General Info

Safety Valves

Consolidated®

The **Consolidated** Pressure Relief Valve has been a leader in the industry since 1879, thus offering over a century of experience in design, engineering and product manufacture. **Consolidated's** history of dependable and reliable valve service assures that today's products and designs are consistent with the industry's current requirements. Rigid manufacturing standards controlled by an ASME approved Quality Assurance Program and a certified/registered ISO 9001 Quality Assurance Program ensure that each valve will be manufactured in accordance with established design criteria and tested for functional performance. This quality-controlled manufacturing and test program assures that each valve manufactured will provide long and reliable service. **Consolidated** ASME Code Sections I and VIII Spring Loaded Pressure Relief Valves have been flow tested in accordance with the applicable ASME Code rules for the establishment of rated capacities and are listed in The National Board of Boiler and Pressure Vessel Inspectors publication *Pressure Relieving Device Certifications.*

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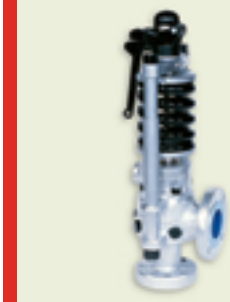
1700



Consolidated Maxiflow® High Pressure Safety Valves are premium products that are installed in a majority of power generating stations worldwide to protect boilers from overpressure conditions.

1700 (GI.3-6)

2700

The **Consolidated** type 2700 Safety Valve is designed to meet the fast growing co-generation and waste-to-energy markets.

2700 (GI.7-10)

Conso

Our Green Tag® serves as a reminder that each **Consolidated** valve meets or exceeds the stringent performance and overpressure protection requirements set forth by the ASME and is backed by Dresser. Additionally, the symbol also represents our Green Tag Centers. These centers are fully certified by Dresser as **Consolidated**® valve assembly and repair facilities. They also meet or exceed the standards of the ASME and the National Board. Contact the authorized Green Tag Center in your local area to fill your immediate needs for **Consolidated** Pressure Relief Valves or call 1-800-245-VALV.

Evidence of this quality is a Green Tag certification attached to the valve following final test and inspection.

Green Tag Center®

1811

The 1811 safety valve is a high capacity flanged steel safety valve designed for steam service. The design is available in two pressure classes (300 and 600). Both pressure classes are provided with a Thermodisc™ seat design to assure maximum seat tightness.

1811 (GI.11-12)

1511

Valve type 1511 is a cast iron exposed spring safety valve. It is designed for ASME Code Sections I and VIII. This valve is specifically designed for steam generator and air service applications.

1511 (GI.13)

1541/1543

Valve types 1541 and 1543 are ASME Code approved for Sections I and VIII. They are designed for steam and other compressible fluids. The valves should be used on compressible fluids only, not incompressible fluids such as water or oil.

1541/1543 (GI.14)

2478

The 2478 valve is designed for thermal relief fluid and non-corrosive liquid service. It is totally enclosed and is non-code.

2478 (GI.15)

3500

The Consolidated Series 3500 Electromatic Ball Valve is designed to provide automatic or manual overpressure protection for steam boiler systems, and can also be used to assist start-up and shut-down venting.

3500

Applications

Valve Type	Inlet		Materials		ANSI Class									ASME Codes		Steam		Liquid	Air, Gas, Vapor			Marine
	Type	Size	Body/ Bonnet	Trim	125	250	300	600	900	1500	2500	3000	4500	Sec I	Sec VIII	Saturated	Superheated	Non-Corrosive	Non-Corrosive	Non-Flammable	Non-Toxic	Power Boilers
1700	Flanged	1-1/2" - 6"	Steel	S.S.				X	X	X	X			X	X	X	X		X	X	X	X
1700W	Welded	1-1/2" - 6"	Steel	S.S.				X	X	X	X	X	X	X	X	X	X		X	X	X	X
2700	Flanged	1-1/2" - 6"	Steel	S.S.				X	X	X				X	X	X	X		X	X	X	X
2700W	Welded	1-1/2" - 6"	Steel	S.S.						X				X	X	X	X		X	X	X	X
1811-3X	Flanged	1-1/2" - 6"	Steel	S.S.			X							X	X	X	X		X	X	X	X
1811-6X	Flanged	1-1/2" - 6"	Steel	S.S.				X						X	X	X	X		X	X	X	X
1511	Flanged	1-1/2" - 6"	Iron	Bronze	X	X								X	X	X			X	X	X	X
1511-S	Flanged	1-1/2" - 6"	Iron	S.S.	X	X								X	X	X			X	X	X	X
1541	External NPT	3/4" - 2-1/2"	Iron	Bronze										X	X	X			X	X	X	X
1541-BR	External NPT	3/4" - 2-1/2"	Bronze	Bronze										X	X	X			X	X	X	X
1541-3	External NPT	3/4" - 2-1/2"	Iron	S.S.										X	X	X			X	X	X	X
1541-3-BR	External NPT	3/4" - 2-1/2"	Bronze	S.S.										X	X	X			X	X	X	X
1543	External NPT	1/2" - 2"	Iron	Bronze										X	X	X			X	X	X	X
1543-BR	External NPT	1/2" - 2"	Bronze	Bronze										X	X	X			X	X	X	X
1543-3	External NPT	1/2" - 2"	Iron	S.S.										X	X	X			X	X	X	X
1543-3-BR	External NPT	1/2" - 2"	Bronze	S.S.										X	X	X			X	X	X	X
2478	External NPT	1/2" - 2-1/2"	Bronze	Bronze														X				
3500	Flanged	1-1/2" - 2-1/2"	Steel	Titanium						X	X			X		X	X		X	X	X	X
3500W	Welded	1-1/2" - 2-1/2"	Steel	Titanium						X	X	X	X	X		X	X		X	X	X	X

Pressure/Temperature Ranges

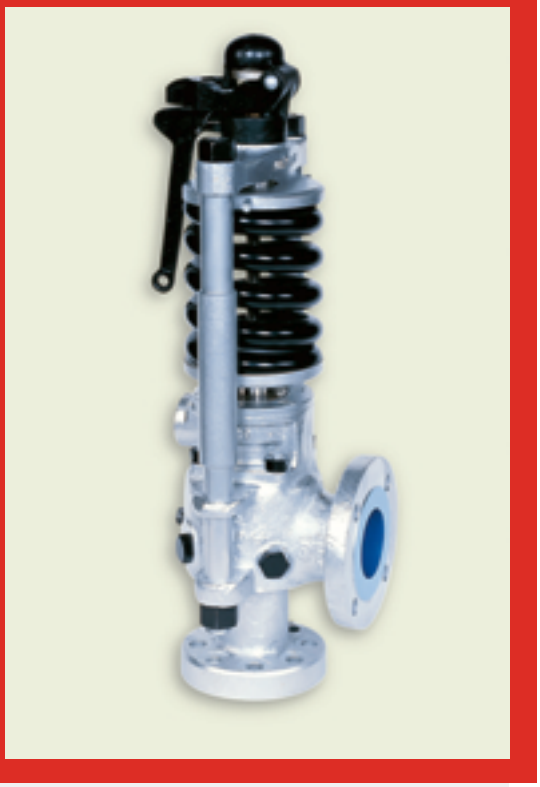
Valve Type	Set Pressure Range			Temperature				Back Pressure % of Set Pressure	Notes
	Steam (psig)	Air (psig)	Liquid (psig)	Minimum		Maximum			
				°F	°C	°F	°C		
1700 Subcritical	100-3100			-20	-28	1120	604	25%	1,2,3,4,5
17-2W Supercritical	3100-5360			-20	-28	1120	604	25%	1,2,3,4,5
2700	100-1600			-20	-28	1050	549	25%	1,2,3,4,5
1811-3X	5-320	5-320		-20	-28	1000	538	20%	1,2,3,4,5
1811-6X	5-725	5-725		-20	-28	1000	538	20%	1,2,3,4,5
1511	5-250	5-250		-20	-28	406	207	20%	1,2,3,4,5
1511-S	5-250	5-250		-20	-28	406	207	10%	1,2,3,5
1541	5-250	5-300		-20	-28	406	207	10%	1,2,3,5
1541-BR	5-250	5-300		-20	-28	406	207	10%	1,2,3,5
1541-3	5-300	5-350		-20	-28	420	215	10%	1,2,3,5
1541-3-BR	5-300	5-350		-20	-28	420	207	10%	1,2,3,5
1543	5-250	5-300		-20	-28	406	207	10%	1,2,3,5
1543-BR	5-250	5-300		-20	-28	420	207	10%	1,2,3,5
1543-3	5-350	5-350		-20	-28	420	215	10%	1,2,3,5
1543-3-BR	5-350	5-350		-20	-28	420	207	10%	1,2,3,5
2478			5-300	-325	-198	406	207	10%	6
3500 Flanged	50-2500			-20	-28	1050	566	Note 7	1, 2, 7
3500 Welded	50-4500			-20	-28	1100	593	Note 7	1, 2, 7

Notes:

1. For maximum set pressure at a given temperature see the Pressure/Temperature chart for each valve type.
2. For set pressure less than 15 psig ASME code stamping is not allowed.
3. These valves have either an open yoke or a vented bonnet which should never be closed.
4. Do not exceed back pressure limits (% of Set Pressure) or the outlet flange rating (whichever is less).
5. ASME code approved products are permitted for use by the U.S. Coast Guard for marine applications which include power boilers, evaporators, heaters, and unfired pressure vessels.
6. The 2478 valve type is a closed bonnet design and can be used for hot liquids when closed discharge piping is used.
   This valve type is not recommended for vapor service. This valve is not ASME certified.
7. Back pressure not to exceed outlet flange rating.

CONSOLIDATED Maxiflow® high pressure safety valves are premium products that are installed on a majority of power generating stations worldwide to protect boilers from overpressure conditions.

1700



INLET SIZES — 1-1/2" through 6" in either flanged or weld neck design.

INLET RATINGS — ANSI Class 600 through 4500

OUTLET SIZES — 3" through 10" flanged

OUTLET RATINGS — ANSI Class 150 and 300

ORIFICE SIZES — Ten sizes: 1 through RR

TEMPERATURE RANGE — -20°F to 1120°F

MATERIALS — Alloy and carbon steel cast body with stainless steel trim is standard. Special alloys are available for specific applications.

CERTIFICATION — ASME B & PVC Section I and VIII

BLOWDOWN — 3%

BACK PRESSURE LIMITS — 25% of Set Pressure

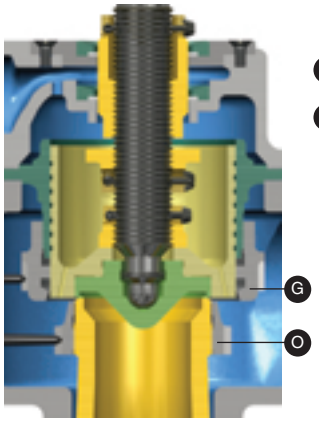


Figure 1-Closed

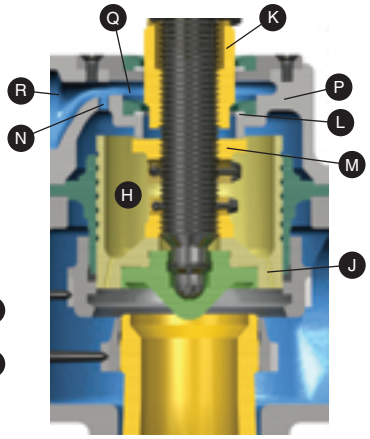


Figure 2-Full Lift

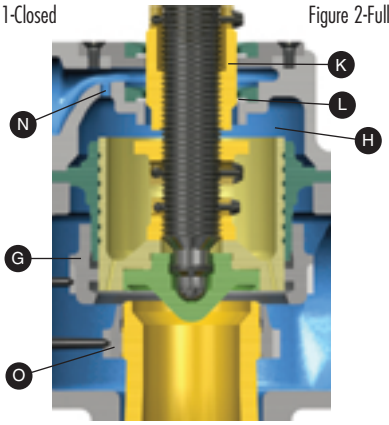


Figure 3-Closing

Backpressure Assisted Closing

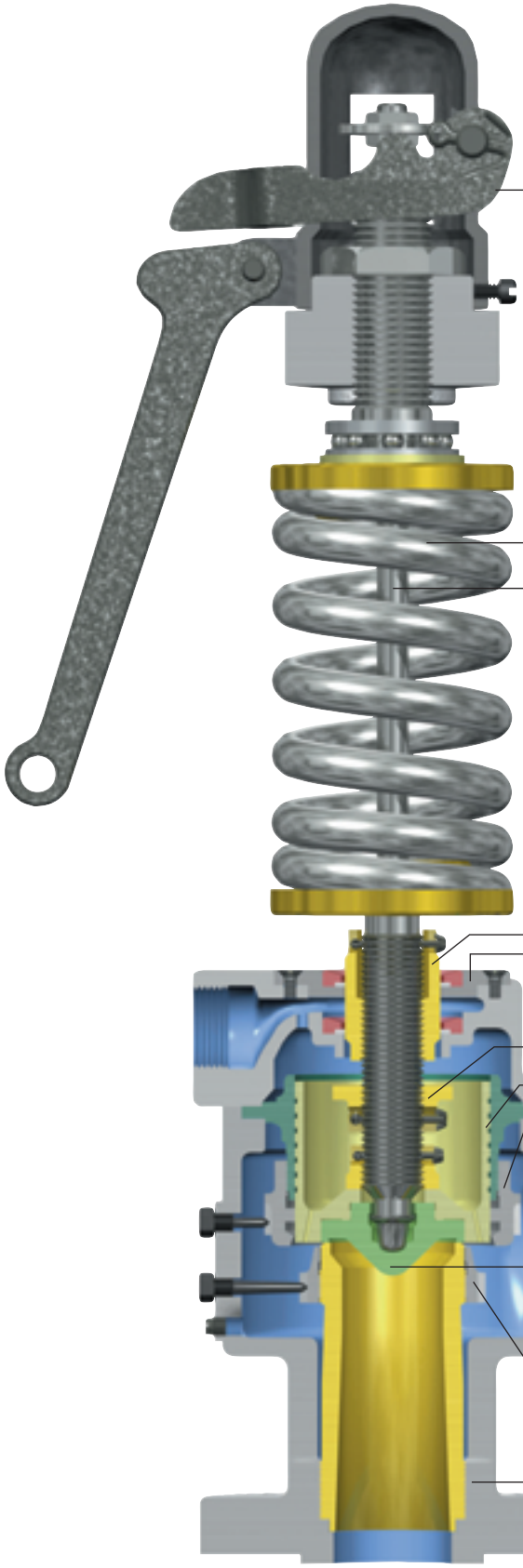
In **(Figure 1)**, the proper location of the lower adjusting ring (O) ensures a sharp pop action at set pressure. 100 percent lift is attained by proper location of the upper adjusting ring (G).

When full lift is attained, **(Figure 2)**, lift stop (M) rests against cover plate (P) to eliminate hunting, adding stability to the valve. When the valve discharges in an open position, steam is bled into chamber (H) through two bleed holes (J) in the roof of the disc holder. Similarly, the spindle overlap collar (K) rises to a fixed position above the floating washer (L). The area between the floating washer and the spindle is thereby increased by the difference in the two diameters on the overlap collar.

Under this condition, steam in chamber (H) enters into chamber (Q) through the secondary area formed by the floating washer (L) and the overlap collar (K) on the spindle, through orifice (N), and escapes to atmosphere through the pipe discharge connection (R).

When closing, **(Figure 3)**, the upper adjusting ring (G) initiates the pressure at which the valve will begin to close. The spindle overlap collar (K) is adjusted so that it moves down into the floating washer (L) thereby reducing the escape of steam from chamber (H) effectively.

The resulting momentary pressure building up in chamber (H), at a rate controlled by orifice (N), produces a downward thrust in the direction of spring loading. The combined thrust of the pressure and spring loading results in positive and precise closing. Cushioning of the closing is controlled by the lower adjusting ring (O).



SERVICE LIFE: 30 YEARS

LIFTING GEAR — adjustable position for flexibility and ease of installation.

PRECISION WOUND SPRING — specifically designed to eliminate eccentric loading and to provide full relieving capacity at minimum accumulation.

STAINLESS STEEL SPINDLE — with spherical bearing having large contact area for low unit loading, low spindle point for improved seat tightness.

OVERLAP COLLAR — controls the pressure at which the valve will reseat.

PRESSURE ASSISTED CLOSING — utilizes steam pressure to assist closing the valve and isolates the spring from steam pressure during actuation.

ADJUSTABLE LIFT STOP — matches safety valve capacity to boiler capacity, eliminates overpressure, protects against chatter, reduces reaction forces, assists stack sizing, and protects against over-compression of the spring.

GROOVED DISC HOLDER — prevents disc rotation and permits motion with minimum friction.

UPPER ADJUSTING RING — for attaining full lift at pop and controlling the pressure at which the valve will begin to close.

HIGH CAPACITY DISCHARGE — provides higher rated capacity and increases allowable backpressure to 25 percent of the valve's set pressure.

THERMODISC™ — eliminates distortion due to thermal stresses. Temperature differentials quickly equalize and permanent tightness is ensured.

LOWER ADJUSTING RING — ensures sharp pop action of the valve on opening and cushions the valve on closing.

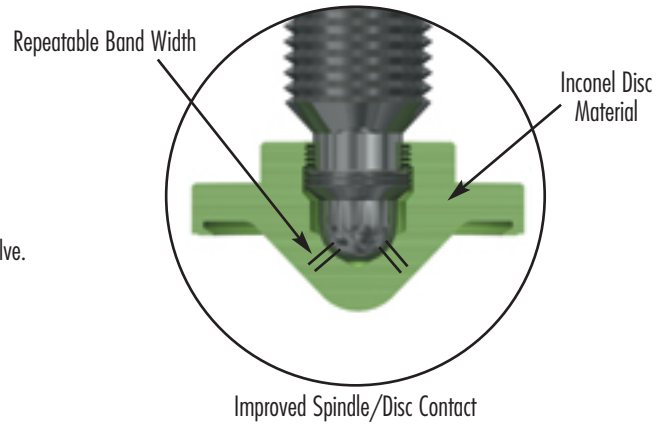
INLET CONNECTION — welded or flange.

Thermodisc™ Design

The Thermodisc™ seat was designed and developed to address the problem of safety valve leakage. The disc design uses Inconel material and has an improved spindle pocket with concentric loading of the disc. These features, when combined with a low spindle bearing point and a thin flexible seat, provide a superior safety valve that has repeatable seat tightness.

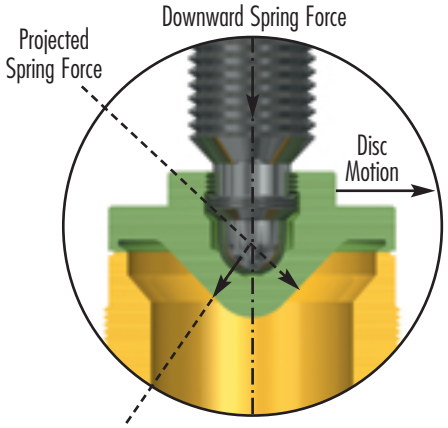
Inconel Disc Material

Inconel material provides superior corrosive resistance and strength at high temperatures over a long period of time. The strength of the Inconel material prevents distortion in the spindle/disc contact area during actuation. A more durable disc material helps to maintain the safety valves original set pressure despite numerous actuations and further improves the longevity of the safety valve.



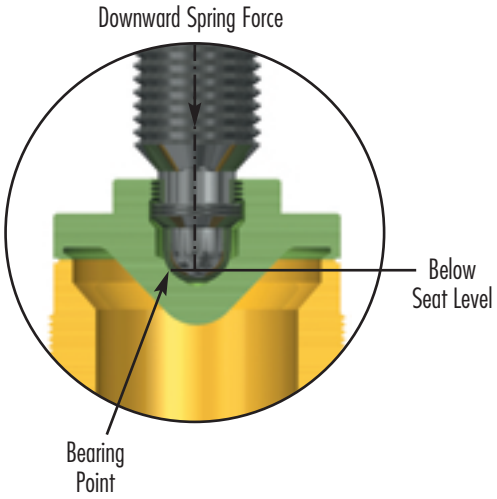
Concentric Disc Loading

Concentric disc loading equalizes the spring force being transmitted to the valve seating area. The disc remains concentric to the centerline of the valve nozzle and ensures that the valve will reseat in its original seating position. The effective seating area remains constant, producing repeatable valve opening pressures.



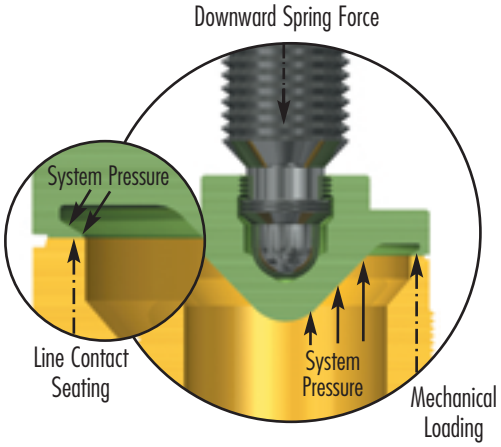
Low Spindle Bearing Point

A low spindle bearing point locates the point of spring force transmission below the horizontal seat line of the valve, which minimizes the natural tendency for the disc to assume a horizontally tilted position during the opening and closing cycle of the valve. The low spindle bearing point further promotes equalized spring force distribution at the valve seat and contributes to maintaining seat tightness.



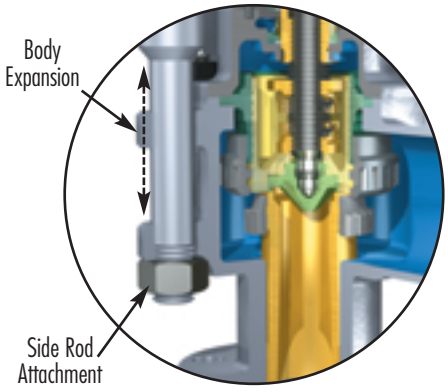
Thin Flexible Design

The thin seat design compensates for temperature changes by equalizing the temperature in the disc, thereby reducing distortions. Flexibility also allows the system pressure to assist the mechanical loading and produce a line contact at the sealing surface of the seat bushing; the critical seating area remains constant, which ensures consistent repeatable valve opening.



Side Rod Construction

The unique side rod construction of these valves insures that spring load in the valve is predictable and does not vary with changes in temperature. The side rods retain spring load and the rods are somewhat removed from the valve body so that the side rod temperatures remain relatively constant. Upon valve actuation, high temperature steam flow through the valve body causes large changes in thermal expansions of materials. The side rods retain their stable temperature and spring load does not change. Body expansion occurs independently of the side rods in an area above the point where the side rods attach to the valve body.



Consolidated type 2700 safety valve is designed to meet the fast growing co-generation and waste-to-energy markets.

2700

INLET SIZES — 1-1/2" through 6" in either flanged or weld neck design.

INLET RATINGS — ANSI Class 600, 900 & 1500

OUTLET SIZES — 3" through 8" flanged

OUTLET RATINGS — ANSI Class 150 and 300

ORIFICE SIZES — Seven sizes: 1 through Q

TEMPERATURE RANGE — -20°F to 1050°F

MATERIALS — Alloy and carbon steel cast body with stainless steel trim is standard. Special alloys are available for specific applications.

CERTIFICATION — ASME B & PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMITS — 25% of Set Pressure

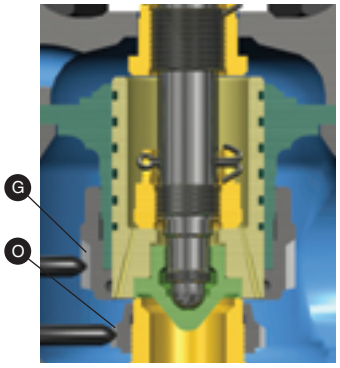


Figure 1 Closed

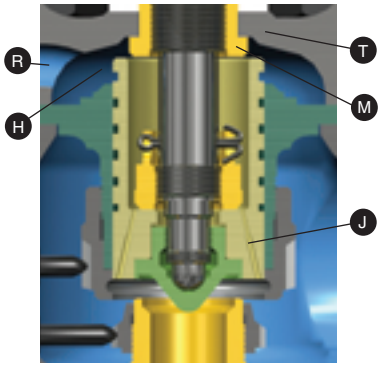
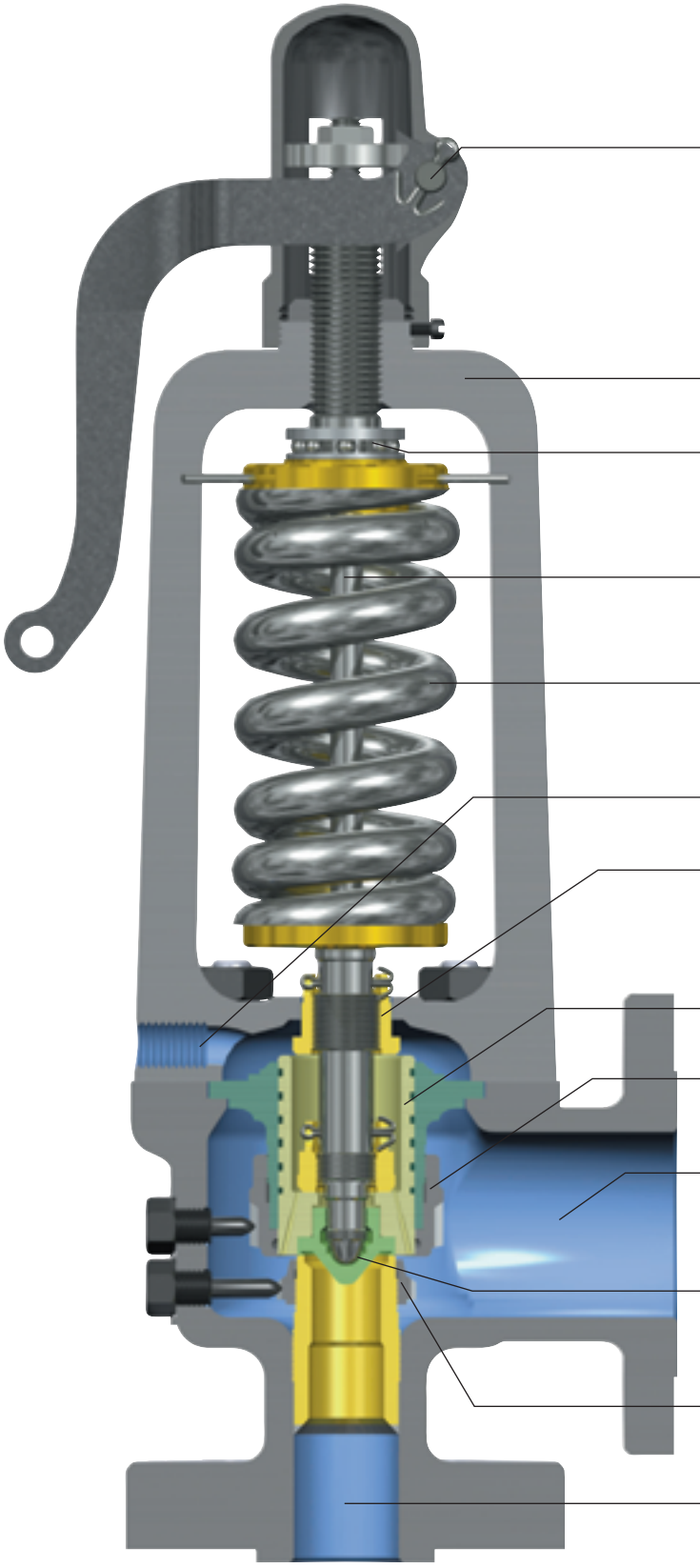


Figure 2 Full Lift

Valve Operation

In **(Figure 1)**, the Upper Adjusting Ring (G) is positioned for attaining full lift at pop and for controlling the pressure at which the valve will begin to close. The Lower Adjusting Ring (O) ensures a sharp pop action at the set pressure and cushions the valve on closing.

When full lift is attained, **(Figure 2)**, Lift Stop (M) rests against Yoke (T) to eliminate hunting, adding stability to the valve. When the valve discharges in an open position, steam is bled into Chamber (H) through two Bleed Holes (J) in the roof of the disc holder. The steam escapes to the atmosphere through the Pipe Discharge Connection (R).



SERVICE LIFE: 30 YEARS

LIFTING GEAR — adjustable position for flexibility and ease of installation.

ADVANCED YOKE DESIGN — provides spring cooling and ensures stable set pressure.

THRUST BEARING — provides accurate and easy adjustment of set pressures when in service, and also provides uniform loading of the valve spring.

STAINLESS STEEL SPINDLE — with spherical bearing having large contact area for low unit loading. Low spindle point for improved seat tightness.

PRECISION WOUND SPRING — specifically designed to eliminate eccentric loading and to provide full relieving capacity at minimum accumulation.

VENTED COVERPLATE — allows the valve to go to full lift at 3% overpressure.

ADJUSTABLE LIFT STOP — matches safety valve capacity to boiler capacity, eliminates overpressure, protects against chatter, reduces reaction forces, assists stack sizing, and protects against ove-compression of the spring.

GROOVED DISC HOLDER — prevents disc rotation and permits motion with minimum friction.

UPPER ADJUSTING RING — for attaining full lift at pop and controlling the pressure at which the valve will begin to close.

HIGH CAPACITY DISCHARGE — provides higher rated capacity and increases allowable backpressure to 25% of the valve's set pressure.

THERMODISC™ — eliminates distortion due to thermal stresses. Temperature differentials quickly equalize and permanent tightness is ensured.

LOWER ADJUSTING RING — ensures sharp pop action of the valve on opening and cushions the valve on closing.

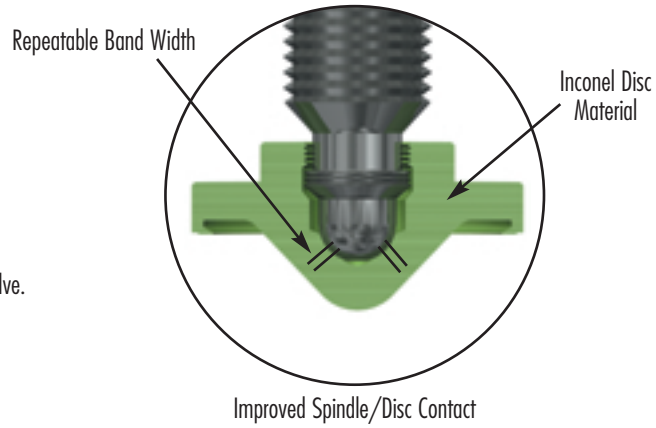
INLET CONNECTION — welded or flange.

Thermodisc™ Design

The Thermodisc™ seat was designed and developed to address the problem of safety valve leakage. The disc design uses Inconel material and has an improved spindle pocket with concentric loading of the disc. These features, when combined with a low spindle bearing point and a thin flexible seat, provide a superior safety valve that has repeatable seat tightness.

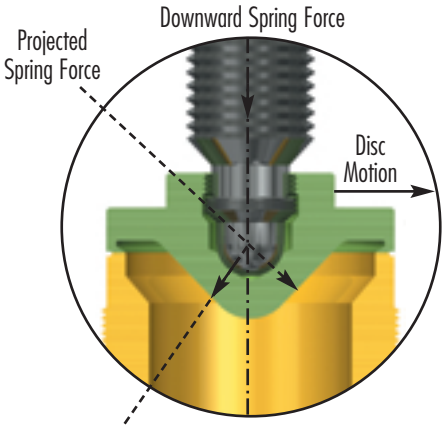
Inconel Disc Material

Inconel material provides superior corrosive resistance and strength at high temperatures over a long period of time. The strength of the Inconel material prevents distortion in the spindle/disc contact area during actuation. A more durable disc material helps to maintain the safety valves original set pressure despite numerous actuations and further improves the longevity of the safety valve.



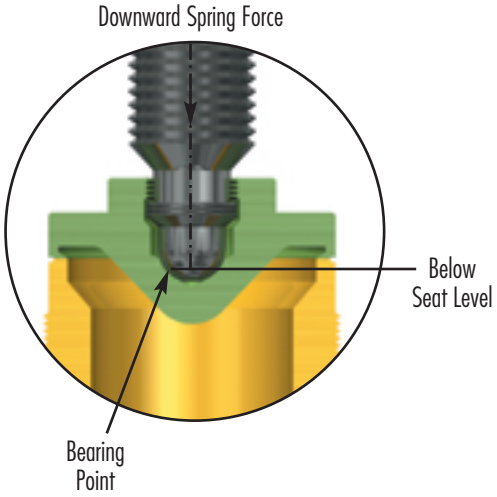
Concentric Disc Loading

Concentric disc loading equalizes the spring force being transmitted to the valve seating area. The disc remains concentric to the centerline of the valve nozzle and ensures that the valve will reseat in its original seating position. The effective seating area remains constant, producing repeatable valve opening pressures.



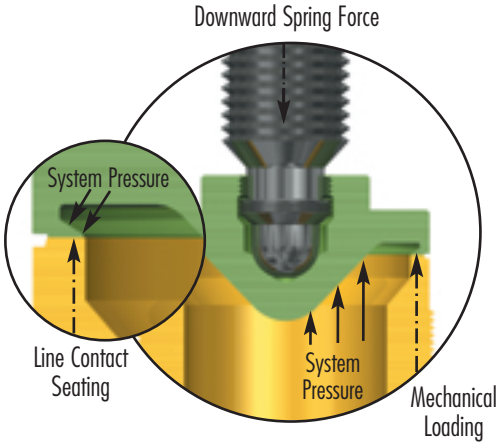
Low Spindle Bearing Point

A low spindle bearing point locates the point of spring force transmission below the horizontal seat line of the valve, which minimizes the natural tendency for the disc to assume a horizontally tilted position during the opening and closing cycle of the valve. The low spindle bearing point further promotes equalized spring force distribution at the valve seat and contributes to maintaining seat tightness.



