (mm) and Weights (Kg)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (Kg)
				STD	Bellows			
1 - 300 x 2 - 150	1920D	104.8	114.3	444.5	469.9	138.1	34.9	22.7
1 - 300 x 2 - 150	1920E	104.8	114.3	444.5	469.9	138.1	34.9	22.7
1-1/2 - 300 x 2 - 150	1920F	123.8	152.4	463.6	489	138.1	39.7	22.7
1-1/2 - 300 x 3 - 150*	1920G	123.8	152.4	463.6	495.3	138.1	39.7	27.2
2 - 300 x 3 - 150	1920H	130.2	123.8	514.4	514.4	160.3	42.8	29.5
3 - 300 x 4 - 150*	1920J	184.2	181	651	651	187.3	46	45.4
3 - 300 x 4 - 150	1920K	155.6	161.9	711.2	711.2	196.9	49.2	63.5
4 - 300 x 6 - 150	1920L	179.4	181	812.8	812.8	241.3	49.2	99.8
4 - 300 x 6 - 150	1920M	177.8	184.2	812.8	812.8	238.1	49.2	104.3
4 - 300 x 6 - 150	1920N	196.9	209.6	870	870	266.7	49.2	117.9
4 - 300 x 6 - 150	1920P	225.4	254	1041.4	1041.4	292.1	49.2	158.8
6 - 300 x 8 - 150	1920Q	239.7	241.3	1041.4	1041.4	346.1	57.2	201.9
6 - 300 x 8 - 150	1920R	239.7	241.3	1092.2	1092.2	368.3	57.2	231.3
8 - 300 x 10 - 150	1920T	276.2	279.4	1355.7	1355.7	419.1	61.9	381
10 - 300 x 14 - 150	1920V	304.8	406.4	1676.4	1676.4	622.3	68.3	907.2
12 - 300 x 16 - 150	1920W	355.6	406.4	1778	1778	622.3	74.6	1300
1 - 600 x 2 - 150	1922D	104.8	114.3	444.5	469.9	138.1	34.9	22.7
1 - 600 x 2 - 150	1922E	104.8	114.3	444.5	469.9	138.1	34.9	22.7
1-1/2 - 600 x 2 - 150	1922F	123.8	152.4	463.6	489	138.1	39.7	22.7
1-1/2 - 600 x 3 - 150*	1922G	123.8	152.4	482.6	514.4	160.3	39.7	29.5
2 - 600 x 3 - 150	1922H	130.2	123.8	514.4	514.4	160.3	42.8	29.5
3 - 600 x 4 - 150*	1922J	184.2	181	651	651	187.3	46	45.4
3 - 600 x 4 - 150	1922K	155.6	161.9	711.2	711.2	196.9	49.2	63.5
4 - 600 x 6 - 150	1922L	179.4	203.2	812.8	812.8	241.3	55.5	104.3
4 - 600 x 6 - 150	1922M	177.8	203.2	920.8	920.8	273.1	55.5	136.1
4 - 600 x 6 - 150	1922N	196.9	222.3	990.6	990.6	298.5	55.5	163.3
6 - 600 x 8 - 150	1922Q	239.7	241.3	1168.4	1168.4	362	68.3	292.6
6 - 600 x 10 - 150	1922R	239.7	266.7	1206.5	1206.5	384.2	68.3	306.2
4 - 600 x 6 - 150	1923P	225.4	254	1104.9	1104.9	352.4	55.5	240.4

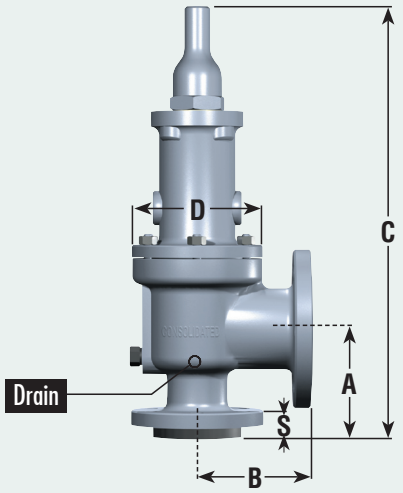
NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



1900 Series Valves
Metric Dimensions (mm) and Weights (Kg)

Size (in.) and Class	Type	A	B	C		D	S	Approx. Weight (Kg)
				STD	Bellows			
1-1/2 - 900 x 2 - 300	1924D	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 900 x 2 - 300	1924E	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 900 x 3 - 300*	1924F	123.8	165.1	571.5	596.9	198.4	49.2	45.4
1-1/2 - 900 x 3 - 300*	1924G	123.8	165.1	571.5	603.3	198.4	49.2	43.1
2 - 900 x 3 - 150	1924H	154	161.9	584.2	584.2	177.8	55.5	40.8
3 - 900 x 4 - 150*	1924J	184.2	181	759	759	228.6	58.7	81.6
3 - 900 x 6 - 150*	1924K	198.4	215.9	895.4	895.4	266.7	55.5	136.1
4 - 900 x 6 - 150	1924L	196.9	222.3	946.2	946.2	311.2	61.9	163.3
4 - 900 x 6 - 150	1924M	196.9	222.3	939.8	939.8	273.1	61.9	154.2
4 - 900 x 6 - 150	1924N	196.9	222.3	990.6	990.6	298.5	61.9	172.4
4 - 900 x 6 - 150	1924P	225.4	254	1104.9	1104.9	352.4	61.9	247.2
1-1/2 - 1500 x 2 - 300	1926D	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 1500 x 2 - 300	1926E	104.8	139.7	552.5	577.9	198.4	49.2	43.1
1-1/2 - 1500 x 3 - 300*	1926F	123.8	165.1	571.5	596.9	198.4	49.2	45.4
2 - 1500 x 3 - 300	1926G	155.6	171.5	603.3	635	198.4	55.5	45.4
2 - 1500 x 3 - 300	1926H	154	161.9	660.4	660.4	209.6	55.5	63.5
3 - 1500 x 4 - 300	1926J	184.2	181	755.7	755.7	228.6	65.1	99.8
3 - 1500 x 6 - 300	1926K	196.9	215.9	895.4	895.4	266.7	65.1	145.2
4 - 1500 x 6 - 150	1926L	196.9	222.3	946.2	946.2	311.2	71.4	167.8
1-1/2 - 2500 x 3 - 300*	1928D	139.7	177.8	673.1	698.5	225.4	61.9	68
1-1/2 - 2500 x 3 - 300*	1928E	139.7	177.8	673.1	698.5	225.4	61.9	68
1-1/2 - 2500 x 3 - 300*	1928F	139.7	177.8	673.1	698.5	225.4	61.9	68
2 - 2500 x 3 - 300	1928G	155.6	171.5	603.3	635	198.4	68.2	49.9

NOTE: Inlet and outlet combinations as well as orifices sizes shown in the table above are compliant with both API Standard 526, Third Edition, 1984 and Fourth Edition, 1995, except those sizes marked * comply only with API 526, Fourth Edition, 1995. For replacement valves that do not comply with both editions, contact the factory for verification of dimensions and inlet and outlet combinations. The V & W orifice valves are not an API approved orifice size.



API Pressure / Temperature Tables

How To Use Rating Tables

The included tables specify important data about the valve including valve sizes, flange ratings, pressure and temperature limits, back pressure ratings, and materials with allowable temperature ranges.

After determining valve size from the Valve Sizing section, or capacity tables in this section, select the proper set of tables and graphs (in the following pages) for the size valve. Enter the pressure/temperature graphs and determine valve type. Review the table of data for that size valve to get other pertinent information.

NOTES: 1 The pressure/temperature limitations shown in the following tables are based on the limits specified in API526 applicable to the 1900 series supplied in standard materials of construction. For pressure/temperature limitations of valves made from special materials, consult the factory or the SRVS sizing program. (Note that 1900-30 bellows design valve supplied with the standard Inconel 625 LCF bellows is limited to a temperature range of -400°F to 1500°F.)

2 ASME Class 300 outlet flanges are permitted for mating purposes only on valves that are normally supplied with standard ASME Class 150 pressure rating. For back pressure applications exceeding the ASME Class 150 pressure rating use SRVS sizing program or contact the factory for assistance.

3 When soft seats are used, they may govern the valve pressure/temperature rating.

Procedure

Example	
Valve Set Pressure	500 psig
Back Pressure	50 psig
Temperature	100°F
Valve	"J"

Enter the graph on page 1900.68 for the "J" size, select set pressure on the bottom scale at 500 psig, follow this line vertically upward until it intersects the 100°F (38°C) line. The selection is a 1910Jc valve.

Results

Referring to the table on page 1900.67, the valve is 3" - 300 x 4" - 150 with a carbon steel body and spring. The back pressure limit is satisfactory for 50 psig back pressure.

Springs

Within given temperature limits, alloy steel springs are specified. Because of material availability from vendors, most springs are of alloy steel construction which provides superior strength and corrosion resistant properties.

Materials

The operating temperature should be used to select the materials in valves for fire sizing applications.

Minimum Set Pressures
The minimum set pressures of the 1900 flanged valves

Orifice	Low Set Pressure Limit[2]	
	Conventional Valve (psig)	Bellows Valve[1] (psig)
D	5	15
E	5	15
F	5	15
G	4	15
H	4	15
J	5	10
K	5	10
L	6	10
M	6	10
N	9	10
P	7	10
Q	7	10
R	7	10
T	9	10
V	15	15
W	7	15

NOTES: 1 The bonnet must be vented when a bellows is used.
2 Valves with set pressure less than 15 psig cannot be stamped with the ASME stamp.

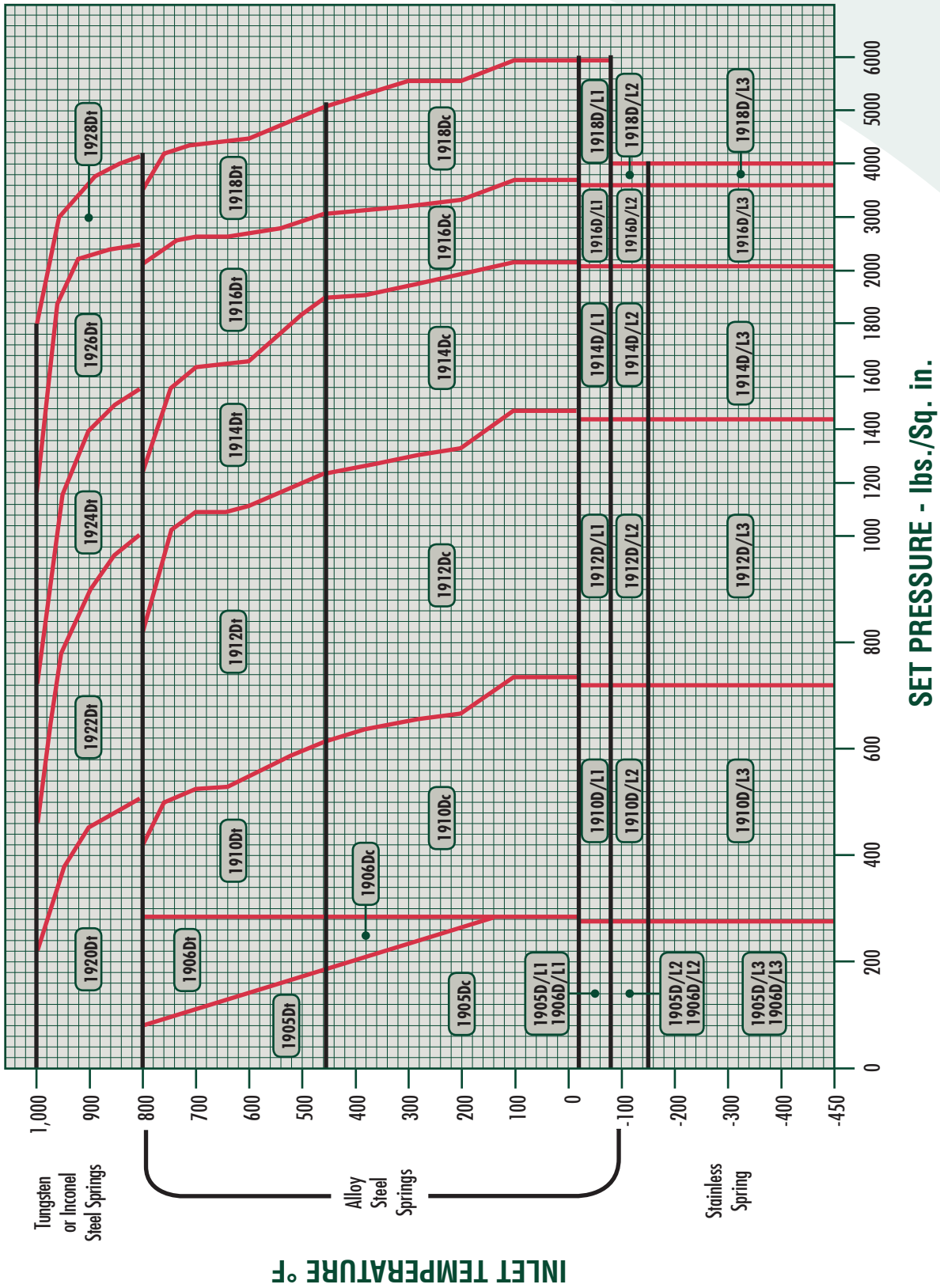
API Selection Table for Vapors, Gases and Liquids

1900 & 1900-30 Series, D Orifice - API area: 0.110 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Dc	1905-30Dc	1 x 2	150	150	—	—	—	285	185	—	—	285	230	-20 to 450
1906Dc	1906-30Dc	1 x 2	300	150	—	—	—	285	285	—	—	285	230	
1910Dc	1910-30Dc	1 x 2	300	150	—	—	—	740	615	—	—	285	230	
1912Dc	1912-30Dc	1 x 2	600	150	—	—	—	1480	1235	—	—	285	230	
1914Dc	1914-30Dc	1-1/2 x 2	900	300	—	—	—	2220	1845	—	—	600	500	
1916Dc	1916-30Dc	1-1/2 x 2	1500	300	—	—	—	3705	3080	—	—	600	500	
1918Dc	1918-30Dc	1-1/2 x 3	2500	300	—	—	—	6000	5135	—	—	740	500	
1905Dt	1905-30Dt	1 x 2	150	150	—	—	—	—	185	80	—	285	230	451 to 800
1906Dt	1906-30Dt	1 x 2	300	150	—	—	—	—	285	285	—	285	230	
1910Dt	1910-30Dt	1 x 2	300	150	—	—	—	—	615	410	—	285	230	
1912Dt	1912-30Dt	1 x 2	600	150	—	—	—	—	1235	825	—	285	230	
1914Dt	1914-30Dt	1-1/2 x 2	900	300	—	—	—	—	1845	1235	—	600	500	
1916Dt	1916-30Dt	1-1/2 x 2	1500	300	—	—	—	—	3080	2060	—	600	500	
1918Dt	1918-30Dt	1-1/2 x 3	2500	300	—	—	—	—	5135	3430	—	740	500	
1920Dt	1920-30Dt	1 x 2	300	150	—	—	—	—	—	510	225	285	230	801 to 1000
1922Dt	1922-30Dt	1 x 2	600	150	—	—	—	—	—	1015	445	285	230	
1924Dt	1924-30Dt	1-1/2 x 2	900	300	—	—	—	—	—	1525	670	600	500	
1926Dt	1926-30Dt	1-1/2 x 2	1500	300	—	—	—	—	—	2540	1115	600	500	
1928Dt	1928-30Dt	1-1/2 x 3	2500	300	—	—	—	—	—	4230	1860	740	500	
1905D/L1	1905-30D/L1	1 x 2	150	150	—	—	275	—	—	—	—	275	230	-21 to -75
1906D/L1	1906-30D/L1	1 x 2	300	150	—	—	275	—	—	—	—	275	230	
1910D/L1	1910-30D/L1	1 x 2	300	150	—	—	720	—	—	—	—	275	230	
1912D/L1	1912-30D/L1	1 x 2	600	150	—	—	1440	—	—	—	—	275	230	
1914D/L1	1914-30D/L1	1-1/2 x 2	900	300	—	—	2160	—	—	—	—	600	500	
1916D/L1	1916-30D/L1	1-1/2 x 2	1500	300	—	—	3600	—	—	—	—	600	500	
1918D/L1	1918-30D/L1	1-1/2 x 3	2500	300	—	—	6000	—	—	—	—	720	500	
1905D/L2	1905-30D/L2	1 x 2	150	150	—	275	—	—	—	—	—	275	230	-76 to -150
1906D/L2	1906-30D/L2	1 x 2	300	150	—	275	—	—	—	—	—	275	230	
1910D/L2	1910-30D/L2	1 x 2	300	150	—	720	—	—	—	—	—	275	230	
1912D/L2	1912-30D/L2	1 x 2	600	150	—	1440	—	—	—	—	—	275	230	
1914D/L2	1914-30D/L2	1-1/2 x 2	900	300	—	2160	—	—	—	—	—	600	500	
1916D/L2	1916-30D/L2	1-1/2 x 2	1500	300	—	3600	—	—	—	—	—	600	500	
1918D/L2	1918-30D/L2	1-1/2 x 3	2500	300	—	4000	—	—	—	—	—	720	500	
1905D/L3	1905-30D/L3	1 x 2	150	150	275	—	—	—	—	—	—	275	230	-151 to -450
1906D/L3	1906-30D/L3	1 x 2	300	150	275	—	—	—	—	—	—	275	230	
1910D/L3	1910-30D/L3	1 x 2	300	150	720	—	—	—	—	—	—	275	230	
1912D/L3	1912-30D/L3	1 x 2	600	150	1440	—	—	—	—	—	—	275	230	
1914D/L3	1914-30D/L3	1-1/2 x 2	900	300	2160	—	—	—	—	—	—	600	500	
1916D/L3	1916-30D/L3	1-1/2 x 2	1500	300	3600	—	—	—	—	—	—	600	500	
1918D/L3	1918-30D/L3	1-1/2 x 3	2500	300	4000	—	—	—	—	—	—	720	500	

API Selection Chart for Vapors, Gases and Liquids

1900 & 1900-30 Series, D Orifice - API area: 0.110 Sq. in.