Thin Flexible Design

The thin seat design compensates for temperature changes by equalizing the temperature in the disc, thereby reducing distortions. Flexibility also allows the system pressure to assist the mechanical loading and produce a line contact at the sealing surface of the seat bushing; the critical seating area remains constant, which ensures consistent repeatable valve opening.



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

1811

INLET SIZES — 1-1/4" through 6" flanged

INLET RATINGS — ANSI Class 300 & 600

OUTLET SIZES — 1-1/2" through 8" flanged

OUTLET RATINGS — ANSI Class 150

ORIFICE SIZES — Ten sizes: F through Q

TEMPERATURE RANGE — -20°F to 1000°F

MATERIALS — Alloy and carbon steel cast body with stainless steel trim is standard.

CERTIFICATION — ASME B & PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 20% of Set Pressure

Features & Benefits

- **Feature:** Ten orifice sizes, from .307 sq. inches to 11.050 sq. inches. Flanges ANSI B16.5 inlet & outlet connections. From 1-1/4" x 1-1/2" to 6" x 8" with oversize flanges available.

  Benefit: A variety of pressure/temperature classes, orifice sizes and inlet/outlet combinations provide a flexible selection of safety valves to meet industrial needs at the lowest cost.

- **Feature:** Low spindle bearing point and concentric spindle loading. The valve disc spindle contact area is designed to provide concentric spindle loading and a low spindle bearing point near the valve seat line.

  Benefit: The natural tendency for the disc to assume a horizontal position during the opening and closing cycle of the valve is virtually eliminated. Equalized spring force at the valve seat line contributes to maintaining seat tightness.

- **Feature:** Thermodisc™ design. The mechanical flexibility of the Thermodisc™ allows the system pressure to assist in sealing the contact surface between the valve seat and Thermodisc™.

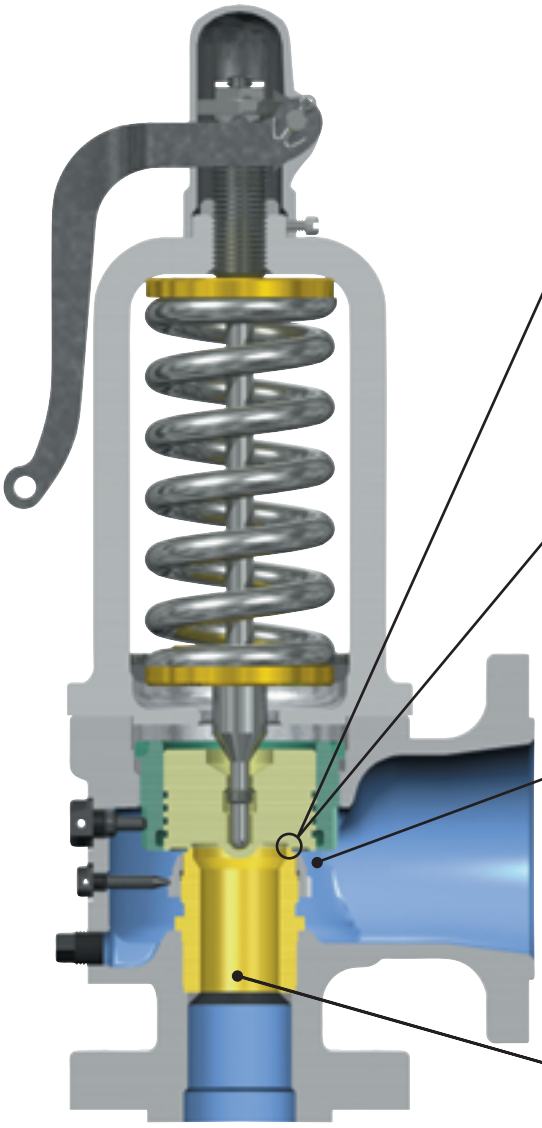
  Benefit: Repeatable tightness of the valve set pressure is achieved. Maintenance costs are reduced and it is not necessary to achieve optical flatness when lapping seats to produce a tight seat.

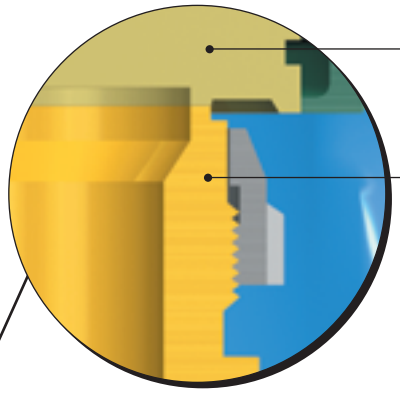
- **Feature:** Seal welded seat bushing.

  Benefit: Seal welding the seat bushing into the base assures no leakage of steam past the threaded area of the seat bushing.

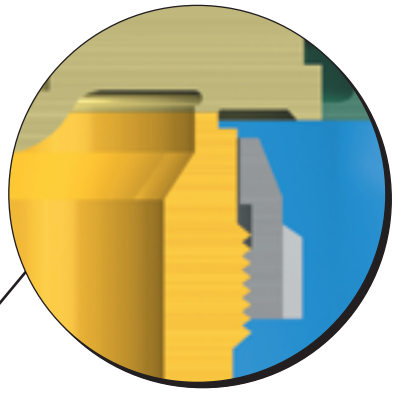
- **Feature:** Two adjusting rings provide positive and repeatable opening action and assure full relieving capacity. The lower adjusting ring assures a sharp pop action. The upper adjusting ring assures full lift and a minimum blowdown.

  Benefit: Dual ring adjustments allow fine tuning of the safety valve's performance characteristics needed to meet steam system conditions which vary at each installation. Sharp, clean opening assures long valve seat life and reduced maintenance cost. Consistent opening and closing pressures contribute to efficient steam system operation.

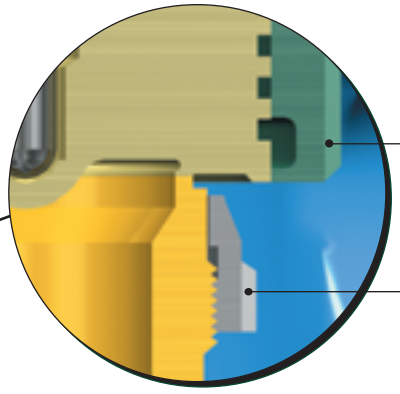




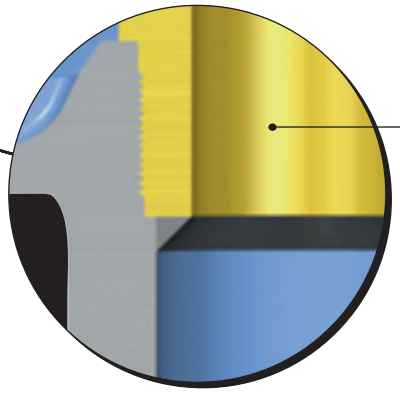
Flat Seat Design



Thermodisc™ Seat Design



Two Adjusting Rings



Seal Welded Bushing

CONSOLIDATED Type 1511 safety valves are designed for low pressure, steam heating boilers and steam generators as well as air service applications.

1511

INLET SIZES — 1-1/2" through 6" in either flanged or threaded design.

INLET RATINGS — ANSI Class 250

OUTLET SIZES — 2-1/2" through 4" threaded, 6" and 8" in either flanged or threaded design.

OUTLET RATINGS — ANSI Class 125

ORIFICE SIZES — Eight sizes: H through Q

TEMPERATURE RANGE — -20°F to 406°F

MATERIALS — Cast iron body with brass trim is standard. Stainless steel trim is optional.

CERTIFICATION — ASME B & PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 10% of Set Pressure

Features & Benefits

- The 1511 valve operating characteristics are designed to handle pressures up to 250 psig maximum and operating temperatures at 406°F.
- The 1511 type valve is available in sizes from 1-1/2" to 6" in a complete range of ASME approved and certified orifice sizes.
- 1511 valves are offered with ANSI 125# & 250# flat face flanges.

Applications

- Steam or Air Service - The 1511 type valve is designed for all steam and air service applications that are within the pressure and temperature limits specified for these valves. This type of valve is not suitable for incompressible fluid service such as water, oil, etc.
- Noncorrosive Air or Gas - For compressible fluid service (other than air or steam), inquiries must state the specific application. The 1511 type valve is NOT suitable for relieving toxic, flammable, or corrosive media.
- Marine Use - Use of standard safety valve products that are ASME Code Section I approved is permitted by the U.S. Coast Guard.
- Bolting to Steel Flanges - Special considerations are required when bolting 1511 valves to carbon steel flanges. When a 1511 valve is bolted to class 150# steel flanges the 150# steel flanges shall be flat-faced. When a 1511 valve is to be bolted to 300# steel flanges the raised face of the 300# steel flange may be supplied with a flat face.

CONSOLIDATED Type 1541 and 1543 safety valves are designed for steam and other compressible fluids. They are most commonly used in pharmaceutical, dying, and process plants.

1541 / 1543

INLET SIZES — 1/2" through 2-1/2" threaded

OUTLET SIZES — 3/4" through 2-1/2" threaded

ORIFICE SIZES — Six sizes: D through J

PRESSURE RANGE — 5 psig to 350 psig

TEMPERATURE RANGE — -20°F to 420°F

MATERIALS — Cast iron bonnet with brass base and trim is standard. Available with bronze bonnet. Stainless steel base and disc are also optional.

CERTIFICATION — ASME B & PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 10% of Set Pressure

Features & Benefits

- Equipped with two adjusting rings to allow for sharp opening action and full lift at 3% overpressure.
- Low spindle bearing point between the spindle and disc for improved tightness.
- Self-aligning spring washer for reliability and long life.
- Precision wound spring, ± 5% tolerance on rate to ensure repeatability and maximum tightness. Manufactured and capacity certified to ASME Code Sections I and VIII.
- Valves tested on steam.
- Seats checked for tightness on steam.
- The adjustable lifting mechanism can be positioned in any location with 300 degrees of rotation to facilitate ease of installation.

CONSOLIDATED Type 2478 pressure relief valve is a totally enclosed design for non-corrosive, thermal relief, liquid service.

2478

INLET SIZES — 1-1/2" through 2-1/2" threaded.

OUTLET SIZES — 3/4" through 2-1/2" threaded.

ORIFICE SIZES — Six sizes: D through J

PRESSURE RANGE — 5 psig to 300 psig

TEMPERATURE RANGE — -325°F to 406°F

MATERIALS — Cast bronze bonnet, brass base & trim and PTFE soft seats are standard.

CERTIFICATION — Non-Coded

BLOWDOWN — 7% - 15%

BACK PRESSURE LIMIT — 10% of Set Pressure

Features & Benefits

- Low spindle bearing point between the spindle and disc for improved tightness
- Self-aligning spring washers for repeatability and long life
- Totally enclosed bonnet to ensure that escaping fluid is properly discharged
- Precision wound spring + 5% tolerance on rate to ensure repeatability and maximum tightness
- Manufactured to ASME Code standards, but not ASME Code capacity certified
- Tested for set pressure on water

The **Consolidated** Series 3500 Electromatic Ball Valve is designed to provide automatic or manual over-pressure protection for steam boiler systems, and can also be used to assist start-up and shut-down venting.

3500EBV

INLET SIZES — 1-1/2", 2" and 2-1/2" in either flanged or weld neck design.

INLET RATINGS — ASME Class 1500 thru 4500

OUTLET SIZES — 3" and 4"

OUTLET RATINGS — ASME Class 300 and 900

BORE SIZES — .875 through 2.000. Reduced bores are available.

TEMP. RANGE — To 1100° F

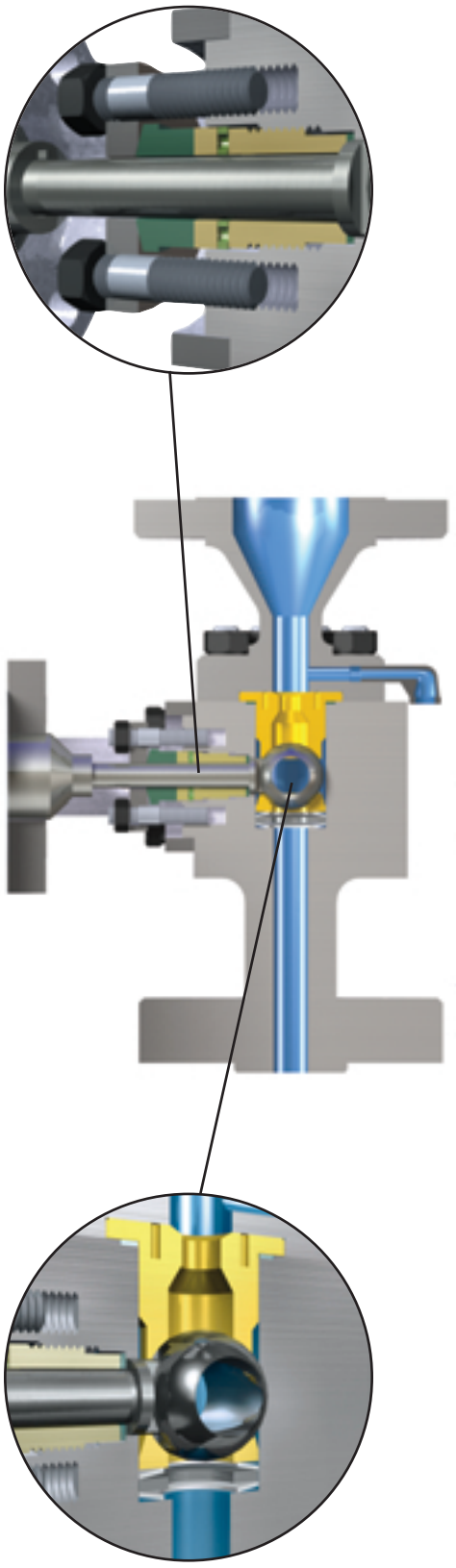
MATERIALS — Alloy steel body with Titanium alloy seat and ball.

CERTIFICATION — ASME B & PVC Section I

Features & Benefits

The **Consolidated** Series 3500 Electromatic Ball Valve (EBV) is designed to provide *automatic* or *manual* over-pressure protection for steam boiler systems. Set to operate at a lower pressure than the spring-loaded safety valves, the EBV substantially reduces safety valve maintenance and increases boiler efficiency. The EBV should be sized as part of the safety valve boiler package in order to ensure safe performance. This can be accomplished using a Consolidated 3500 EBV because the proper seat bore diameter is selected to match the optimum capacity requirement. Where open/close actuation is acceptable, the EBV can also be used to assist with start-up and shut-down venting.

Features and Benefits



Guided Yoke Design

This preferred design is rugged and insures positive and precise guiding of the actuator, stem and ball. The weight of the actuator is fully supported by the yoke; and by removing the side loading on the stem, excessive wear is eliminated on the packing, stem and actuator.

Gland, Stop Ring and Packing

The stuffing box arrangement has been designed specifically to take advantage of the sealing properties found in expanded graphite. This design provides for a stable low maintenance operation that eliminates the need for frequent packing adjustments. Live loading of the packing with washers is not necessary.

Stem and Bearing Washer

As a special feature, both the stem and bearing washer are carbide coated. The carbide coating provides gall resistant stem guiding for a maximum wear life. Stem rotation remains easy even at high pressures and temperatures. Packing migration is kept to a minimum.

Stem Retaining Nut

The threaded stem nut retains the stem and protects against blowout. This top entry design allows the stem to be a single piece that improves alignment between the ball and actuator.

Ball, Seat, and Seat Loader Assembly

The ball, seat, and seat loader is carbide coated which helps to prevent damage caused by abrasives in the steam flow. Also a wiping action occurs as the valve opens and closes which further protects the seats. The ball and seat are made from titanium in order to fight thermal stress cracking, and to improve seat tightness. To further extend the service life of the valve, the 'seat, ball, and seat loader assembly' is replaceable in the field.

Seat and Body Joint Seal

When it is time to repair the EBV, the 'seat, ball and seat loader assembly' can easily be replaced by removing the outlet flange from the valve body. The seat/body joint seal is made of expanded graphite. Expanded graphite provides positive sealing and there is little or no need for lapping surfaces, taking critical measurements and making fine adjustments. This proven method of sealing is also the method with the lowest replacement cost.

LEDEEN® Actuator

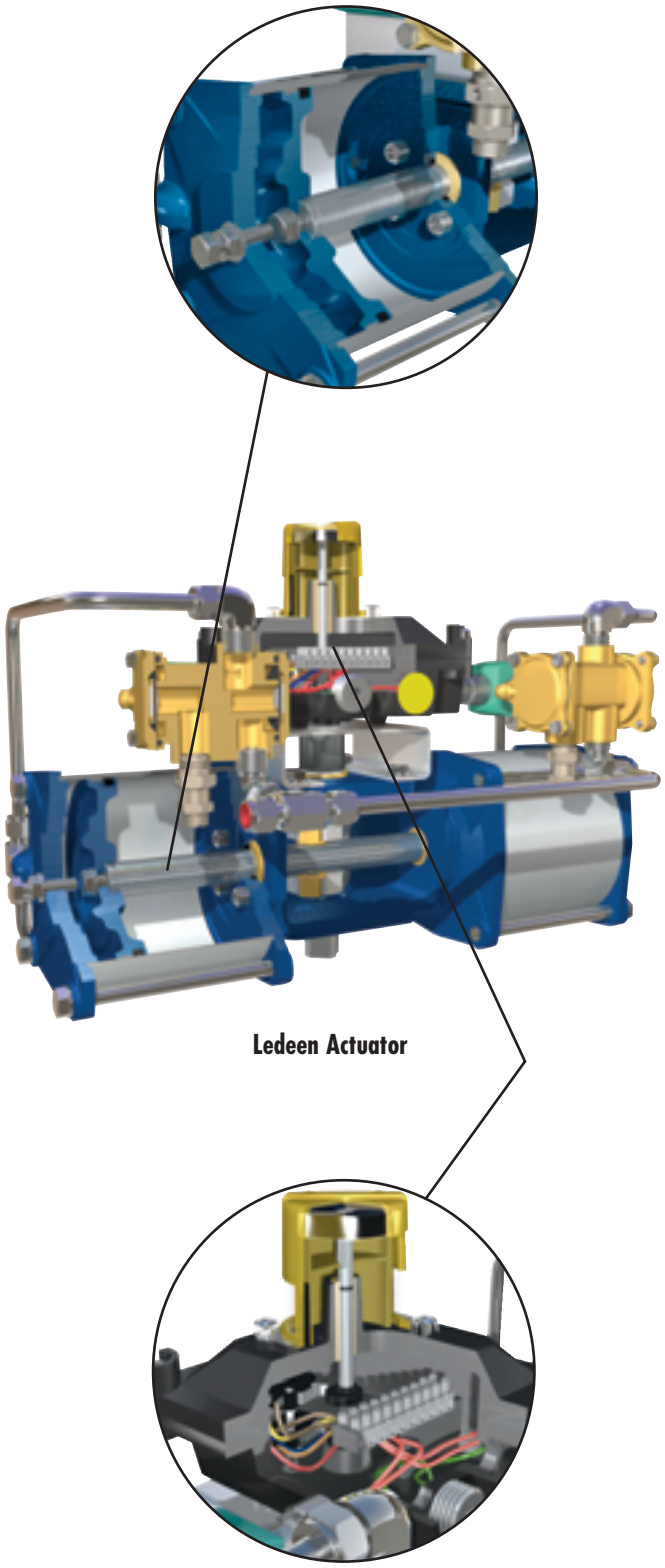
The LEDEEN actuator is a high quality scotch yoke actuator with several design features not typically found on pneumatic actuators installed in power stations. The rugged frame of the Ledeen actuator is its foundation and is well suited for developing and transferring torque to the valve. Furthermore, the frame is non-pressurized and it is totally weatherproof. This ensures that the rotary seals on the output shaft will not contribute to a pressure leak that would require unexpected maintenance.

Inside this frame, every mechanism that slides or rotates during operation has a low friction bushing to efficiently support its movement. In addition, the square slide blocks within the yoke are distinctive and provide a significant stress reduction when transferring the linear input force of the piston into the rotary output of the yoke.

In the pneumatic cylinder, a cap seal assembly is utilized on the piston and piston rod. This unique seal design provides a dependable pressure seal specifically designed for dynamic applications that vary widely in operation from low frequency to high frequency. The combination of this seal design with the non-corrosive sealing surface of the cylinder and piston rod ensures extended maintenance free performance. All of the above features on the Ledeen actuator are intended to provide for a long service life.

Control Package

Several items have been added to the control package. The positioner monitor is an explosion proof (NEMA 4, 4X, 7, 9 rated) aluminum enclosure and is equipped with two mechanical switches and a high visibility monitor for instant recognition of valve position up to distances of 150 feet. The solenoid valves are mounted directly onto the position monitor housing. This package has the option of adding additional switches should a customer want to send a valve position signal to his DCS or other remote location.



Ledeen Actuator

System Components

(Figure 1) illustrates the relationship of the various components of the CONSOLIDATED Electromatic Ball Valve System. The Electromatic Ball Valve (EBV) is usually mounted on the superheater outlet header, the controller close to the boiler and the control station on the boiler control panel board. The Electromatic Ball Valve is normally set at a pressure lower than the spring-loaded safety valves where it can substantially reduce safety valve maintenance and improve boiler efficiency.

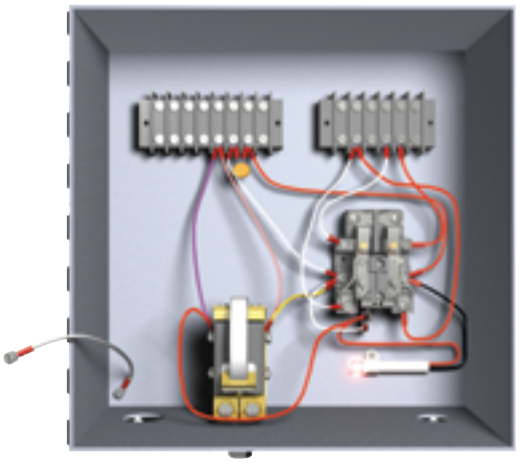
Electromatic Ball Valve (Type 3500)

The CONSOLIDATED 3500 EBV is an automatic, power actuated, pressure relief and venting valve. A double acting air actuator is the standard actuation package. The estimated (open, close) cyclic action is 2 seconds.

Controller (Type 3539)

(Figure 2) The standard control package consists of a dual control pressure switch comprised of a bourdon type sensing element that actuates two micro switches and a heavy duty relay switch. When the predetermined set point of the valve is reached, the relay switch closes and transmits electric current to two three-way solenoid valves located on the actuation package. With the solenoid valves energized, the EBV opens. When the pressure decreases below the adjusted closing point of the valve, the relay opens which de-energizes the solenoid valves and causes the EBV to close.

On request, the actuator can be controlled by the customer's *distributive control system* (DCS). Customers can also submit their own control package for review by Dresser Engineering.



3539 Controller
(Figure 2)

Control Station (Type 2537)

(Figure 3) The control station, which includes a switch and two lights, is a small unit that can be mounted on the control panel. The control station is electrically connected to the controller. The control station is a three-position electric switch: *off*, *automatic* or *manual*.

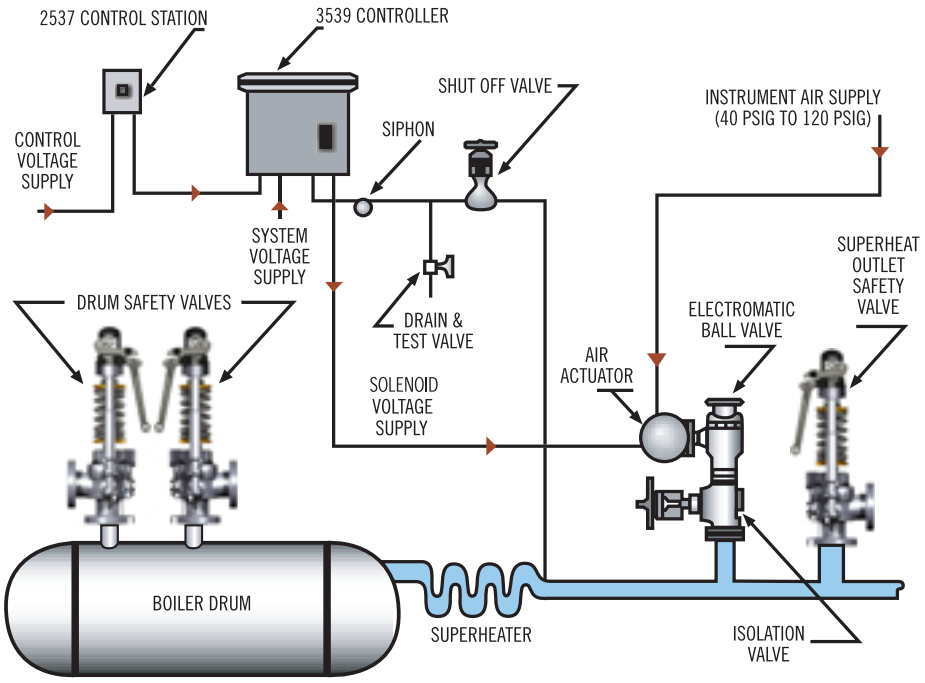
With the control station switch in the automatic position, the *amber* light turns on indicating *valve closed* and remains on until the valve is opened. When the system pressure reaches the set pressure the valve opens, the amber light turns off, and the *red* light turns on indicating *valve open*. When the system pressure decreases to the closing pressure, the valve closes, the red light is turned off and the amber light is turned back on indicating *valve closed*.

When it is desirable to open the valve manually, this can be accomplished by simply pushing the control station switch to the *manual* position. To close the valve, it is only necessary to push the switch to the off position.

2537 Control Station
(Figure 3)

Isolation Valve

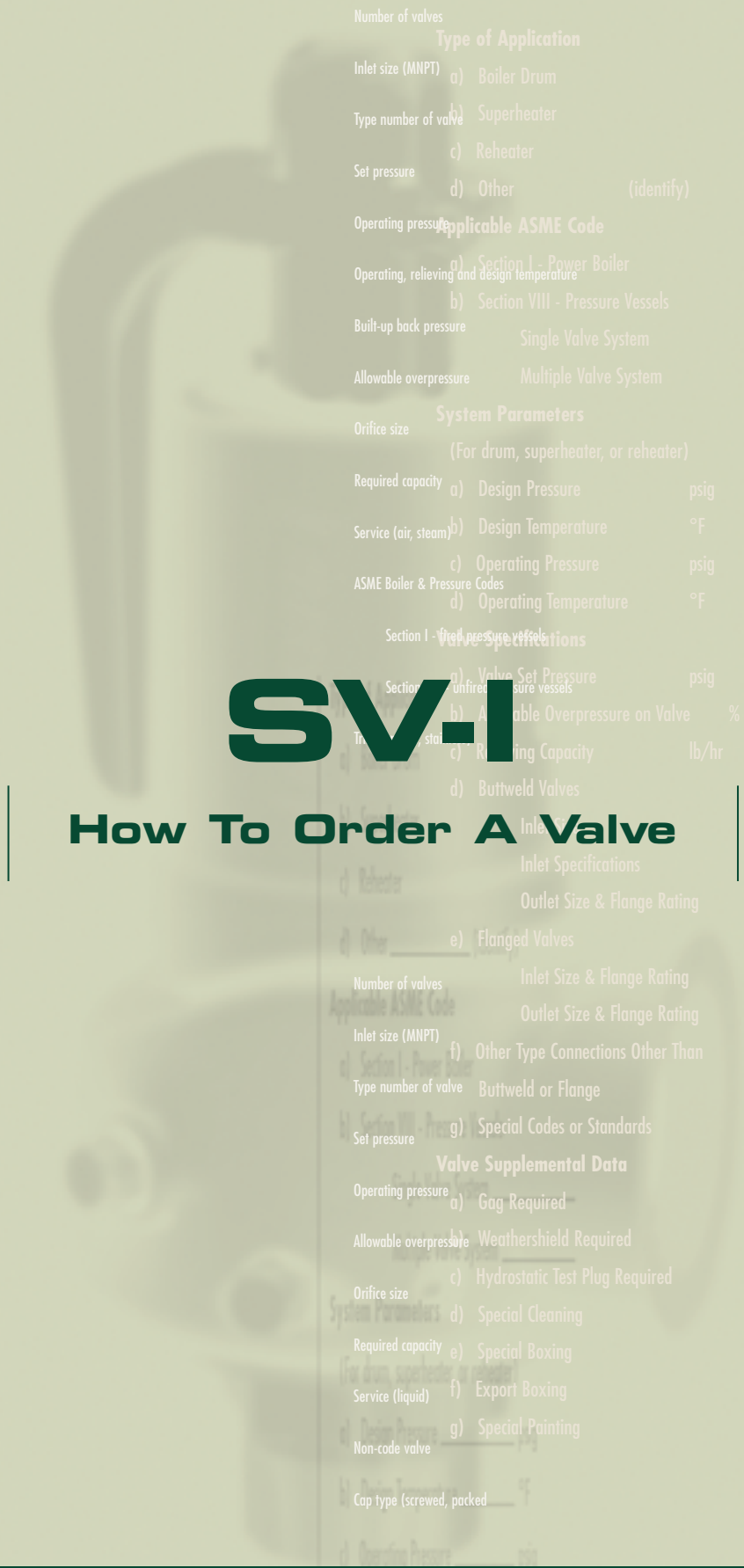
A special isolation valve is used to isolate the 3500 Electromatic Ball Valve. It must be the correct size and not restrict the capacity of the Electromatic Ball Valve. The valve is used to isolate the EBV in the event of leakage. The isolation valve is normally in the open position during startup. Contact the factory for an isolating ball valve or an isolating gate valve quotation.