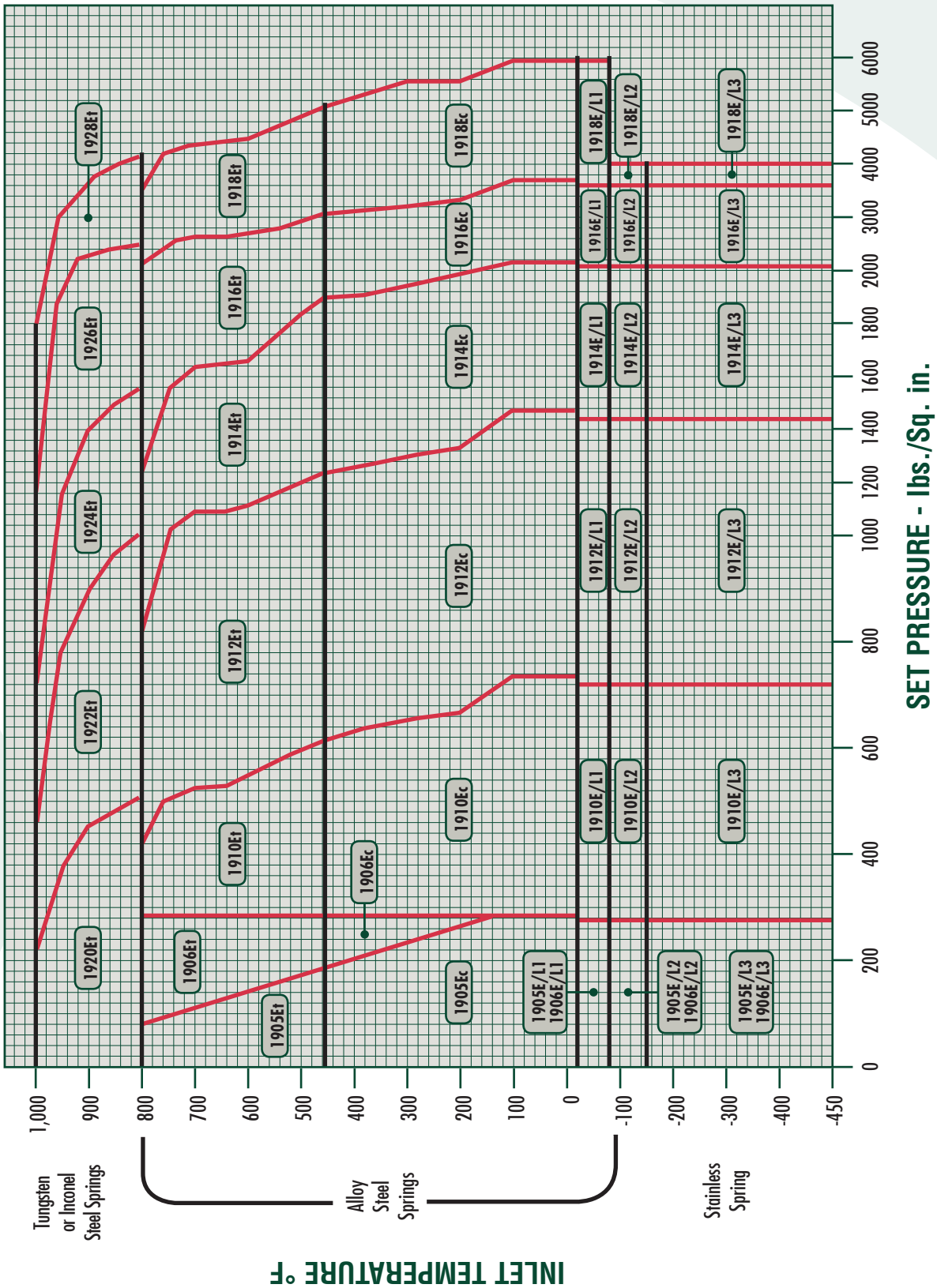
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, E Orifice - API Area: 0.196 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Ec	1905-30Ec	1 x 2	150	150	—	—	—	285	185	—	—	285	230	
1906Ec	1906-30Ec	1 x 2	300	150	—	—	—	285	285	—	—	285	230	
1910Ec	1910-30Ec	1 x 2	300	150	—	—	—	740	615	—	—	285	230	-20
1912Ec	1912-30Ec	1 x 2	600	150	—	—	—	1480	1235	—	—	285	230	to
1914Ec	1914-30Ec	1-1/2 x 2	900	300	—	—	—	2220	1845	—	—	600	500	450
1916Ec	1916-30Ec	1-1/2 x 2	1500	300	—	—	—	3705	3080	—	—	600	500	
1918Ec	1918-30Ec	1-1/2 x 3	2500	300	—	—	—	6000	5135	—	—	740	500	
1905Et	1905-30Et	1 x 2	150	150	—	—	—	—	185	80	—	285	230	
1906Et	1906-30Et	1 x 2	300	150	—	—	—	—	285	285	—	285	230	
1910Et	1910-30Et	1 x 2	300	150	—	—	—	—	615	410	—	285	230	451
1912Et	1912-30Et	1 x 2	600	150	—	—	—	—	1235	825	—	285	230	to
1914Et	1914-30Et	1-1/2 x 2	900	300	—	—	—	—	1845	1235	—	600	500	800
1916Et	1916-30Et	1-1/2 x 2	1500	300	—	—	—	—	3080	2060	—	600	500	
1918Et	1918-30Et	1-1/2 x 3	2500	300	—	—	—	—	5135	3430	—	740	500	
1920Et	1920-30Et	1 x 2	300	150	—	—	—	—	—	510	225	285	230	
1922Et	1922-30Et	1 x 2	600	150	—	—	—	—	—	1015	445	285	230	801
1924Et	1924-30Et	1-1/2 x 2	900	300	—	—	—	—	—	1525	670	600	500	to
1926Et	1926-30Et	1-1/2 x 2	1500	300	—	—	—	—	—	2540	1115	600	500	1000
1928Et	1928-30Et	1-1/2 x 3	2500	300	—	—	—	—	—	4230	1860	740	500	
1905E/L1	1905-30E/L1	1 x 2	150	150	—	—	275	—	—	—	—	275	230	
1906E/L1	1906-30E/L1	1 x 2	300	150	—	—	275	—	—	—	—	275	230	
1910E/L1	1910-30E/L1	1 x 2	300	150	—	—	720	—	—	—	—	275	230	-21
1912E/L1	1912-30E/L1	1 x 2	600	150	—	—	1440	—	—	—	—	275	230	to
1914E/L1	1914-30E/L1	1-1/2 x 2	900	300	—	—	2160	—	—	—	—	600	500	-75
1916E/L1	1916-30E/L1	1-1/2 x 2	1500	300	—	—	3600	—	—	—	—	600	500	
1918E/L1	1918-30E/L1	1-1/2 x 3	2500	300	—	—	6000	—	—	—	—	720	500	
1905E/L2	1905-30E/L2	1 x 2	150	150	—	275	—	—	—	—	—	275	230	
1906E/L2	1906-30E/L2	1 x 2	300	150	—	275	—	—	—	—	—	275	230	
1910E/L2	1910-30E/L2	1 x 2	300	150	—	720	—	—	—	—	—	275	230	-76
1912E/L2	1912-30E/L2	1 x 2	600	150	—	1440	—	—	—	—	—	275	230	to
1914E/L2	1914-30E/L2	1-1/2 x 2	900	300	—	2160	—	—	—	—	—	600	500	-150
1916E/L2	1916-30E/L2	1-1/2 x 2	1500	300	—	3600	—	—	—	—	—	600	500	
1918E/L2	1918-30E/L2	1-1/2 x 3	2500	300	—	4000	—	—	—	—	—	720	500	
1905E/L3	1905-30E/L3	1 x 2	150	150	275	—	—	—	—	—	—	275	230	
1906E/L3	1906-30E/L3	1 x 2	300	150	275	—	—	—	—	—	—	275	230	
1910E/L3	1910-30E/L3	1 x 2	300	150	720	—	—	—	—	—	—	275	230	-151
1912E/L3	1912-30E/L3	1 x 2	600	150	1440	—	—	—	—	—	—	275	230	to
1914E/L3	1914-30E/L3	1-1/2 x 2	900	300	2160	—	—	—	—	—	—	600	500	-450
1916E/L3	1916-30E/L3	1-1/2 x 2	1500	300	3600	—	—	—	—	—	—	600	500	
1918E/L3	1918-30E/L3	1-1/2 x 3	2500	300	4000	—	—	—	—	—	—	720	500	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, E Orifice - API Area: 0.196 Sq. in.



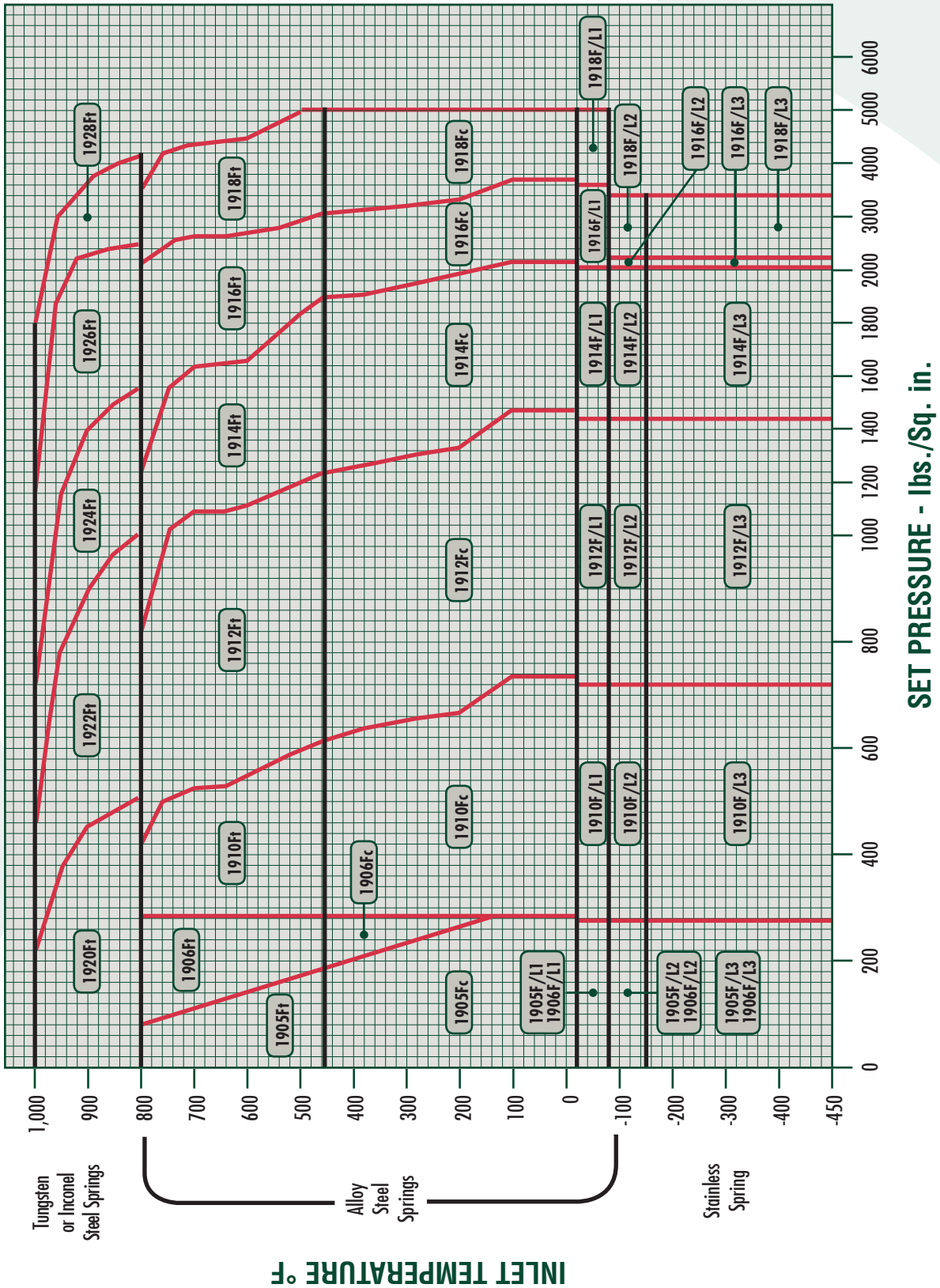
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, F Orifice - API Area: 0.307 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Fc	1905-30Fc	1-1/2 x 2	150	150	—	—	—	285	185	—	—	285	230	
1906Fc	1906-30Fc	1-1/2 x 2	300	150	—	—	—	285	285	—	—	285	230	
1910Fc	1910-30Fc	1-1/2 x 2	300	150	—	—	—	740	615	—	—	285	230	-20
1912Fc	1912-30Fc	1-1/2 x 2	600	150	—	—	—	1480	1235	—	—	285	230	to
1914Fc	1914-30Fc	1-1/2 x 3	900	300	—	—	—	2220	1845	—	—	740	500	450
1916Fc	1916-30Fc	1-1/2 x 3	1500	300	—	—	—	3705	3080	—	—	740	500	
1918Fc	1918-30Fc	1-1/2 x 3	2500	300	—	—	—	5000	5000	—	—	740	500	
1905Ft	1905-30Ft	1-1/2 x 2	150	150	—	—	—	—	185	80	—	285	230	
1906Ft	1906-30Ft	1-1/2 x 2	300	150	—	—	—	—	285	285	—	285	230	
1910Ft	1910-30Ft	1-1/2 x 2	300	150	—	—	—	—	615	410	—	285	230	451
1912Ft	1912-30Ft	1-1/2 x 2	600	150	—	—	—	—	1235	825	—	285	230	to
1914Ft	1914-30Ft	1-1/2 x 3	900	300	—	—	—	—	1845	1235	—	740	500	800
1916Ft	1916-30Ft	1-1/2 x 3	1500	300	—	—	—	—	3080	2060	—	740	500	
1918Ft	1918-30Ft	1-1/2 x 3	2500	300	—	—	—	—	5135	3430	—	740	500	
1920Ft	1920-30Ft	1-1/2 x 2	300	150	—	—	—	—	—	510	225	285	230	
1922Ft	1922-30Ft	1-1/2 x 2	600	150	—	—	—	—	—	1015	445	285	230	801
1924Ft	1924-30Ft	1-1/2 x 3	900	300	—	—	—	—	—	1525	670	740	500	to
1926Ft	1926-30Ft	1-1/2 x 3	1500	300	—	—	—	—	—	2540	1115	740	500	1000
1928Ft	1928-3Ft	1-1/2 x 3	2500	300	—	—	—	—	—	4230	1860	740	500	
1905F/L1	1905-30F/L1	1-1/2 x 2	150	150	—	—	275	—	—	—	—	275	230	
1906F/L1	1906-30F/L1	1-1/2 x 2	300	150	—	—	275	—	—	—	—	275	230	
1910F/L1	1910-30F/L1	1-1/2 x 2	300	150	—	—	720	—	—	—	—	275	230	-21
1912F/L1	1912-30F/L1	1-1/2 x 2	600	150	—	—	1440	—	—	—	—	275	230	to
1914F/L1	1914-30F/L1	1-1/2 x 3	900	300	—	—	2160	—	—	—	—	720	500	-75
1916F/L1	1916-30F/L1	1-1/2 x 3	1500	300	—	—	3600	—	—	—	—	720	500	
1918F/L1	1918-30F/L1	1-1/2 x 3	2500	300	—	—	5000	—	—	—	—	720	500	
1905F/L2	1905-30F/L2	1-1/2 x 2	150	150	—	275	—	—	—	—	—	275	230	
1906F/L2	1906-30F/L2	1-1/2 x 2	300	150	—	275	—	—	—	—	—	275	230	
1910F/L2	1910-30F/L2	1-1/2 x 2	300	150	—	720	—	—	—	—	—	275	230	-76
1912F/L2	1912-30F/L2	1-1/2 x 2	600	150	—	1440	—	—	—	—	—	275	230	to
1914F/L2	1914-30F/L2	1-1/2 x 3	900	300	—	2160	—	—	—	—	—	720	500	-150
1916F/L2	1916-30F/L2	1-1/2 x 3	1500	300	—	2200	—	—	—	—	—	720	500	
1918F/L2	1918-30F/L2	1-1/2 x 3	2500	300	—	3400	—	—	—	—	—	720	500	
1905F/L3	1905-30F/L3	1-1/2 x 2	150	150	275	—	—	—	—	—	—	275	230	
1906F/L3	1906-30F/L3	1-1/2 x 2	300	150	275	—	—	—	—	—	—	275	230	
1910F/L3	1910-30F/L3	1-1/2 x 2	300	150	720	—	—	—	—	—	—	275	230	-151
1912F/L3	1912-30F/L3	1-1/2 x 2	600	150	1440	—	—	—	—	—	—	275	230	to
1914F/L3	1914-30F/L3	1-1/2 x 3	900	300	2160	—	—	—	—	—	—	720	500	-450
1916F/L3	1916-30F/L3	1-1/2 x 3	1500	300	2200	—	—	—	—	—	—	720	500	
1918F/L3	1918-30F/L3	1-1/2 x 3	2500	300	3400	—	—	—	—	—	—	720	500	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, F Orifice - API Area: 0.307 Sq. in.