3500 Electromatic Ball Valve with Standard Control Package
(Figure 1)

SV-I

How To Order A Valve



How To Order A 1700, 2700, Or 1811 Safety Valve

Please Specify:

Type of Application

a) Boiler Drum

b) Superheater

c) Reheater

d) Other _____ (identify)

Applicable ASME Code

a) Section I - Power Boiler

b) Section VIII - Pressure Vessels

Single Valve System _____

Multiple Valve System _____

System Parameters

(For drum, superheater, or reheater)

a) Design Pressure _____ psig

b) Design Temperature _____ °F

c) Operating Pressure _____ psig

d) Operating Temperature _____ °F

Valve Specifications

a) Valve Set Pressure _____ psig

b) Allowable Overpressure on Valve ___ %

c) Relieving Capacity _____ lb/hr

d) Buttweld Valves

Inlet Size _____

Inlet Specifications _____

Outlet Size & Flange Rating ____

e) Flanged Valves

Inlet Size & Flange Rating

Outlet Size & Flange Rating

f) Other Type Connections Other Than Buttweld or Flange _____

g) Special Codes or Standards

Valve Supplemental Data

a) Gag Required _____

b) Weathershield Required _____

c) Hydrostatic Test Plug Required _____

d) Special Cleaning _____

e) Special Boxing _____

f) Export Boxing _____

g) Special Painting _____

How To Order A 1511 Safety Valve

Please Specify:	Example
Number of valves	3
Valve inlet	
Size (standard, oversize)	1-1/2" standard 250#
Connection (250#, 125# FNPT)	250#
Type number of valve	1511JS-0-2
Set pressure	100 psig
Operating pressure	80 psig
Operating, relieving and design temperature	325°F/339°F/400°F
Built-up back pressure	5 psig
Allowable overpressure	3%
Orifice size	J
Required capacity	6,500 PPH
Service (air, steam)	Steam
ASME boiler & pressure codes	
Section I - fired pressure vessels	ASME Section I
Section VIII - unfired pressure vessels	
Trim (bronze, stainless)	Stainless
Material substitution (government ring, specify other)	-
Accessories (gag, spring cover, spring coating)	Gag
Certification (for approval, for record)	-
Customer drawings (for approval, for record)	for approval
Note any special needs	-

How To Order A 1541/1543 Safety Valve

Please Specify:	Example
Number of valves	3
Inlet size (MNPT)	1/2"
Type number of valve	1543-D-3
Set pressure	100 psig
Operating pressure	80 psig
Operating, relieving and design temperature	325°F/339°F/400°F
Built-up back pressure	5 psig
Allowable overpressure	3%
Orifice size	D
Required capacity	530 PPH
Service (air, steam)	Steam
ASME Boiler & Pressure Codes	
Section I - fired pressure vessels	ASME Section I
Section VIII - unfired pressure vessels	
Trim (bronze, stainless)	Stainless
Seat type (metal seat, soft seat)	Metal Seat
Bonnet material (cast iron, bronze)	Cast Iron
Material substitution	-
Accessories (spring coating)	-
Certification (for approval, for record)	-
Customer drawings (for approval, for record)	for approval
Note any special needs	-

How To Order A 2478 Safety Valve

Please Specify:	Example
Number of valves	3
Inlet size (MNPT)	1-1/2"
Type number of valve	2478-H-DA
Set pressure	100 psig
Operating pressure	80 psig
Operating, relieving and design temperature	100°F/200°F/400°F
Backpressure (constant, variable and/or built-up)	5 psig constant, 5 psig built-up additive
Allowable overpressure	25%
Orifice size	H
Required capacity	100 GWPM
Service (liquid)	Liquid
Non-code valve	-
Cap type (screwed, packed)	Screwed cap
Seat type (soft seat)	-
Material substitution	-
Accessories (spring coating)	-
Certification (for approval, for record)	-
Customer drawings (for approval, for record)	-
Note any special needs	-

How To Order A 3500 Electromatic Ball Valve

Please Specify:

Type of Application

a) Superheater _____

b) Other _____ (identify)

Applicable ASME Code

a) Section I - Power Boiler

b) Section VIII - Pressure Vessels

c) Non Code

System Parameters

a) Design Pressure _____ psig

b) Design Temperature _____ °F

c) Operating Pressure _____ psig

d) Operating Temperature _____ °F

Valve Specifications

a) Valve Set Pressure _____ psig

b) Allowable Overpressure on Valve ____ %

c) Required Relieving Capacity _____ lb/hr

d) Buttweld Valves

Inlet Size _____

Inlet Specifications _____

Outlet Size & Flange Rating _____

e) Flanged Valves

Inlet Size & Flange Rating _____

Outlet Size & Flange Rating _____

f) Other Type Connections Other Than Buttweld or Flange _____

g) Special Codes or Standards _____

h) Model and Manufacturer of Isolation Gate Valve (if any) _____

i) Model No. and Nameplate data of valve being replaced _____

Valve Supplemental Data

a) Special Cleaning _____

b) Special Boxing _____

c) Export Boxing _____

d) Special Painting _____

Available Air (40-120 psig)

Max. _____ psig

Min. _____ psig

Electrical Requirements

AC _____

Hz _____

DC _____

Control Preference

2537 Control Station _____

2539 Controller _____

Transmitter Controller _____

DCS _____

Other (specify) _____

Safety Valve Information

a) Total Generating Capacity of the Boiler

b) Drum Safety Valve Capacities

c) Superheater Safety Valve Capacities

d) Drum Operating Pressure

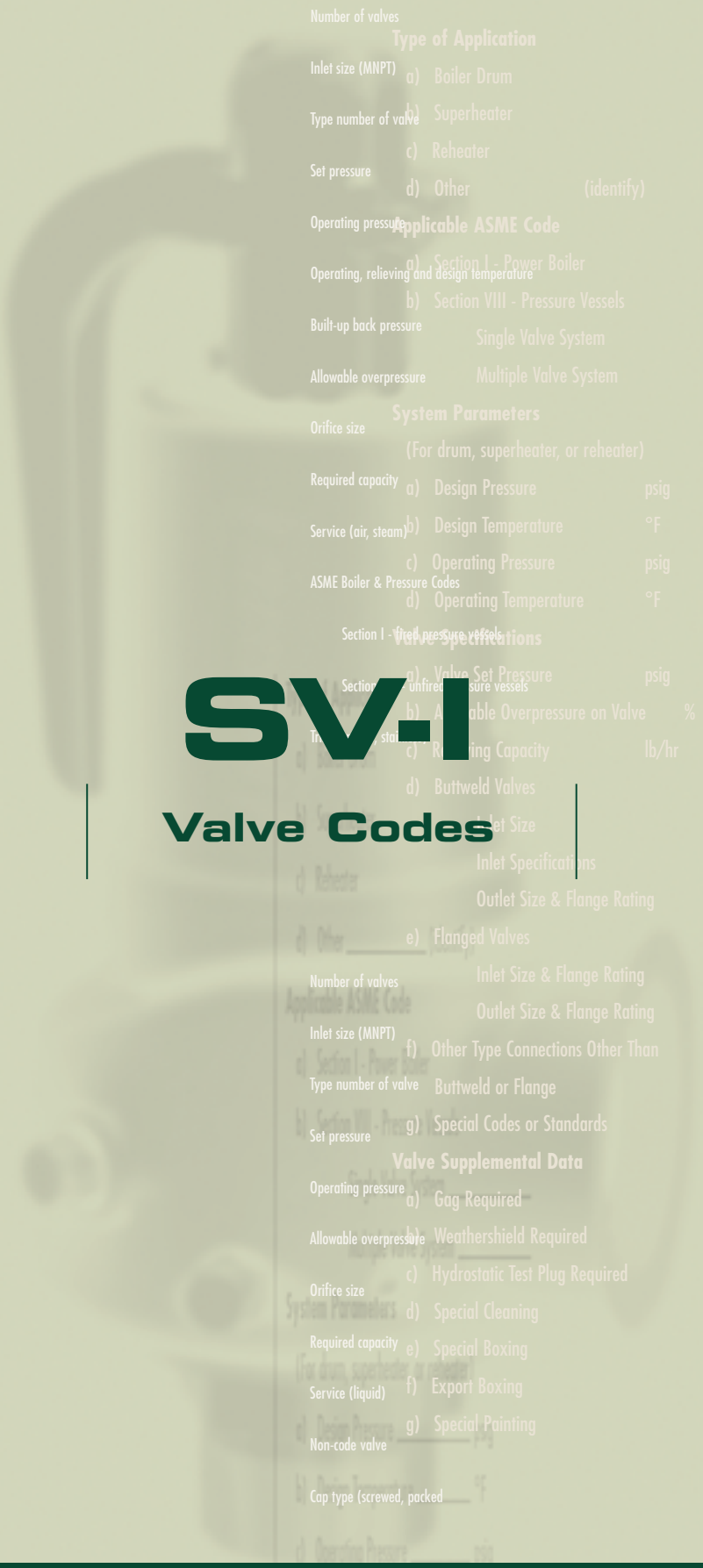
e) Superheater Operating Pressure

f) Set Pressure of Low Set Drum Safety Valve

g) Set Pressure of Low Set Superheater Safety Valve

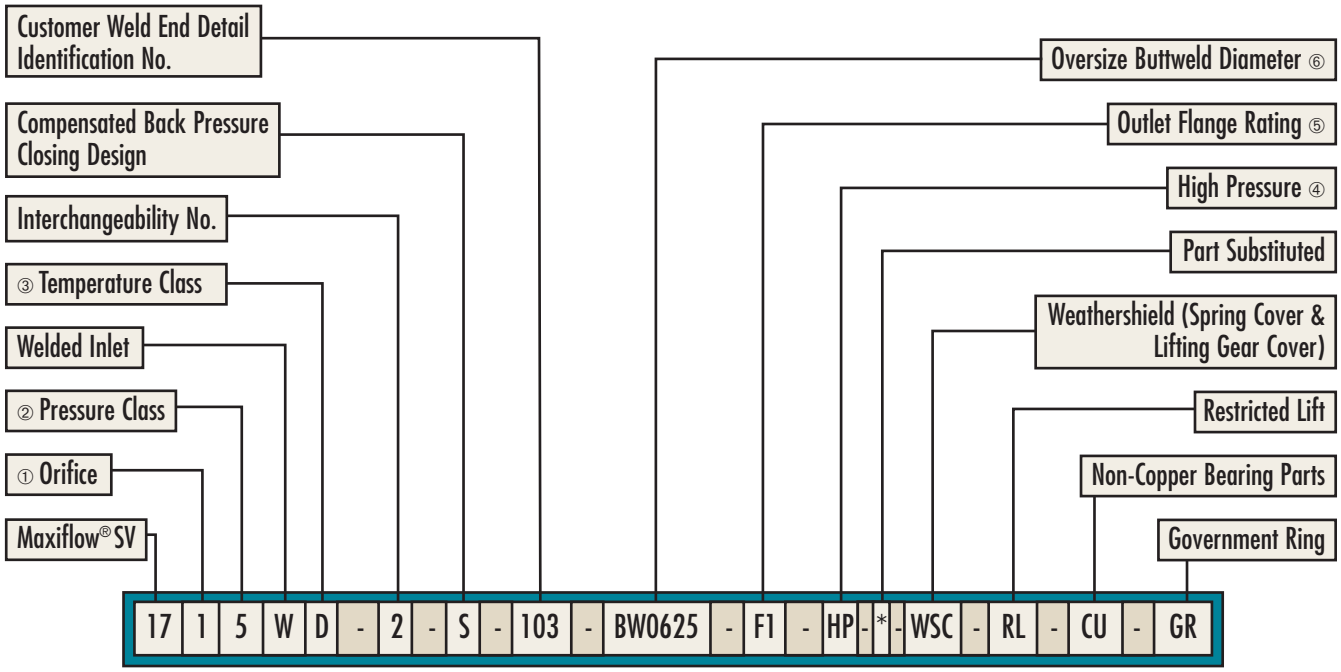
SV-I

Valve Codes



1700 Valve Codes

Welded Inlet



① **ORIFICE** 1,2,3,5, 4,6,Q,8,R & RR
In the case of the Q, 8, R & RR orifice the designation appears between the Pressure Class and the Welded Inlet designation, i.e. 1707QWD.

② **PRESSURE CLASS**
5 = 600#
6 = 900#
7 = 1500#
9 = 2500#
0 = 3000#
3 = 4500#

③ **TEMPERATURE CLASS**
B = to 750°F (399°C)
D = to 1020°F (549°C)
E = to 1060°F (571°C)
F = to 1100°F (593°C)
G = to 1120°F (604°C)

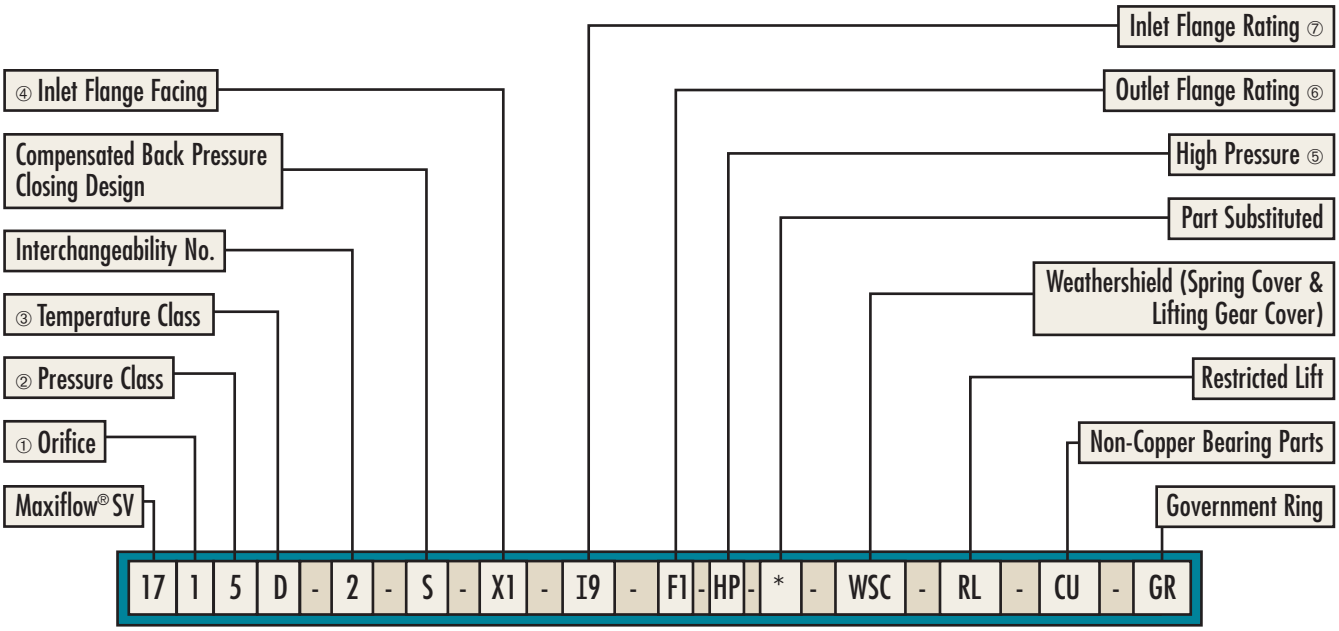
④ **HIGH PRESSURE**
The 900# Class 8, R & RR orifice valves have HP in the valve code

⑤ **OUTLET FLANGE RATING**
F1 = 150#
F3 = 300#

⑥ **OVERSIZE BUTTWELD DIAMETER STATED IN INCHES AND DECIMALS OF INCHES**
i.e., 0625 = 6-1/4"

1700 Valve Codes

Flanged Inlet



① **ORIFICE** 1,2,3,5, 4,6,Q,8,R & RR
In the case of the Q, R & RR orifice the designation appears between the Pressure Class and the Temperature Class, i.e. 1707QD.

② **PRESSURE CLASS**
5 = 600#
6 = 900#
7 = 1500#
9 = 2500#

③ **TEMPERATURE CLASS**
B = to 750°F (399°C)
D = to 1020°F (549°C)
E = to 1060°F (571°C)
F = to 1100°F (593°C)
G = to 1120°F (604°C)

④ **INLET FLANGE FACING**
X1 = R.F. Serrated
X2 = R.F. Smooth
X3 = Ring Joint
X4 = Large Tongue
X5 = Large Groove
X6 = Small Tongue
X7 = Small Groove
X8 = Large Female
X9 = Misc.

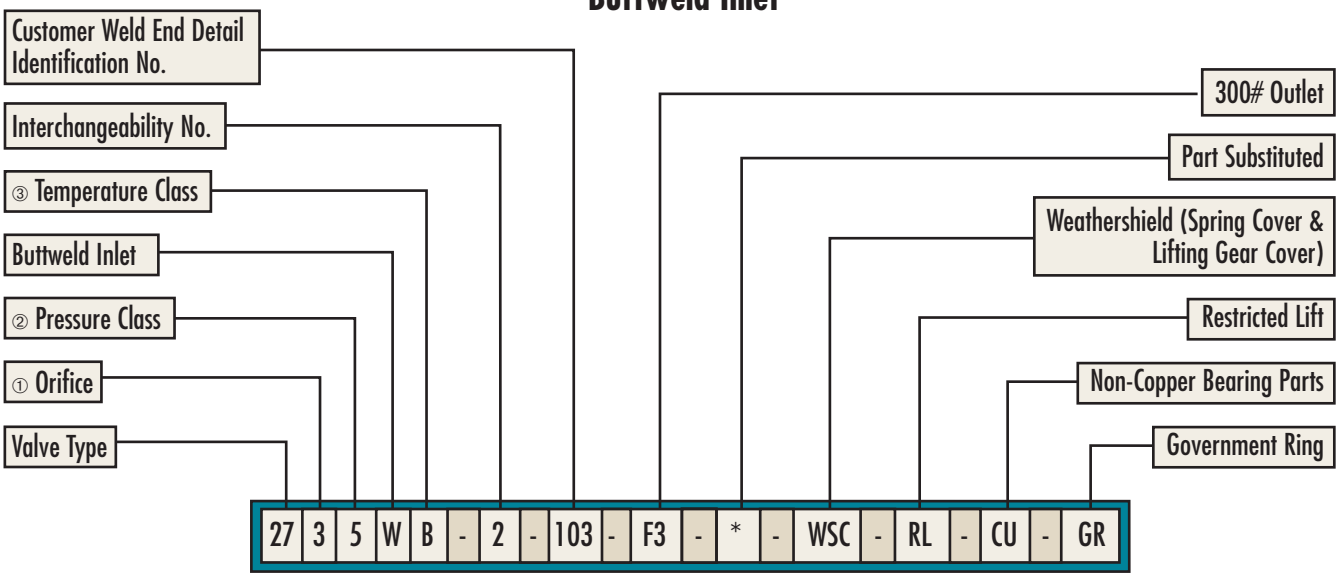
⑤ **HIGH PRESSURE**
The 900# Class 8, R & RR orifice valves have HP in the valve code.

⑥ **OUTLET FLANGE RATING**
F1 = 150#
F3 = 300#

⑦ **INLET FLANGE RATING**
I6 = 600#
I9 = 900#
I15 = 1500#
I25 = 2500#

2700 Valve Codes

Buttweld Inlet

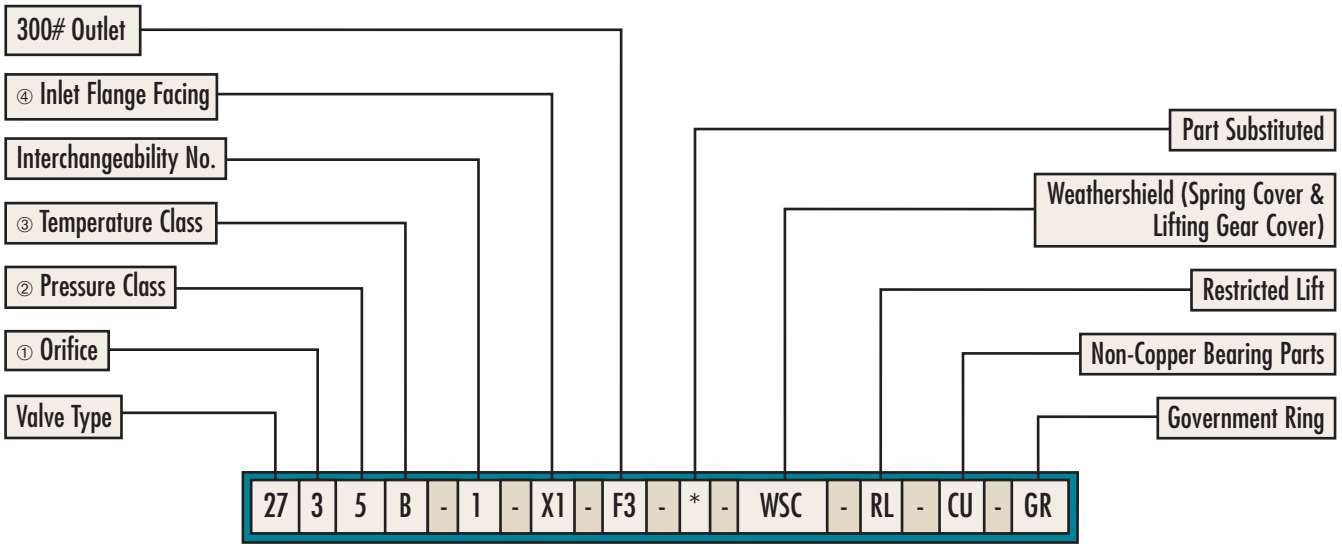


① **ORIFICE** 1,2,3,5, 4,6,Q

② **PRESSURE CLASS**
5 = 600#
6 = 900#
7 = 1500#

③ **TEMPERATURE CLASS**
B = to 750°F (399°C)
D = to 1050°F (566°C)

Flanged Inlet



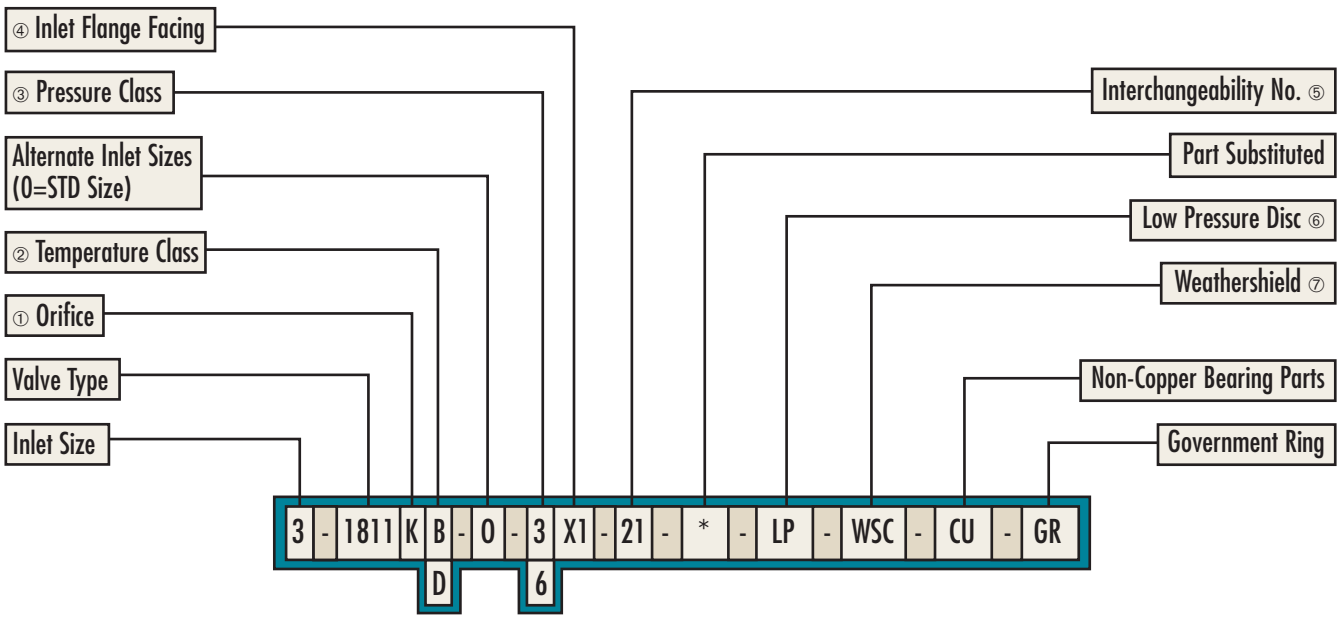
① **ORIFICE** 1,2,3,5, 4,6,Q

② **PRESSURE CLASS**
5 = 600#
6 = 900#
7 = 1500#

③ **TEMPERATURE CLASS**
B = to 750°F (399°C)
D = to 1050°F (566°C)

④ **FLANGE FACING**
X1 = R.F. Serrated
X2 = R.F. Smooth
X3 = Ring Joint
X4 = Large Tongue
X5 = Large Groove
X6 = Small Tongue
X7 = Small Groove
X8 = Large Female
X9 = Misc.

1811 Valve Codes



① ORIFICE
F through Q

② TEMPERATURE CLASS
B = to 750°F (399°C)
D = to 1000°F (538°C)

③ PRESSURE CLASS
3 - 300# ANSI Class
6 - 600# ANSI Class

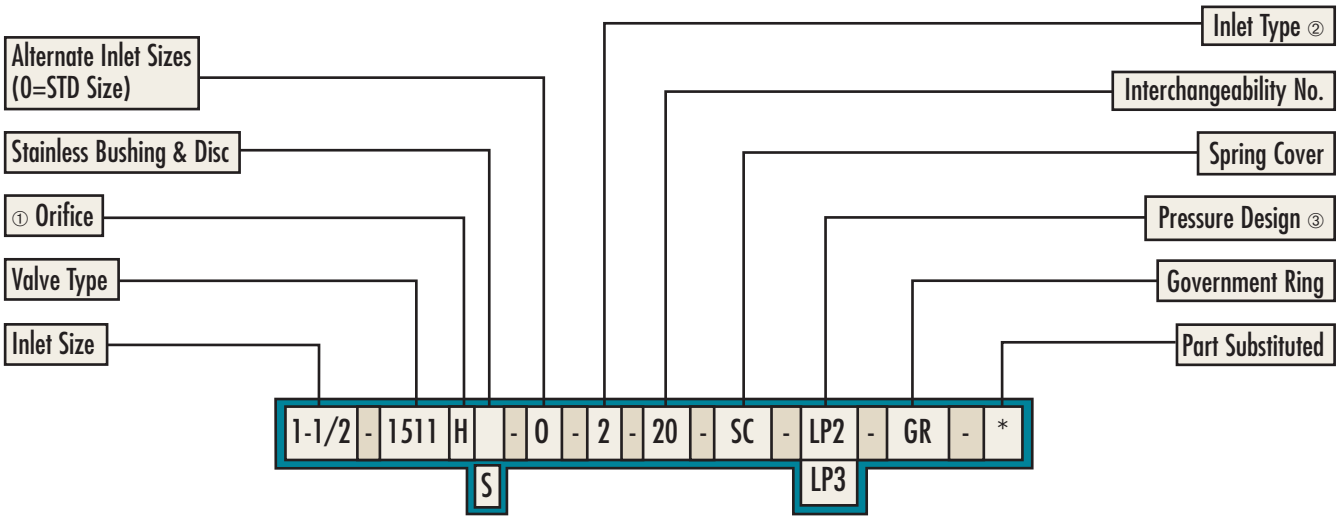
④ FLANGE FACING
X1 = R.F. Serrated
X2 = R.F. Smooth
X3 = Ring Joint
X4 = Large Tongue
X5 = Large Groove
X6 = Small Tongue
X7 = Small Groove
X8 = Large Female
X9 = Large Male

⑤ INTERCHANGEABILITY NO.
20 = STD Outlet - Flat Seat
21 = Oversize Outlet - Flat seat
22 = STD Outlet - Thermodisc™ Seat
23 = Oversize Outlet - Thermodisc™ Seat

⑥ LOW PRESSURE DISC
For Set Pressure 5-124 psig.
Does not apply to F, G & H orifice sizes.

⑦ WEATHER SHIELD
WSC = Spring Cover & Lifting Gear Cover
WC = Spring Cover Only

1511 Valve Codes

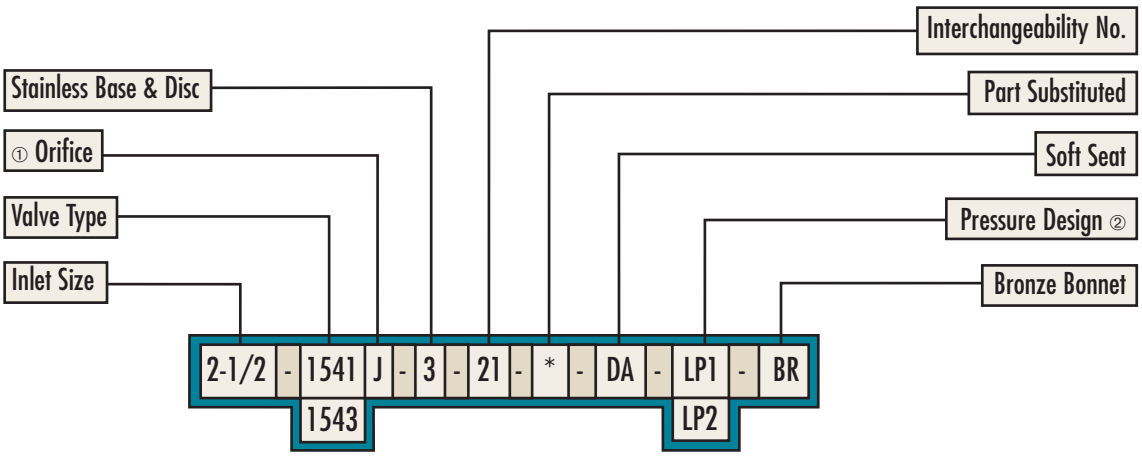


① **ORIFICE** H through Q

② **INLET TYPE**
2 = 250# R.F.
1 = 125# F.F.
FS = Female Screwed
(offered on inlet sizes 1-1/2", 2" and 2-1/2" - H through L only.)

③ **PRESSURE DESIGN**
STD Valve = 125 psig and above
LP2 = 5 psig to 26 psig
LP3 = 27 psig to 124 psig

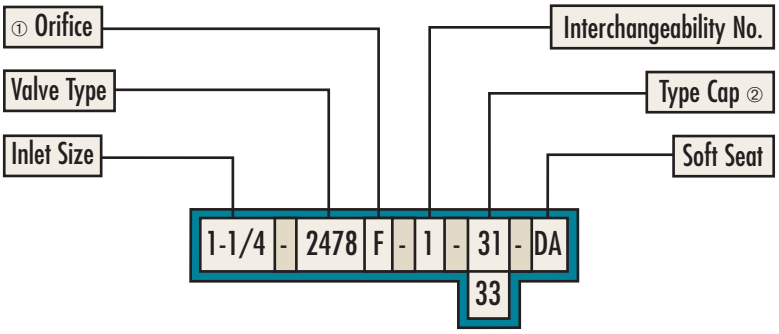
1541 / 1543 Valve Codes



① **ORIFICE**
D through J

② **PRESSURE DESIGN**
STD Valve = 16 psig and above (except H & J Metal Seat see LP2)
LP1 = 5 psig to 15 psig
(D through J, Metal Seat & Soft Seat)
LP2 = 16 psig to 35 psig
(H & J Metal Seat Only)

2478 Valve Codes

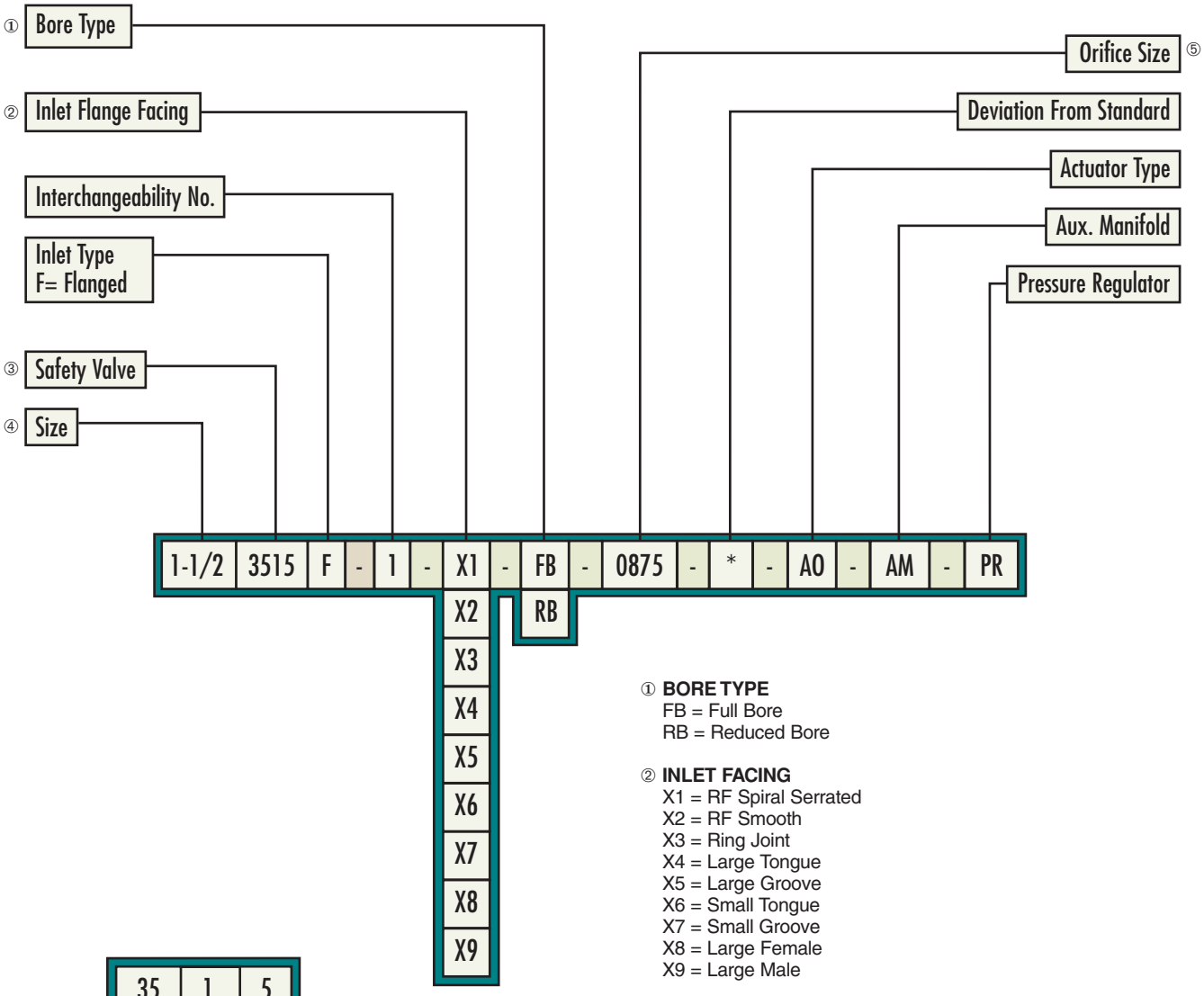


① **ORIFICE**
D through J

② **TYPE CAP**
31 - screwed cap
33 - packed lever

3500 Safety Valve Code

Flanged Inlet



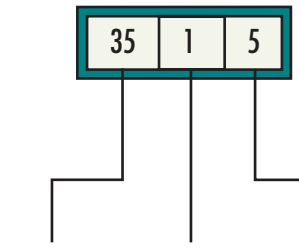
① BORE TYPE
FB = Full Bore
RB = Reduced Bore

② INLET FACING
X1 = RF Spiral Serrated
X2 = RF Smooth
X3 = Ring Joint
X4 = Large Tongue
X5 = Large Groove
X6 = Small Tongue
X7 = Small Groove
X8 = Large Female
X9 = Large Male

③ MODEL NUMBER EXAMPLE

④ SIZE
1-1/2"
2"
2-1/2"

⑤ ORIFICE SIZE (FULL BORE)
0.875
1.000
1.750
Reduced Bores

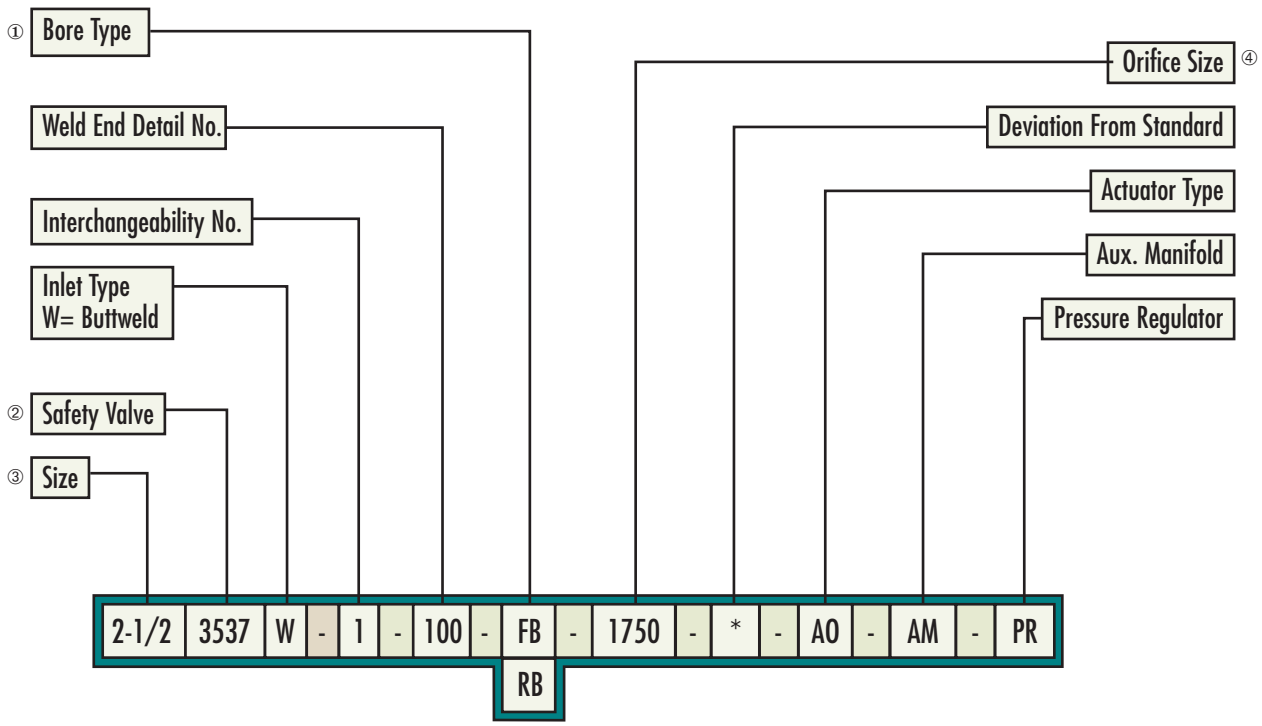


Orifice Designation

Designation	Inlet Size	Max. Flow Area
5	1-1/2"	0.875
6	2"	1.000
7	2-1/2"	1.750

3500 Safety Valve Code

Welded Inlet

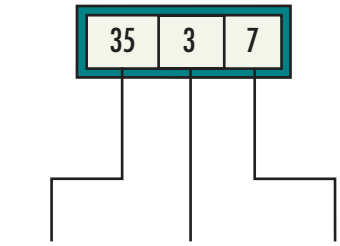


① **BORE TYPE**
FB = Full Bore
RB = Reduced Bore

② **MODEL NUMBER EXAMPLE**

③ **SIZE**
1-1/2"
2"
2-1/2"

④ **ORIFICE SIZE (FULL BORE)**
0.875
1.000
1.750
2.000
Reduced Bores



Basic Model Number

Pressure Class
2 = 2658 LTD
3 = 3090 LTD
4 = 4500

Orifice Designation

Designation	Inlet Size	Max. Flow Area
5	1-1/2"	0.875
6	2"	1.000
7	2-1/2"	1.750
8	2-1/2"	2.000

Overview

Mission Statement: ***"To provide our customers with the consistent and exceptional delivery of repair, training and field services plus spare parts and replacement equipment."***

Consolidated is a leading provider of pressure relief valves with over 100 years of experience. One of the many Dresser product lines includes **Consolidated** pressure relief valve products, providing world-class market-leading technology. **Consolidated** commands a global network of manufacturing facilities and service providers, offering strength through experience and innovation.

As a leading provider of pressure relief valve solutions, **Consolidated** offers world-class global aftermarket services. The global aftermarket program is designed to provide consistent and exceptional repair services, technical training, field support, spare parts production and management, complete equipment replacement, and comprehensive diagnostic services. This global support network consists of Green Tag Centers (GTC®) and **Consolidated** field service technicians that provide OEM experience, knowledge, and technology to support all of your MRO needs worldwide, including hands-on training and on-site support.

The **Consolidated** aftermarket service program offers complete services for pressure relief valve products, including on-site installation and start-up, predictive and preventative maintenance programs, equipment testing, rebuilding and trouble-shooting, and complete valve turn-around management. The program also includes on-site inventory planning, diagnostic data interpretation services, on-site machining, field retrofitting, and hands-on training. **Consolidated** aftermarket service support is accessible 24 hours a day and seven days a week year round.

OEM Parts - **Consolidated** fully understands that quick response in obtaining replacement parts and overhaul services is a critical factor in maintaining a smoothly operating plant. As a result, **Consolidated** has placed extremely high importance on this customer need within our global aftermarket program.

Service Parts Inventory Philosophy - **Consolidated's** formulated service parts inventory philosophy is designed to provide prompt valve service capability, thus preventing extended maintenance downtime. Your **Consolidated** sales representative or local Green Tag Center can assist you in developing an optimum inventory plan to fit your company's inventory needs.

Consolidated also provides integrated programs; using tools such as "Valv-Keep" to help manage the support of your installed equipment. These programs are location specific and include plant surveys, data management, scheduling and planning of maintenance, repairs, and overhauls. Historical data and trends can be managed using an asset management system to maximize efficiency of overall equipment support. In addition, **Consolidated** has developed advanced diagnostic tools and services that also assist in the prevention of unexpected or unnecessary maintenance, repair, or overhaul. Available diagnostic tools include the Electronic Valve Tester (EVT®) for pressure relief valves. Diagnostic services include the on-site application of these highly advanced tools by fully trained technicians.

Consolidated® Operations

"The Total Solutions Provider"

Call 1-800-245-VALV for service in the Americas or contact the factory for international service and support.

1700
Safety Valves

Consolidated®

CONSOLIDATED Maxiflow® high pressure safety valves are premium products that are installed on a majority of power generating stations worldwide to protect boilers from overpressure conditions.

1700

INLET SIZES — 1-1/2" through 6" in either flanged or weld neck design.

INLET RATINGS — ANSI Class 600 through 4500

OUTLET SIZES — 3" through 10" flanged

OUTLET RATINGS — ANSI Class 150 and 300

ORIFICE SIZES — Eleven sizes: 1 through RR

TEMPERATURE RANGE — -20°F to 1120°F

MATERIALS — Alloy and carbon steel cast body with stainless steel trim is standard. Special alloys are available for specific applications.

CERTIFICATION — ASME B & PVC Section I and VIII

BLOWDOWN — 3%

BACK PRESSURE LIMIT — 25% of Set Pressure

Table of Contents

The CONSOLIDATED Pressure Relief Valve has been a leader in the industry since 1879, thus offering over a century of experience in design, engineering and product manufacture. CONSOLIDATED's history of dependable and reliable valve service assures that today's products and designs are consistent with the industry's current requirements. Rigid manufacturing standards controlled by an ASME approved Quality Assurance Program and a certified/registered ISO 9001 Quality Assurance Program ensure that each valve will be manufactured in accordance with established design criteria and tested for functional performance. This quality-controlled manufacturing and testing program assures that each valve manufactured will provide long and reliable service.

Evidence of this quality is a Green Tag® certification attached to the valve following final test and inspection.

Our Green Tag® serves as a reminder that each Consolidated valve meets or exceeds the stringent performance and overpressure protection requirements set forth by the ASME and is backed by the Industrial Valve Operation, Dresser Flow Control.

Consolidated ASME Code Sections I and VIII Spring Loaded Pressure Relief Valves have been flow tested in accordance with the applicable ASME Code rules for the establishment of rated capacities and are listed in The National Board of Boiler and Pressure Vessel Inspectors publication "Pressure Relieving Device Certifications."

Additionally, the symbol also represents our Green Tag Centers. These centers are fully certified by Dresser as Consolidated valve assembly and repair facilities. They also meet or exceed the standards of the ASME and the National Board. Contact the authorized Green Tag Center in your local area to fill your immediate needs for Consolidated Pressure Relief Valves.

Valve Selection

1. Determine the required orifice designation by using the appropriate capacity table beginning on page 1700.42. Using the required set pressure, select the capacity that exceeds the relieving capacity requirements and note the orifice size and designation.

2. If applicable, correct the capacity for superheat conditions. Refer to the superheat correction table on page1700.66. Multiply the saturated capacity by the correct superheat correction factor. The correct capacity must meet or exceed the capacity requirements.

3. Locate the valve type in the appropriate scope of design section and complete the valve selection. Review the required weights, dimensions, materials, and connections.

Example

Flanged inlet safety valve, ASME Code Section I. Application. Set pressure 1000 psig, temperature 900°F, required relieving capacity 94,900 lbs./hr.= valve type number 17???-2-S.

1. Refer to capacity table on page 1700.45 for ASME Code Section I Saturated Steam. At 1000 psig set pressure, select a #3 orifice with a saturated capacity of 120,221 lbs./hr. = valve type number 173??-2-S.

2. Correct for superheat using table on page 1700.66 for superheat correction factor at 3% overpressure. At 1044.7 psia and 900°F, multiply saturated capacity 120,221 lbs./hr. by correction factor .797 = 95,923 lbs./hr.

3. Verify pressure and temperature requirements on page 1700.33 for ASME Section I, ASME B16.34. At 1000 psig, 900°F and a #3 orifice, locate the D temperature class and select the 900 class valve with 900# inlet flange and a 150# outlet flange = valve type number 1736 D-2-S.

4. Locate the valve type in the appropriate scope of design section page 1700.3 and the configuration code on page GI.21. Complete the valve selection = valve type number 1736D-2-S-I9-F1.

5. Review the required weights, dimensions, materials and connections on page 1700.9 and 1700.20.

Subcritical & Supercritical Steam Service

					Valve Sizes											End Connections	
				1-1/2"	2"	2-1/2"	3"	3"	4"	4"	6"	6"	6"	6"		
	Pressure Class	Temperature Limits Degrees F	Degrees C	Temp. Class	Orifice Area Sq. in. 0.994	1.431	2.545	3.341	3.976	7.07	12.25	11.05	14.18	16.00	19.29	Inlet	Outlet
					Orifice Designation 1	2	3	5	4	6	Q	Q	8	R	RR		
STEAM SERVICE SUBCRITICAL		750°	399°	B	1715B	1725B	1735B	1755B	1745B	1765B	1775QB	1775QB	1785B	1705RB	1705RRB		
		1020°	549°	D	1715D	1725D	1735D	1755D	1745D	1765D	1775QD	1775QD	1785D	1705RD	1705RRD	Class 600	Class 150
	600	1060°	571°	E	1715E	1725E	1735E	1755E	1745E	1765E	1775QE	1775QE	1785E	1705RE	1705RRE	raised face	or 300
		1100°	593°	F						1765F	1775QF	1775QF	1785F			or buttweld	raised face
		1120°	604°	G						1765G	1775QG	1775QG	1785QG				
		750°	399°	B	1716B	1726B	1736B	1756B	1746B	1766B	1776QB	1776QB	1786B	1706RB	1706RRB		
		1020°	549°	D	1716D	1726D	1736D	1756D	1746D	1766D	1776QD	1776QD	1786D	1706RD	1706RRD	Class 900	Class 150
	900	1060°	571°	E	1716E	1726E	1736E	1756E	1746E	1766E	1776QE	1776QE	1786E	1706RE	1706RRE	raised face	or 300
		1100°	593°	F						1766F	1776QF	1776QF	1786F			or buttweld	raised face
		1120°	604°	G						1766G	1776QG	1776QG	1786G				
		750°	399°	B	1717B	1727B	1737B	1757B	1747B	1767B		1777QB	1787B	1707RB	1707RRB		
		1020°	549°	D	1717D	1727D	1737D	1757D	1747D	1767D		1777QD	1787D	1707RD	1707RRD	Class 1500	Class 150
	1500	1060°	571°	E	1717E	1727E	1737E	1757E	1747E	1767E		1777QE	1787E	1707RE	1707RRE	raised face	or 300
		1100°	593°	F						1767F						or buttweld	raised face
		1120°	604°	G						1767G							
		750°	399°	B	1719B	1729B	1739B	1759B	1749B								
		1020°	549°	D	1719D	1729D	1739D	1759D	1749D							Class 2500	Class 300
	2500	1060°	571°	E	1719E	1729E	1739E	1759E	1749E							raised face	raised face
		1100°	593°	F	1719F	1929F	1739F	1759F	1749F							or buttweld	
		1120°	604°	G	1719G	1729G	1739G	1759G	1749G								
		750°	399°	B	1710WB	1720WB	1730WB	1750WB	1740WB	1760WB							
		1020°	549°	D	1710WD	1720WD	1730WD	1750WD	1740WD	1760WD						Class	Class
	3000	1060°	571°	E	1710WE	1720WE	1730WE	1750WE	1740WE	1760WE						3000	300
		1100°	593°	F	1710WF	1720WF	1730WF	1750WF	1740WF							buttweld	raised face
		1120°	604°	G	1710WG	1720WG	1730WG	1750WG	1740WG								
SUPER CRITICAL		750°	399°	B	1713WB	1723WB	1733WB	1753WB	1743WB							Class	Class
	4500	1020°	549°	D	1713WD	1723WD	1733WD	1753WD	1743WD							4500	300
		1060°	571°	E	1713WE	1723WE	1733WE	1753WE	1743WE							buttweld	raised face

Flanged Inlet - Type 17_5, class 600

Inlet (Notes 3 & 5) ANSI Std. R.F. Flange		Outlet (Note 2) ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	600	3"	150	1715B	1715D	1715E	.994	6.413	1
2"	600	3"	150	1725B	1725D	1725E	1.431	9.232	2
2-1/2"	600	6"	150	1735B	1735D	1735E	2.545	16.420	3
3"	600	6"	150	1755B	1755D	1755E	3.341	21.556	5
3"	600	6"	150	1745B	1745D	1745E	3.976	25.653	4
4"	600	6"	150	1765B	1765D	1765E	7.070	45.616	6
4"	600	8"	150	1775QB	1775QD	1775QE	12.25	79.037	Q
6"	600	8"	150	1775QB	1775QD	1775QE	11.050	71.295	Q
6"	600	8"	150	1785B	1785D	1785E	14.180	91.489	8
6"	600	8"	150	1705RB	1705RD	1705RE	16.000	103.232	R
6"	600	8"	150	1705RRB	1705RRD	1705RRE	19.29	124.459	RR

Flanged Inlet - Type 17_6, class 900

Inlet (Notes 4 & 5) ANSI Std. R.F. Flange		Outlet (Note 2) ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	900	3"	150	1716B	1716D	1716E	.994	6.413	1
2"	900	3"	150	1726B	1726D	1726E	1.431	9.232	2
2-1/2"	900	6"	150	1736B	1736D	1736E	2.545	16.420	3
3"	900	6"	150	1756B	1756D	1756E	3.341	21.556	5
3"	900	6"	150	1746B	1746D	1746E	3.976	25.653	4
4"	900	6"	150	1766B	1766D	1766E	7.070	45.616	6
4"	900	8"	150	1776QB	1776QD	1776QE	12.25	79.037	Q
6"	900	8"	150	1776QB	1776QD	1776QE	11.050	71.295	Q
6"	900	10"	150	1786B-HP	1786D-HP	1786E-HP	14.180	91.489	8
6"	900	10"	150	1706RB-HP	1706RD-HP	1706RE-HP	16.000	103.232	R
6"	900	10"	150	1706RRB-HP	1706RRD-HP	1706RRE-HP	19.29	124.459	RR

Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available in an ANSI Class 300 outlet flange.
3. For replacement valves only and on application, available in an ANSI Class 900 inlet flange.
4. For replacement valves and on application, available in an ANSI Class 1500 inlet flange.
5. Available with ANSI B16.5 inlet flange facings. See page GI.21 for selections.

Flanged Inlet - Type 17_7, class 1500

Inlet (Notes 3 & 4) ANSI Std. R.F. Flange		Outlet (Note 2) ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	1500	3"	150	1717B	1717D	1717E	.994	6.413	1
2"	1500	3"	150	1727B	1727D	1727E	1.431	9.232	2
2-1/2"	1500	6"	150	1737B	1737D	1737E	2.545	16.420	3
3"	1500	6"	150	1757B	1757D	1757E	3.341	21.556	5
3"	1500	6"	150	1747B	1747D	1747E	3.976	25.653	4
4"	1500	6"	150	1767B	1767D	1767E	7.070	45.616	6
6"	1500	8"	150	1777QB	1777QD	1777QE	11.050	71.295	Q
6"	1500	10"	150	1787B	1787D	1787E	14.180	91.489	8
6"	1500	10"	150	1707RB	1707RD	1707RE	16.000	103.232	R
6"	1500	10"	150	1707RRB	1707RRD	1707RRE	19.29	124.459	RR

Flanged Inlet - Type 17_9, class 2500

Inlet (Note 4) ANSI Std. R.F. Flange		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	2500	4"	300	1719B	1719D	1719E	.994	6.413	1
2"	2500	4"	300	1729B	1729D	1729E	1.431	9.232	2
2-1/2"	2500	6"	300	1739B	1739D	1739E	2.545	16.420	3
3"	2500	6"	300	1759B	1759D	1759E	3.341	21.556	5
3"	2500	6"	300	1749B	1749D	1749E	3.976	25.653	4

Notes:

1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available in an ANSI Class 300 outlet flange.
3. For replacement valves and on application, available in an ANSI Class 2500 inlet flange.
4. Available with ANSI B16.5 inlet flange facings. See page GI.21 for selections.

Welded Inlet - Type 17_5W, class 600

Inlet Buttweld		Outlet (Note 2) ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	600	3"	150	1715WB	1715WD	1715WE	.994	6.413	1
2"	600	3"	150	1725WB	1725WD	1725WE	1.431	9.232	2
2-1/2"	600	6"	150	1735WB	1735WD	1735WE	2.545	16.420	3
3"	600	6"	150	1755WB	1755WD	1755WE	3.341	21.556	5
3"	600	6"	150	1745WB	1745WD	1745WE	3.976	25.653	4
4"	600	6"	150	1765WB	1765WD	1765WE	7.070	45.616	6
4"	600	8"	150	1775QWB	1775QWD	1775QWE	12.25	79.037	Q
6"	600	8"	150	1775QWB	1775QWD	1775QWE	11.050	71.295	Q
6"	600	8"	150	1785WB	1785WD	1785WE	14.180	91.489	8
6"	600	8"	150	1705RWB	1705RWD	1705RWE	16.000	103.232	R
6"	600	8"	150	1705RRWB	1705RRWD	1705RRWE	19.29	124.459	RR

Welded Inlet - Type 17_6W, class 900

Inlet Buttweld		Outlet (Note 2) ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	900	3"	150	1716WB	1716WD	1716WE	.994	6.413	1
2"	900	3"	150	1726WB	1726WD	1726WE	1.431	9.232	2
2-1/2"	900	6"	150	1736WB	1736WD	1736WE	2.545	16.420	3
3"	900	6"	150	1756WB	1756WD	1756WE	3.341	21.556	5
3"	900	6"	150	1746WB	1746WD	1746WE	3.976	25.653	4
4"	900	6"	150	1766WB	1766WD	1766WE	7.070	45.616	6
4"	900	8"	150	1776QWB	1776QWD	1776QWE	12.25	79.037	Q
6"	900	8"	150	1776QWB	1776QWD	1776QWE	11.050	71.295	Q
6"	900	10"	150	1786WB-HP	1786WD-HP	1786WE-HP	14.180	91.489	8
6"	900	10"	150	1706RWB-HP	1706RWD-HP	1706RWE-HP	16.000	103.232	R
6"	900	10"	150	1706RRWB-HP	1706RRWD-HP	1706RRWE-HP	19.29	124.459	RR

Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available in an ANSI Class 300 outlet flange.

Welded Inlet - Type 17_7W, class 1500

Inlet Buttweld		Outlet (Note 2) ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	1500	3"	150	1717WB	1717WD	1717WE	.994	6.413	1
2"	1500	3"	150	1727WB	1727WD	1727WE	1.431	9.232	2
2-1/2"	1500	6"	150	1737WB	1737WD	1737WE	2.545	16.420	3
3"	1500	6"	150	1757WB	1757WD	1757WE	3.341	21.556	5
3"	1500	6"	150	1747WB	1747WD	1747WE	3.976	25.653	4
4"	1500	6"	150	1767WB	1767WD	1767WE	7.070	45.616	6
6"	1500	8"	150	1777QWB	1777QWD	1777QWE	11.050	71.295	Q
6"	1500	10"	150	1787WB	1787WD	1787WE	14.180	91.489	8
6"	1500	10"	150	1707RWB	1707RWD	1707RWE	16.000	103.232	R
6"	1500	10"	150	1707RRWB	1707RRWD	1707RRWE	19.29	124.459	RR

Welded Inlet - Type 17_9W, class 2500

Inlet Buttweld		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	2500	4"	300	1719WB	1719WD	1719WE	.994	6.413	1
2"	2500	4"	300	1729WB	1729WD	1729WE	1.431	9.232	2
2-1/2"	2500	6"	300	1739WB	1739WD	1739WE	2.545	16.420	3
3"	2500	6"	300	1759WB	1759WD	1759WE	3.341	21.556	5
3"	2500	6"	300	1749WB	1749WD	1749WE	3.976	25.653	4

Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available in an ANSI Class 300 outlet flange.

Welded Inlet - Type 17_0W, class 3000

Inlet Buttweld		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1020°F (549°C)	1060°F (571°C)	in^2	cm^2	
1-1/2"	3000	4"	300	1710WB	1710WD	1710WE	.994	6.413	1
2"	3000	4"	300	1720WB	1720WD	1720WE	1.431	9.232	2
2-1/2"	3000	6"	300	1730WB	1730WD	1730WE	2.545	16.420	3
3"	3000	6"	300	1750WB	1750WD	1750WE	3.341	21.556	5
3"	3000	6"	300	1740WB	1740WD	1740WE	3.976	25.653	4
4"	3000	8"	300	1760WB	1760WD	1760WE	7.070	45.616	6

Welded Inlet - Type 17_3W, class 4500

Inlet Buttweld		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)			Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1005°F (541°C)	1020°F (549°C)	in^2	cm^2	
1-1/2"	4500	4"	300	1713WB	1713WD	1713WE	.994	6.413	1
2"	4500	6"	300	1723WB	1723WD	1723WE	1.431	9.232	2
2-1/2"	4500	6"	300	1733WB	1733WD	1733WE	2.545	16.420	3
3"	4500	8"	300	1753WB	1753WD	1753WE	3.341	21.556	5
3"	4500	8"	300	1743WB	1743WD	1743WE	3.976	25.653	4

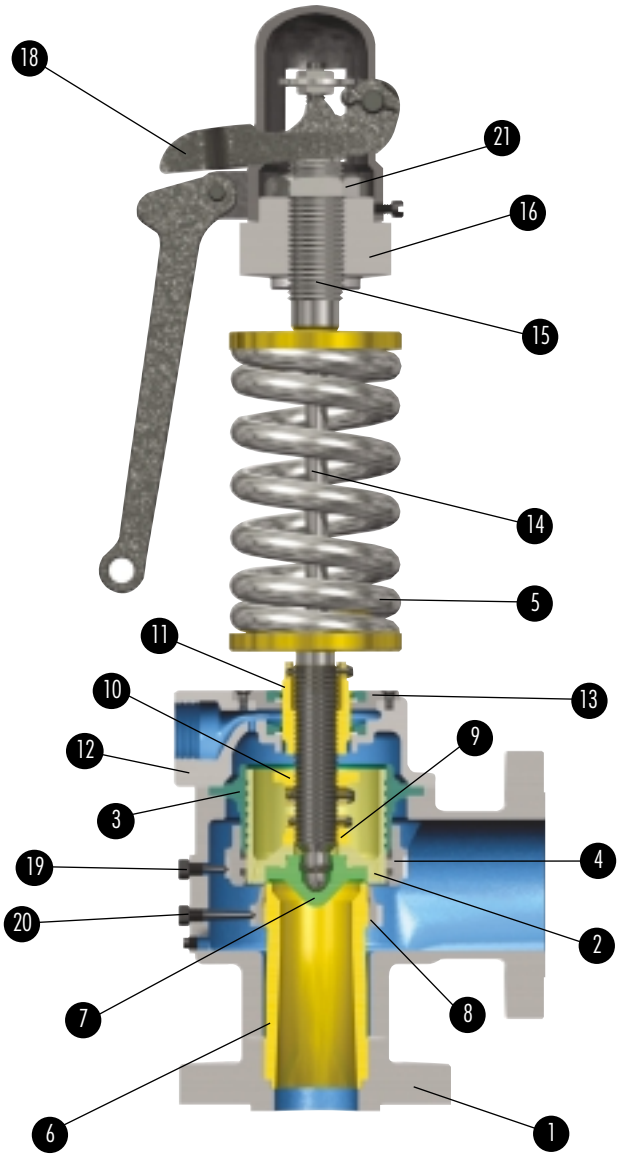
Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.

17_5 Flanged

600 Pressure Class

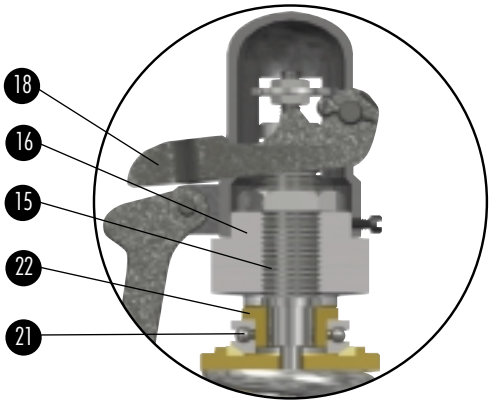
Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.

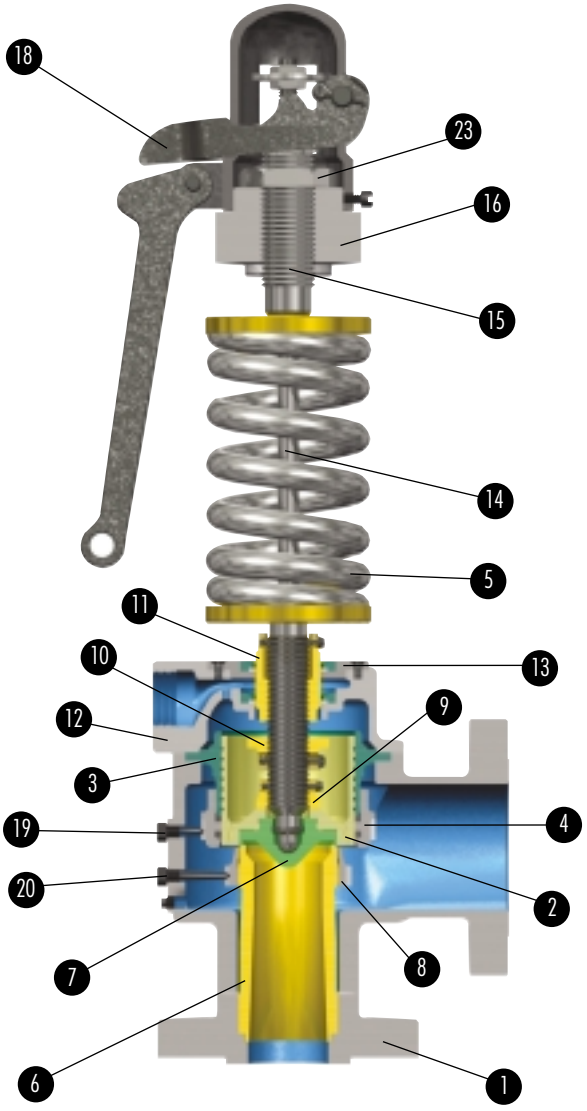


Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.

17_6 Flanged



Valve Type Numbers
1786-HP & 1706RR-HP Only



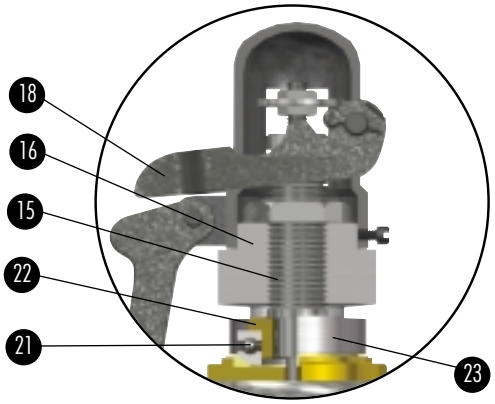
900 Pressure Class

Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Compression Screw Locknut	Silicon Brass

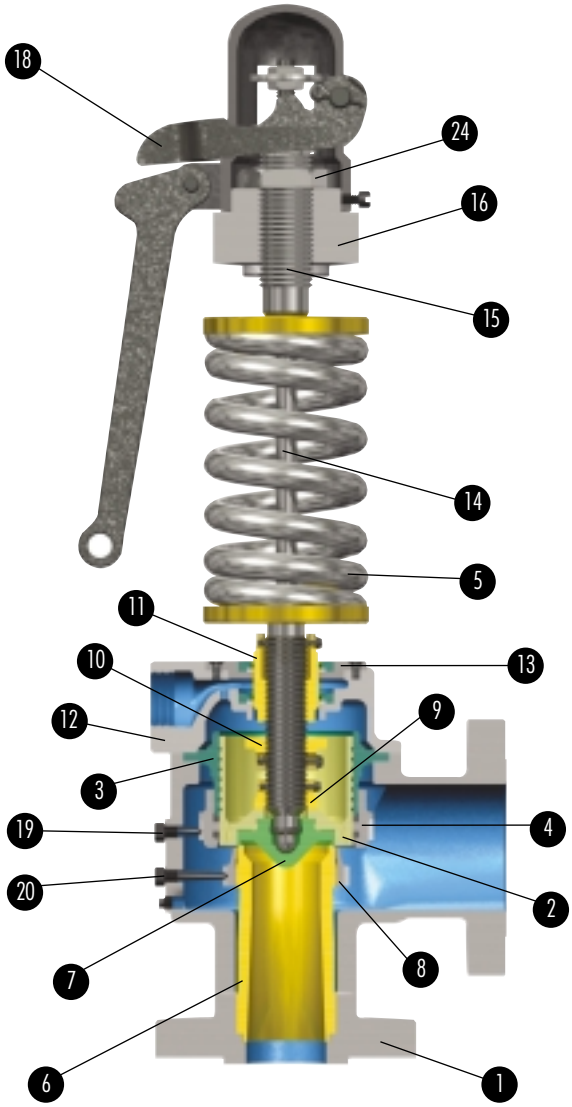
• = Recommended spare parts. See maintenance manual for quantity.

Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.

17_7 Flanged



Valve Type Numbers
1787 & 1707R Only



1500 Pressure Class

Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Thrust Bearing Cover	Steel
24	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.

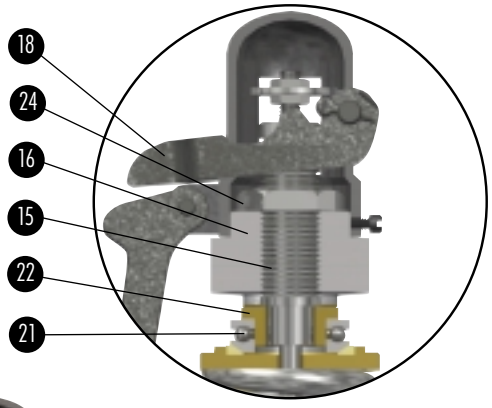
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.
2. Locknut set screw supplied when valve set pressure is 2500 psig and above. (Set screw not shown).

17_9 Flanged Inlet

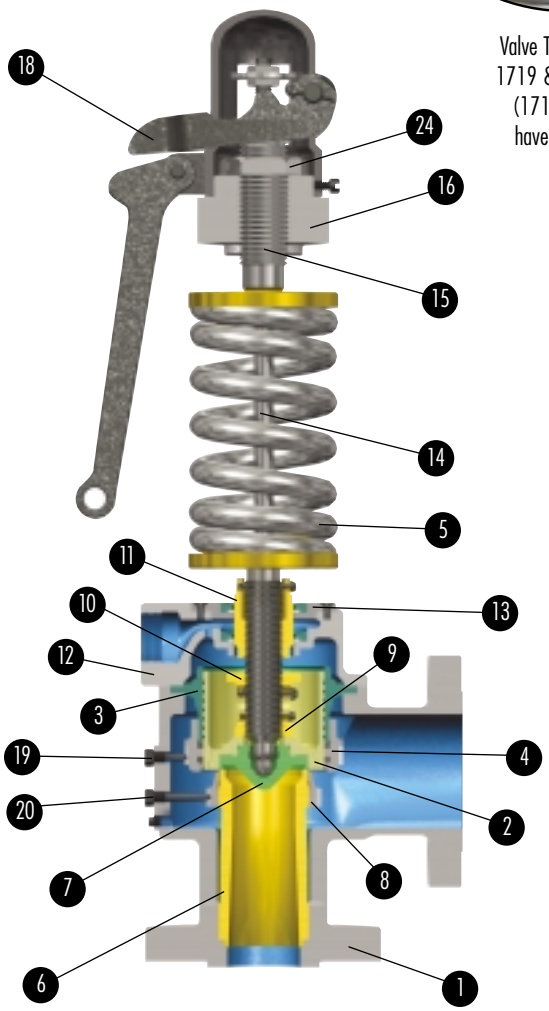
2500 Pressure Class

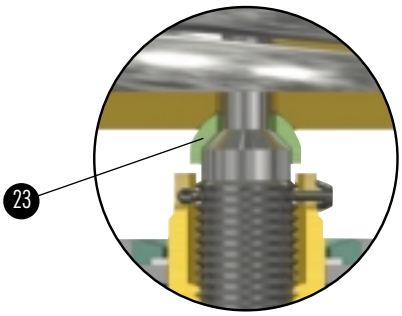
Ref. No	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Spindle Button (1719 Only)	Stainless Steel
24	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.