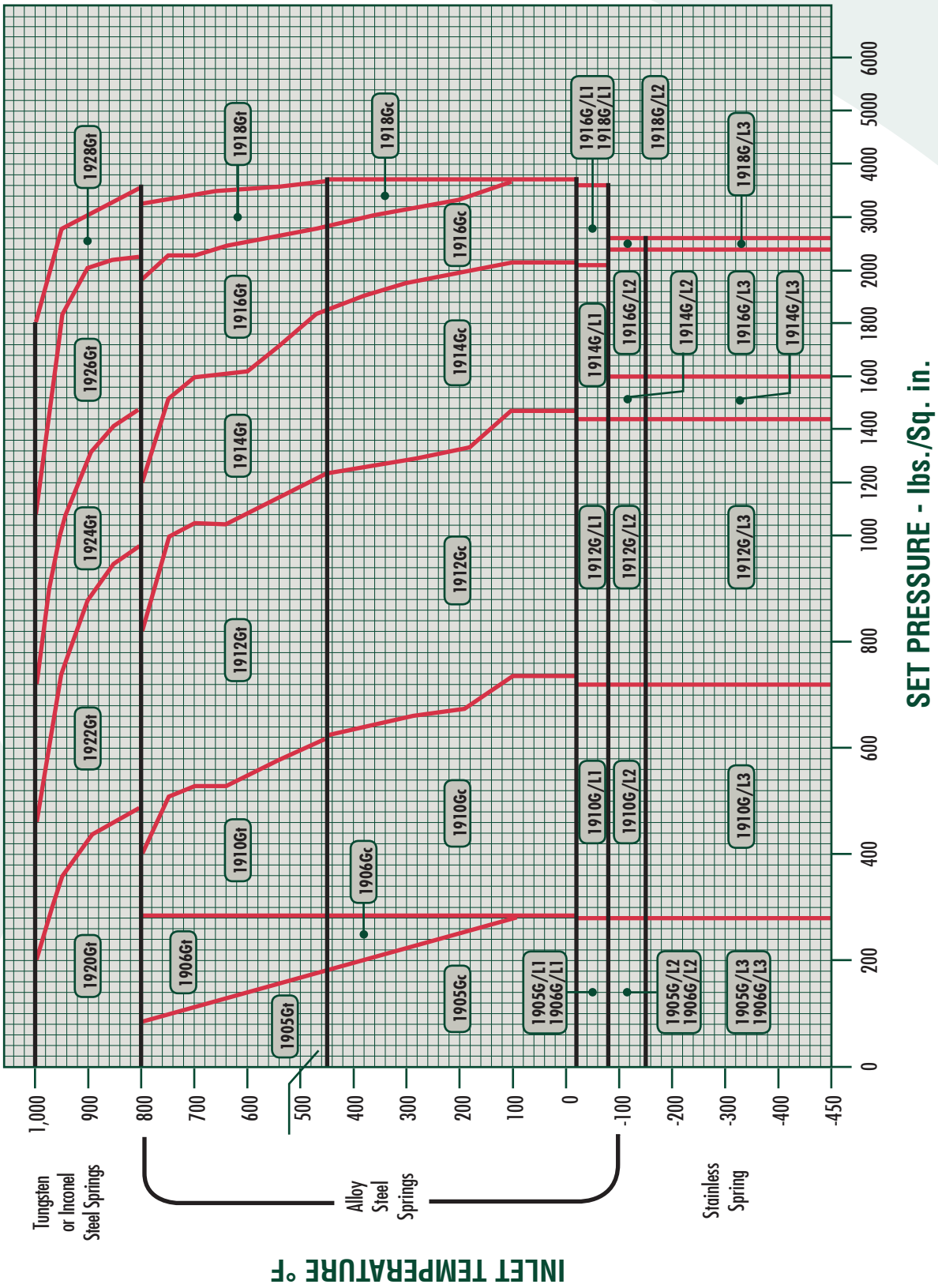
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, G Orifice - API Area: 0.503 Sq. in.

Valve Type Number Standard	Valve Type Number Bellows	Valve Size Inlet x Outlet	ASME Flanged Ratings Inlet R.F. or R.J.	ASME Flanged Ratings Outlet R.F.	Inlet Pressure (psig) & Temperature Limits - °F -450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Back Press. Limits (psig) at 100°F Standard	Back Press. Limits Bellows	Inlet Temp. Range (°F)
1905Gc	1905-30Gc	1-1/2 x 3	150	150	—	—	—	285	185	—	—	285	230	
1906Gc	1906-30Gc	1-1/2 x 3	300	150	—	—	—	285	285	—	—	285	230	
1910Gc	1910-30Gc	1-1/2 x 3	300	150	—	—	—	740	615	—	—	285	230	-20
1912Gc	1912-30Gc	1-1/2 x 3	600	150	—	—	—	1480	1235	—	—	285	230	to
1914Gc	1914-30Gc	1-1/2 x 3	900	300	—	—	—	2220	1845	—	—	740	470	450
1916Gc	1916-30Gc	2 x 3	1500	300	—	—	—	3705	3080	—	—	740	470	
1918Gc	1918-30Gc	2 x 3	2500	300	—	—	—	3705	3705	—	—	740	470	
1905Gt	1905-30Gt	1-1/2 x 3	150	150	—	—	—	—	185	80	—	285	230	
1906Gt	1906-30Gt	1-1/2 x 3	300	150	—	—	—	—	285	285	—	285	230	
1910Gt	1910-30Gt	1-1/2 x 3	300	150	—	—	—	—	615	410	—	285	230	451
1912Gt	1912-30Gt	1-1/2 x 3	600	150	—	—	—	—	1235	825	—	285	230	to
1914Gt	1914-30Gt	1-1/2 x 3	900	300	—	—	—	—	1845	1235	—	740	470	800
1916Gt	1916-30Gt	2 x 3	1500	300	—	—	—	—	3080	2060	—	740	470	
1918Gt	1918-30Gt	2 x 3	2500	300	—	—	—	—	3705	3430	—	740	470	
1920Gt	1920-30Gt	1-1/2 x 3	300	150	—	—	—	—	—	510	225	285	230	
1922Gt	1922-30Gt	1-1/2 x 3	600	150	—	—	—	—	—	1015	445	285	230	801
1924Gt	1924-30Gt	1-1/2 x 3	900	300	—	—	—	—	—	1525	670	740	470	to
1926Gt	1926-30Gt	2 x 3	1500	300	—	—	—	—	—	2540	1115	740	470	1000
1928Gt	1928-30Gt	2 x 3	2500	300	—	—	—	—	—	3705	1860	740	470	
1905G/L1	1905-30G/L1	1-1/2 x 3	150	150	—	—	275	—	—	—	—	275	230	
1906G/L1	1906-30G/L1	1-1/2 x 3	300	150	—	—	275	—	—	—	—	275	230	
1910G/L1	1910-30G/L1	1-1/2 x 3	300	150	—	—	720	—	—	—	—	275	230	-21
1912G/L1	1912-30G/L1	1-1/2 x 3	600	150	—	—	1440	—	—	—	—	275	230	to
1914G/L1	1914-30G/L1	1-1/2 x 3	900	300	—	—	2160	—	—	—	—	720	470	-75
1916G/L1	1916-30G/L1	2 x 3	1500	300	—	—	3600	—	—	—	—	720	470	
1918G/L1	1918-30G/L1	2 x 3	2500	300	—	—	3600	—	—	—	—	720	470	
1905G/L2	1905-30G/L2	1-1/2 x 3	150	150	—	275	—	—	—	—	—	275	230	
1906G/L2	1906-30G/L2	1-1/2 x 3	300	150	—	275	—	—	—	—	—	275	230	
1910G/L2	1910-30G/L2	1-1/2 x 3	300	150	—	720	—	—	—	—	—	275	230	-76
1912G/L2	1912-30G/L2	1-1/2 x 3	600	150	—	1440	—	—	—	—	—	275	230	to
1914G/L2	1914-30G/L2	1-1/2 x 3	900	300	—	1600	—	—	—	—	—	720	470	-150
1916G/L2	1916-30G/L2	2 x 3	1500	300	—	2450	—	—	—	—	—	720	470	
1918G/L2	1918-30G/L2	2 x 3	2500	300	—	2600	—	—	—	—	—	720	470	
1905G/L3	1905-30G/L3	1-1/2 x 3	150	150	275	—	—	—	—	—	—	275	230	
1906G/L3	1906-30G/L3	1-1/2 x 3	300	150	275	—	—	—	—	—	—	275	230	
1910G/L3	1910-30G/L3	1-1/2 x 3	300	150	720	—	—	—	—	—	—	275	230	-151
1912G/L3	1912-30G/L3	1-1/2 x 3	600	150	1440	—	—	—	—	—	—	275	230	to
1914G/L3	1914-30G/L3	1-1/2 x 3	900	300	1600	—	—	—	—	—	—	720	470	-450
1916G/L3	1916-30G/L3	2 x 3	1500	300	2450	—	—	—	—	—	—	720	470	
1918G/L3	1918-30G/L3	2 x 3	2500	300	2600	—	—	—	—	—	—	720	470	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, G Orifice - API Area: 0.503 Sq. in.