Valve Type Number
1719 & 1729 Only
(1719 does not
have part #22)





Valve Type Number
1719 Only

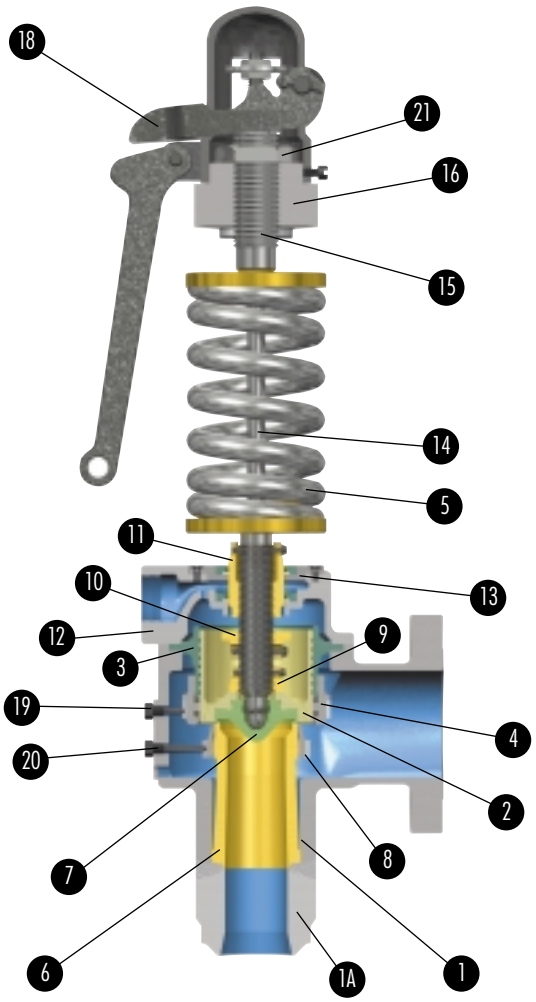
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.
2. Locknut set screw supplied when valve set pressure is 2500 psig and above. (Set screw not shown).

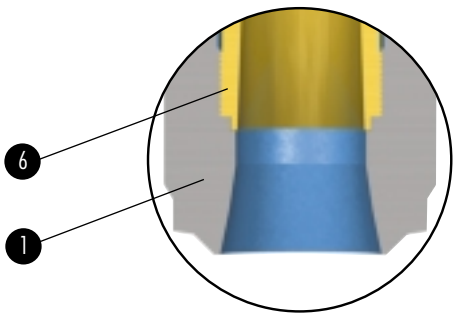
17_5W Welded Inlet

600 Pressure Class

Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA216 WCC
1A	Inlet Neck (1.5" through 3")	SA105 Carbon Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
1A	Inlet Neck	SA182 F11 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
1A	Inlet Neck	SA182 F22 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc	Inconel
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.





4" Through 6" Cast Inlet Neck

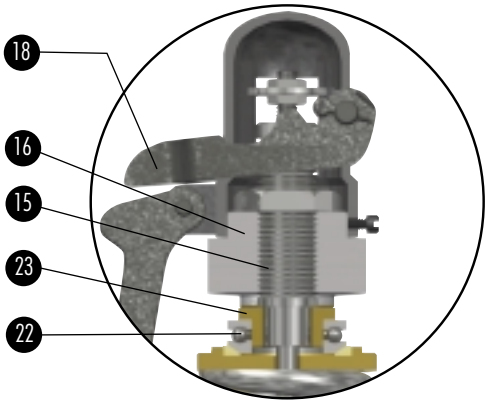
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.

17_6W Welded Inlet

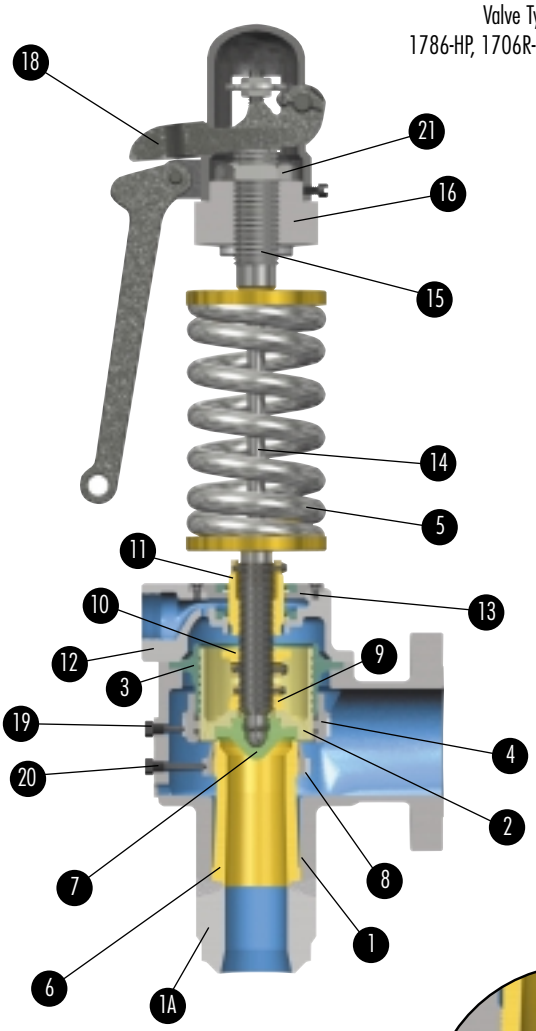
900 Pressure Class

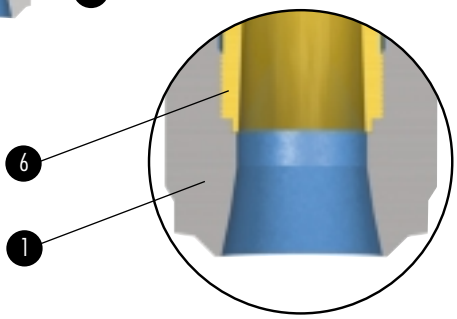
Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA216 WCC
1A	Inlet Neck (1.5" through 3")	SA105 Carbon Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
1A	Inlet Neck	SA182 F11 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
1A	Inlet Neck	SA182 F22 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Compression Screw Locknut	Silicon Brass
22	Thrust Bearing	Steel
23	Compression Screw Adaptor	Stainless Steel

• = Recommended spare parts. See maintenance manual for quantity.



Valve Type Numbers
1786-HP, 1706R-HP & 1706RR-HP Only





4" Through 6" Cast Inlet Neck

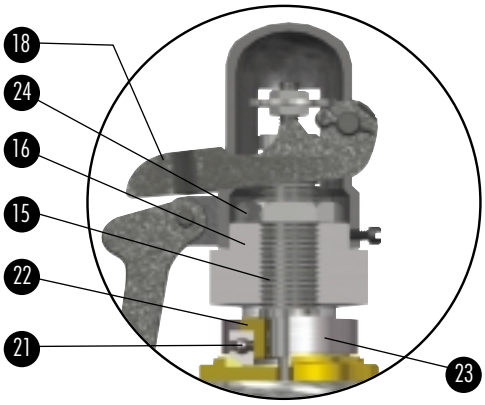
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.

17_7W Welded Inlet

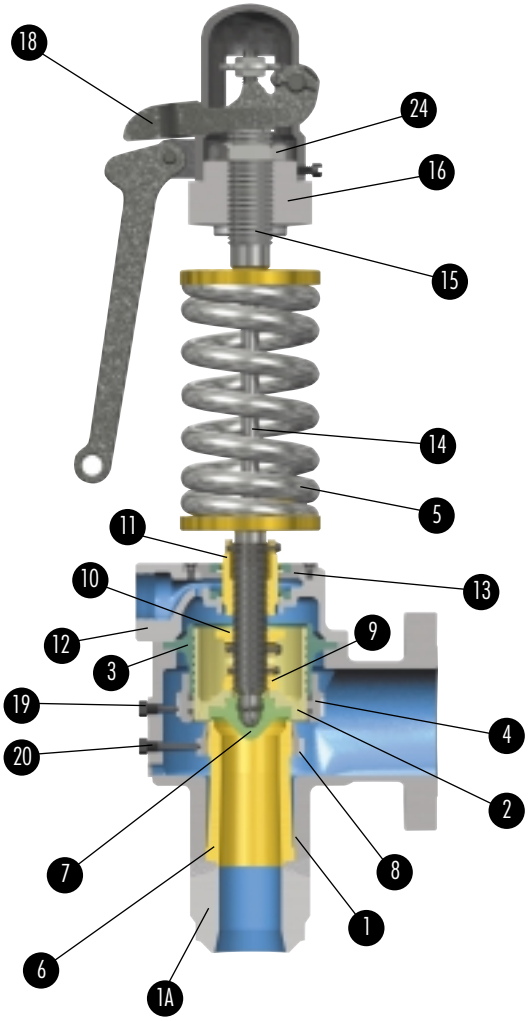
1500 Pressure Class

Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA216 WCC Carbon Steel
1A	Inlet Neck	SA105 Carbon Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
1A	Inlet Neck	SA182 F11 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
1A	Inlet Neck	SA182 F22 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Thrust Bearing Cover	Steel
24	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.



Valve Type Numbers
1787, 1707R & 1707RR Only



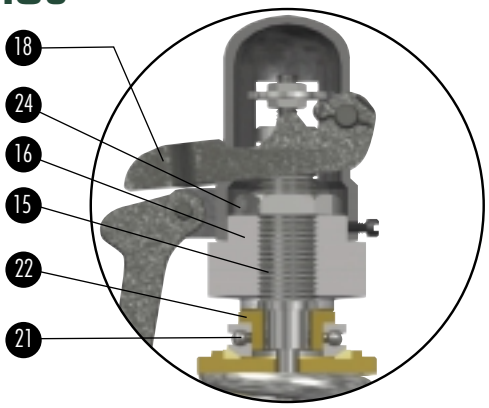
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.
2. Locknut set screw supplied when valve set pressure is 2500 psig and above.

17_9W Welded Inlet

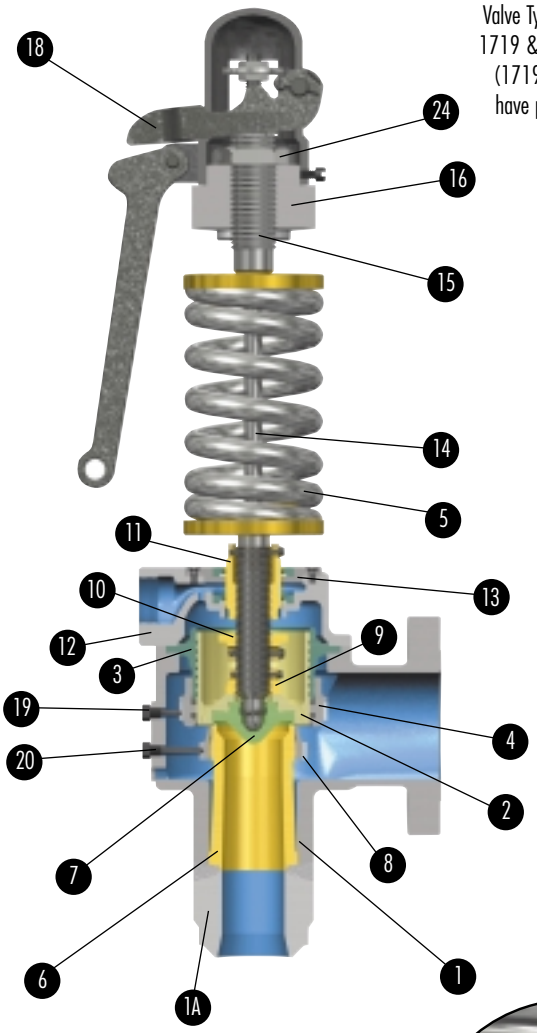
2500 Pressure Class

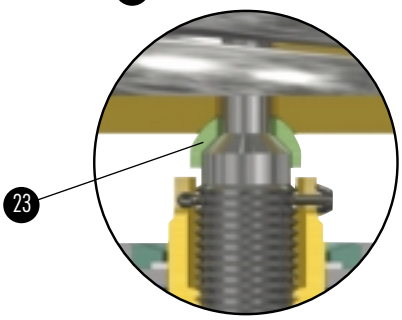
Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA216 WCC Carbon Steel
1A	Inlet Neck	SA105 Carbon Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
1A	Inlet Neck	SA182 F11 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
1A	Inlet Neck	SA182 F22 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Spindle Button (1719 Only)	Stainless Steel
24	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.



Valve Type Number
1719 & 1729 Only
(1719 does not
have part #22)





Valve Type Number
1719 Only

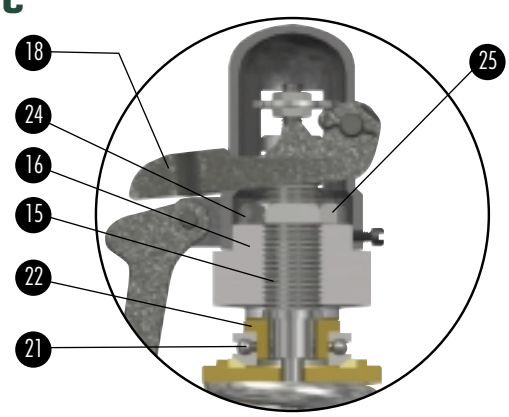
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.
2. Locknut set screw supplied when valve set pressure is 2500 psig and above.

17_OW Welded Inlet

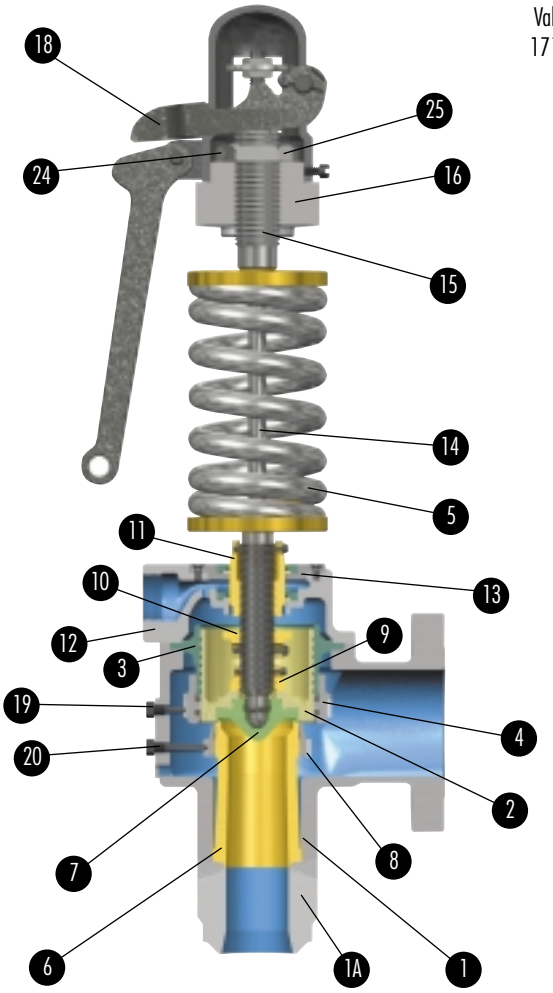
3000 Pressure Class

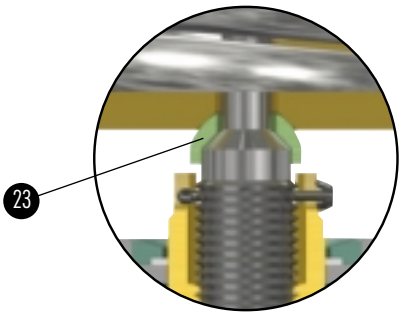
Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA216 WCC Carbon Steel
1A	Inlet Neck	SA105 Carbon Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC6 Alloy Steel
1A	Inlet Neck	SA182 F11 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1060°F (571°C)	
1	Base	SA217 WC9 Alloy Steel
1A	Inlet Neck	SA182 F22 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Spindle Button	Stainless Steel
24	Compression Screw Locknut	Silicon Brass
25	Locknut Set Screw (Not Shown)	Stainless Steel

• = Recommended spare parts. See maintenance manual for quantity.



Valve Type Number
1710 & 1720 Only





Valve Type Numbers
1710 & 1760 Only

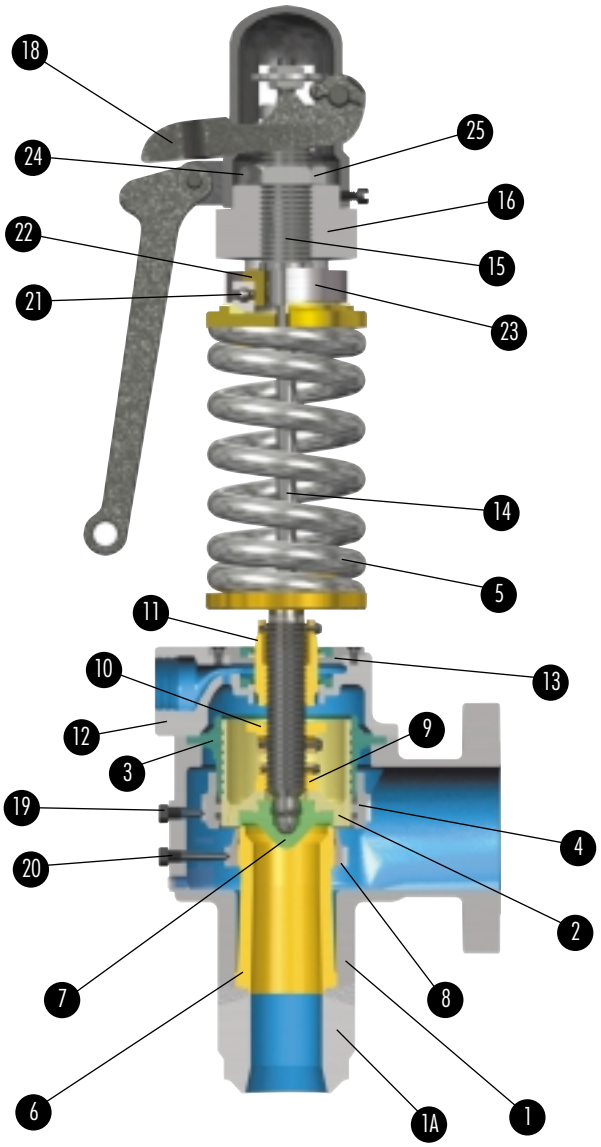
Note:
1. For F(1100°F) (593°C) AND G(1120°F) (604°C) temperature class materials contact factory.

17_3W Welded Inlet

4500 Pressure Class

Ref. No.	Part	Material
	Temp. Classes to 750°F (399°C)	
1	Base	SA216 WCC Carbon Steel
1A	Inlet Neck	SA105 Carbon Steel
2	• Disc Holder	Leaded Nickel Silver
3	• Guide	Leaded Nickel Silver
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1005°F (541°C)	
1	Base	SA217 WC6 Alloy Steel
1A	Inlet Neck	SA182 F11 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	Temp. Class 1020°F (549°C)	
1	Base	SA217 WC9 Alloy Steel
1A	Inlet Neck	SA182 F22 Alloy Steel
2	• Disc Holder	Monel
3	• Guide	Monel
4	• Upper Adjusting Ring	Stainless Steel
5	Spring	Alloy Steel
	All Temp. Classes	
6	Seat Bushing	Stainless Steel
7	• Disc Inconel	
8	• Lower Adjusting Ring	Stainless Steel
9	Disc Collar	Stainless Steel
10	Lift Stop	Stainless Steel
11	• Overlap Collar	Stainless Steel
12	Cover Plate Assembly	
12A	Cover Plate	WC6 Alloy Steel
12B	Floating Washer	Monel
12C	Washer Retainer	Stainless Steel
13	Top Plate Assembly	
13A	Top Plate	F11 Alloy Steel
13B	Washer Retainer	Stainless Steel
13C	Floating Washer	Monel
14	• Spindle	Stainless Steel
15	Compression Screw	Silicon Brass
16	Yoke	SA216 WCC Carbon Steel
17	Yoke Rod (Not Shown)	B16 Alloy Steel
18	Lifting Gear	Iron or Steel
19	• Upper Adjusting Ring Pin	Stainless Steel
20	• Lower Adjusting Ring Pin	Stainless Steel
21	Thrust Bearing	Steel
22	Compression Screw Adapter	Stainless Steel
23	Thrust Bearing Cover	Steel
24	Lock Nut Set Screw (Not Shown)	Steel
25	Compression Screw Locknut	Silicon Brass

• = Recommended spare parts. See maintenance manual for quantity.



Alternate Materials for Base Assembly

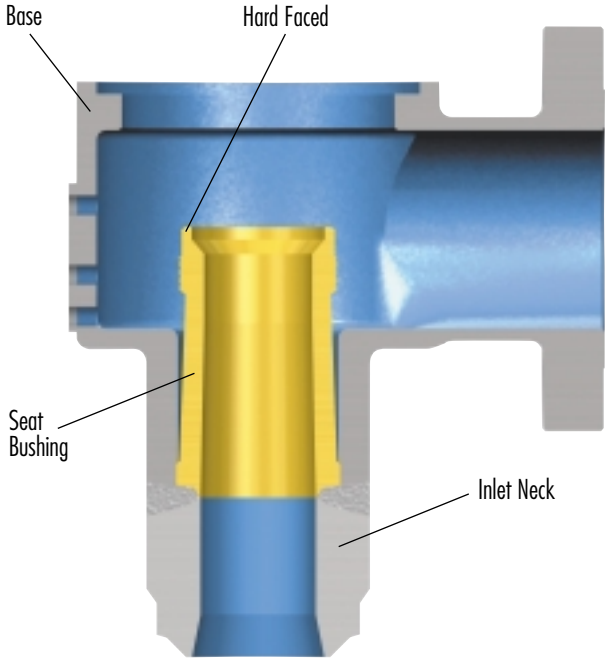
Valve Construction

Pressure Class	Valve Type
600	1715W 1725W 1735W 1755W 1745W
900	1716W 1726W 1736W 1756W 1746W
1500	1717W 1727W 1737W 1757W 1747W 1767W 1777QW 1787W 1707RW 1707RRW
2500	1719W 1729W 1739W 1759W 1749W
3000	1710W 1720W 1730W 1750W 1740W 1760W
4500	1713W 1723W 1733W 1753W 1743W

Consolidated safety valves are supplied to meet the specific material requirements of our customers. The following special material requirements are available for the safety valves listed. Many boiler manufactures now prefer to match the safety valve inlet neck material to the material being used on the header and nozzle inlet. By matching the materials, welding procedures can be simplified and the overall cost of installation reduced.

Some customers prefer that the valve be supplied with the same material for both the inlet neck and seat bushing. This material combination is often requested when rapid startup is expected on the boiler, as is the case with peaking units. When heat is applied, the expansion rate is constant for both the inlet neck and seat bushing.

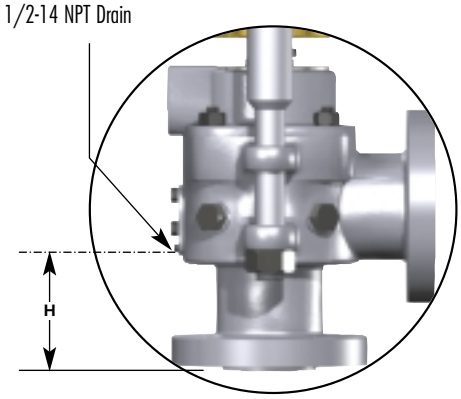
Both the inlet neck and seat bushing are manufactured from high strength forged material integrally welded to the cast valve body. A Stellite deposit is added to the seating area.

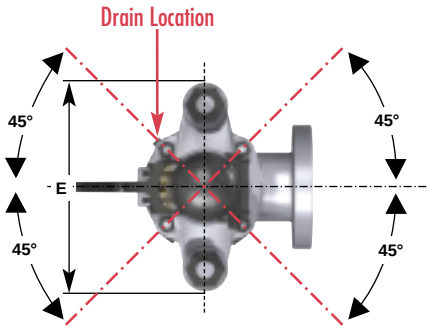


Material Options

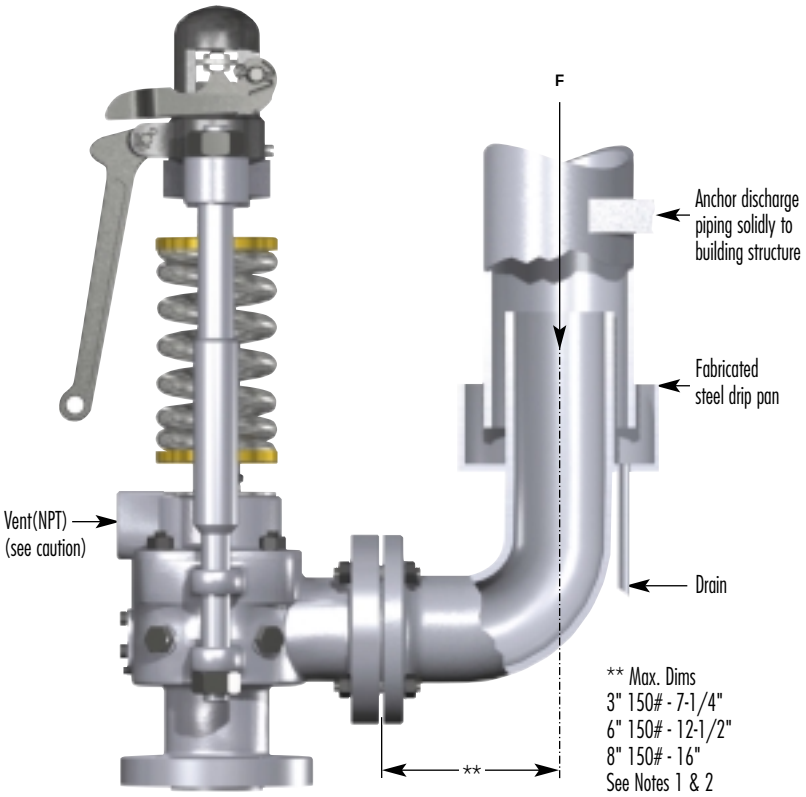
Ref No.	Part	Material				
1	Base	ASME SA216 WCC	ASME SA217 WC6	ASME SA217 WC9	ASME SA217 WC9	ASME SA217 C12A
2	Inlet neck (Note 1)	ASME SA105	ASME SA182 F11	ASME SA182 F22	ASME SA182 F91	ASME SA182 F91
3	Seat bushing (Note 1, 2)	ASME SA105	ASME SA182 F11	ASME SA182 F22	ASME SA182 F91	ASME SA182 F91
4	Hard faced	Stellite	Stellite	Stellite	Stellite	Stellite

Note:
1. Inlet neck and seat bushing can be supplied of one-piece construction on application.
2. Also available in ASME SA479 GR. 410 Material.

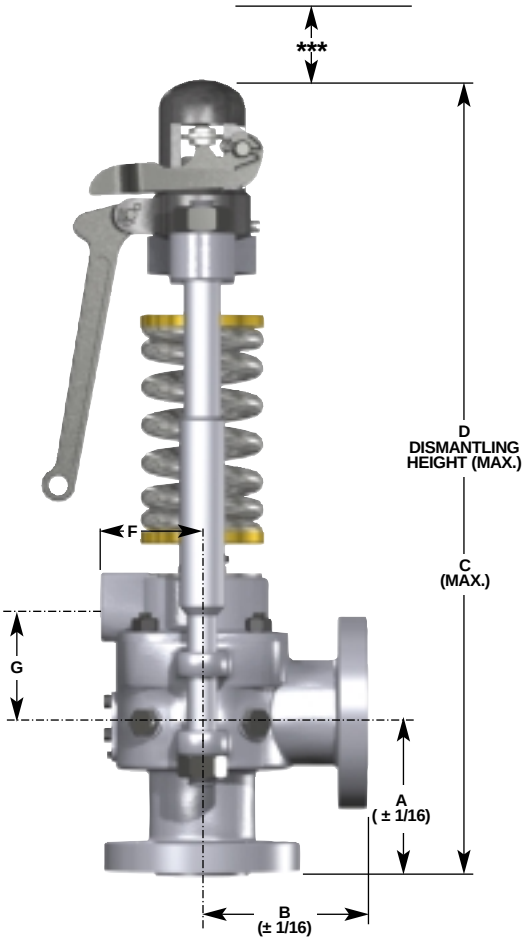




Cap and lever may be rotated 45°
horizontally to either side of centerline
Drain location for 4" & 6" valves is on centerline of outlet



** Max. Dims
3" 150# - 7-1/4"
6" 150# - 12-1/2"
8" 150# - 16"
See Notes 1 & 2



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

***The EVT-I and Hydroset require 15" clearance.

The EVT-II requires 17" clearance. And an additional 8" is required when the assisted closing device is utilized.

Notes:

1. For lever clearance dimensions see page 1700.31.
2. Appropriate considerations should be made for draining any condensate which may accumulate in the cover plate vent piping, body bowl drain, and drip pan elbow arrangement. See maintenance manual.

Flanged Inlet - Type 17_5, class 600

Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.		
1-1/2" 1715	6	5-1/4	23-3/4	28	9	3-1/4	3-9/16	4-15/16	1	85
2" 1725	7	5-1/2	28-1/2	34-1/2	10-1/4	3-3/8	4-5/8	5-15/16	1-1/4	100
2-1/2" 1735	8-1/4	7	33-1/2	40-3/4	13	3-7/16	4-13/16	6-3/16	1-1/4	240
3" 1755	8-1/2	7	37-1/4	44-3/4	15-1/2	3-15/16	5-1/2	5-15/16	1-1/2	285
3" 1745	8-1/2	7	37-1/4	44-3/4	15-1/2	3-15/16	5-1/2	5-15/16	1-1/2	285
4" 1765	9	8	40-3/4	49-1/4	15-1/2	5-13/16	6-7/8	6-7/16	2	475
4" 1775Q	8-3/4	9	45-1/4	55-1/4	19	6	8-3/16	5-5/16	2	550
6" 1775Q	12-11/16	9	49-1/4	59-1/4	19	6	8-3/16	9-1/4	2	600
6" 1785	10-11/16	10	50-1/2	62-3/4	20-1/4	7-1/4	8-7/16	7-1/4	2-1/2	750
6" 1705R	10-11/16	10	55-1/4	71-1/4	20-1/4	7-1/4	8-7/16	7-9/32	2-1/2	765
6" 1705RR	10-11/16	10	55-1/4	71-1/4	20-1/4	7-1/4	8-7/16	7-9/32	2-1/2	765

Flanged Inlet - Type 17_6, class 900

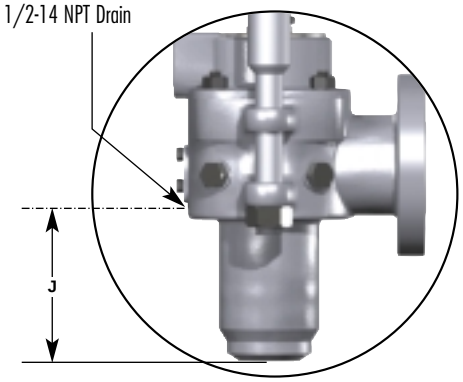
Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.		
1-1/2" 1716	6	5-1/4	23-3/4	28	9	3-1/4	3-9/16	4-15/16	1	90
2" 1726	7	5-1/2	29-3/4	35-1/2	10-1/4	3-3/8	4-5/8	5-15/16	1-1/4	110
2-1/2" 1736	8-1/4	7	34-1/4	42	13	3-7/16	4-13/16	6-3/16	1-1/4	250
3" 1756	8-5/8	7	38-1/2	46-3/4	15-1/2	3-15/16	5-1/2	6-1/16	1-1/2	385
3" 1746	8-5/8	7	38-1/2	46-3/4	15-1/2	3-15/16	5-1/2	6-1/16	1-1/2	385
4" 1766	9-1/8	8	42-3/4	53-1/4	15-1/2	5-13/16	6-7/8	6-9/16	2	500
4" 1776Q	9	9	47-1/2	59-1/2	19	6	8-3/16	5-9/16	2	575
6" 1776Q	13	9	51-1/2	63-1/2	19	6	8-3/16	9-5/16	2	640
6" 1786HP	15-7/16	10-1/2	64-7/16	71-7/16	21-1/2	7-1/16	8-9/16	11	2-1/2	1200
6" 1706RHP	15-7/16	10-1/2	64-7/16	71-7/16	21-1/2	7-1/16	8-9/16	11	2-1/2	1200
6" 1706RRHP	15-7/16	10-1/2	64-7/16	71-7/16	21-1/2	7-1/16	8-9/16	11	2-1/2	1200

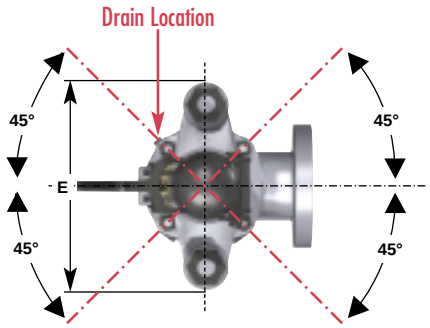
Flanged Inlet - Type 17_7, class 1500

Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.		
1-1/2" 1717	6	5-1/4	25-1/2	31-1/2	9	3-1/4	3-9/16	4-15/16	1	90
2" 1727	7	5-1/2	31-1/4	38-1/2	10-1/4	3-3/8	4-5/8	5-15/16	1-1/4	140
2-1/2" 1737	8-1/4	7	34-1/4	42	13	3-7/16	4-13/16	6-3/16	1-1/4	250
3" 1757	9	7	40-1/2	51	15-1/2	3-15/16	5-1/2	7-7/16	1-1/2	400
3" 1747	9	7	40-1/2	51	15-1/2	3-15/16	5-1/2	6-7/16	1-1/2	400
4" 1767	9-1/2	8	45	57-1/2	15-1/2	5-13/16	6-7/8	6-15/16	2	600
6" 1777Q	14-1/4	10	57-1/2	73-1/2	19-3/4	7-1/4	8-7/16	10-13/16	2-1/2	850
6" 1787	16-1/2	10-1/2	68-3/8	77-7/8	21-1/2	7-1/16	8-9/16	12-1/16	2-1/2	1280
6" 1707R	16-1/2	10-1/2	68-3/8	77-7/8	21-1/2	7-1/16	8-9/16	12-1/16	2-1/2	1312
6" 1707RR	16-1/2	10-1/2	68-3/8	77-7/8	21-1/2	7-1/16	8-9/16	12-1/16	2-1/2	1312

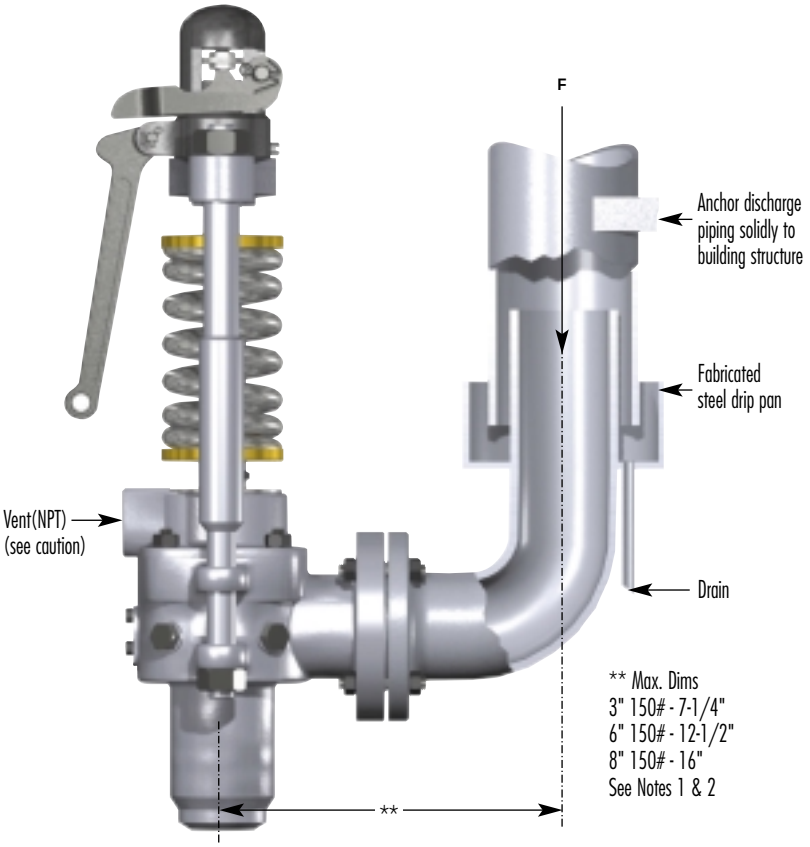
Flanged Inlet - Type 17_9, class 2500

Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.		
1-1/2" 1719	8-3/4	6-1/2	30-1/4	36	10-3/4	3-1/4	3-13/16	7-3/16	1	200
2" 1729	8-3/4	6-1/2	33-1/2	40-3/4	10-3/4	3-3/8	4-1/8	7-3/16	1-1/4	200
2-1/2" 1739	10-3/4	7-1/2	40-1/4	50-3/4	15-1/2	3-7/16	5-7/16	8-3/16	1-1/2	400
3" 1759	11	7-1/2	44	54-1/4	16	3-15/16	5-1/2	8-7/16	1-1/2	500
3" 1749	11	7-1/2	45-3/4	58	16	3-15/16	5-1/2	8-7/16	1-1/2	500

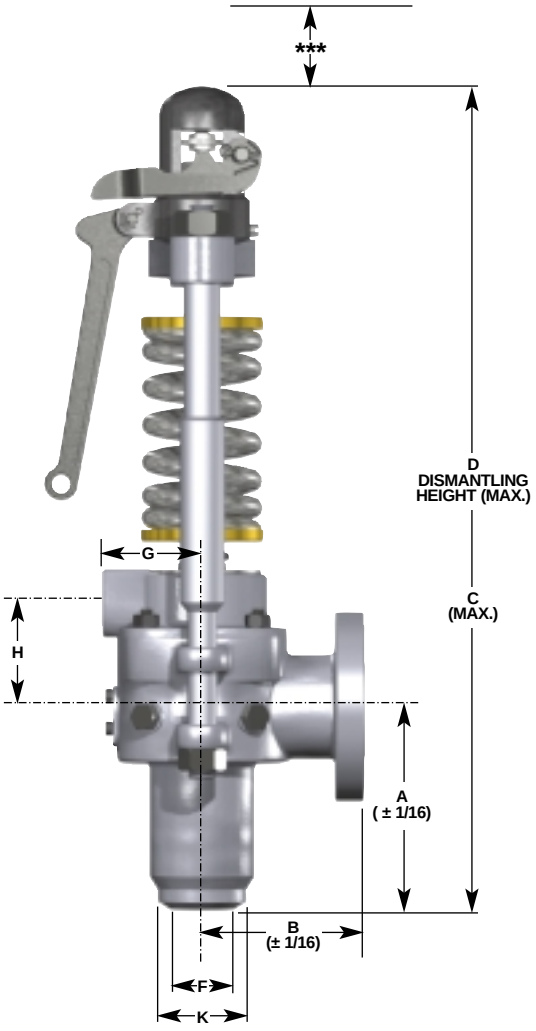




Cap and lever may be rotated 45° horizontally to either side of centerline
Drain location for 4" & 6" valves is on centerline of outlet



** Max. Dims
3" 150# - 7-1/4"
6" 150# - 12-1/2"
8" 150# - 16"
See Notes 1 & 2



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

***The EVT-I and Hydroset require 15" clearance.

The EVT-II requires 17" clearance. And an additional 8" is required when the assisted closing device is utilized.

Notes:
1. For lever clearance dimensions see page 1700.31.
2. Appropriate considerations should be made for draining any condensate which may accumulate in the cover plate vent piping, body bowl drain, and drip pan elbow arrangement. See maintenance manual.

Welded Inlet - Type 17_5W, class 600

Size and Type	All Temperature Classes									Temp. Class to 750°F	Temp. Class to 1020°F	Temp. Class to 1060°F	Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1715W	10	5-1/4	27-3/4	32	9	1-1/2	3-1/4	3-9/16	8-15/16	3.99	3.99	3.99	1	85
2" 1725W	10	5-1/2	31-1/2	37-1/2	10-1/4	2	3-3/8	4-5/8	8-15/16	3.99	3.99	3.99	1-1/4	100
2-1/2" 1735W	12	7	37-1/2	44-1/2	13	2-1/2	3-7/16	4-13/16	9-15/16	4.49	4.49	4.98	1-1/4	240
3" 1755W	12	7	40-3/4	48-1/4	15-1/2	3	3-15/16	5-1/2	9-7/16	5.49	5.49	5.49	1-1/2	260
3" 1745W	12	7	40-3/4	48-1/4	15-1/2	3	3-15/16	5-1/2	9-7/16	5.74	5.74	5.74	1-1/2	260
4" 1765W	12	8	43-3/4	52-1/4	15-1/2	4	5-13/16	6-7/8	9-7/16	6.99	6.99	6.99	2	475
4" 1775QW	12	9	48-1/2	58-1/2	19	4-1/8	6	8-3/16	8-9/16	7.24	7.24	7.24	2	550
6" 1775QW	12	9	48-1/2	58-1/2	19	6	6	8-3/16	8-9/16	8.74	8.74	8.74	2	600
6" 1785W	12	10	51-3/4	64	20-1/4	6	7-1/4	8-7/16	8-9/16	8.74	8.74	8.74	2-1/2	750
6" 1705RW	12	10	56-1/4	72-1/4	20-1/4	6	7-1/4	8-7/16	8-9/16	8.74	8.74	8.74	2-1/2	765
6" 1705RRW	12	10	56-1/4	72-1/4	20-1/4	6	7-1/4	8-7/16	8-9/16	8.74	8.74	8.74	2-1/2	765

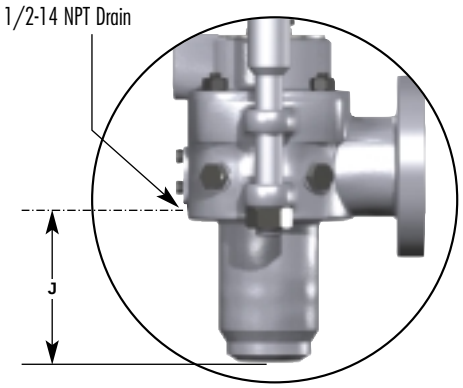
Welded Inlet - Type 17_6W, class 900

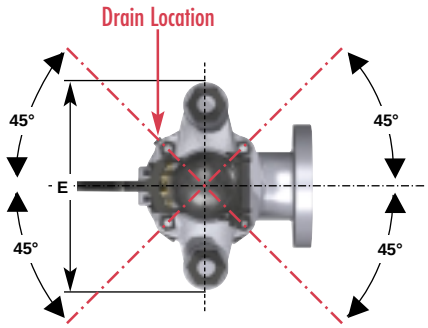
Size and Type	All Temperature Classes									Temp. Class to 750°F	Temp. Class to 1020°F	Temp. Class to 1060°F	Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1716W	10	5-1/4	27-3/4	32	9	1-1/2	3-1/4	3-9/16	8-15/16	3.99	3.99	3.99	1	90
2" 1726W	10	5-1/2	32-3/4	38-1/2	10-1/4	2	3-3/8	4-9/16	8-15/16	3.99	3.99	3.99	1-1/4	110
2-1/2" 1736W	12	7	38	45-3/4	13	2-1/2	3-7/16	4-13/16	9-15/16	4.99	4.99	4.99	1-1/4	250
3" 1756W	12	7	41-3/4	50-1/4	15-1/2	3	3-15/16	5-1/2	9-7/16	5.49	5.49	5.49	1-1/2	360
3" 1746W	12	7	41-3/4	50-1/4	15-1/2	3	3-15/16	5-1/2	9-7/16	5.74	5.74	5.74	1-1/2	360
4" 1766W	12	8	45-1/2	56	15-1/2	4	5-13/16	6-7/8	9-7/16	6.99	6.99	6.99	2	500
4" 1776QW	12	9	50-1/2	62-1/2	19	4-1/8	6	8-3/16	8-9/16	7.24	7.24	7.24	2	575
6" 1776QW	12	9	50-1/2	62-1/2	19	6	6	8-3/16	8-9/16	8.74	8.74	8.74	2	640
6" 1786W	15	10-1/2	64	71	21-1/2	6	7-1/4	9-7/16	10-9/16	8.74	8.74	8.74	2-1/2	1100
6" 1706RW	15	10-1/2	64	71	21-1/2	6	7-1/16	8-9/16	10-9/16	8.74	8.74	8.74	2-1/2	1132
6" 1706RRW	15	10-1/2	64	71	21-1/2	6	7-1/16	8-9/16	10-9/16	8.74	8.74	8.74	2-1/2	1132

Welded Inlet - Type 17_7W, class 1500

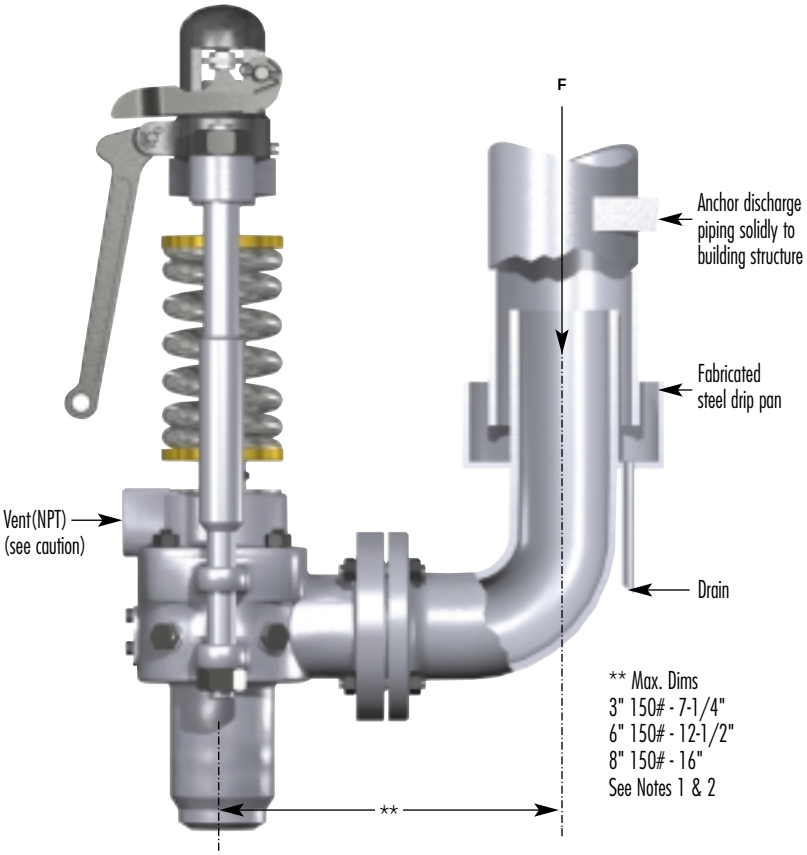
Size and Type	All Temperature Classes									Temp. Class to 750°F	Temp. Class to 1020°F	Temp. Class to 1060°F	Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1717W	10	5-1/4	29-1/2	35-1/2	9	1-1/2	3-1/4	3-21/32	8-15/16	3.99	3.99	3.99	1	90
2" 1727W	10	5-1/2	34-1/4	41-1/2	10-1/4	2	3-3/8	3-23/32	8-15/16	4.49	4.49	4.49	1-1/4	140
2-1/2" 1737W	12	7	38	45-3/4	13	2-1/2	3-7/16	4-29/32	9-15/16	4.99	4.99	5.49	1-1/4	250
3" 1757W	12	7	43-1/2	59	15-1/2	3	3-5/16	5-19/32	9-7/16	5.49	5.49	6.49	1-1/2	380
3" 1747W	12	7	43-1/2	59	15-1/2	3	3-5/16	5-19/32	9-7/16	5.74	5.74	6.49	1-1/2	380
4" 1767W	12	8	47-1/2	60	15-1/2	4	5-13/16	6-7/8	9-7/16	6.99	6.99	7.24	2	525
6" 1777QW	12	10	55-1/4	61-3/4	19-3/4	6	71/4	8-7/16	8-9/16	8.74	8.74	8.74	2-1/2	785
6" 1787W	16	10-1/2	67-7/8	77-3/8	21-1/2	6	7-1/16	8-9/16	11-9/16	8.74	8.74	8.74	2-1/2	1100
6" 1707RW	16	10-1/2	67-7/8	77-3/8	21-1/2	6	7-1/16	8-9/16	11-9/16	8.74	8.74	8.74	2-1/2	1132
6" 1707RRW	16	10-1/2	67-7/8	77-3/8	21-1/2	6	7-1/16	8-9/16	11-9/16	8.74	8.74	8.74	2-1/2	1132

Note1: Maximum nominal "K" dimension based on standard inlet neck outside diameter. Oversize inlet necks also available (consult factory).
Butt weld configuration is dependent upon set pressure and customer's required configuration.

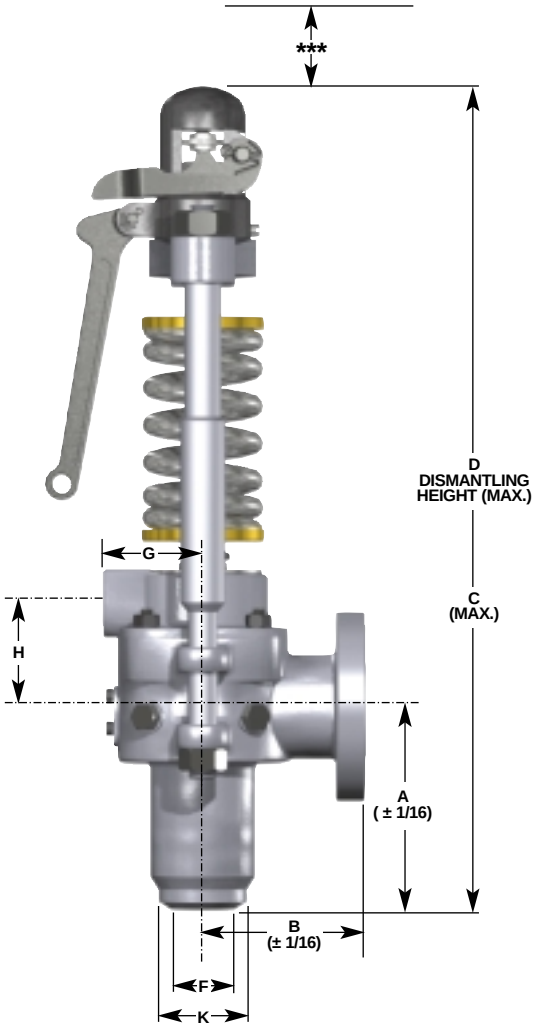




Cap and lever may be rotated 45° horizontally to either side of centerline
Drain location for 4" & 6" valves is on centerline of outlet



** Max. Dims
3" 150# - 7-1/4"
6" 150# - 12-1/2"
8" 150# - 16"
See Notes 1 & 2



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

***The EVT-I and Hydroset require 15" clearance.

The EVT-II requires 17" clearance, and an additional 8" is required when the assisted closing device is utilized.

Notes:
1. For lever clearance dimensions see page 1700.31.
2. Appropriate considerations should be made for draining any condensate which may accumulate in the cover plate vent piping, body bowl drain, and drip pan elbow arrangement. See maintenance manual.

Welded Inlet - Type 17_9W, class 2500

Size and Type	All Temperature Classes									Temp. Class to 750°F	Temp. Class to 1020°	Temp. Class to 1060°F	Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1719W	10	6-1/2	31-1/2	37-1/4	10-3/4	1-1/2	3-1/4	3-13/16	8-7/16	3.99	3.99	4.49	1	190
2" 1729W	10	6-1/2	34-3/4	42	10-3/4	2	3-3/8	4-1/8	8-7/16	4.99	4.99	5.49	1-1/4	200
2-1/2" 1739W	12	7-1/2	41-1/2	50	15-1/2	2-1/2	3-7/16	5-7/16	9-7/16	5.99	5.99	5.99	1-1/4	400
3" 1759W	12	7-1/2	45	55-1/4	16	3	3-15/16	5-1/2	9-7/16	6.49	6.49	6.99	1-1/2	470
3" 1749W	12	7-1/2	46-3/4	59	16	3	3-15/16	5-1/2	9-7/16	6.49	6.49	7.24	1-1/2	470

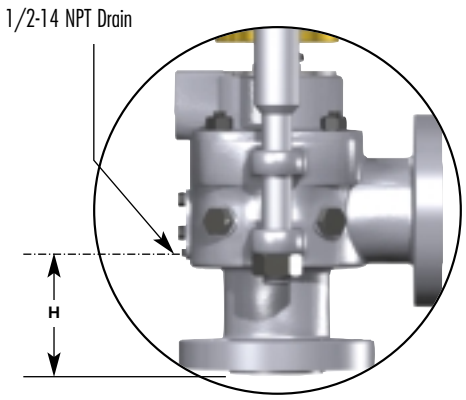
Welded Inlet - Type 17_0W, class 3000

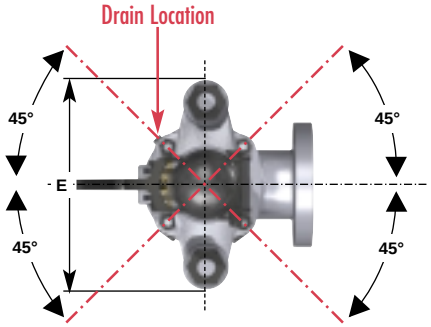
Size and Type	All Temperature Classes									Temp. Class to 750°F	Temp. Class to 1020°F	Temp. Class to 1060°F	Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1710W	10	6-1/2	31-1/2	37-1/4	10-3/4	1-1/2	3-1/4	3-13/16	8-7/16	4.49	4.49	4.99	1	190
2" 1720W	10	6-1/2	34-3/4	42	10-3/4	2	33/8	4-1/8	8-7/16	4.99	4.99	5.49	1-1/4	200
2-1/2" 1730W	12	7-1/2	43-1/2	54	15-1/2	2-1/2	3-7/16	5-7/16	9-7/16	5.99	5.99	6.49	1-1/2	400
3" 1750W	12	7-1/2	47	59-1/4	16	3	3-15/16	5-1/2	9-7/16	6.49	6.49	7.24	1-1/2	480
3" 1740W	12	7-1/2	47	59-1/4	16	3	3-15/16	5-1/2	9-7/16	6.74	6.74	7.49	1-1/2	480
4" 1760W	12	9-11/16	65-1/8	76	22-3/4	4	5-13/16	8-1/8	8-3/16	10.49	10.49	10.49	2	1250

Welded Inlet - Type 17_3W, class 4500

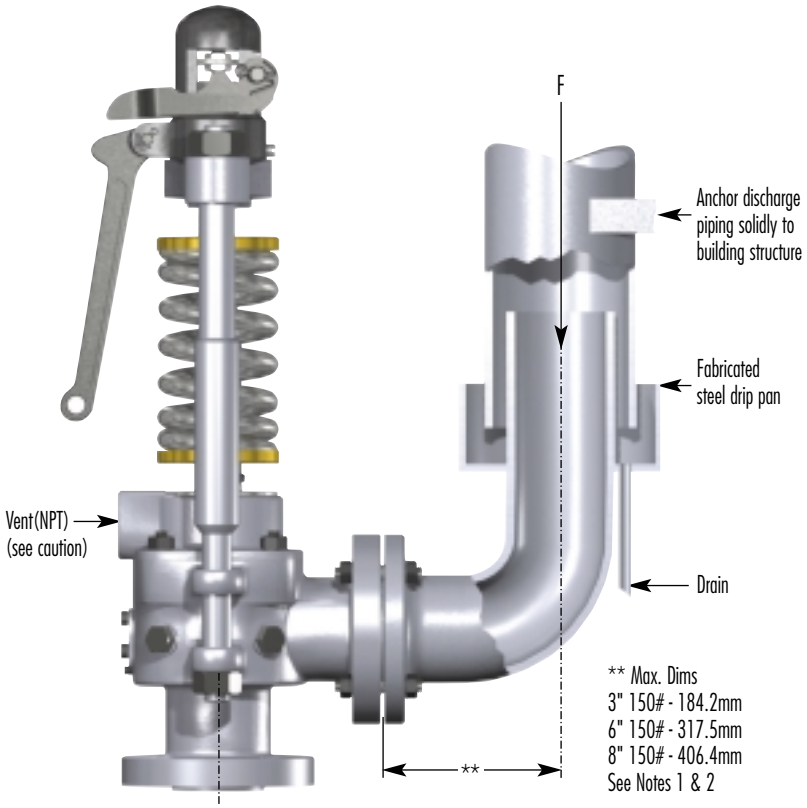
Size and Type	All Temperature Classes									Temp. Class to 750°F	Temp. Class to 1005°F	Temp. Class to 1020°F	Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1713W	10	6-1/2	34-3/4	42	10-3/4	1-1/2	3-1/4	3-43/64	8-7/16	5.49	5.49	5.49	1-1/4	250
2" 1723W	12	7-1/2	45-1/4	55-3/4	15-1/2	2	3-7/16	5-7/16	9-7/16	6.49	6.49	6.49	1-1/2	375
2-1/2" 1733W	12	7-1/2	51-3/4	65-1/2	16	2-1/2	3-15/16	5-1/2	9-7/16	6.99	6.99	6.99	1-1/2	475
3" 1753W	14	8	56-1/2	70-1/2	19-1/4	3	4-5/16	5-5/8	11-7/16	7.99	7.99	7.99	1-1/2	575
3" 1743W	14	8	58	72-1/2	19-1/4	3	4-5/16	5-5/8	11-7/16	7.99	7.99	7.99	1-1/2	600

Note1: Maximum nominal "K" dimension based on standard inlet neck outside diameter. Oversize inlet necks also available (consult factory).
Butt weld configuration is dependent upon set pressure and customer's required configuration.

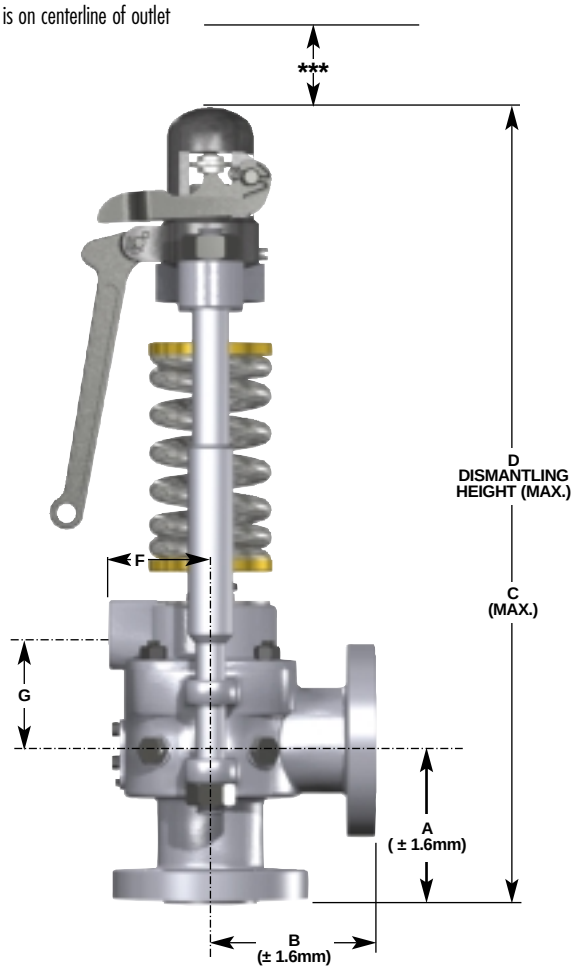




Cap and lever may be rotated 45° horizontally to either side of centerline
Drain location for 4" & 6" valves is on centerline of outlet



** Max. Dims
3" 150# - 184.2mm
6" 150# - 317.5mm
8" 150# - 406.4mm
See Notes 1 & 2



***The EVT-I and Hydroset require 381mm clearance.

The EVT-II requires 432mm clearance, and an additional 203mm is required when the assisted closing device is utilized.

CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

Notes:
1. For lever clearance dimensions see page 1700.31.
2. Appropriate considerations should be made for draining any condensate which may accumulate in the cover plate vent piping, body bowl drain, and drip pan elbow arrangement. See maintenance manual.

Flanged Inlet - Type 17_5, class 600

Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm		
1-1/2" 1715	152.4	133.4	603.3	711.2	228.6	82.6	90.5	125.4	1	38.6
2" 1725	177.8	139.7	723.9	876.3	260.4	85.7	117.5	150.8	1-1/4	45.4
2-1/2" 1735	209.6	177.8	850.9	1035.1	330.2	87.3	122.2	157.2	1-1/4	108.9
3" 1755	215.9	177.8	946.2	1136.7	393.7	100.0	139.7	150.8	1-1/2	129.3
3" 1745	215.9	177.8	946.2	1136.7	393.7	100.0	139.7	150.8	1-1/2	129.3
4" 1765	228.6	203.2	1035.1	1251.0	393.7	147.6	174.6	163.5	2	215.5
4" 1775Q	222.3	228.6	1149.4	1403.4	482.6	152.4	207.9	134.9	2	249.5
6"1775Q	322.3	228.6	1251.0	1505.0	482.6	152.4	207.9	235.0	2	272.2
6"1785	271.5	254.0	1282.7	1593.9	514.4	184.2	214.3	184.2	2-1/2	340.2
6"1705R	271.5	254.0	1403.4	1809.8	514.4	184.2	214.3	184.2	2-1/2	347.0
6" 1705RR	271.5	254.0	1403.4	1809.8	514.4	184.2	214.3	184.2	2-1/2	347.0

Flanged Inlet - Type 17_6, class 900

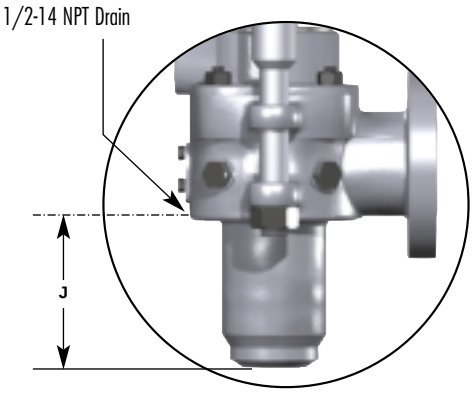
Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm		
1-1/2" 1716	152.4	133.4	603.3	711.2	228.6	82.6	90.5	125.4	1	40.8
2" 1726	177.8	139.7	755.7	901.7	260.4	85.7	117.5	150.8	1-1/4	49.9
2-1/2" 1736	209.6	177.8	870.0	1066.8	330.2	87.3	122.2	157.2	1-1/4	113.4
3" 1756	219.1	177.8	977.9	1187.5	393.7	100.0	139.7	154.0	1-1/2	174.6
3" 1746	219.1	177.8	977.9	1187.5	393.7	100.0	139.7	154.0	1-1/2	174.6
4" 1766	231.8	203.2	1085.9	1352.6	393.7	147.6	174.6	166.7	2	226.8
4" 1776Q	228.6	228.6	1206.5	1511.3	482.6	152.4	207.9	141.3	2	260.8
6" 1776Q	330.2	228.6	1308.1	1612.9	482.6	152.4	207.9	236.5	2	290.3
6" 1786-HP	392.1	266.7	1636.7	1814.5	546.1	179.4	217.5	279.4	2-1/2	544.0
6" 1706R-HP	392.1	266.7	1636.7	1814.5	546.1	179.4	217.5	279.4	2-1/2	544.0
6" 1706RR-HP	392.1	266.7	1636.7	1814.5	546.1	179.4	217.5	279.4	2-1/2	544.0

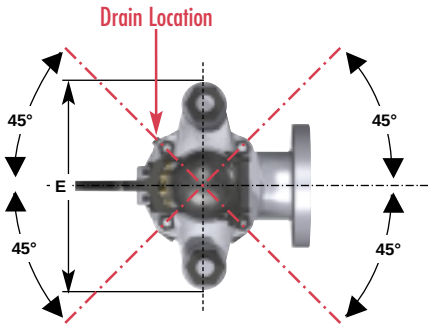
Flanged Inlet - Type 17_7, class 1500

Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm		
1-1/2" 1717	152.4	133.4	647.7	800.1	228.6	82.6	90.5	125.4	1	40.8
2" 1727	177.8	139.7	793.8	977.9	260.4	85.7	117.5	150.8	1-1/4	63.5
2-1/2" 1737	209.6	177.8	870.0	1066.8	330.2	87.3	122.2	157.2	1-1/4	113.4
3" 1757	228.6	177.8	1028.7	1295.4	393.7	100.0	139.7	188.9	1-1/2	181.4
3" 1747	228.6	177.8	1028.7	1295.4	393.7	100.0	139.7	163.5	1-1/2	181.4
4" 1767	241.3	203.2	1143.0	1460.5	393.7	147.6	174.6	176.2	2	272.2
6" 1777Q	362.0	254.0	1460.5	1866.9	501.7	184.2	214.3	274.6	2-1/2	385.6
6" 1787	419.1	266.7	1736.7	1978.0	546.1	179.4	217.5	306.4	2-1/2	581.0
6" 1707R	419.1	266.7	1736.7	1978.0	546.1	179.4	217.5	306.4	2-1/2	595.0
6" 1707RR	419.1	266.7	1734.7	1978.0	546.1	179.4	217.5	306.4	2-1/2	595.0

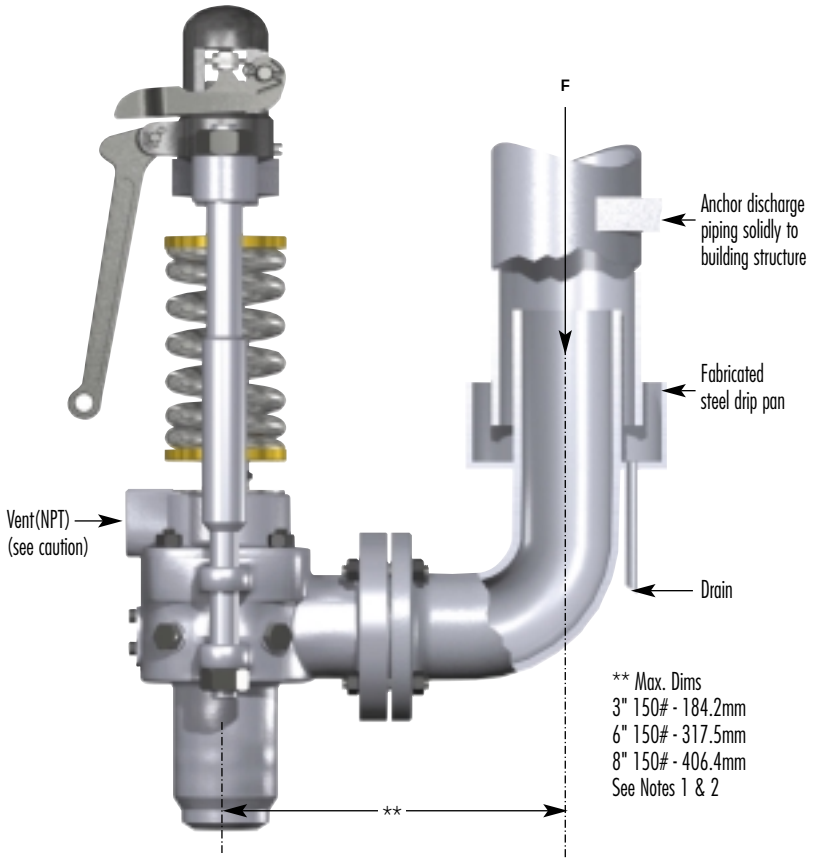
Flanged Inlet - Type 17_9, class 2500

Size and Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm		
1-1/2" 1719	222.3	165.1	768.4	914.4	273.1	82.6	96.8	182.6	1	91.0
2" 1729	222.3	165.1	850.9	1035.1	273.1	85.7	104.8	182.6	1-1/4	91.0
2-1/2" 1739	273.1	190.5	1022.4	1289.1	393.7	87.3	138.1	207.9	1-1/2	181.4
3" 1759	279.4	190.5	1117.6	1378.4	406.4	100.0	139.7	214.3	1-1/2	226.8
3" 1749	279.4	190.5	1162.1	1473.2	406.4	100.0	139.7	214.3	1-1/2	226.8

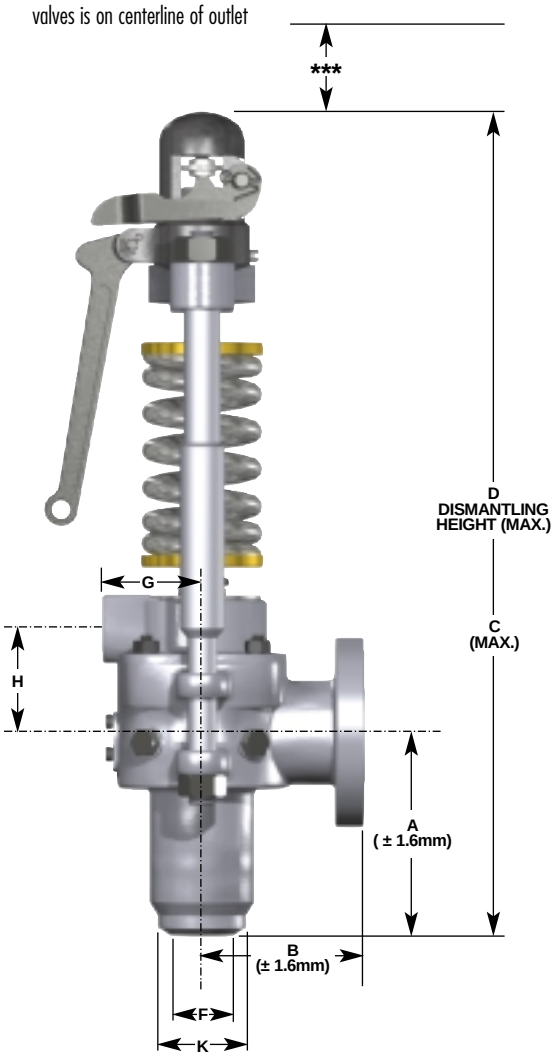




Cap and lever may be rotated 45° horizontally to either side of centerline
Drain location for 4" & 6" valves is on centerline of outlet



** Max. Dims
3" 150# - 184.2mm
6" 150# - 317.5mm
8" 150# - 406.4mm
See Notes 1 & 2



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

***The EVT-I and Hydroset require 381mm clearance.

The EVT-II requires 432mm clearance, and an additional 203mm is required when the assisted closing device is utilized.