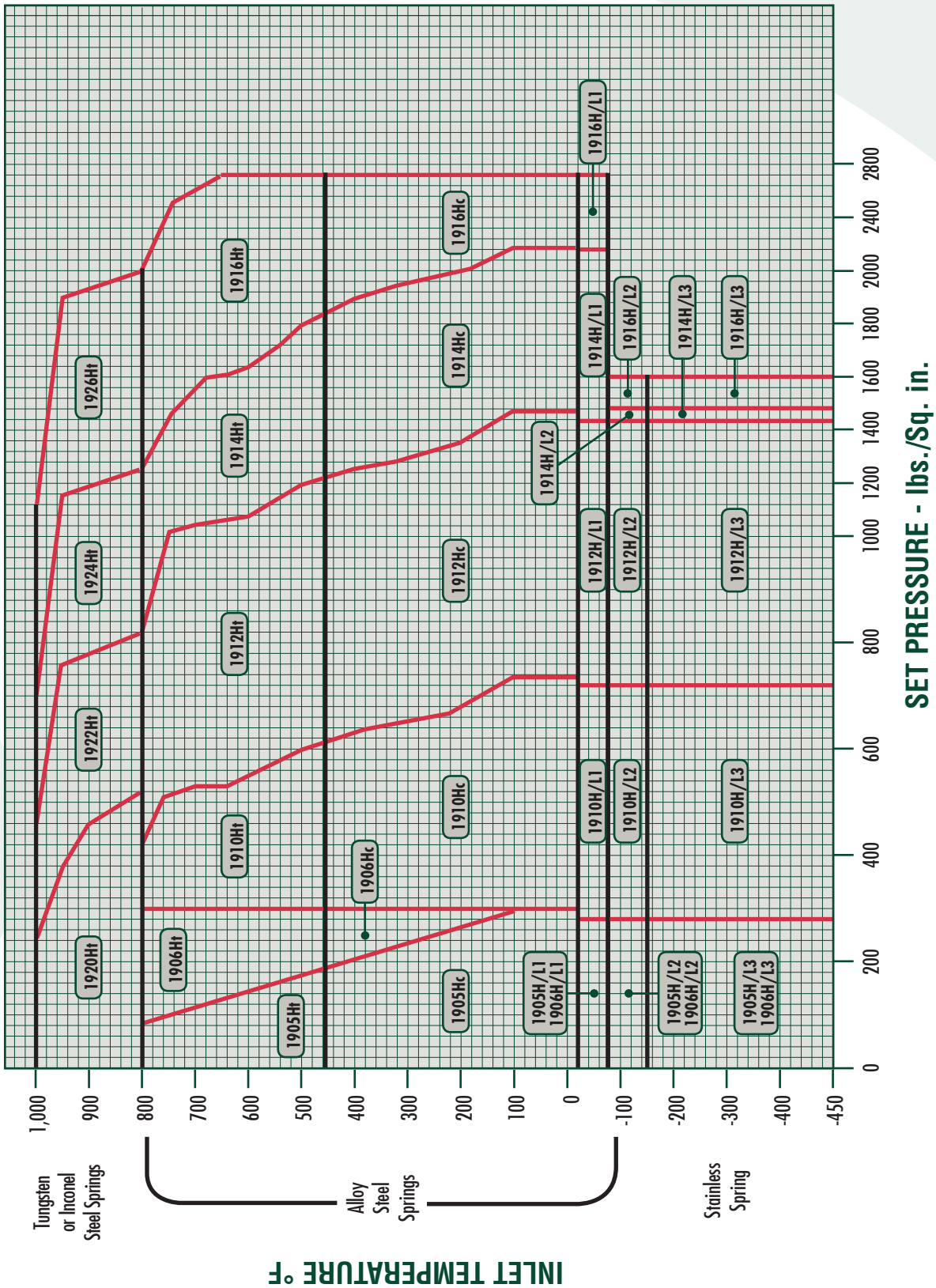
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, H Orifice - API Area: 0.785 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp.
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	Range (°F)
1905Hc	1905-30Hc	1-1/2 x 3	150	150	—	—	—	285	185	—	—	285	230	-20 to 450
1906Hc	1906-30Hc	1-1/2 x 3	300	150	—	—	—	285	285	—	—	285	230	
1910Hc	1910-30Hc	2 x 3	300	150	—	—	—	740	615	—	—	285	230	
1912Hc	1912-30Hc	2 x 3	600	150	—	—	—	1480	1235	—	—	285	230	
1914Hc	1914-30Hc	2 x 3	900	150	—	—	—	2220	1845	—	—	285	230	
1916Hc	1916-30Hc	2 x 3	1500	300	—	—	—	2750	2750	—	—	740	415	
1905Ht	1905-30Ht	1-1/2 x 3	150	150	275	—	—	—	185	80	—	285	230	451 to 800
1906Ht	1906-30Ht	1-1/2 x 3	300	150	275	—	—	—	285	285	—	285	230	
1910Ht	1910-30Ht	2 x 3	300	150	720	—	—	—	615	410	—	285	230	
1912Ht	1912-30Ht	2 x 3	600	150	1440	—	—	—	1235	825	—	285	230	
1914Ht	1914-30Ht	2 x 3	900	150	1485	—	—	—	1845	1235	—	285	230	
1916Ht	1916-30Ht	2 x 3	1500	300	1600	—	—	—	2750	2060	—	740	415	
1920Ht	1920-30Ht	2 x 3	300	150	—	—	—	—	—	510	225	285	230	801 to 1000
1922Ht	1922-30Ht	2 x 3	600	150	—	—	—	—	—	1015	445	285	230	
1924Ht	1924-30Ht	2 x 3	900	150	—	—	—	—	—	1225	670	285	230	
1926Ht	1926-30Ht	2 x 3	1500	300	—	—	—	—	—	2040	1115	740	415	
1905H/L1	1905-30H/L1	1-1/2 x 3	150	150	—	—	275	—	—	—	—	275	230	-21 to -75
1906H/L1	1906-30H/L1	1-1/2 x 3	300	150	—	—	275	—	—	—	—	275	230	
1910H/L1	1910-30H/L1	2 x 3	300	150	—	—	720	—	—	—	—	275	230	
1912H/L1	1912-30H/L1	2 x 3	600	150	—	—	1440	—	—	—	—	275	230	
1914H/L1	1914-30H/L1	2 x 3	900	150	—	—	2160	—	—	—	—	275	230	
1916H/L1	1916-30H/L1	2 x 3	1500	300	—	—	2750	—	—	—	—	720	415	
1905H/L2	1905-30H/L2	1-1/2 x 3	150	150	—	275	—	—	—	—	—	275	230	-76 to -150
1906H/L2	1906-30H/L2	1-1/2 x 3	300	150	—	275	—	—	—	—	—	275	230	
1910H/L2	1910-30H/L2	2 x 3	300	150	—	720	—	—	—	—	—	275	230	
1912H/L2	1912-30H/L2	2 x 3	600	150	—	1440	—	—	—	—	—	275	230	
1914H/L2	1914-30H/L2	2 x 3	900	150	—	1485	—	—	—	—	—	275	230	
1916H/L2	1916-30H/L2	2 x 3	1500	300	—	1600	—	—	—	—	—	720	415	
1905H/L3	1905-30H/L3	1-1/2 x 3	150	150	—	—	—	—	—	—	—	275	230	-151 to -450
1906H/L3	1906-30H/L3	1-1/2 x 3	300	150	—	—	—	—	—	—	—	275	230	
1910H/L3	1910-30H/L3	2 x 3	300	150	—	—	—	—	—	—	—	275	230	
1912H/L3	1912-30H/L3	2 x 3	600	150	—	—	—	—	—	—	—	275	230	
1914H/L3	1914-30H/L3	2 x 3	900	150	—	—	—	—	—	—	—	275	230	
1916H/L3	1916-30H/L3	2 x 3	1500	300	—	—	—	—	—	—	—	720	415	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, H Orifice - API Area: 0.785 Sq. in.



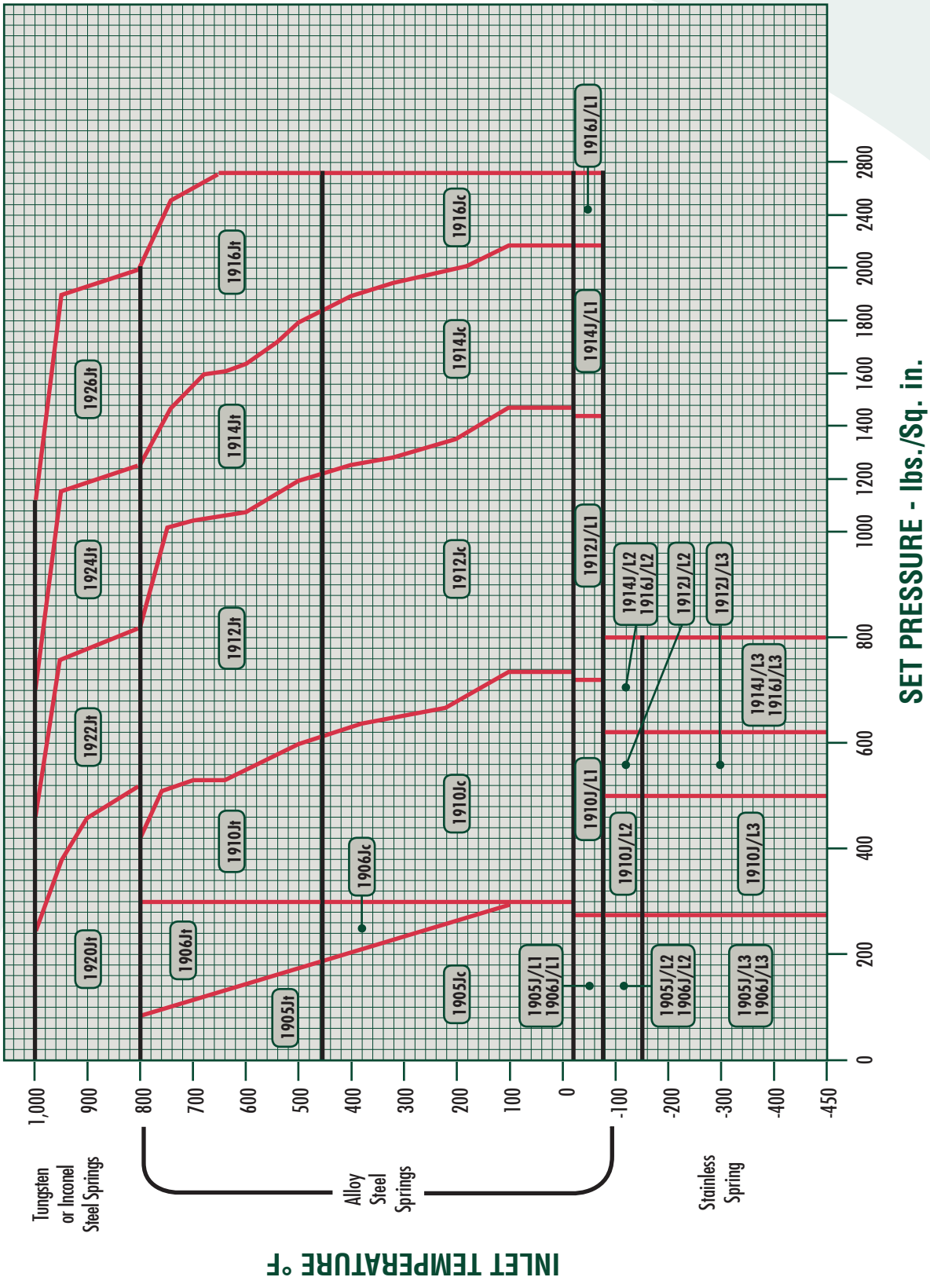
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, J Orifice - API Area: 1.287 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Jc	1905-30Jc	2 x 3	150	150	—	—	—	285	185	—	—	285	230	-20 to 450
1906Jc	1906-30Jc	2 x 3	300	150	—	—	—	285	285	—	—	285	230	
1910Jc	1910-30Jc	3 x 4	300	150	—	—	—	740	615	—	—	285	230	
1912Jc	1912-30Jc	3 x 4	600	150	—	—	—	1480	1235	—	—	285	230	
1914Jc	1914-30Jc	3 x 4	900	150	—	—	—	2220	1845	—	—	285	230	
1916Jc	1916-30Jc	3 x 4	1500	300	—	—	—	2700	2700	—	—	600	230	
1905Jt	1905-30Jt	2 x 3	150	150	—	—	—	—	185	80	—	285	230	451 to 800
1906Jt	1906-30Jt	2 x 3	300	150	—	—	—	—	285	285	—	285	230	
1910Jt	1910-30Jt	3 x 4	300	150	—	—	—	—	615	410	—	285	230	
1912Jt	1912-30Jt	3 x 4	600	150	—	—	—	—	1235	825	—	285	230	
1914Jt	1914-30Jt	3 x 4	900	150	—	—	—	—	1845	1235	—	285	230	
1916Jt	1916-30Jt	3 x 4	1500	300	—	—	—	—	2700	2060	—	600	230	
1920Jt	1920-30Jt	3 x 4	300	150	—	—	—	—	—	510	225	285	230	801 to 1000
1922Jt	1922-30Jt	3 x 4	600	150	—	—	—	—	—	815	445	285	230	
1924Jt	1924-30Jt	3 x 4	900	150	—	—	—	—	—	1225	670	285	230	
1926Jt	1926-30Jt	3 x 4	1500	300	—	—	—	—	—	2040	1115	600	230	
1905J/L1	1905-30J/L1	2 x 3	150	150	—	—	275	—	—	—	—	275	230	-21 to -75
1906J/L1	1906-30J/L1	2 x 3	300	150	—	—	275	—	—	—	—	275	230	
1910J/L1	1910-30J/L1	3 x 4	300	150	—	—	720	—	—	—	—	275	230	
1912J/L1	1912-30J/L1	3 x 4	600	150	—	—	1440	—	—	—	—	275	230	
1914J/L1	1914-30J/L1	3 x 4	900	150	—	—	2160	—	—	—	—	275	230	
1916J/L1	1916-30J/L1	3 x 4	1500	300	—	—	2700	—	—	—	—	600	230	
1905J/L2	1905-30J/L2	2 x 3	150	150	—	275	—	—	—	—	—	275	230	-76 to -150
1906J/L2	1906-30J/L2	2 x 3	300	150	—	275	—	—	—	—	—	275	230	
1910J/L2	1910-30J/L2	3 x 4	300	150	—	500	—	—	—	—	—	275	230	
1912J/L2	1912-30J/L2	3 x 4	600	150	—	625	—	—	—	—	—	275	230	
1914J/L2	1914-30J/L2	3 x 4	900	150	—	800	—	—	—	—	—	275	230	
1916J/L2	1916-30J/L2	3 x 4	1500	300	—	800	—	—	—	—	—	600	230	
1905J/L3	1905-30J/L3	2 x 3	150	150	275	—	—	—	—	—	—	275	230	-151 to -450
1906J/L3	1906-30J/L3	2 x 3	300	150	275	—	—	—	—	—	—	275	230	
1910J/L3	1910-30J/L3	3 x 4	300	150	500	—	—	—	—	—	—	275	230	
1912J/L3	1912-30J/L3	3 x 4	600	150	625	—	—	—	—	—	—	275	230	
1914J/L3	1914-30J/L3	3 x 4	900	150	800	—	—	—	—	—	—	275	230	
1916J/L3	1916-30J/L3	3 x 4	1500	300	800	—	—	—	—	—	—	600	230	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, J Orifice - API Area: 1.287 Sq. in.



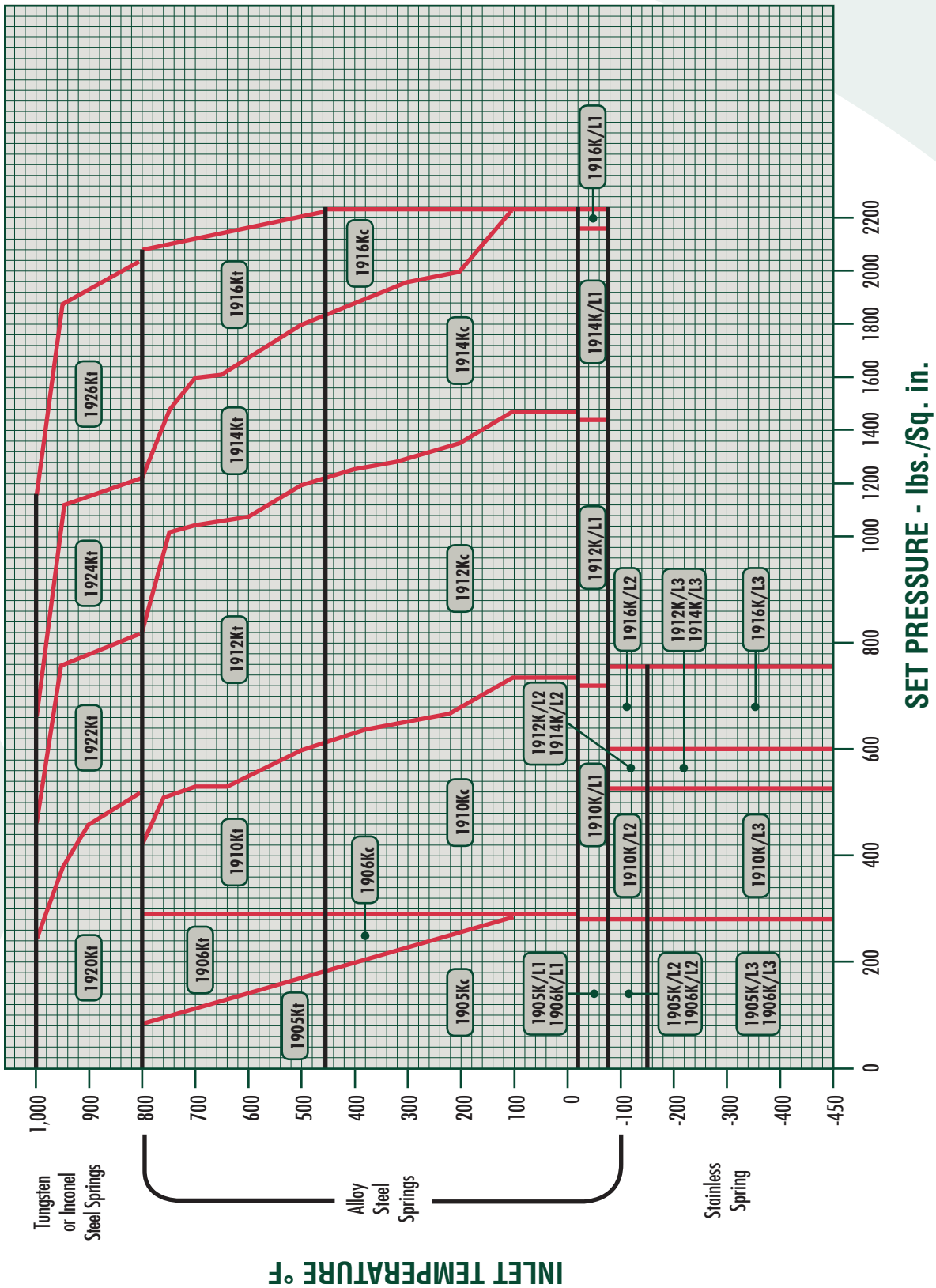
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, K Orifice - API Area: 1.838 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Kc	1905-30Kc	3 x 4	150	150	—	—	—	285	185	—	—	285	150	-20 to 450
1906Kc	1906-30Kc	3 x 4	300	150	—	—	—	285	285	—	—	285	150	
1910Kc	1910-30Kc	3 x 4	300	150	—	—	—	740	615	—	—	285	150	
1912Kc	1912-30Kc	3 x 4	600	150	—	—	—	1480	1235	—	—	285	200	
1914Kc	1914-30Kc	3 x 6	900	150	—	—	—	2220	1845	—	—	285	200	
1916Kc	1916-30Kc	3 x 6	1500	300	—	—	—	2220	2220	—	—	600	200	
1905Kt	1905-30Kt	3 x 4	150	150	—	—	—	—	185	80	—	285	150	451 to 800
1906Kt	1906-30Kt	3 x 4	300	150	—	—	—	—	285	285	—	285	150	
1910Kt	1910-30Kt	3 x 4	300	150	—	—	—	—	615	410	—	285	150	
1912Kt	1912-30Kt	3 x 4	600	150	—	—	—	—	1235	825	—	285	200	
1914Kt	1914-30Kt	3 x 6	900	150	—	—	—	—	1845	1235	—	285	200	
1916Kt	1916-30Kt	3 x 6	1500	300	—	—	—	—	2220	2060	—	600	200	
1920Kt	1920-30Kt	3 x 4	300	150	—	—	—	—	—	510	225	285	150	801 to 1000
1922Kt	1922-30Kt	3 x 4	600	150	—	—	—	—	—	815	445	285	200	
1924Kt	1924-30Kt	3 x 6	900	150	—	—	—	—	—	1225	670	285	200	
1926Kt	1926-30Kt	3 x 6	1500	300	—	—	—	—	—	2040	1115	600	200	
1905K/L1	1905-30K/L1	3 x 4	150	150	—	—	275	—	—	—	—	275	150	-21 to -75
1906K/L1	1906-30K/L1	3 x 4	300	150	—	—	275	—	—	—	—	275	150	
1910K/L1	1910-30K/L1	3 x 4	300	150	—	—	720	—	—	—	—	275	150	
1912K/L1	1912-30K/L1	3 x 4	600	150	—	—	1440	—	—	—	—	275	200	
1914K/L1	1914-30K/L1	3 x 6	900	150	—	—	2160	—	—	—	—	275	200	
1916K/L1	1916-30K/L1	3 x 6	1500	300	—	—	2220	—	—	—	—	600	200	
1905K/L2	1905-30K/L2	3 x 4	150	150	—	275	—	—	—	—	—	275	150	-76 to -150
1906K/L2	1906-30K/L2	3 x 4	300	150	—	275	—	—	—	—	—	275	150	
1910K/L2	1910-30K/L2	3 x 4	300	150	—	525	—	—	—	—	—	275	150	
1912K/L2	1912-30K/L2	3 x 4	600	150	—	600	—	—	—	—	—	275	200	
1914K/L2	1914-30K/L2	3 x 6	900	150	—	600	—	—	—	—	—	275	200	
1916K/L2	1916-30K/L2	3 x 6	1500	300	—	750	—	—	—	—	—	600	200	
1905K/L3	1905-30K/L3	3 x 4	150	150	275	—	—	—	—	—	—	275	150	-151 to -450
1906K/L3	1906-30K/L3	3 x 4	300	150	275	—	—	—	—	—	—	275	150	
1910K/L3	1910-30K/L3	3 x 4	300	150	525	—	—	—	—	—	—	275	150	
1912K/L3	1912-30K/L3	3 x 4	600	150	600	—	—	—	—	—	—	275	200	
1914K/L3	1914-30K/L3	3 x 6	900	150	600	—	—	—	—	—	—	275	200	
1916K/L3	1916-30K/L3	3 x 6	1500	300	750	—	—	—	—	—	—	600	200	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, K Orifice - API Area: 1.838 Sq. in.