Notes:
1. For lever clearance dimensions see page 1700.31.
2. Appropriate considerations should be made for draining any condensate which may accumulate in the cover plate vent piping, body bowl drain, and drip pan elbow arrangement. See maintenance manual.

Welded Inlet - Type 17_5W, class 600

Size and Type	All Temperature Classes									Temp. Class to 399°C	Temp. Class to 549°C	Temp. Class to 571°C	Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1715W	254.0	133.4	704.9	812.8	228.6	38.1	82.6	90.5	227.0	3.99	3.99	3.99	1	38.6
2" 1725W	254.0	139.7	800.1	952.5	260.4	50.8	85.7	117.5	227.0	3.99	3.99	3.99	1-1/4	45.4
2-1/2" 1735W	304.8	177.8	946.2	1130.3	330.2	63.5	87.3	122.2	252.4	4.49	4.49	4.98	1-1/4	108.9
3" 1755W	304.8	177.8	1035.1	1225.6	393.7	76.2	100.0	139.7	239.7	5.49	5.49	5.49	1-1/2	118.0
3" 1745W	304.8	177.8	1035.1	1225.6	393.7	76.2	100.0	139.7	239.7	5.74	5.74	5.74	1-1/2	118.0
4" 1765W	304.8	203.2	1111.3	1327.2	393.7	101.6	147.6	174.6	239.7	6.99	6.99	6.99	2	215.5
4" 1775QW	304.8	228.6	1231.9	1485.9	482.6	104.8	152.4	208.0	217.5	7.24	7.24	7.24	2	249.5
6" 1775QW	304.8	228.6	1231.9	1485.9	482.6	152.4	152.4	208.0	217.5	8.74	8.74	8.74	2	272.2
6" 1785W	304.8	254.0	1314.5	1625.6	514.4	152.4	184.2	214.3	217.5	8.74	8.74	8.74	2-1/2	340.2
6" 1705RW	304.8	254.0	1428.8	1835.2	514.4	152.4	184.2	214.3	217.5	8.74	8.74	8.74	2-1/2	347.0
6" 1705RRW	304.8	254.0	1428.8	1835.2	514.4	152.4	184.2	214.3	217.5	8.74	8.74	8.74	2-1/2	347.0

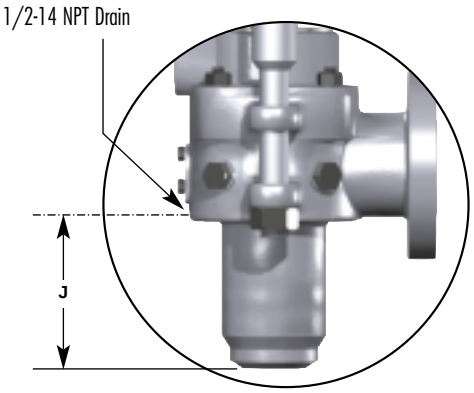
Welded Inlet - Type 17_6W, class 900

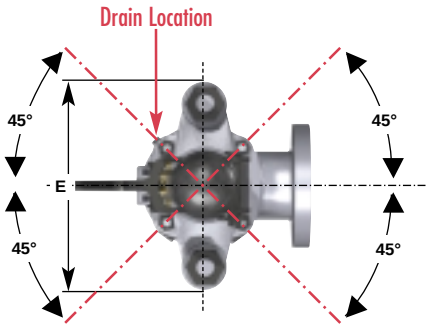
Size and Type	All Temperature Classes									Temp. Class to 399°C	Temp. Class to 549°C	Temp. Class to 571°C	Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1716W	254.0	133.4	704.9	812.8	228.6	38.1	82.6	90.5	227.0	3.99	3.99	3.99	1	40.8
2" 1726W	254.0	139.7	831.9	977.9	260.4	50.8	85.7	117.5	227.0	3.99	3.99	3.99	1-1/4	50.0
2-1/2" 1736W	304.8	177.8	965.2	1162.1	330.2	63.5	87.3	122.2	252.4	4.99	4.99	4.99	1-1/4	113.4
3" 1756W	304.8	177.8	1060.5	1276.4	393.7	76.2	100.0	139.7	239.7	5.49	5.49	5.49	1-1/2	163.3
3" 1746W	304.8	177.8	1060.5	1276.4	393.7	76.2	100.0	139.7	239.7	5.74	5.74	5.74	1-1/2	163.3
4" 1766W	304.8	203.2	1155.7	1422.4	393.7	101.6	147.6	174.6	239.7	6.99	6.99	6.99	2	226.8
4" 1776QW	304.8	228.6	1282.7	1587.5	482.6	104.8	152.4	208.0	217.5	7.24	7.24	7.24	2	260.8
6" 1776QW	304.8	228.6	1282.7	1587.5	482.6	152.4	152.4	208.0	217.5	8.74	8.74	8.74	2	290.3
6" 1786W-HP	381.0	266.7	1625.6	1803.4	546.1	152.4	184.2	239.7	268.3	8.74	8.74	8.74	2-1/2	499.0
6" 1706RW-HP	381.0	266.7	1625.6	1803.4	546.1	152.4	179.4	217.5	268.3	8.74	8.74	8.74	2-1/2	513.5
6" 1706RRW-HP	381.0	266.7	1625.6	1803.4	546.1	152.4	179.4	217.5	268.3	8.74	8.74	8.74	2-1/2	513.5

Welded Inlet - Type 17_7W, class 1500

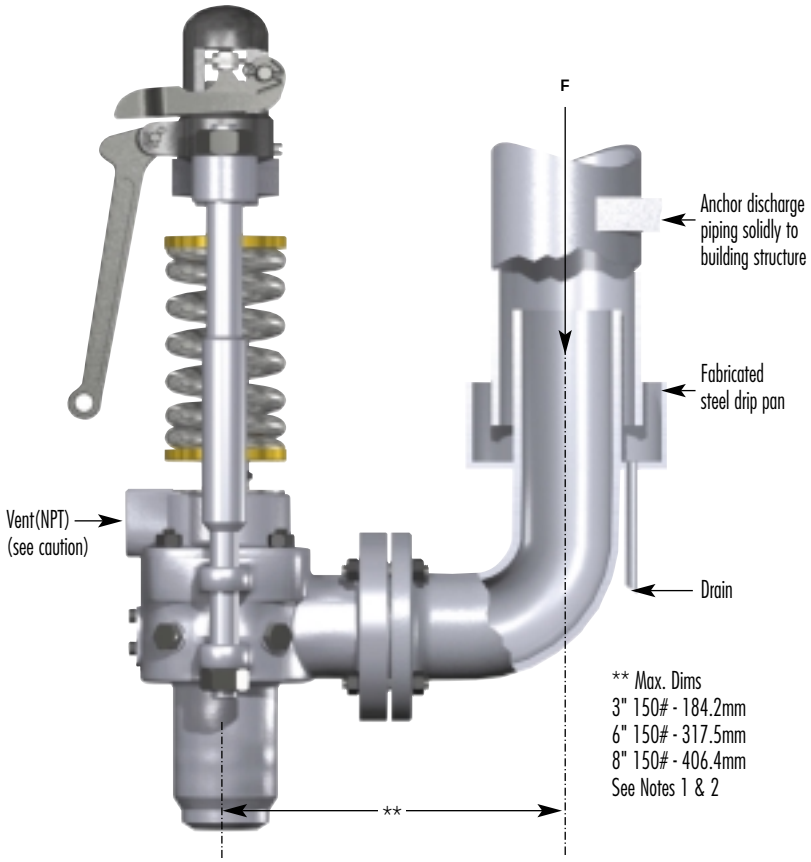
Size and Type	All Temperature Classes									Temp. Class to 399°C	Temp. Class to 549°C	Temp. Class to 571°C	Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	Max. K in. Note 1	Max. K in. Note 1	Max. K in. Note 1		
1-1/2" 1717W	254.0	133.4	749.3	901.7	228.6	38.1	82.6	92.8	227.0	3.99	3.99	3.99	1	40.8
2" 1727W	254.0	139.7	870.0	1054.1	260.4	50.8	85.7	94.4	227.0	4.49	4.49	4.49	1-1/4	63.5
2-1/2" 1737W	304.8	177.8	965.2	1162.1	330.2	63.5	87.3	124.6	252.4	4.99	4.99	5.49	1-1/2	113.4
3" 1757W	304.8	177.8	1104.9	1498.6	393.7	76.2	100.0	142.0	239.7	5.49	5.49	6.49	1-1/2	172.4
3" 1747W	304.8	177.8	1104.9	1498.6	393.7	76.2	100.0	142.0	239.7	5.74	5.74	6.49	1-1/2	172.4
4" 1767W	304.8	203.2	1206.5	1524.0	393.7	101.6	147.6	174.6	239.7	6.99	6.99	7.24	2	238.1
6" 1777QW	304.8	254.0	1403.4	1568.5	501.7	152.4	184.2	214.3	217.5	8.74	8.74	8.74	2-1/2	356.1
6" 1787W	406.4	266.7	1724.0	1965.3	546.1	152.4	179.4	217.5	293.7	8.74	8.74	8.74	2-1/2	499.0
6" 1707RW	406.4	266.7	1724.0	1965.3	546.1	152.4	179.4	217.5	293.7	8.74	8.74	8.74	2-1/2	513.5
6" 1707RRW	406.4	266.7	1724.0	1965.3	546.1	152.4	179.4	217.5	293.7	8.74	8.74	8.74	2-1/2	513.5

Note1: Maximum nominal "K" dimension based on standard inlet neck outside diameter. Oversize inlet necks also available (consult factory).
Butt weld configuration is dependent upon set pressure and customer's required configuration.

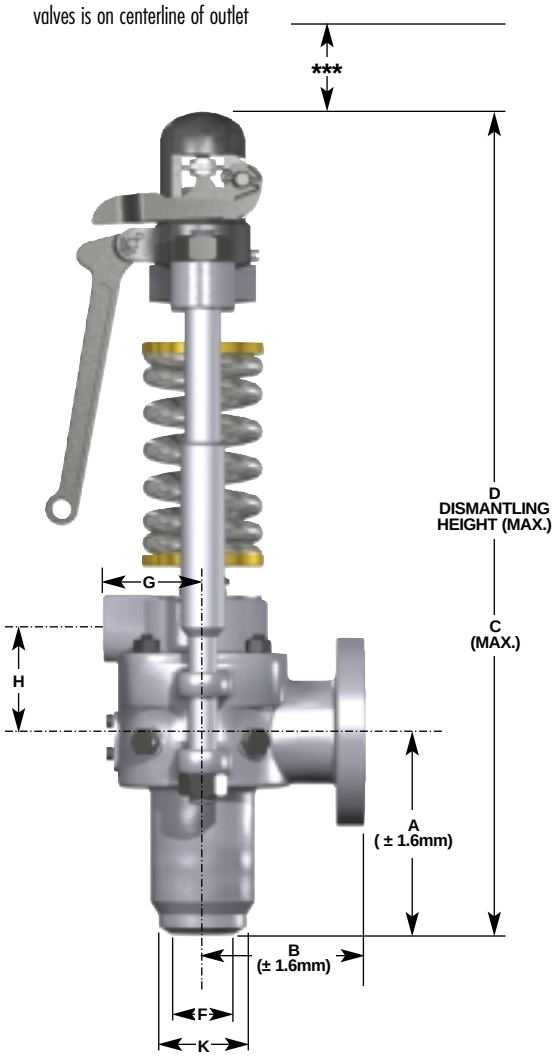




Cap and lever may be rotated 45° horizontally to either side of centerline
Drain location for 4" & 6" valves is on centerline of outlet



** Max. Dims
3" 150# - 184.2mm
6" 150# - 317.5mm
8" 150# - 406.4mm
See Notes 1 & 2



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

***The EVT-I and Hydroset require 381mm clearance.

The EVT-II requires 432mm clearance, and an additional 203mm is required when the assisted closing device is utilized.

Notes:
1. For lever clearance dimensions see page 1700.31.
2. Appropriate considerations should be made for draining any condensate which may accumulate in the cover plate vent piping, body bowl drain, and drip pan elbow arrangement. See maintenance manual.

Welded Inlet - Type 17_9W, class 2500

Size and Type	All Temperature Classes									Temp. Class to 399°C	Temp. Class to 549°C	Temp. Class to 571°C	Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K in. Note 1	K in. Note 1	K in. Note 1		
1-1/2" 1719W	254.0	165.1	800.1	946.2	273.1	38.1	82.6	96.8	214.3	3.99	3.99	4.49	1	86.2
2" 1729W	254.0	165.1	882.7	1066.8	273.1	50.8	85.7	104.8	214.3	4.99	4.99	5.49	1-1/4	90.7
2-1/2" 1739W	304.8	190.5	1054.1	1270.0	393.7	63.5	87.3	138.1	239.7	5.99	5.99	5.99	1-1/2	181.4
3" 1759W	304.8	190.5	1143.0	1403.4	406.4	76.2	100.0	139.7	239.7	6.49	6.49	6.99	1-1/2	213.2
3" 1749W	304.8	190.5	1187.5	1498.6	406.4	76.2	100.0	139.7	239.7	6.49	6.49	7.24	1-1/2	213.2

Welded Inlet - Type 17_0W, class 3000

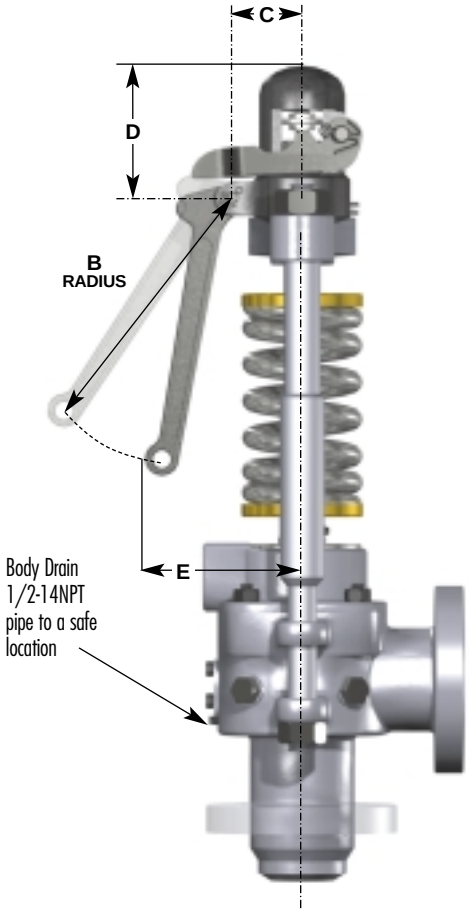
Size and Type	All Temperature Classes									Temp. Class to 399°C	Temp. Class to 549°C	Temp. Class to 571°C	Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K in. Note 1	K in. Note 1	K in. Note 1		
1-1/2" 1710W	254.0	165.1	800.1	946.2	273.1	38.1	82.6	96.8	214.3	4.49	4.49	4.99	1	86.2
2" 1720W	254.0	165.1	882.7	1066.8	273.1	50.8	85.7	104.8	214.3	4.99	4.99	5.49	1-1/4	90.7
2-1/2" 1730W	304.8	191.0	1104.9	1371.6	393.7	63.5	87.3	138.1	239.7	5.99	5.99	6.49	1-1/2	181.4
3" 1750W	304.8	191.0	1193.8	1505.0	406.4	76.2	100.0	139.7	239.7	6.49	6.49	7.24	1-1/2	217.7
3" 1740W	304.8	191.0	1193.8	1505.0	406.4	76.2	100.0	139.7	239.7	6.74	6.74	7.49	1-1/2	217.7
4" 1760W	304.8	246.0	1654.2	1930.4	577.9	101.6	147.6	206.4	208.0	10.49	10.49	10.49	2	567.0

Welded Inlet - Type 17_3W, class 4500

Size and Type	All Temperature Classes									Temp. Class to 399°C	Temp. Class to 541°C	Temp. Class to 549°C	Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm	K in. Note 1	K in. Note 1	K in. Note 1		
1-1/2" 1713W	254.0	165.1	882.7	1066.8	273.1	38.1	82.6	93.2	214.3	5.49	5.49	5.49	1-1/4	113.4
2" 1723W	304.8	190.5	1149.4	1416.1	393.7	50.8	87.3	138.1	239.7	6.49	6.49	6.49	1-1/2	170.1
2-1/2" 1733W	304.8	190.5	1314.5	1663.7	406.4	63.5	100.0	139.7	239.7	6.99	6.99	6.99	1-1/2	215.5
3" 1753W	355.6	203.2	1435.1	1790.7	489.0	76.2	109.5	142.9	290.5	7.99	7.99	7.99	1-1/2	260.8
3" 1743W	355.6	203.2	1473.2	1841.5	489.0	76.2	109.5	142.9	290.5	7.99	7.99	7.99	1-1/2	272.2

Note1: Maximum nominal "K" dimension based on standard inlet neck outside diameter. Oversize inlet necks also available (consult factory).
Butt weld configuration is dependent upon set pressure and customer's required configuration.

Lever Clearance Dimensions



Lever Clearance Dimensions (US & metric units)

SIZE & TYPE		B in. mm	C in. mm	D in. mm	E in. mm
1-1/2-1715, 1716, 1717 2-1725		8 203.2	1-15/16 49.2	3-9/16 90.5	4-1/8 104.8
1-1/2-1710, 1719 2-1726, 1727	2-1/2 -1735	11-3/4 298.5	2-1/2 63.5	4-1/8 104.8	3-7/8 98.4
1-1/2-1713 2-1720, 1729	2-1/2-1736, 1737	11-3/4 298.5	2-11/16 68.2	4-3/8 111.1	5-7/8 149.2
4-1760		32 812.8	3-5/8 92.1	6-1/4 158.8	9-1/4 235.0
2-1723 2-1/2-1730, 1739	3-1745, 1746, 1747, 1755, 1756, 1757 4-1765, 1766, 1767	18-1/8 460.4	3-1/16 77.8	5-5/8 142.9	8-5/16 211.1
2-1/2-1733	3-1740, 1743, 1749, 1750, 1753, 1759	18-1/4 463.6	3-5/8 92.1	6-1/4 158.8	9-1/8 231.8
4-1775Q 6-1775Q		18-1/4 463.6	3-5/8 92.1	6-1/4 158.8	7-1/8 181.0
6-1705R, 1706R, 1777Q, 1785, 1786, 1705RR		18-1/4 463.6	3-5/8 92.1	6-1/4 158.8	10-7/8 276.2
4-1776Q 6-1776Q		22-3/4 577.9	3-5/8 92.1	6-1/4 158.8	7-1/4 184.1
6-1706R-HP, 1707R, 1786-HP, 1787 6-1706RR-HP, 6-1707RR		32 812.8	3-5/8 92.1	6-1/4 158.8	9-7/32 234.1

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

600 Pressure Class

Temperature Class Base Material Flanged Base Material Buttweld Inlet Neck Material Buttweld (Note 1 & 2)			B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	E WC9 WC9 F22	F WC9 WC9 F22	G CF8M CF8M F316
Valve Type	Inlet CL_600	Outlet Flange (Note 3)	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1715	Flange Buttweld	CL_150 CL_150	1210 1500	1175 1500	1135 1500	1065 1500	1015 1500	975 1500	900 1500	640 1500	430 1500	374 1500	324 1500	220 1500	556 1500
1725	Flange ButtWeld	CL_150 CL_150	1210 1500	1175 1500	1135 1500	1065 1500	1015 1500	975 1500	900 1500	640 1500	430 1500	374 1500	324 1500	220 1083	556 1500
1735	Flange ButtWeld	CL_150 CL_150	1210 2500	1175 2500	1135 2500	1065 2500	1015 2500	975 2500	900 2500	640 2500	430 1830	374 1586	324 1615	220 1096	556 2500
1755	Flange ButtWeld	CL_150 CL_150	1210 2500	1175 2500	1135 2500	1065 2500	1015 2500	975 2500	900 2500	640 2500	430 1912	374 1657	324 1431	220 972	556 2459
1745	Flange ButtWeld	CL_150 CL_150	1210 2000	1175 2000	1135 2000	1065 2000	1015 2000	975 2000	900 2000	640 2000	430 2000	374 1777	324 1535	220 1042	556 2000
1765	Flange ButtWeld	CL_150 CL_150	1015 1015	1015 1015	1015 1015	1015 1015	1015 1015	975 1015	900 1015	640 1015	430 1015	374 1015	324 1015	220 924	556 1015
4" - 1775Q	Flange ButtWeld	CL_150 CL_150	1210 1285	1175 1285	1135 1285	1065 1285	1015 1285	975 1285	900 1285	640 1285	430 1285	374 1244	324 1075	220 730	556 1285
6" - 1775Q	Flange ButtWeld	CL_150 CL_150	1210 1500	1175 1500	1135 1500	1065 1500	1015 1500	975 1500	900 1500	640 1500	430 1207	374 1046	324 905	220 614	556 1500
1785	Flange ButtWeld	CL_150 CL_150	900 900	900 900	900 900	900 900	900 900	900 900	900 900	640 900	430 900	374 900	324 900	220 611	556 900
1705R	Flange ButtWeld	CL_150 CL_150	900 900	900 900	900 900	900 900	900 900	900 900	900 900	640 900	430 900	374 900	324 900	220 611	556 900
1705RR	Flange ButtWeld	CL_150 CL_150	900 900	900 900	900 900	900 900	900 900	900 900	900 900	640 900	430 900	374 900	324 900	220 611	556 900

Notes:
1. Applies to 1-1/2" through 3" sizes only.
2. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
3. Available CL_300 with same Pressure/Temperature rating.

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

900 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 1 & 2)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_900	Outlet Flange (Note 3)	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1716	Flange	CL_150	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1726	Flange	CL_150	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1290	1500
1736	Flange	CL_150	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	3000	3000	3000	3000	3000	3000	3000	2699	1830	1586	1615	1096	2773
1756	Flange	CL_150	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	3000	3000	3000	3000	3000	3000	3000	2821	1912	1657	1431	972	2459
1746	Flange	CL_150	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	2000	2000	2000	2000	2000	2000	2000	2000	2000	1777	1535	1042	2000
1766	Flange	CL_150	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1361	924	1500
4" - 1776Q	Flange	CL_150	1285	1285	1285	1285	1285	1285	1285	955	650	562	486	330	833
	ButtWeld	CL_150	1285	1285	1285	1285	1285	1285	1285	1285	1285	1244	1075	730	1285
6" - 1776Q	Flange	CL_150	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1500	1500	1500	1500	1500	1500	1500	1500	1207	1046	905	614	1552
1786XHP	Flange	CL_150	1040	1040	1040	1040	1040	1040	1040	955	650	562	486	330	833
	ButtWeld	CL_150	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	900	611	1040
1706RXHP	Flange	CL_150	1010	1010	1010	1010	1010	1010	1010	955	650	562	486	330	833
	ButtWeld	CL_150	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	900	611	1010
1706RRXHP	Flange	CL_150	1010	1010	1010	1010	1010	1010	1010	955	650	562	486	330	833
	ButtWeld	CL_150	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	900	611	1010

Notes:

1. Applies to 1-1/2" through 3" sizes only.
2. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
3. Available CL_300 with same Pressure/Temperature rating.

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

1500 Pressure Class

Temperature Class Base Material Flanged Base Material Buttweld Inlet Neck Material Buttweld (Note 1)			B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	E WC9 WC9 F22	F WC9 WC9 F22	G CF8M CF8M F316
Valve Type	Inlet CL_1500	Outlet Flange (Note 2)	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1717	Flange	CL_150	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	3100	3100	3100	3100	3100	3100	3100	3100	3100	2737	2367	1603	3100
1727	Flange	CL_150	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	3100	3100	3100	3100	3100	3100	3100	3100	2540	2201	1903	1290	3100
1737	Flange	CL_150	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	3100	3100	3100	3100	3100	3100	3100	3100	2156	1869	1861	1262	3100
1757	Flange	CL_150	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	3100	3100	3100	3100	3100	3100	3100	2821	1912	1657	1845	1251	3100
1747	Flange	CL_150	2000	2000	2000	2000	2000	2000	2000	1595	1080	936	810	550	1389
	ButtWeld	CL_150	2000	2000	2000	2000	2000	2000	2000	2000	2000	1777	1845	1251	2000
1767	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1576	1437	976	1600
1777Q	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1200 1600*	1040 1600*	900 1350*	610 1050*	1545
1787	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1200 1600*	1040 1600*	900 1200*	610 950*	1545
1707R	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1200 1600*	1040 1600*	900 1100*	610 850*	1545
1707RR	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1200 1600*	1040 1600*	900 925*	610 720*	1545

Notes:

1. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
2. Available CL_300 with same Pressure/Temperature rating.

*Meets ASME B&PVC Section I, Code Case 1876-2, but does not meet ANSI B16.34. (1996 Edition)

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

2500 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 1)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_2500	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1719	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	3100	2737	2429	1645	3100
1729	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2950	2557	2429	1645	3100
1739	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2600	2437	2230	1510	3100
												2600*	2600*	2500*	
1759	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2462	2134	1948	1320	3100
											2600*	2600*	2600*	2350*	
1749	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2462	2134	2154	1460	3100
											2600*	2600*	2600*	2150*	

Notes: 1. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.

*Meets ASME B&PVC Section I, Code Case 1876-2, but does not meet ANSI B16.34. (1996 Edition)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

3000 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 1)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_3000	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1710	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	3100	2808	2429	1645	3100
												3100*	3100*	2900*	
1720	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2950	2557	2429	1645	3100
											3100*	3100*	3100*	3100*	
1730	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2812	2437	2414	1635	3100
											3100*	3100*	3100*	3100*	
1750	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2462	2134	2154	1460	3100
											3100*	3100*	3100*	2650*	
1740	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2600	2253	2258	1529	3100
											3100*	3100*	3100*	2525*	
1760	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	3100	2808	2429	1645	3100
												3100*	3100*	3100*	

Notes: 1. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.

*Meets ASME B&PVC Section I, Code Case 1876-2, but does not meet ANSI B16.34. (1996 Edition)

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

4500 Pressure Class

Temperature Class Base Material Flanged Base Material Buttweld Inlet Neck Material Buttweld (Note 1)			B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	E WC9 WC9 F22	F WC9 WC9 F22	G CF8M CF8M F316
Valve Type	Inlet CL_4500	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1713	ButtWeld	CL_300	5360	5360	5360	5360	5020	5020	5020	4785 4830*	3240 4830*	2808 4830*	2429 4750*	1645 4750*	4165 4750*
1723	ButtWeld	CL_300	5360	5360	5360	5360	5020	5020	5020	4785 4830*	3240 4830*	2808 4830*	2429 4750*	1645 4750*	4165 4750*
1733	ButtWeld	CL_300	5360	5360	5360	5360	5020	5020	5020	4785 4830*	3240 4830*	2808 4830*	2429 4750*	1645 4750*	4165 4750*
1753	ButtWeld	CL_300	5360	5360	5360	5360	5020	5020	5020	4785 4830*	3240 4830*	2808 4830*	2429 4750*	1645 4750*	4165 4750*
1743	ButtWeld	CL_300	5360	5360	5360	5360	5020	5020	5020	4785 4830*	3240 4830*	2808 4830*	2429 4750*	1645 4750*	4165 4750*

Notes: 1. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.

*Meets ASME B&PVC Section I, Code Case 1876-2, but does not meet ANSI B16.34. (1996 Edition)

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II. — (Note 5)

600 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 3 & 4)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_600	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1715	Flange	CL_150	1210	1175	1135	1065	1015	975	806	640	430	370	280	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	1500	1500	1500	1477	1232	1048	806	645	477	414	280	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1725	Flange	CL_150	1210	1175	1048	856	743	632	517	414	306	265	(Note 1)	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	1393	1183	1048	856	743	632	517	414	306	265	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1080	1500
1735	Flange	CL_150	1210	1175	1135	1065	1015	975	900	640	430	370	320	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	2500	2500	2500	2500	2439	1921	1569	1232	839	714	503	(Note 1)	(Note 2)
		CL_300	2500	2500	2500	2500	2500	2500	2500	2500	1830	1580	1615	1096	2500
1755	Flange	CL_150	1210	1175	1135	1065	1015	975	900	640	430	370	320	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	2274	2274	2274	1882	1569	1309	1069	790	583	506	350	(Note 1)	(Note 2)
		CL_300	2500	2500	2500	2500	2500	2500	2500	2500	1912	1664	1437	976	2469
1745	Flange	CL_150	1210	1175	1135	1065	1015	975	806	632	430	370	286	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	2000	2000	1736	1477	1232	1048	806	632	477	414	286	(Note 1)	(Note 2)
		CL_300	2000	2000	2000	2000	2000	2000	2000	2000	2000	1777	1535	1042	2000
1765	Flange	CL_150	1008	856	758	672	572	486	405	325	240	208	(Note 1)	(Note 1)	(Note 2)
		CL_300	1015	1015	1015	1015	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	1008	856	758	672	572	486	405	325	240	208	(Note 1)	(Note 1)	(Note 2)
		CL_300	1015	1015	1015	1015	1015	1015	1015	1015	1015	1015	1015	924	1015
4" - 1775Q	Flange	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1285	1285	1285	1285	1285	1285	1285	1285	1285	1244	1075	730	1285
6" - 1775Q	Flange	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1210	1175	1135	1065	1015	975	900	640	430	370	320	220	556
	ButtWeld	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1207	1046	905	614	1500
1785	Flange	CL_150	797	709	638	550	487	415	346	271	204	177	(Note 1)	(Note 1)	(Note 2)
		CL_300	900	900	900	900	900	900	900	640	430	370	320	220	556
	ButtWeld	CL_150	797	709	638	550	487	415	346	271	204	177	(Note 1)	(Note 1)	(Note 2)
		CL_300	900	900	900	900	900	900	900	900	900	900	900	611	900
1705R	Flange	CL_150	695	624	547	487	423	360	300	235	177	154	(Note 1)	(Note 1)	(Note 2)
		CL_300	900	900	900	900	900	900	900	640	430	370	320	220	556
	ButtWeld	CL_150	695	624	547	487	423	360	300	235	177	154	(Note 1)	(Note 1)	(Note 2)
		CL_300	900	900	900	900	900	900	900	900	900	900	900	611	900
1705RR	Flange	CL_150	553	490	442	390	339	294	240	192	142	123	(Note 1)	(Note 1)	(Note 2)
		CL_300	900	900	900	900	900	900	900	640	430	370	320	220	556
	ButtWeld	CL_150	553	490	442	390	339	294	240	192	142	123	(Note 1)	(Note 1)	(Note 2)
		CL_300	900	900	900	900	900	900	900	900	900	900	900	611	900

Notes:

1. Not recommended at this temperature.
2. Consult the factory.
3. Applies to 1-1/2" through 3" sizes only.
4. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
5. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature. The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34. The valve inlet pressure/temperature rating is in compliance with ASME B16.34.