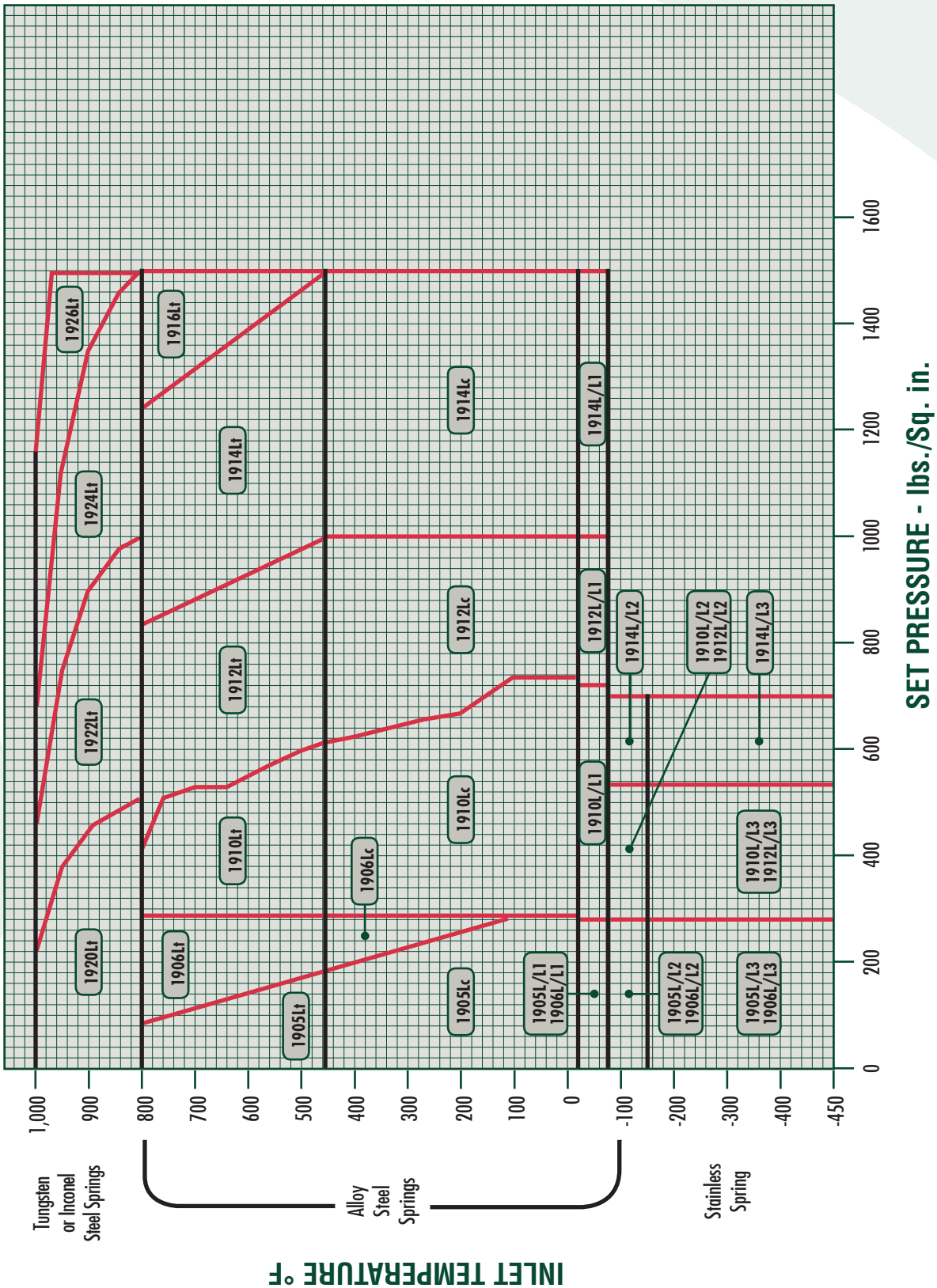
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, L Orifice - API Area: 2.853 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Lc	1905-30Lc	3 x 4	150	150	—	—	—	285	185	—	—	285	100	-20 to 450
1906Lc	1906-30Lc	3 x 4	300	150	—	—	—	285	285	—	—	285	100	
1910Lc	1910-30Lc	4 x 6	300	150	—	—	—	740	615	—	—	285	170	
1912Lc	1912-30Lc	4 x 6	600	150	—	—	—	1000	1000	—	—	285	170	
1914Lc	1914-30Lc	4 x 6	900	150	—	—	—	1500	1500	—	—	285	170	
1905Lt	1905-30Lt	3 x 4	150	150	—	—	—	—	185	80	—	285	100	451 to 800
1906Lt	1906-30Lt	3 x 4	300	150	—	—	—	—	285	285	—	285	100	
1910Lt	1910-30Lt	4 x 6	300	150	—	—	—	—	615	410	—	285	170	
1912Lt	1912-30Lt	4 x 6	600	150	—	—	—	—	1000	825	—	285	170	
1914Lt	1914-30Lt	4 x 6	900	150	—	—	—	—	1500	1235	—	285	170	
1916Lt	1916-30Lt	4 x 6	1500	150	—	—	—	—	1500	1500	—	285	170	
1920Lt	1920-30Lt	4 x 6	300	150	—	—	—	—	—	510	225	285	170	801 to 1000
1922Lt	1922-30Lt	4 x 6	600	150	—	—	—	—	—	1000	445	285	170	
1924Lt	1924-30Lt	4 x 6	900	150	—	—	—	—	—	1500	670	285	170	
1926Lt	1926-30Lt	4 x 6	1500	150	—	—	—	—	—	1500	1115	285	170	
1905L/L1	1905-30L/L1	3 x 4	150	150	—	—	275	—	—	—	—	275	100	-21 to -75
1906L/L1	1906-30L/L1	3 x 4	300	150	—	—	275	—	—	—	—	275	100	
1910L/L1	1910-30L/L1	4 x 6	300	150	—	—	720	—	—	—	—	275	170	
1912L/L1	1912-30L/L1	4 x 6	600	150	—	—	1000	—	—	—	—	275	170	
1914L/L1	1914-30L/L1	4 x 6	900	150	—	—	1500	—	—	—	—	275	170	
1905L/L2	1905-30L/L2	3 x 4	150	150	—	275	—	—	—	—	—	275	100	-76 to -150
1906L/L2	1906-30L/L2	3 x 4	300	150	—	275	—	—	—	—	—	275	100	
1910L/L2	1910-30L/L2	4 x 6	300	150	—	535	—	—	—	—	—	275	170	
1912L/L2	1912-30L/L2	4 x 6	600	150	—	535	—	—	—	—	—	275	170	
1914L/L2	1914-30L/L2	4 x 6	900	150	—	700	—	—	—	—	—	275	170	
1905L/L3	1905-30L/L3	3 x 4	150	150	275	—	—	—	—	—	—	275	100	-151 to -450
1906L/L3	1906-30L/L3	3 x 4	300	150	275	—	—	—	—	—	—	275	100	
1910L/L3	1910-30L/L3	4 x 6	300	150	535	—	—	—	—	—	—	275	170	
1912L/L3	1912-30L/L3	4 x 6	600	150	535	—	—	—	—	—	—	275	170	
1914L/L3	1914-30L/L3	4 x 6	900	150	700	—	—	—	—	—	—	275	170	

Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, L Orifice - API Area: 2.853 Sq. in.



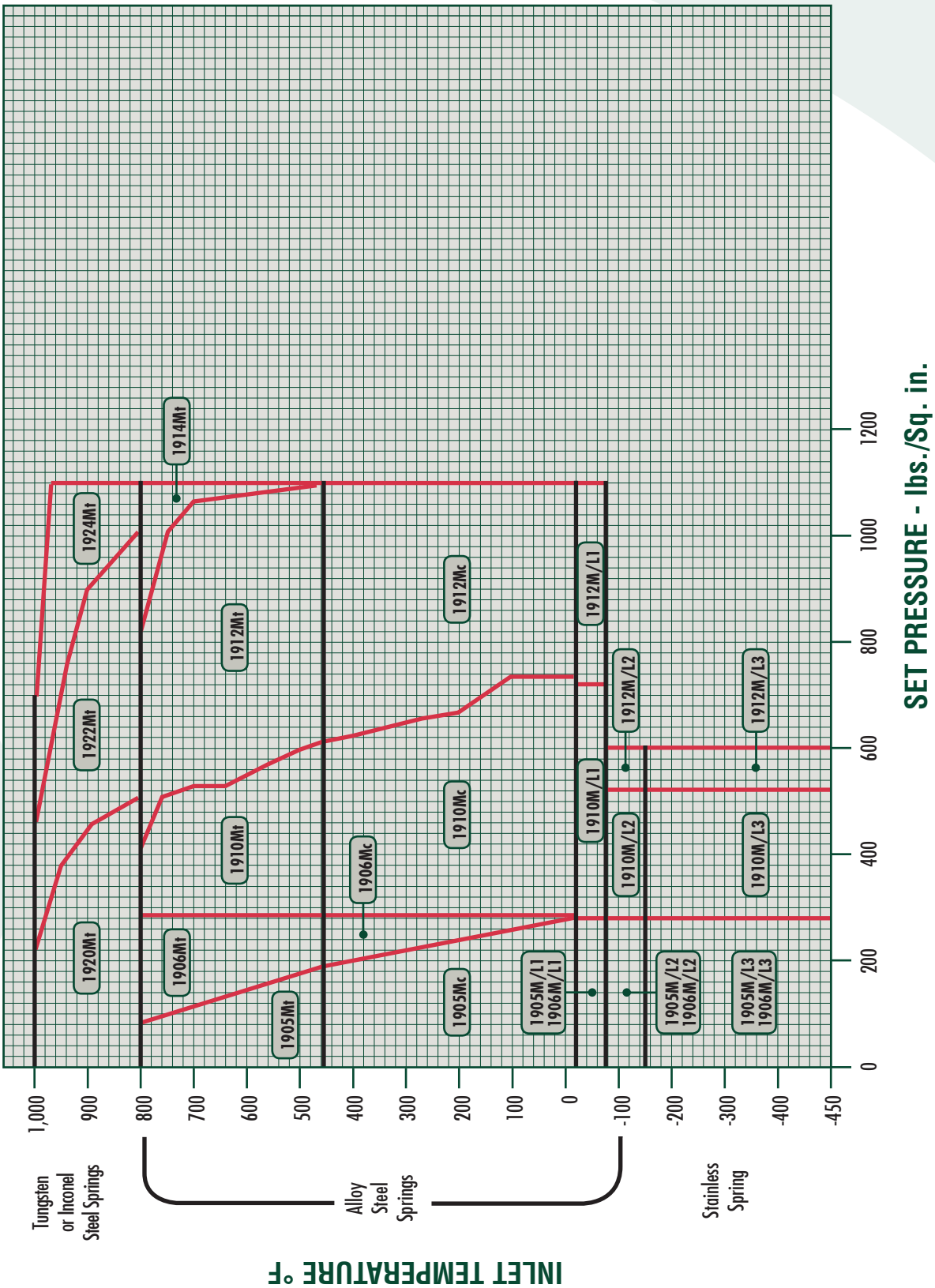
Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, M Orifice - API Area: 3.60 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Mc	1905-30Mc	4 x 6	150	150	—	—	—	285	185	—	—	285	80	-20 to 450
1906Mc	1906-30Mc	4 x 6	300	150	—	—	—	285	285	—	—	285	80	
1910Mc	1910-30Mc	4 x 6	300	150	—	—	—	740	615	—	—	285	160	
1912Mc	1912-30Mc	4 x 6	600	150	—	—	—	1100	1100	—	—	285	160	
1905Mt	1905-30Mt	4 x 6	150	150	—	—	—	—	185	80	—	285	80	451 to 800
1906Mt	1906-30Mt	4 x 6	300	150	—	—	—	—	285	285	—	285	80	
1910Mt	1910-30Mt	4 x 6	300	150	—	—	—	—	615	410	—	285	160	
1912Mt	1912-30Mt	4 x 6	600	150	—	—	—	—	1100	825	—	285	160	
1914Mt	1914-30Mt	4 x 6	900	150	—	—	—	—	1100	1100	—	285	160	
1920Mt	1920-30Mt	4 x 6	300	150	—	—	—	—	—	510	225	285	160	801 to 1000
1922Mt	1922-30Mt	4 x 6	600	150	—	—	—	—	—	1015	445	285	160	
1924Mt	1924-30Mt	4 x 6	900	150	—	—	—	—	—	1100	670	285	160	
1905M/L1	1905-30M/L1	4 x 6	150	150	—	—	275	—	—	—	—	275	80	-21 to -75
1906M/L1	1906-30M/L1	4 x 6	300	150	—	—	275	—	—	—	—	275	80	
1910M/L1	1910-30M/L1	4 x 6	300	150	—	—	720	—	—	—	—	275	160	
1912M/L1	1912-30M/L1	4 x 6	600	150	—	—	1000	—	—	—	—	275	160	
1905M/L2	1905-30M/L2	4 x 6	150	150	—	275	—	—	—	—	—	275	80	-76 to -150
1906M/L2	1906-30M/L2	4 x 6	300	150	—	275	—	—	—	—	—	275	80	
1910M/L2	1910-30M/L2	4 x 6	300	150	—	525	—	—	—	—	—	275	160	
1912M/L2	1912-30M/L2	4 x 6	600	150	—	600	—	—	—	—	—	275	160	
1905M/L3	1905-30M/L3	4 x 6	150	150	275	—	—	—	—	—	—	275	80	-151 to -450
1906M/L3	1906-30M/L3	4 x 6	300	150	275	—	—	—	—	—	—	275	80	
1910M/L3	1910-30M/L3	4 x 6	300	150	525	—	—	—	—	—	—	275	160	
1912M/L3	1912-30M/L3	4 x 6	600	150	600	—	—	—	—	—	—	275	160	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, M Orifice - API Area: 3.60 Sq. in.



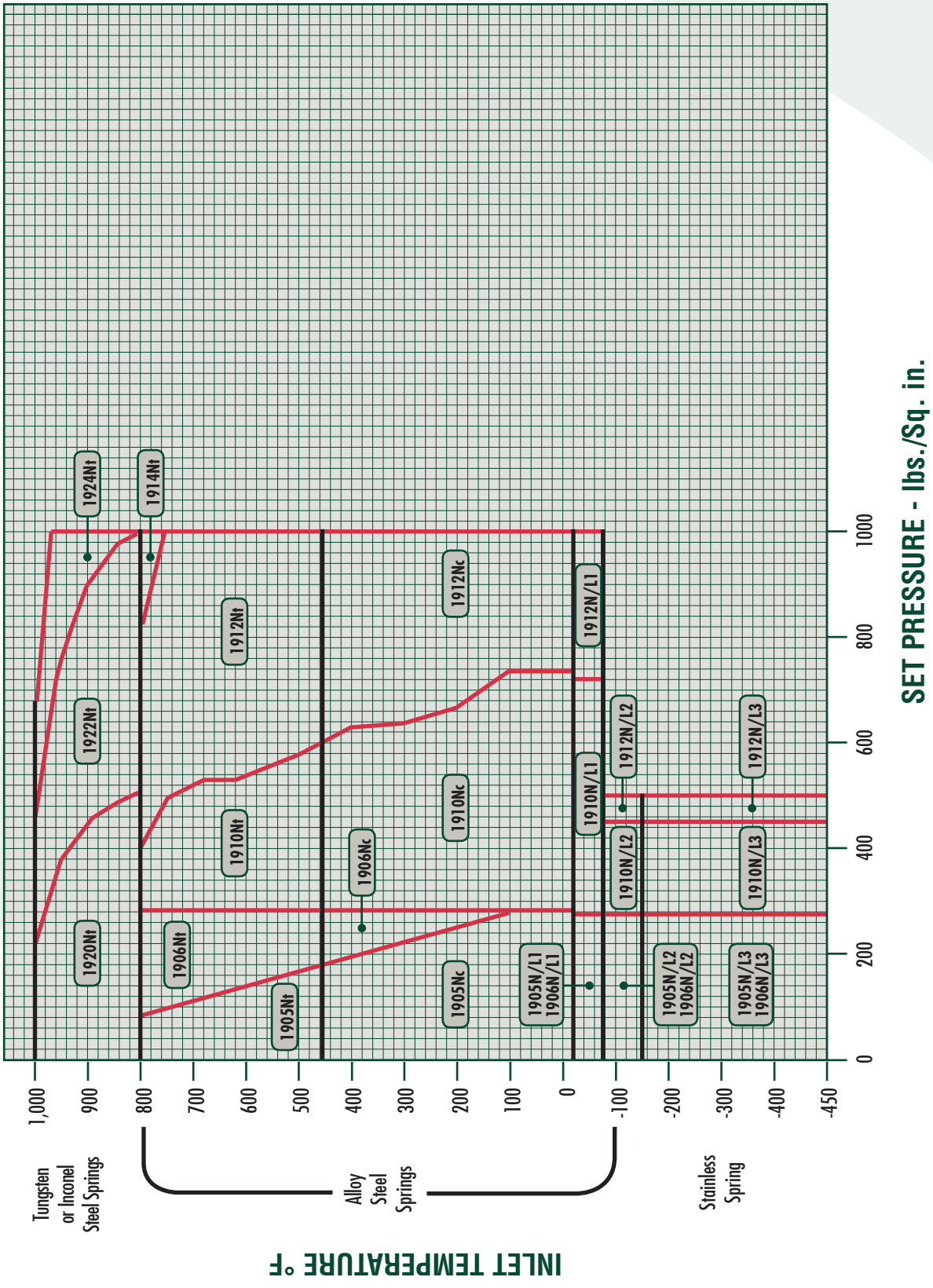
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, N Orifice - API Area: 4.34 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Nc	1905-30Nc	4 x 6	150	150	—	—	—	285	185	—	—	285	80	-20 to 450
1906Nc	1906-30Nc	4 x 6	300	150	—	—	—	285	285	—	—	285	80	
1910Nc	1910-30Nc	4 x 6	300	150	—	—	—	740	615	—	—	285	160	
1912Nc	1912-30Nc	4 x 6	600	150	—	—	—	1000	1100	—	—	285	160	
1905Nt	1905-30Nt	4 x 6	150	150	—	—	—	—	185	80	—	285	80	451 to 800
1906Nt	1906-30Nt	4 x 6	300	150	—	—	—	—	285	285	—	285	80	
1910Nt	1910-30Nt	4 x 6	300	150	—	—	—	—	615	410	—	285	160	
1912Nt	1912-30Nt	4 x 6	600	150	—	—	—	—	1000	825	—	285	160	
1914Nt	1914-30Nt	4 x 6	900	150	—	—	—	—	1000	1000	—	285	160	
1920Nt	1920-30Nt	4 x 6	300	150	—	—	—	—	—	510	225	285	160	801 to 1000
1922Nt	1922-30Nt	4 x 6	600	150	—	—	—	—	—	1000	445	285	160	
1924Nt	1924-30Nt	4 x 6	900	150	—	—	—	—	—	1000	670	285	160	
1905N/L1	1905-30N/L1	4 x 6	150	150	—	—	275	—	—	—	—	275	80	-21 to -75
1906N/L1	1906-30N/L1	4 x 6	300	150	—	—	275	—	—	—	—	275	80	
1910N/L1	1910-30N/L1	4 x 6	300	150	—	—	720	—	—	—	—	285	160	
1912N/L1	1912-30N/L1	4 x 6	600	150	—	—	1000	—	—	—	—	285	160	
1905N/L2	1905-30N/L2	4 x 6	150	150	—	275	—	—	—	—	—	275	80	-76 to -150
1906N/L2	1906-30N/L2	4 x 6	300	150	—	275	—	—	—	—	—	275	80	
1910N/L2	1910-30N/L2	4 x 6	300	150	—	450	—	—	—	—	—	285	160	
1912N/L2	1912-30N/L2	4 x 6	600	150	—	500	—	—	—	—	—	285	160	
1905N/L3	1905-30N/L3	4 x 6	150	150	275	—	—	—	—	—	—	275	80	-151 to -450
1906N/L3	1906-30N/L3	4 x 6	300	150	275	—	—	—	—	—	—	275	80	
1910N/L3	1910-30N/L3	4 x 6	300	150	450	—	—	—	—	—	—	275	160	
1912N/L3	1912-30N/L3	4 x 6	600	150	600	—	—	—	—	—	—	275	160	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, N Orifice - API Area: 4.34 Sq. in.



API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, P Orifice - API Area: 6.38 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Pc	1905-30Pc	4 x 6	150	150	—	—	—	285	185	—	—	285	80	-20 to 450
1906Pc	1906-30Pc	4 x 6	300	150	—	—	—	285	285	—	—	285	80	
1910Pc	1910-30Pc	4 x 6	300	150	—	—	—	525	525	—	—	285	150	
1912Pc	1912-30Pc	4 x 6	600	150	—	—	—	1000	1100	—	—	285	150	
1905Pt	1905-30Pt	4 x 6	150	150	—	—	—	—	185	80	—	285	80	451 to 800
1906Pt	1906-30Pt	4 x 6	300	150	—	—	—	—	285	285	—	285	80	
1910Pt	1910-30Pt	4 x 6	300	150	—	—	—	—	525	410	—	285	150	
1912Pt	1912-30Pt	4 x 6	600	150	—	—	—	—	1000	825	—	285	150	
1914Pt	1914-30Pt	4 x 6	900	150	—	—	—	—	1000	1000	—	285	150	
1920Pt	1920-30Pt	4 x 6	300	150	—	—	—	—	—	510	225	285	150	801 to 1000
1922Pt	1922-30Pt	4 x 6	600	150	—	—	—	—	—	1000	445	285	150	
1924Pt	1924-30Pt	4 x 6	900	150	—	—	—	—	—	1000	670	285	150	
1905P/L1	1905-30P/L1	4 x 6	150	150	—	—	275	—	—	—	—	275	80	-21 to -75
1906P/L1	1906-30P/L1	4 x 6	300	150	—	—	275	—	—	—	—	275	80	
1910P/L1	1910-30P/L1	4 x 6	300	150	—	—	525	—	—	—	—	275	150	
1912P/L1	1912-30P/L1	4 x 6	600	150	—	—	1000	—	—	—	—	275	150	
1905P/L2	1905-30P/L2	4 x 6	150	150	—	175	—	—	—	—	—	175	80	-76 to -150
1906P/L2	1906-30P/L2	4 x 6	300	150	—	175	—	—	—	—	—	175	80	
1910P/L2	1910-30P/L2	4 x 6	300	150	—	300	—	—	—	—	—	275	150	
1912P/L2	1912-30P/L2	4 x 6	600	150	—	480	—	—	—	—	—	275	150	
1905P/L3	1905-30P/L3	4 x 6	150	150	175	—	—	—	—	—	—	175	80	-151 to -450
1906P/L3	1906-30P/L3	4 x 6	300	150	175	—	—	—	—	—	—	175	80	
1910P/L3	1910-30P/L3	4 x 6	300	150	300	—	—	—	—	—	—	275	150	
1912P/L3	1912-30P/L3	4 x 6	600	150	480	—	—	—	—	—	—	275	150	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, P Orifice - API Area: 6.38 Sq. in.

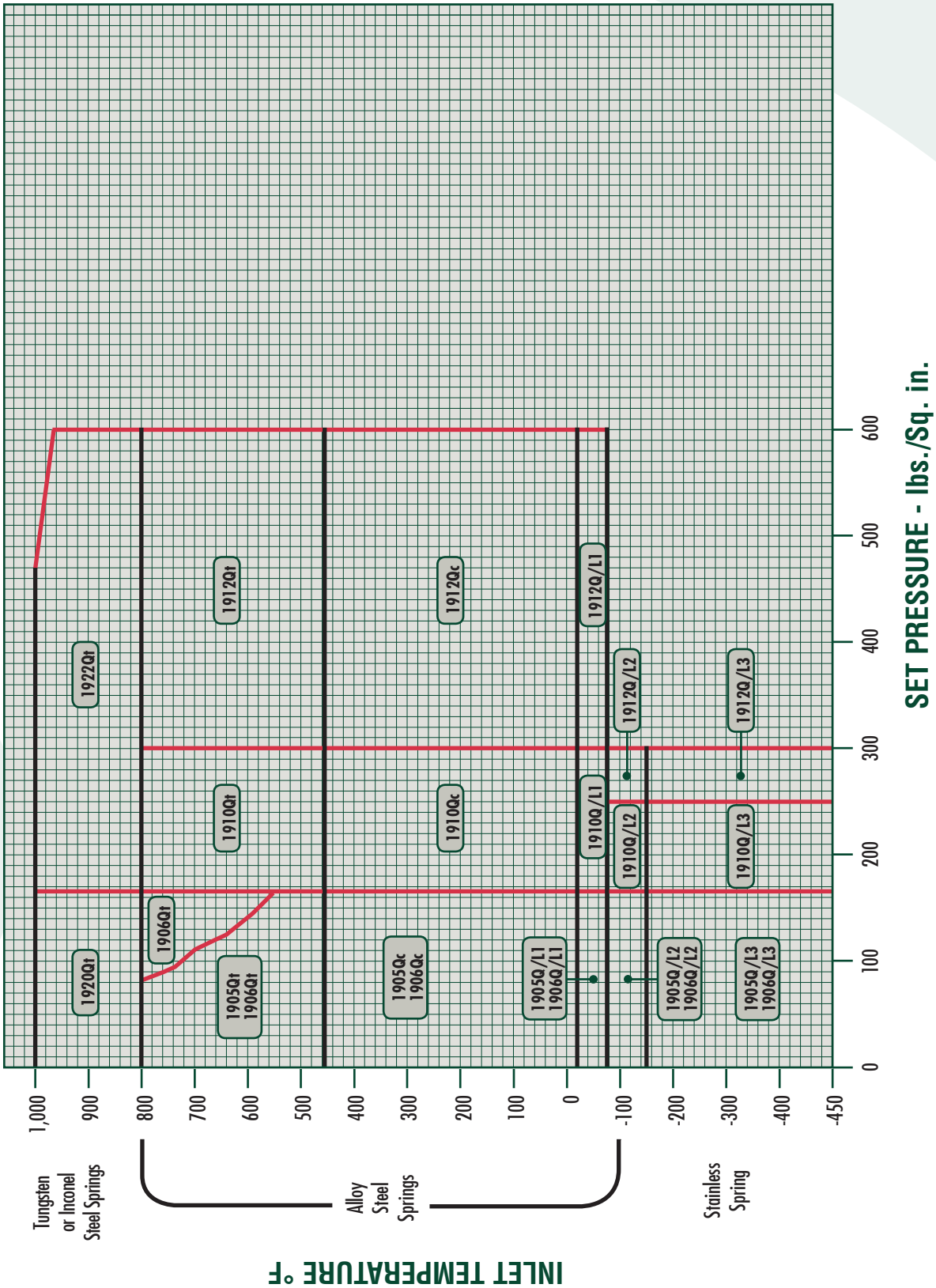
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, Q Orifice - API Area: 11.05 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Qc	1905-30Qc	6 x 8	150	150	—	—	—	165	165	—	—	115	70	-20 to 450
1906Qc	1906-30Qc	6 x 8	300	150	—	—	—	165	165	—	—	115	70	
1910Qc	1910-30Qc	6 x 8	300	150	—	—	—	300	300	—	—	115	115	
1912Qc	1912-30Qc	6 x 8	600	150	—	—	—	600	600	—	—	115	115	
1905Qt	1905-30Qt	6 x 8	150	150	—	—	—	—	165	80	—	115	70	451 to 800
1906Qt	1906-30Qt	6 x 8	300	150	—	—	—	—	165	165	—	115	70	
1910Qt	1910-30Qt	6 x 8	300	150	—	—	—	—	300	300	—	115	115	
1912Qt	1912-30Qt	6 x 8	600	150	—	—	—	—	600	600	—	115	115	
1920Qt	1920-30Qt	6 x 8	300	150	—	—	—	—	—	165	165	115	115	801 to 1000
1922Qt	1922-30Qt	6 x 8	600	150	—	—	—	—	—	600	445	115	115	
1905Q/L1	1905-30Q/L1	6 x 8	150	150	—	—	165	—	—	—	—	115	70	-21 to -75
1906Q/L1	1906-30Q/L1	6 x 8	300	150	—	—	165	—	—	—	—	115	70	
1910Q/L1	1910-30Q/L1	6 x 8	300	150	—	—	300	—	—	—	—	115	115	
1912Q/L1	1912-30Q/L1	6 x 8	600	150	—	—	600	—	—	—	—	115	115	
1905Q/L2	1905-30Q/L2	6 x 8	150	150	—	165	—	—	—	—	—	115	70	-76 to -150
1906Q/L2	1906-30Q/L2	6 x 8	300	150	—	165	—	—	—	—	—	115	70	
1910Q/L2	1910-30Q/L2	6 x 8	300	150	—	250	—	—	—	—	—	115	115	
1912Q/L2	1912-30Q/L2	6 x 8	600	150	—	300	—	—	—	—	—	115	115	
1905Q/L3	1905-30Q/L3	6 x 8	150	150	165	—	—	—	—	—	—	115	70	-151 to -450
1906Q/L3	1906-30Q/L3	6 x 8	300	150	165	—	—	—	—	—	—	115	70	
1910Q/L3	1910-30Q/L3	6 x 8	300	150	250	—	—	—	—	—	—	115	115	
1912Q/L3	1912-30Q/L3	6 x 8	600	150	300	—	—	—	—	—	—	115	115	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, Q Orifice - API Area: 11.05 Sq. in.



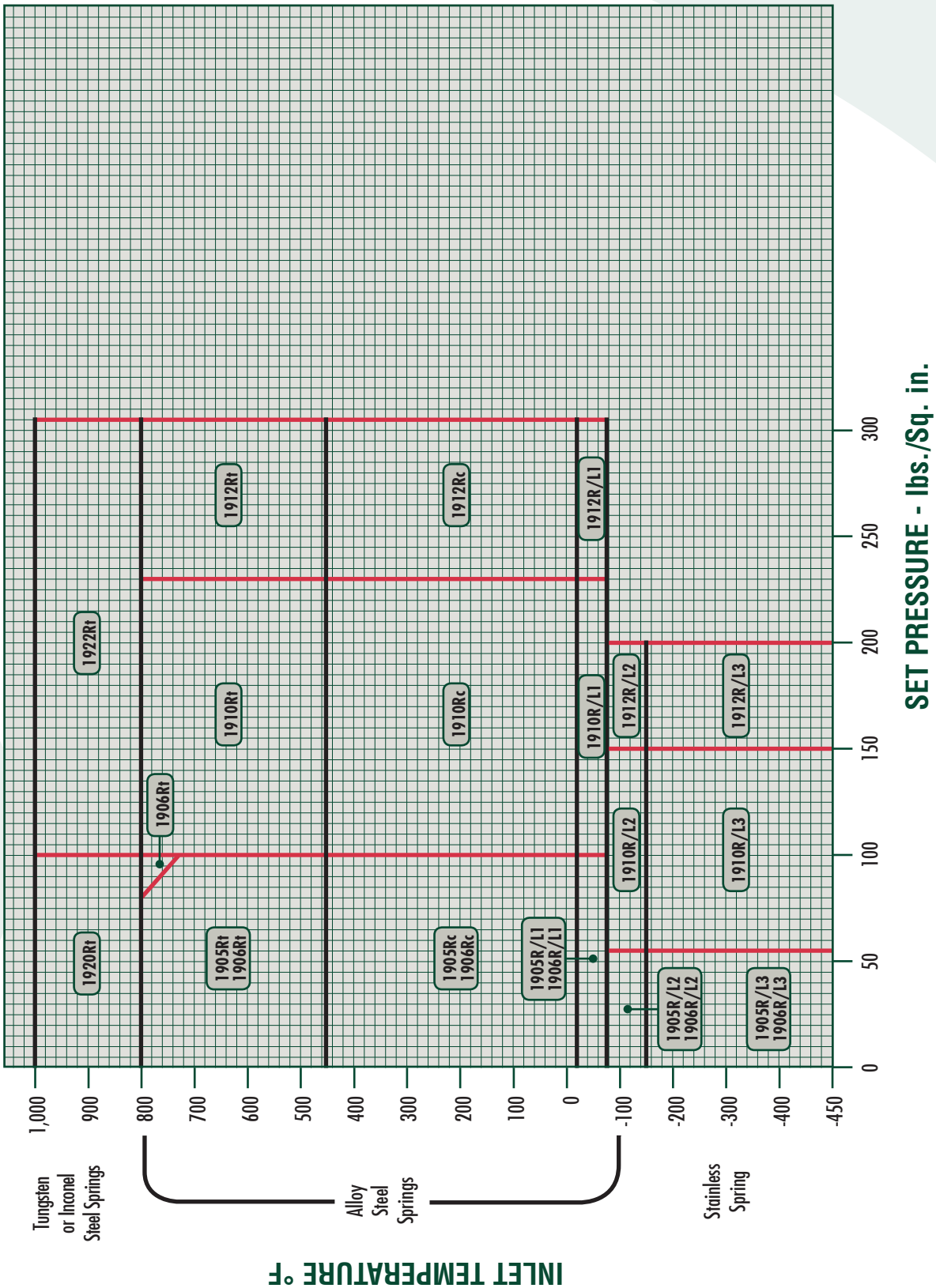
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, R Orifice - API Area: 16.0 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Rc	1905-30Rc	6 x 8	150	150	—	—	—	100	100	—	—	60	60	-20 to 450
1906Rc	1906-30Rc	6 x 8	300	150	—	—	—	100	100	—	—	60	60	
1910Rc	1910-30Rc	6 x 10	300	150	—	—	—	230	230	—	—	100	100	
1912Rc	1912-30Rc	6 x 10	600	150	—	—	—	300	300	—	—	100	100	
1905Rt	1905-30Rt	6 x 8	150	150	—	—	—	—	100	80	—	60	60	451 to 800
1906Rt	1906-30Rt	6 x 8	300	150	—	—	—	—	100	100	—	60	60	
1910Rt	1910-30Rt	6 x 10	300	150	—	—	—	—	230	230	—	100	100	
1912Rt	1912-30Rt	6 x 10	600	150	—	—	—	—	300	300	—	100	100	
1920Rt	1920-30Rt	6 x 8	300	150	—	—	—	—	—	100	100	60	60	801 to 1000
1922Rt	1922-30Rt	6 x 10	600	150	—	—	—	—	—	300	300	100	100	
1905R/L1	1905-30R/L1	6 x 8	150	150	—	—	100	—	—	—	—	60	60	-21 to -75
1906R/L1	1906-30R/L1	6 x 8	300	150	—	—	100	—	—	—	—	60	60	
1910R/L1	1910-30R/L1	6 x 10	300	150	—	—	230	—	—	—	—	100	100	
1912R/L1	1912-30R/L1	6 x 10	600	150	—	—	300	—	—	—	—	100	100	
1905R/L2	1905-30R/L2	6 x 8	150	150	—	55	—	—	—	—	—	55	55	-76 to -150
1906R/L2	1906-30R/L2	6 x 8	300	150	—	55	—	—	—	—	—	55	55	
1910R/L2	1910-30R/L2	6 x 10	300	150	—	150	—	—	—	—	—	100	100	
1912R/L2	1912-30R/L2	6 x 10	600	150	—	200	—	—	—	—	—	100	100	
1905R/L3	1905-30R/L3	6 x 8	150	150	55	—	—	—	—	—	—	55	55	-151 to -450
1906R/L3	1906-30R/L3	6 x 8	300	150	55	—	—	—	—	—	—	55	55	
1910R/L3	1910-30R/L3	6 x 10	300	150	150	—	—	—	—	—	—	100	100	
1912R/L3	1912-30R/L3	6 x 10	600	150	200	—	—	—	—	—	—	100	100	

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, R Orifice - API Area: 16.0 Sq. in.



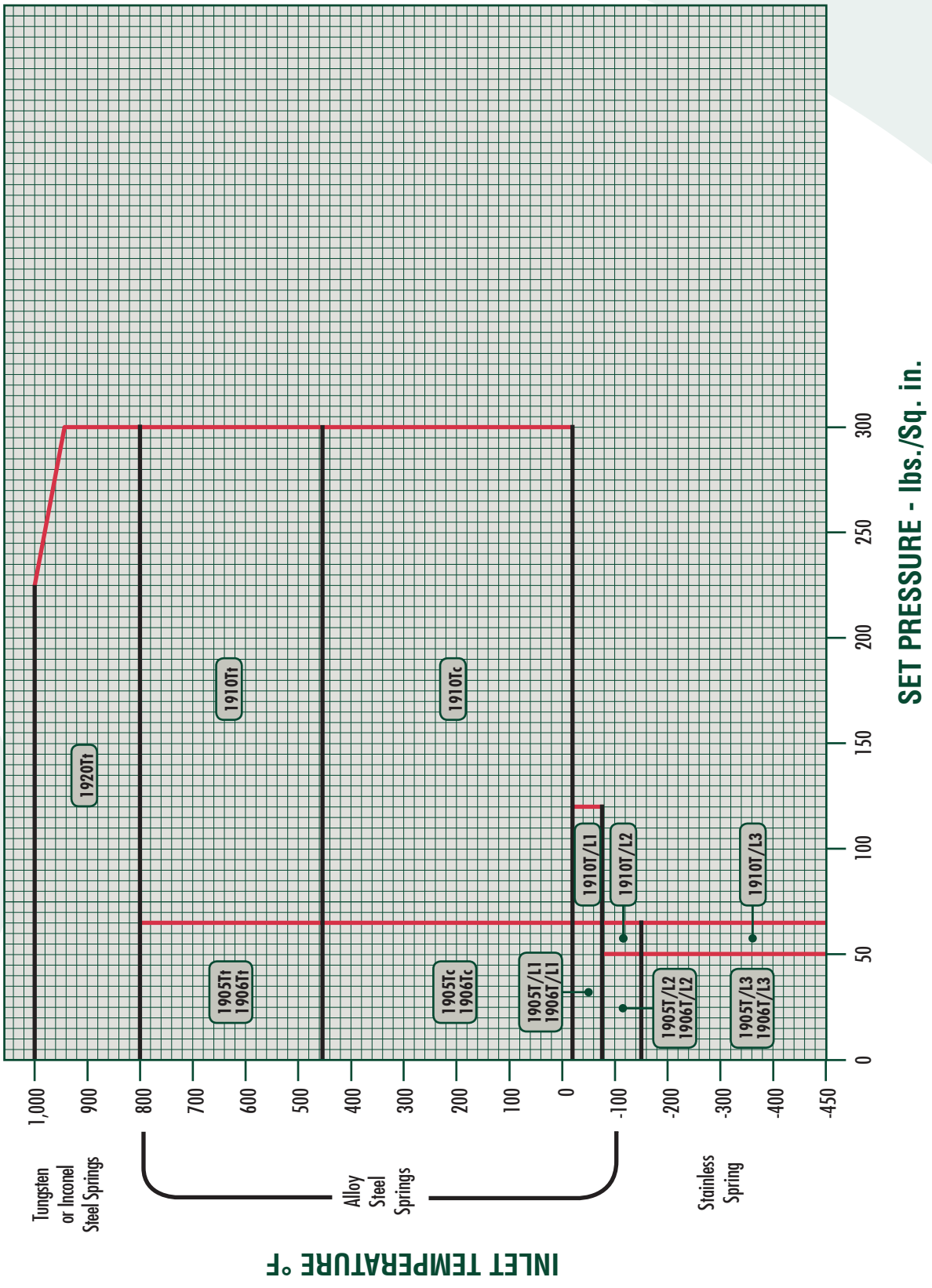
API Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, T Orifice - Area: 26.00 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F							Back Press. Limits (psig) at 100°F		Inlet Temp. Range (°F)
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-450 -151	-150 -76	-75 -21	-20 +100	+450	+800	+1000	Standard	Bellows	
1905Tc	1905-30Tc	8 x 10	150	150	—	—	—	65	65	—	—	30	30	-20
1906Tc	1906-30Tc	8 x 10	300	150	—	—	—	65	65	—	—	30	30	to
1910Tc	1910-30Tc	8 x 10	300	150	—	—	—	300	300	—	—	100	100	450
1905Tt	1905-30Tt	8 x 10	150	150	—	—	—	—	65	65	—	30	30	451
1906Tt	1906-30Tt	8 x 10	300	150	—	—	—	—	65	65	—	30	30	to
1910Tt	1910-30Tt	8 x 10	300	150	—	—	—	—	300	300	—	100	100	800
1920Tt	1920-30Tt	8 x 10	300	150	—	—	—	—	—	300	225	100	100	801 to 1000
1905T/L1	1905-30T/L1	8 x 10	150	150	—	—	65	—	—	—	—	30	30	-21
1906T/L1	1906-30T/L1	8 x 10	300	150	—	—	65	—	—	—	—	30	30	to
1910T/L1	1910-30T/L1	8 x 10	300	150	—	—	120	—	—	—	—	100	100	-75
1905T/L2	1905-30T/L2	8 x 10	150	150	—	50	—	—	—	—	—	30	30	-76
1906T/L2	1906-30T/L2	8 x 10	300	150	—	50	—	—	—	—	—	30	30	to
1910T/L2	1910-30T/L2	8 x 10	300	150	—	65	—	—	—	—	—	60	60	-150
1905T/L3	1905-30T/L3	8 x 10	150	150	50	—	—	—	—	—	—	30	30	-151
1906T/L3	1906-30T/L3	8 x 10	300	150	50	—	—	—	—	—	—	30	30	to
1910T/L3	1910-30T/L3	8 x 10	300	150	65	—	—	—	—	—	—	60	60	-450

API Selection Chart for Vapors, Gases and Liquids

1900 and 1900-30 Series, T Orifice - Area: 30.21 Sq. in.



ASME Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, V Orifice - Area: 50.26 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F				Back Press. Limits (psig) at 100°F	
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-20 +100	+101 +450	+451 +800	+801 +1000	Standard	Bellows
1905V	1905-30V	10 x 14	150	150	154	154	80	—	30	72
1906V	1906-30V	10 x 14	300	150	154	154	154	—	30	72
1910V	1910-30V	10 x 14	300	150	300	300	300	—	100	72
1920V	1920-30V	10 x 14	300	150	—	—	—	154	30	72

ASME Selection Table for Vapors, Gases and Liquids

1900 and 1900-30 Series, W Orifice - Area: 78.996 Sq. in.

Valve Type Number		Valve Size	ASME Flanged Ratings		Inlet Pressure (psig) & Temperature Limits - °F				Back Press. Limits (psig) at 100°F	
Standard	Bellows	Inlet x Outlet	Inlet R.F. or R.J.	Outlet R.F.	-20 +100	+101 +450	+451 +800	+801 +1000	Standard	Bellows
1905W	1905-30W	12 x 16	150	150	154	154	80	—	30	72
1906W	1906-30W	12 x 16	300	150	154	154	154	—	30	72
1910W	1910-30W	12 x 16	300	150	300	300	300	—	100	72
1920W	1920-30W	12 x 16	300	150	—	—	—	154	30	72

1900 Flanged Valve Orifice Capacities for Air (USCS Units)
ASME B & PVC, Section VIII

Capacities Based on Set Pressure plus 10% overpressure or 3 psig, whichever is greater.
Capacities in standard feet of air per minute @ 60°F.

Set Press. (psig)	Orifice Designation															
	D 0.1279	E 0.2279	F 0.3568	G 0.5849	H 0.9127	J 1.496	K 2.138	L 3.317	M 4.186	N 5.047	P 7.417	Q 12.85	R 18.6	T 30.21	V 50.26	W 78.996
15	65	117	183	300	468	767	1097	1702	2148	2589	3806	6594	9544	15502	25792	40538
20	75	134	211	346	539	885	1264	1962	2476	2985	4388	7602	11004	17873	29735	46737
30	95	170	267	437	683	1119	1600	2483	3133	3778	5552	9619	13923	22614	37623	59134
40	117	209	328	538	840	1378	1969	3055	3856	4649	6832	11837	17134	27829	46229	72770
50	139	249	390	639	998	1636	2338	3628	4578	5520	8112	14055	20345	33044	54975	86407
60	161	288	451	740	1155	1894	2707	4200	5301	6391	9393	16273	23555	38259	63651	100044
70	184	327	513	841	1313	2152	3076	4773	6023	7263	10673	18492	26766	43474	72327	113681
80	206	367	575	942	1471	2411	3445	5346	6746	8134	11953	20710	29977	48689	81004	127318
90	228	406	636	1043	1628	2669	3814	5918	7469	9005	13234	22928	33188	53904	89680	140954
100	250	445	698	1144	1786	2927	4183	6491	8191	9876	14514	25146	36399	59119	98356	154591
120	294	524	821	1346	2101	3444	4922	7636	9637	11619	17075	29583	42821	69549	115708	181865
140	338	603	944	1548	2416	3960	5660	8781	11082	13361	19636	34019	49242	79979	133061	209138
160	382	682	1067	1750	2731	4477	6398	9926	12527	15104	22196	38456	55664	90409	150413	236412
180	426	760	1190	1952	3046	4993	7136	11072	13972	16846	24757	42892	62086	100839	167766	263685
200	471	839	1314	2154	3361	5510	7874	12217	15417	18589	27318	47329	68507	111270	185118	290959
220	515	918	1437	2356	3676	6023	8612	13362	16863	20331	29879	51765	74929	121700	202470	318233
240	559	996	1560	2558	3991	6543	9351	14507	18308	22074	32439	56202	81351	132130	219823	345506
260	603	1075	1683	2760	4307	7059	10089	15652	19753	23816	35000	60638	87772	142560	237175	372780
280	647	1154	1806	2962	4622	7576	10827	16798	21198	25559	37561	65075	94194	152990	254528	400053
300	691	1232	1930	3164	4937	8092	11565	17943	22644	27301	40122	69511	100616	163420	271880	427327
320	736	1311	2053	3365	5252	8609	12303	19088	24089	29044	42682	73948	—	—	—	—
340	780	1390	2176	3567	5567	9125	13041	20233	25534	30786	45243	78384	—	—	—	—
360	824	1468	2299	3769	5882	9642	13779	21378	26979	32529	47804	82821	—	—	—	—
380	868	1547	2422	3971	6197	10158	14518	22524	28424	34271	50365	87257	—	—	—	—
400	912	1626	2546	4173	6512	10675	15256	23669	29870	36014	52925	91694	—	—	—	—
420	956	1704	2669	4375	6827	11191	15994	24814	31315	37756	55486	96130	—	—	—	—
440	1000	1783	2792	4577	7143	11708	16732	25959	32760	39499	58047	100567	—	—	—	—
460	1045	1862	2915	4779	7458	12224	17470	27104	34205	41241	60608	105003	—	—	—	—
480	1089	1940	3038	4981	7773	12741	18208	28250	35651	42984	63168	109440	—	—	—	—
500	1133	2019	3161	5183	8088	13257	18946	29395	37096	44726	65729	113876	—	—	—	—
600	1354	2413	3777	6193	9663	15840	22637	35121	44322	53439	78533	136059	—	—	—	—
700	1575	2806	4393	7202	11239	18422	26328	40487	51548	62151	91336	—	—	—	—	—
800	1795	3199	5009	8212	12815	21005	30019	46573	58774	70863	104140	—	—	—	—	—
900	2016	3593	5625	9222	14390	23587	33709	52299	66000	79576	116944	—	—	—	—	—
1000	2237	3986	6241	10231	15966	26170	37400	58025	73227	88288	129747	—	—	—	—	—
1100	2458	4380	6875	11241	17541	28752	41091	63751	80453	—	—	—	—	—	—	—
1200	2678	4773	7473	12251	19117	31334	44782	69477	—	—	—	—	—	—	—	—
1300	2899	5166	8089	13260	20692	33917	48472	75203	—	—	—	—	—	—	—	—
1400	3120	5560	8705	14270	22268	36499	52163	80929	—	—	—	—	—	—	—	—
1500	3341	5953	9321	15280	23843	39082	55854	86655	—	—	—	—	—	—	—	—
2000	4445	7920	12400	20328	31721	51994	74308	—	—	—	—	—	—	—	—	—
2500	5549	9887	15480	25377	39599	64907	—	—	—	—	—	—	—	—	—	—
3000	6653	11855	18560	30425	47477	77819	—	—	—	—	—	—	—	—	—	—
4000	8861	15789	24719	—	—	—	—	—	—	—	—	—	—	—	—	—
5000	11068	19723	30878	—	—	—	—	—	—	—	—	—	—	—	—	—
6000	13276	23657	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: 1 Relieving capacities indicated are 90% of average capacity in accordance with the latest ASME Code requirements. For temperatures other than 60° F and specific gravities other than air use formula sizing method.

SIZING: Refer to the sizing section for formulas for both ASME and API sizing. Valves may be sized for either ASME or API applications.

1900 and 1900TD Flanged Valve Orifice Capacities for Steam (USCS Units)
ASME B & PVC, Section VIII

Capacities Based on Set Pressure plus 10% overpressure or 3 psig, whichever is greater. Capacities in lbs. per hour of saturated steam

Set Press. (psig)	Orifice Designation															
	D 0.1279	E 0.2279	F 0.3568	G 0.5849	H 0.9127	J 1.496	K 2.138	L 3.317	M 4.186	N 5.047	P 7.417	Q 12.85	R 18.6	T 30.21	V 50.26	W 78.996
15	184	328	513	842	1314	2154	3078	4776	6027	7266	10679	18502	26781	43498	72367	113743
20	212	378	592	970	1515	2483	3549	5506	6948	8378	12312	21331	30876	50149	83432	131135
30	268	478	749	1228	1916	3142	4490	6966	8792	10600	15578	26989	39066	63451	105563	165919
40	330	589	922	1511	2359	3866	5526	8573	10819	13045	19170	33213	48075	78084	129907	204181
50	392	699	1095	1795	2801	4591	6561	10180	12487	15489	22763	39437	57084	92716	154251	242443
60	454	809	1267	2078	3243	5315	7597	11786	14874	17934	26355	45661	66093	107348	178595	280706
70	516	920	1440	2361	3685	6040	8632	13393	16902	20378	29948	51885	75102	121981	202938	318968
80	578	1030	1613	2645	4127	6765	9668	14999	18929	22823	33540	58109	84111	136613	227282	357230
90	640	1140	1786	2928	4569	7489	10703	16606	20957	25267	37133	64333	93120	151246	251626	395493
100	702	1251	1959	3211	5011	8214	11739	18213	22984	27712	40725	70557	102129	165878	275970	433755
120	826	1472	2304	3778	5895	9663	13810	21426	27039	32601	47910	83005	120147	195143	342657	510280
140	950	1692	2650	4344	6779	11112	15881	24639	31094	37490	55095	95453	138166	224408	373345	586804
160	1073	1913	2996	4911	7663	12561	17952	27852	35149	42379	62280	107901	156184	253673	422033	663329
180	1197	2134	3341	5478	8548	14011	20023	31066	39204	47268	69465	120349	174202	282938	470720	739853
200	1321	2355	3687	6044	9432	15460	22095	34279	43259	52157	76650	132797	192220	312203	519408	816378
220	1445	2575	4032	6611	10316	16909	24166	37492	47314	57046	83835	145245	210238	341467	568095	892903
240	1569	2796	4378	7177	11200	18358	26237	40705	51370	61936	91020	157693	228256	370732	616783	969427
260	1693	3017	4724	7744	12084	19807	28308	43918	55425	66825	98205	170141	246274	399997	665471	1045952
280	1817	3238	5069	8311	12968	21257	30379	47132	59480	71714	105390	182589	264292	429262	714158	1122476
300	1941	3459	5415	8877	13852	22706	32450	50345	63535	76603	112575	195037	282310	458527	762846	1199001
320	2065	3679	5761	9444	14737	24155	34521	53558	67590	81492	119760	207485	—	—	—	—
340	2189	3900	6106	10010	15621	25604	36592	56771	71645	86381	126945	219933	—	—	—	—
360	2312	4121	6452	10577	16505	27053	38663	59985	75700	91270	134130	232381	—	—	—	—
380	2436	4342	6798	11144	17389	28503	40735	63198	79755	96159	141315	244829	—	—	—	—
400	2560	4562	7143	11710	18273	29952	42806	66411	83810	101048	148500	257277	—	—	—	—
420	2684	4783	7489	12277	19157	31401	44877	69624	87865	105938	155685	269725	—	—	—	—
440	2808	5004	7834	12843	20041	32850	46948	72838	91920	110827	162869	282173	—	—	—	—
460	2932	5225	8180	13410	20926	34299	49019	76051	95975	115716	170054	294621	—	—	—	—
480	3056	5446	8526	13977	21810	35749	51090	79264	100030	120605	177239	307069	—	—	—	—
500	3180	5666	8871	14543	22694	37198	53161	82477	104085	125494	184424	319517	—	—	—	—
600	3799	6770	10600	17376	27115	44444	63517	98543	124360	149939	220349	381757	—	—	—	—
700	4419	7874	12328	20209	31535	51690	73872	114609	144365	174385	256274	—	—	—	—	—
800	5038	8978	14056	23042	35956	58936	84228	130676	164911	198831	292199	—	—	—	—	—
900	5658	10082	15784	25875	40377	66182	94583	146742	185186	223276	328124	—	—	—	—	—
1000	6277	11186	17512	28708	44798	73428	104939	162808	205461	247722	364048	—	—	—	—	—
1100	6897	12289	19241	31541	49218	80674	115295	178874	225736	—	—	—	—	—	—	—
1200	7516	13393	20969	34374	53639	87920	125650	194940	246011	—	—	—	—	—	—	—
1300	8136	14497	22697	37207	58060	95166	136006	211006	—	—	—	—	—	—	—	—
1400	8755	15601	24425	40040	62481	102412	146361	227072	—	—	—	—	—	—	—	—
1423	8898	15855	24822	40691	63496	104076	148740	230764	—	—	—	—	—	—	—	—
1500	9420	16785	26279	43079	67222	110183	157468	244304	—	—	—	—	—	—	—	—
2000	13024	23207	36334	59562	92943	152343	217720	—	—	—	—	—	—	—	—	—
2500	17235	30711	48082	78821	122995	201601	—	—	—	—	—	—	—	—	—	—
2903	21551	38401	60121	98557	—	—	—	—	—	—	—	—	—	—	—	—

NOTE 1: Relieving capacities indicated are 90% of average capacity in accordance with the latest ASME Code requirements. Maximum permissible set pressure on steam is 2903 psig. 3000 psig capacities are included for interpolation purposes only.

NOTE 2: For Superheat Correction Factors refer to pages VS.18 and VS.19 in the Valve Sizing section of this catalog.

SIZING: Refer to the sizing section for formulas for both ASME and API sizing. Valves may be sized for either ASME or API applications.

1900LA Flanged Valve Orifice Capacities for Water (USCS Units)
ASME B & PVC, Section VIII

Capacities based on Set Pressure plus 10% overpressure or 3 psig, whichever is greater, zero psig back pressure. Capacities in gallons of water per minute at 70°F, 90% of average capacity.

Set Press. (psig)	Orifice Designation															
	D 0.1279	E 0.2279	F 0.3568	G 0.5849	H 0.9127	J 1.496	K 2.138	L 3.317	M 4.186	N 5.047	P 7.417	Q 12.85	R 18.6	T 30.21	V 50.26	W 78.996
15	13	24	38	63	98	161	230	357	451	544	799	1385	2006	3258	5420	8520
20	15	27	43	71	111	182	260	404	510	615	904	1566	2267	3683	6127	9631
30	18	33	52	85	133	218	312	484	611	737	1083	1876	2716	4411	7339	11536
40	21	38	60	98	153	252	360	559	705	851	1250	2166	3136	5094	8475	13321
50	24	42	67	110	172	282	403	625	789	951	1398	2422	3506	5695	9475	14893
60	26	47	73	120	188	308	441	685	864	1042	1531	2653	3841	6239	10380	16314
70	28	50	79	130	203	333	476	739	933	1125	1654	2866	4149	6739	11211	17622
80	30	54	85	139	217	356	509	791	998	1203	1768	3064	4435	7204	11985	18838
90	32	57	90	147	230	378	540	839	1058	1276	1876	3250	4704	7641	12713	19981
100	34	60	95	155	243	398	570	884	1116	1345	1977	3426	4959	8054	13400	21062
120	37	66	104	170	266	436	624	968	1222	1474	2166	3753	5432	8823	14679	23072
140	40	71	112	184	287	471	674	1046	1320	1592	2339	4053	5867	9530	15855	24921
160	43	76	120	197	307	504	721	1118	1411	1702	2501	4333	6273	10188	16950	26642
180	45	81	127	209	326	535	764	1186	1497	1805	2653	4596	6653	10806	17978	28258
200	48	85	134	220	344	564	806	1250	1578	1903	2796	4845	7013	11391	18951	29786
220	50	90	141	231	360	591	845	1311	1655	1995	2933	5081	7355	11947	19876	31240
240	52	94	147	241	377	617	883	1370	1729	2084	3063	5307	7682	12478	20760	32629
260	54	97	153	251	392	643	919	1426	1799	2169	3188	5524	7996	12988	21608	33962
280	57	101	159	260	407	667	953	1479	1867	2251	3309	5733	8298	13478	22423	35244
300	59	105	164	270	421	690	987	1531	1933	2330	3425	5934	8589	13951	23210	36481
320	61	108	170	278	435	713	1019	1582	1996	2407	3537	6128	—	—	—	—
340	62	112	175	287	448	735	1051	1630	2058	2481	3646	6317	—	—	—	—
360	64	115	180	295	461	756	1081	1678	2117	2553	3752	6500	—	—	—	—
380	66	118	185	304	474	777	1111	1724	2175	2623	3855	6678	—	—	—	—
400	68	121	190	311	486	797	1140	1768	2232	2691	3955	6852	—	—	—	—
420	69	124	194	319	498	817	1168	1812	2287	2757	4052	7021	—	—	—	—
440	71	127	199	327	510	836	1195	1855	2341	2822	4148	7186	—	—	—	—
460	73	130	204	334	521	855	1222	1896	2393	2886	4241	7348	—	—	—	—
480	74	133	208	341	533	873	1248	1937	2445	2948	4332	7506	—	—	—	—
500	76	135	212	348	544	891	1274	1977	2495	3009	4422	7661	—	—	—	—
600	83	148	233	382	596	977	1396	2166	2733	3296	4844	8392	—	—	—	—
700	90	160	251	412	643	1055	1508	2339	2952	3560	5232	9064	—	—	—	—
800	96	171	269	441	688	1128	1612	2501	3156	3806	5593	9690	—	—	—	—
900	102	182	285	467	730	1196	1710	2653	3348	4037	5932	10278	—	—	—	—
1000	107	192	300	493	769	1261	1802	2796	3529	4255	6253	10834	—	—	—	—
1100	113	201	315	517	807	1322	1890	2933	3701	—	—	—	—	—	—	—
1200	118	210	329	540	842	1381	1974	3063	—	—	—	—	—	—	—	—
1300	122	219	343	562	877	1438	2055	3188	—	—	—	—	—	—	—	—
1400	127	227	355	583	910	1492	2132	3309	—	—	—	—	—	—	—	—
1500	132	235	368	603	942	1544	2207	3425	—	—	—	—	—	—	—	—
2000	152	271	425	697	1088	1783	2549	—	—	—	—	—	—	—	—	—
2500	170	303	475	779	1216	1994	—	—	—	—	—	—	—	—	—	—
3000	186	332	521	854	1332	2184	—	—	—	—	—	—	—	—	—	—
4000	215	384	601	986	—	—	—	—	—	—	—	—	—	—	—	—
5000	241	429	672	—	—	—	—	—	—	—	—	—	—	—	—	—
6000	264	470	—	—	—	—	—	—	—	—	—	—	—	—	—	—

NOTE: 1 Relieving capacities indicated are 90% of average capacity in accordance with the latest ASME Code requirements.
SIZING: Refer to the sizing section for formulas for both ASME and API sizing. Valves may be sized for either ASME or API applications.