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II. — (Note 5)

900 Pressure Class

Temperature Class Base Material Flanged Base Material Buttweld Inlet Neck Material Buttweld (Note 3 & 4)			B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	E WC9 WC9 F22	F WC9 WC9 F22	G CF8M CF8M F316
Valve Type	Inlet CL_900	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1716	Flange	CL_150	1500	1500	1500	1477	1232	1048	806	645	477	414	280	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1500	1500	1500	1477	1232	1048	806	645	477	414	280	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
1726	Flange	CL_150	1393	1183	1048	856	743	632	517	414	306	265	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1393	1183	1048	856	743	632	517	414	306	265	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1290	1500
1736	Flange	CL_150	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	(Note 1)	(Note 2)
		CL_300	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	3000	3000	3000	3000	2439	1921	1569	1232	839	714	503	(Note 1)	(Note 2)
		CL_300	3000	3000	3000	3000	3000	3000	3000	2699	1830	1586	1615	1096	2773
1756	Flange	CL_150	1815	1765	1705	1595	1525	1309	1069	790	583	506	350	(Note 1)	(Note 2)
		CL_300	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	2274	2274	2274	1882	1569	1309	1069	790	583	506	350	(Note 1)	(Note 2)
		CL_300	3000	3000	3000	3000	3000	3000	3000	2821	1912	1657	1431	972	2459
1746	Flange	CL_150	1815	1765	1705	1477	1232	1048	806	632	477	414	286	(Note 1)	(Note 2)
		CL_300	1815	1765	1705	1595	1525	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	2000	2000	1736	1477	1232	1048	806	632	477	414	286	(Note 1)	(Note 2)
		CL_300	2000	2000	2000	2000	2000	2000	2000	2000	2000	1777	1535	1042	2000
1766	Flange	CL_150	1008	856	758	672	572	486	405	325	240	208	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1008	856	758	672	572	486	405	325	240	208	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1361	924	1500
4" - 1776Q	Flange	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1285	1285	1285	1285	1285	1285	1285	955	650	562	486	330	833
	ButtWeld	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1285	1285	1285	1285	1285	1285	1285	1285	1285	1244	1075	730	1285
6" - 1776Q	Flange	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1500	1500	1500	1500	1500	1460	1350	955	650	562	486	330	833
	ButtWeld	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	
		CL_300	1500	1500	1500	1500	1500	1500	1500	1500	1207	1046	904	614	1500
1786XHP	Flange	CL_150	1040	1040	1040	1027	839	714	583	467	352	299	211	(Note 1)	(Note 2)
		CL_300	1040	1040	1040	1040	1040	1040	1040	955	650	562	486	330	1040
	ButtWeld	CL_150	1040	1040	1040	1027	839	714	583	467	352	299	211	(Note 1)	(Note 2)
		CL_300	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1025	611	1040
1706RXHP	Flange	CL_150	1010	1010	1006	839	714	607	506	405	306	260	183	(Note 1)	(Note 2)
		CL_300	1010	1010	1010	1010	1010	1010	1010	955	650	562	486	330	1010
	ButtWeld	CL_150	1010	1010	1006	839	714	607	506	405	306	260	183	(Note 1)	(Note 2)
		CL_300	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	900	611	1010
1706RRXHP	Flange	CL_150	1010	1010	1006	839	714	607	506	405	306	260	183	(Note 1)	(Note 2)
		CL_300	1010	1010	1010	1010	1010	1010	1010	955	650	562	486	330	1010
	ButtWeld	CL_150	1010	1010	1006	839	714	607	506	405	306	260	183	(Note 1)	(Note 2)
		CL_300	1010	1010	1010	1010	1010	1010	1010	1010	1010	1010	900	611	1010

Notes:

1. Not recommended at this temperature.
2. Consult the factory.
3. Applies to 1-1/2" through 3" sizes only.
4. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
5. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature. The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34. The valve inlet pressure/temperature rating is in compliance with ASME B16.34.

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II. — (Note 4)

1500 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 3)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_1500	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1717	Flange	CL_150	2202	2202	1808	1477	1232	1048	806	645	477	414	280	(Note 1)	(Note 2)
		CL_300	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	2200	2200	1808	1477	1232	1048	806	645	477	414	280	(Note 1)	(Note 2)
		CL_300	3100	3100	3100	3100	3100	3100	3100	3100	3100	2737	2367	1603	3100
1727	Flange	CL_150	1393	1183	1048	856	743	632	517	414	306	265	(Note 1)	(Note 1)	(Note 2)
		CL_300	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1393	1183	1048	856	743	632	517	414	306	265	(Note 1)	(Note 1)	(Note 2)
		CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2540	2201	1903	1290	3100
1737	Flange	CL_150	3025	2940	2840	2660	2439	1921	1569	1232	839	714	503	(Note 1)	(Note 2)
		CL_300	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	3000	3000	3000	3000	2439	1921	1569	1232	839	714	503	(Note 1)	(Note 2)
		CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2156	1869	1861	1262	3100
1757	Flange	CL_150	2274	2274	2274	1882	1569	1309	1069	790	583	506	350	(Note 1)	(Note 2)
		CL_300	3025	2940	2840	2660	2540	2435	2245	1595	1080	936	810	550	1389
	ButtWeld	CL_150	2274	2274	2274	1882	1569	1309	1069	790	583	506	350	(Note 1)	(Note 2)
		CL_300	3100	3100	3100	3100	3100	3100	3100	2821	1912	1657	1845	1251	3100
1747	Flange	CL_150	2000	2000	1736	1477	1232	1048	806	632	477	414	286	(Note 1)	(Note 2)
		CL_300	2000	2000	2000	2000	2000	2000	2000	1595	1080	936	810	550	1389
	ButtWeld	CL_150	2200	2200	1736	1477	1232	1048	806	632	477	414	286	(Note 1)	(Note 2)
		CL_300	2000	2000	2000	2000	2000	2000	2000	2000	2000	1777	1845	1251	2000
1767	Flange	CL_150	1008	856	758	672	572	486	405	325	240	208	(Note 1)	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1008	856	758	672	572	486	405	325	240	208	(Note 1)	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1576	1437	976	1600
1777Q	Flange	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1185	1027	874	743	658	549	458	366	271	235	(Note 1)	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1201	1041	900	611	1545
1787	Flange	CL_150	1528	1390	1183	1027	839	714	583	467	352	299	211	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1500	1390	1183	1027	839	714	583	467	352	299	211	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1201	1041	900	611	1545
1707R	Flange	CL_150	1338	1159	1006	839	714	607	506	405	306	260	183	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1338	1159	1006	839	714	607	506	405	306	260	183	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1201	1041	900	611	1545
1707RR	Flange	CL_150	1029	868	758	672	583	496	405	325	245	212	(Note 1)	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	810	550	1389
	ButtWeld	CL_150	1029	868	758	672	583	496	405	325	245	212	(Note 1)	(Note 1)	(Note 2)
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1201	1041	900	611	1545

Notes:

1. Not recommended at this temperature.
2. Consult the factory.
3. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
4. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature. The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34. The valve inlet pressure/temperature rating is in compliance with ASME B16.34.

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II. — (Note 4)

2500 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 3)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_2500	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1719	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	1860	1574	1517	945	2525
1729	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2950	2557	2429	1645	3100
1739	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2600	2600	2230	1511	3100
1759	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2462	2134	2051	1390	3100
1749	Flange	CL_300	3100	3100	3100	3100	3100	3100	3100	2655	1800	1560	1347	915	2315
	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2462	2134	2154	1460	3100

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II. — (Note 4)

3000 Pressure Class

Temperature Class			B	B	B	B	D	D	D	D	D	D	E	F	G
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Base Material Buttweld			WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC9	WC9	CF8M
Inlet Neck Material Buttweld (Note 3)			A105	A105	A105	A105	F11	F11	F11	F11	F11	F11	F22	F22	F316
Valve Type	Inlet CL_3000	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1710	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	3100	2808	2429	1645	3100
1720	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2950	2557	2429	1645	3100
1730	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2812	2437	2414	1635	3100
1750	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2462	2134	2154	1460	3100
1740	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	2600	2253	2258	1529	3100
1760	ButtWeld	CL_300	3100	3100	3100	3100	3100	3100	3100	3100	3100	2808	2429	1645	3100

Notes: 3. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.

4. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature. The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34. The valve inlet pressure/temperature rating is in compliance with ASME B16.34.

Set pressure limits (psig) for 1700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II. — (Note 2)

4500 Pressure Class

Temperature Class Base Material Flanged Base Material Buttweld Inlet Neck Material Buttweld (Note 1)			B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	B WC6 WCC A105	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	D WC6 WC6 F11	E WC9 WC9 F22	F WC9 WC9 F22	G CF8M CF8M F316
Valve Type	Inlet CL_4500	Outlet Flange	100-600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1060°F	1100°F	1120°F
1713	ButtWeld	CL_300	5360	5360	5360	5360	5360	5020	5020	4785	3240	2808	2429	1645	4165
1723	ButtWeld	CL_300	5360	5360	5360	5360	5360	5020	5020	4785	3240	2808	2429	1645	4165
1733	ButtWeld	CL_300	5360	5360	5360	5360	5360	5020	5020	4785	3240	2808	2429	1645	4165
1753	ButtWeld	CL_300	5360	5360	5360	5360	5360	5020	5020	4785	3240	2808	2429	1645	4165
1743	ButtWeld	CL_300	5360	5360	5360	5360	5360	5020	5020	4785	3240	2808	2429	1645	4165

Notes:
1. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.
2. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature. The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34. The valve inlet pressure/temperature rating is in compliance with ASME B16.34.

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure/temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
100	5290	7615	13544	17780	21160	37626	58808	75466	85152	102662
105	5521	7949	14137	18558	22086	39273	61381	78768	88878	107154
110	5753	8282	14729	19336	23012	40919	63954	82070	92604	111646
115	5984	8615	15322	20114	23938	42565	66528	85372	96330	116138
120	6215	8948	15915	20892	24863	44212	69101	88674	100056	120630
125	6447	9282	16507	21670	25789	45858	71674	91976	103782	125122
130	6678	9615	17100	22449	26715	47505	74247	95278	107507	129614
135	6910	9948	17693	23227	27641	49151	76820	98580	111233	134106
140	7141	10281	18285	24005	28567	50797	79394	101883	114959	138598
145	7373	10614	18878	24783	29493	52444	81967	105185	118685	143090
150	7604	10948	19471	25561	30419	54090	84540	108487	122411	147582
155	7836	11281	20063	26339	31345	55736	87113	111789	126137	152074
160	8067	11614	20656	27117	32271	57383	89686	115091	129863	156566
165	8299	11947	21249	27895	33196	59029	92259	118393	133589	161058
170	8530	12281	21841	28673	34122	60676	94833	121695	137314	165550
175	8762	12614	22434	29451	35048	62322	97406	124997	141040	170042
180	8993	12947	23026	30229	35974	63968	99979	128299	144766	174534
185	9225	13280	23619	31007	36900	65615	102552	131601	148492	179026
190	9456	13614	24212	31785	37826	67261	105125	134903	152218	183518
195	9688	13947	24804	32563	38752	68907	107699	138205	155944	188010
200	9919	14280	25397	33341	39678	70554	110272	141507	159670	192502
205	10150	14613	25990	34119	40603	72200	112845	144809	163396	196994
210	10382	14946	26582	34897	41529	73847	115418	148111	167122	201486
215	10613	15280	27175	35675	42455	75493	117991	151413	170847	205978
220	10845	15613	27768	36453	43381	77139	120565	154716	174573	210470
225	11076	15946	28360	37231	44307	78786	123138	158018	178299	214962
230	11308	16279	28953	38009	45233	80432	125711	161320	182025	219454
235	11539	16613	29546	38787	46159	82078	128284	164622	185751	223946
240	11771	16946	30138	39565	47085	83725	130857	167924	189477	228438
245	12002	17279	30731	40343	48010	85371	133430	171226	193203	232930
250	12234	17612	31324	41121	48936	87018	136004	174528	196929	237422
255	12465	17946	31916	41899	49862	88664	138577	177830	200654	241914
260	12697	18279	32509	42677	50788	90310	141150	181132	204380	246406
265	12928	18612	33101	43455	51714	91957	143723	184434	208106	250898
270	13160	18945	33694	44233	52640	93603	146296	187736	211832	255390
275	13391	19279	34287	45011	53566	95249	148870	191038	215558	259882
280	13623	19612	34879	45789	54492	96896	151443	194340	219284	264374
285	13854	19945	35472	46567	55418	98542	154016	197642	223010	268866
290	14085	20278	36065	47345	56343	100189	156589	200944	226736	273358
295	14317	20611	36657	48123	57269	101835	159162	204246	230462	277850
300	14548	20945	37250	48901	58195	103481	161736	207549	234187	282342
305	14780	21278	37843	49679	59121	105128	164309	210851	237913	286834
310	15011	21611	38435	50457	60047	106774	166882	214153	241639	291326
315	15243	21944	39028	51235	60973	108420	169455	217455	245365	295818
320	15474	22278	39621	52013	61899	110067	172028	220757	249091	300310
325	15706	22611	40213	52791	62825	111713	174601	224059	252817	304802
330	15937	22944	40806	53569	63750	113360	177175	227361	256543	309294
335	16169	23277	41399	54347	64676	115006	179748	230663	260269	313786
340	16400	23611	41991	55125	65602	116652	182321	233965	263994	318278
345	16632	23944	42584	55903	66528	118299	184894	237267	267720	322770

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07	6"=11.05	14.18	16	19.29
Set Pressure (psig)										
350	16863	24277	43176	56681	67454	119945	187467	240569	271446	327262
355	17095	24610	43769	57459	68380	121591	190041	243871	275172	331754
360	17326	24943	44362	58237	69306	123238	192614	247173	278898	336246
365	17558	25277	44954	59015	70232	124884	195187	250475	282624	340738
370	17789	25610	45547	59793	71158	126531	197760	253777	286350	345230
375	18020	25943	46140	60571	72083	128177	200333	257079	290076	349722
380	18252	26276	46732	61349	73009	129823	202906	260382	293801	354215
385	18483	26610	47325	62127	73935	131470	205480	263684	297527	358707
390	18715	26943	47918	62905	74861	133116	208053	266986	301253	363199
395	18946	27276	48510	63683	75787	134762	210626	270288	304979	367691
400	19178	27609	49103	64461	76713	136409	213199	273590	308705	372183
405	19409	27943	49696	65239	77639	138055	215772	276892	312431	376675
410	19641	28276	50288	66017	78565	139701	218346	280194	316157	381167
415	19872	28609	50881	66795	79490	141348	220919	283496	319883	385659
420	20104	28942	51474	67573	80416	142994	223492	286798	323609	390151
425	20335	29276	52066	68351	81342	144641	226065	290100	327334	394643
430	20567	29609	52659	69129	82268	146287	228638	293402	331060	399135
435	20798	29942	53252	69907	83194	147933	231212	296704	334786	403627
440	21030	30275	53844	70685	84120	149580	233785	300006	338512	408119
445	21261	30608	54437	71463	85046	151226	236358	303308	342238	412611
450	21493	30942	55029	72241	85972	152872	238931	306610	345964	417103
455	21724	31275	55622	73019	86898	154519	241504	309912	349690	421595
460	21955	31608	56215	73797	87823	156165	244077	313214	353416	426087
465	22187	31941	56807	74575	88749	157812	246651	316517	357141	430579
470	22418	32275	57400	75353	89675	159458	249224	319819	360867	435071
475	22650	32608	57993	76131	90601	161104	251797	323121	364593	439563
480	22881	32941	58585	76909	91527	162751	254370	326423	368319	444055
485	23113	33274	59178	77687	92453	164397	256943	329725	372045	448547
490	23344	33608	59771	78465	93379	166043	259517	333027	375771	453039
495	23576	33941	60363	79243	94305	167690	262090	336329	379497	457531
500	23807	34274	60956	80021	95230	169336	264663	339631	383223	462023
505	24039	34607	61549	80799	96156	170983	267236	342933	386948	466515
510	24270	34940	62141	81577	97082	172629	269809	346235	390674	471007
515	24502	35274	62734	82355	98008	174275	272383	349537	394400	475499
520	24733	35607	63327	83133	98934	175922	274956	352839	398126	479991
525	24965	35940	63919	83911	99860	177568	277529	356141	401852	484483
530	25196	36273	64512	84689	100786	179214	280102	359443	405578	488975
535	25428	36607	65104	85467	101712	180861	282675	362745	409304	493467
540	25659	36940	65697	86245	102637	182507	285248	366047	413030	497959
545	25890	37273	66290	87023	103563	184154	287822	369350	416756	502451
550	26122	37606	66882	87801	104489	185800	290395	372652	420481	506943
555	26353	37940	67475	88579	105415	187446	292968	375954	424207	511435
560	26585	38273	68068	89357	106341	189093	295541	379256	427933	515927
565	26816	38606	68660	90135	107267	190739	298114	382558	431659	520419
570	27048	38939	69253	90913	108193	192385	300688	385860	435385	524911
575	27279	39273	69846	91691	109119	194032	303261	389162	439111	529403
580	27511	39606	70438	92469	110045	195678	305834	392464	442837	533895
585	27742	39939	71031	93247	110970	197325	308407	395766	446563	538387
590	27974	40272	71624	94025	111896	198971	310980	399068	450288	542879
595	28205	40605	72216	94803	112822	200617	313554	402370	454014	547371

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
600	28437	40939	72809	95581	113748	202264	316127	405672	457740	551863
605	28668	41272	73402	96359	114674	203910	318700	408974	461466	556355
610	28900	41605	73994	97138	115600	205556	321273	412276	465192	560847
615	29131	41938	74587	97916	116526	207203	323846	415578	468918	565339
620	29363	42272	75179	98694	117452	208849	326419	418880	472644	569831
625	29594	42605	75772	99472	118377	210496	328993	422183	476370	574323
630	29825	42938	76365	100250	119303	212142	331566	425485	480096	578815
635	30057	43271	76957	101028	120229	213788	334139	428787	483821	583307
640	30288	43605	77550	101806	121155	215435	336712	432089	487547	587799
645	30520	43938	78143	102584	122081	217081	339285	435391	491273	592291
650	30751	44271	78735	103362	123007	218727	341859	438693	494999	596783
655	30983	44604	79328	104140	123933	220374	344432	441995	498725	601275
660	31214	44937	79921	104918	124859	222020	347005	445297	502451	605767
665	31446	45271	80513	105696	125785	223667	349578	448599	506177	610259
670	31677	45604	81106	106474	126710	225313	352151	451901	509903	614751
675	31909	45937	81699	107252	127636	226959	354724	455203	513628	619243
680	32140	46270	82291	108030	128562	228606	357298	458505	517354	623735
685	32372	46604	82884	108808	129488	230252	359871	461807	521080	628227
690	32603	46937	83477	109586	130414	231898	362444	465109	524806	632719
695	32835	47270	84069	110364	131340	233545	365017	468411	528532	637211
700	33066	47603	84662	111142	132266	235191	367590	471713	532258	641703
705	33298	47937	85254	111920	133192	236838	370164	475016	535984	646195
710	33529	48270	85847	112698	134117	238484	372737	478318	539710	650688
715	33760	48603	86440	113476	135043	240130	375310	481620	543435	655180
720	33992	48936	87032	114254	135969	241777	377883	484922	547161	659672
725	34223	49270	87625	115032	136895	243423	380456	488224	550887	664164
730	34455	49603	88218	115810	137821	245069	383030	491526	554613	668656
735	34686	49936	88810	116588	138747	246716	385603	494828	558339	673148
740	34918	50269	89403	117366	139673	248362	388176	498130	562065	677640
745	35149	50602	89996	118144	140599	250009	390749	501432	565791	682132
750	35381	50936	90588	118922	141525	251655	393322	504734	569517	686624
755	35612	51269	91181	119700	142450	253301	395895	508036	573243	691116
760	35844	51602	91774	120478	143376	254948	398469	511338	576968	695608
765	36075	51935	92366	121256	144302	256594	401042	514640	580694	700100
770	36307	52269	92959	122034	145228	258240	403615	517942	584420	704592
775	36538	52602	93552	122812	146154	259887	406188	521244	588146	709084
780	36770	52935	94144	123590	147080	261533	408761	524546	591872	713576
785	37001	53268	94737	124368	148006	263180	411335	527849	595598	718068
790	37233	53602	95330	125146	148932	264826	413908	531151	599324	722560
795	37464	53935	95922	125924	149857	266472	416481	534453	603050	727052
800	37695	54268	96515	126702	150783	268119	419054	537755	606775	731544
805	37927	54601	97107	127480	151709	269765	421627	541057	610501	736036
810	38158	54934	97700	128258	152635	271411	424201	544359	614227	740528
815	38390	55268	98293	129036	153561	273058	426774	547661	617953	745020
820	38621	55601	98885	129814	154487	274704	429347	550963	621679	749512
825	38853	55934	99478	130592	155413	276350	431920	554265	625405	754004
830	39084	56267	100071	131370	156339	277997	434493	557567	629131	758496
835	39316	56601	100663	132148	157264	279643	437066	560869	632857	762988
840	39547	56934	101256	132926	158190	281290	439640	564171	636583	767480
845	39779	57267	101849	133704	159116	282936	442213	567473	640308	771972

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
850	40010	57600	102441	134482	160042	284582	444786	570775	644034	776464
855	40242	57934	103034	135260	160968	286229	447359	574077	647760	780956
860	40473	58267	103627	136038	161894	287875	449932	577379	651486	785448
865	40705	58600	104219	136816	162820	289521	452506	580682	655212	789940
870	40936	58933	104812	137594	163746	291168	455079	583984	658938	794432
875	41168	59267	105405	138372	164672	292814	457652	587286	662664	798924
880	41399	59600	105997	139150	165597	294461	460225	590588	666390	803416
885	41630	59933	106590	139928	166523	296107	462798	593890	670115	807908
890	41862	60266	107182	140706	167449	297753	465372	597192	673841	812400
895	42093	60599	107775	141484	168375	299400	467945	600494	677567	816892
900	42325	60933	108368	142262	169301	301046	470518	603796	681293	821384
905	42556	61266	108960	143040	170227	302692	473091	607098	685019	825876
910	42788	61599	109553	143818	171153	304339	475664	610400	688745	830368
915	43019	61932	110146	144596	172079	305985	478237	613702	692471	834860
920	43251	62266	110738	145374	173004	307632	480811	617004	696197	839352
925	43482	62599	111331	146152	173930	309278	483384	620306	699922	843844
930	43714	62932	111924	146930	174856	310924	485957	623608	703648	848336
935	43945	63265	112516	147708	175782	312571	488530	626910	707374	852828
940	44177	63599	113109	148486	176708	314217	491103	630212	711100	857320
945	44408	63932	113702	149264	177634	315863	493677	633514	714826	861812
950	44640	64265	114294	150042	178560	317510	496250	636817	718552	866304
955	44871	64598	114887	150820	179486	319156	498823	640119	722278	870796
960	45103	64931	115480	151598	180412	320803	501396	643421	726004	875288
965	45334	65265	116072	152376	181337	322449	503969	646723	729730	879780
970	45565	65598	116665	153154	182263	324095	506542	650025	733455	884272
975	45797	65931	117257	153932	183189	325742	509116	653327	737181	888764
980	46028	66264	117850	154710	184115	327388	511689	656629	740907	893256
985	46260	66598	118443	155488	185041	329034	514262	659931	744633	897748
990	46491	66931	119035	156266	185967	330681	516835	663233	748359	902240
995	46723	67264	119628	157044	186893	332327	519408	666535	752085	906732
1000	46954	67597	120221	157822	187819	333974	521982	669837	755811	911224
1005	47186	67931	120813	158600	188744	335620	524555	673139	759537	915716
1010	47417	68264	121406	159378	189670	337266	527128	676441	763262	920208
1015	47649	68597	121999	160156	190596	338913	529701	679743	766988	924700
1020	47880	68930	122591	160934	191522	340559	532274	683045	770714	929192
1025	48112	69264	123184	161712	192448	342205	534848	686347	774440	933684
1030	48343	69597	123777	162490	193374	343852	537421	689650	778166	938176
1035	48575	69930	124369	163268	194300	345498	539994	692952	781892	942668
1040	48806	70263	124962	164046	195226	347145	542567	696254	785618	947160
1045	49038	70596	125555	164824	196152	348791	545140	699556	789344	951653
1050	49269	70930	126147	165602	197077	350437	547713	702858	793070	956145
1055	49500	71263	126740	166380	198003	352084	550287	706160	796795	960637
1060	49732	71596	127332	167158	198929	353730	552860	709462	800521	965129
1065	49963	71929	127925	167936	199855	355376	555433	712764	804247	969621
1070	50195	72263	128518	168714	200781	357023	558006	716066	807973	974113
1075	50426	72596	129110	169492	201707	358669	560579	719368	811699	978605
1080	50658	72929	129703	170270	202633	360316	563153	722670	815425	983097
1085	50889	73262	130296	171049	203559	361962	565726	725972	819151	987589
1090	51121	73596	130888	171827	204484	363608	568299	729274	822877	992081
1095	51352	73929	131481	172605	205410	365255	570872	732576	826602	996573

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
1100	51584	74262	132074	173383	206336	366901	573445	735878	830328	1001065
1105	51815	74595	132666	174161	207262	368547	576019	739180	834054	1005557
1110	52047	74929	133259	174939	208188	370194	578592	742483	837780	1010049
1115	52278	75262	133852	175717	209114	371840	581165	745785	841506	1014541
1120	52510	75595	134444	176495	210040	373487	583738	749087	845232	1019033
1125	52741	75928	135037	177273	210966	375133	586311	752389	848958	1023525
1130	52972	76261	135630	178051	211891	376779	588884	755691	852684	1028017
1135	53204	76595	136222	178829	212817	378426	591458	758993	856409	1032509
1140	53435	76928	136815	179607	213743	380072	594031	762295	860135	1037001
1145	53667	77261	137408	180385	214669	381718	596604	765597	863861	1041493
1150	53898	77594	138000	181163	215595	383365	599177	768899	867587	1045985
1155	54130	77928	138593	181941	216521	385011	601750	772201	871313	1050477
1160	54361	78261	139185	182719	217447	386658	604324	775503	875039	1054969
1165	54593	78594	139778	183497	218373	388304	606897	778805	878765	1059461
1170	54824	78927	140371	184275	219299	389950	609470	782107	882491	1063953
1175	55056	79261	140963	185053	220224	391597	612043	785409	886217	1068445
1180	55287	79594	141556	185831	221150	393243	614616	788711	889942	1072937
1185	55519	79927	142149	186609	222076	394889	617190	792013	893668	1077429
1190	55750	80260	142741	187387	223002	396536	619763	795316	897394	1081921
1195	55982	80593	143334	188165	223928	398182	622336	798618	901120	1086413
1200	56213	80927	143927	188943	224854	399829	624909	801920	904846	1090905
1205	56445	81260	144519	189721	225780	401475	627482	805222	908572	1095397
1210	56676	81593	145112	190499	226706	403121	630055	808524	912298	1099889
1215	56907	81926	145705	191277	227631	404768	632629	811826	916024	1104381
1220	57139	82260	146297	192055	228557	406414	635202	815128	919749	1108873
1225	57370	82593	146890	192833	229483	408060	637775	818430	923475	1113365
1230	57602	82926	147483	193611	230409	409707	640348	821732	927201	1117857
1235	57833	83259	148075	194389	231335	411353	642921	825034	930927	1122349
1240	58065	83593	148668	195167	232261	413000	645495	828336	934653	1126841
1245	58296	83926	149260	195945	233187	414646	648068	831638	938379	1131333
1250	58528	84259	149853	196723	234113	416292	650641	834940	942105	1135825
1255	58759	84592	150446	197501	235039	417939	653214	838242	945831	1140317
1260	58991	84926	151038	198279	235964	419585	655787	841544	949557	1144809
1265	59222	85259	151631	199057	236890	421231	658360	844846	953282	1149301
1270	59454	85592	152224	199835	237816	422878	660934	848149	957008	1153793
1275	59685	85925	152816	200613	238742	424524	663507	851451	960734	1158285
1280	59917	86258	153409	201391	239668	426170	666080	854753	964460	1162777
1285	60148	86592	154002	202169	240594	427817	668653	858055	968186	1167269
1290	60380	86925	154594	202947	241520	429463	671226	861357	971912	1171761
1295	60611	87258	155187	203725	242446	431110	673800	864659	975638	1176253
1300	60842	87591	155780	204503	243371	432756	676373	867961	979364	1180745
1305	61074	87925	156372	205281	244297	434402	678946	871263	983089	1185237
1310	61305	88258	156965	206059	245223	436049	681519	874565	986815	1189729
1315	61537	88591	157558	206837	246149	437695	684092	877867	990541	1194221
1320	61768	88924	158150	207615	247075	439341	686666	881169	994267	1198713
1325	62000	89258	158743	208393	248001	440988	689239	884471	997993	1203205
1330	62231	89591	159335	209171	248927	442634	691812	887773	1001719	1207697
1335	62463	89924	159928	209949	249853	444281	694385	891075	1005445	1212189
1340	62694	90257	160521	210727	250779	445927	696958	894377	1009171	1216681
1345	62926	90590	161113	211505	251704	447573	699531	897679	1012896	1221173

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07	6"=11.05	14.18	16	19.29
Set Pressure (psig)										
1350	63157	90924	161706	212283	252630	449220	702105	900982	1016622	1225665
1355	63389	91257	162299	213061	253556	450866	704678	904284	1020348	1230157
1360	63620	91590	162891	213839	254482	452512	707251	907586	1024074	1234649
1365	63852	91923	163484	214617	255408	454159	709824	910888	1027800	1239141
1370	64083	92257	164077	215395	256334	455805	712397	914190	1031526	1243633
1375	64315	92590	164669	216173	257260	457452	714971	917492	1035252	1248126
1380	64546	92923	165262	216951	258186	459098	717544	920794	1038978	1252618
1385	64777	93256	165855	217729	259111	460744	720117	924096	1042704	1257110
1390	65009	93590	166447	218507	260037	462391	722690	927398	1046429	1261602
1395	65240	93923	167040	219285	260963	464037	725263	930700	1050155	1266094
1400	65472	94256	167633	220063	261889	465683	727837	934002	1053881	1270586
1405	65703	94589	168225	220841	262815	467330	730410	937304	1057607	1275078
1410	65935	94923	168818	221619	263741	468976	732983	940606	1061333	1279570
1415	66166	95256	169410	222397	264667	470623	735556	943908	1065059	1284062
1420	66398	95589	170003	223175	265593	472269	738129	947210	1068785	1288554
1425	66629	95922	170596	223953	266519	473915	740702	950512	1072511	1293046
1430	66861	96255	171188	224731	267444	475562	743276	953814	1076236	1297538
1435	67092	96589	171781	225509	268370	477208	745849	957117	1079962	1302030
1440	67324	96922	172374	226287	269296	478854	748422	960419	1083688	1306522
1445	67555	97255	172966	227065	270222	480501	750995	963721	1087414	1311014
1450	67787	97588	173559	227843	271148	482147	753568	967023	1091140	1315506
1455	68018	97922	174152	228621	272074	483794	756142	970325	1094866	1319998
1460	68250	98255	174744	229399	273000	485440	758715	973627	1098592	1324490
1465	68481	98588	175337	230177	273926	487086	761288	976929	1102318	1328982
1470	68712	98921	175930	230955	274851	488733	763861	980231	1106043	1333474
1475	68944	99255	176522	231733	275777	490379	766434	983533	1109769	1337966
1480	69175	99588	177115	232511	276703	492025	769008	986835	1113495	1342458
1485	69407	99921	177708	233289	277629	493672	771581	990137	1117221	1346950
1490	69638	100254	178300	234067	278555	495318	774154	993439	1120947	1351442
1495	69870	100587	178893	234845	279481	496965	776727	996741	1124673	1355934
1500	70101	100921	179486	235623	280407	498611	779300	1000043	1128399	1360426
1505	70333	101254	180078	236401	281333	500257	781873	1003345	1132125	1364918
1510	70564	101587	180671	237179	282258	501904	784447	1006647	1135851	1369410
1515	70796	101920	181263	237957	283184	503550	787020	1009950	1139576	1373902
1520	71027	102254	181856	238735	284110	505196	789593	1013252	1143302	1378394
1525	71279	102616	182501	239582	285117	506987	792391	1016843	1147354	1383279
1530	71531	102979	183146	240428	286125	508779	795193	1020437	1151410	1388169
1535	71783	103342	183791	241276	287134	510573	797996	1024035	1155470	1393063
1540	72035	103705	184438	242124	288143	512368	800802	1027635	1159532	1397961
1545	72288	104069	185084	242973	289154	514164	803610	1031238	1163598	1402863
1550	72541	104433	185732	243823	290165	515963	806420	1034845	1167667	1407768
1555	72794	104797	186379	244673	291177	517762	809232	1038454	1171739	1412678
1560	73047	105161	187028	245524	292190	519563	812047	1042066	1175815	1417592
1565	73300	105526	187676	246376	293203	521365	814864	1045681	1179894	1422510
1570	73554	105891	188326	247229	294218	523169	817684	1049299	1183976	1427432
1575	73808	106257	188976	248082	295233	524975	820505	1052920	1188062	1432358
1580	74062	106623	189626	248936	296249	526782	823330	1056544	1192152	1437288
1585	74316	106989	190277	249790	297266	528590	826156	1060171	1196244	1442222
1590	74571	107355	190929	250646	298284	530400	828985	1063802	1200340	1447160
1595	74825	107722	191581	251502	299303	532212	831816	1067435	1204440	1452103

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
1600	75080	108089	192233	252358	300323	534025	834650	1071071	1208543	1457050
1605	75335	108456	192877	253216	301343	535839	-	-	-	-
1610	75591	108823	193540	254074	302364	537655	-	-	-	-
1615	75846	109191	194195	254933	303387	539473	-	-	-	-
1620	76102	109560	194850	255793	304410	541292	-	-	-	-
1625	76358	109928	195505	256653	305434	543113	-	-	-	-
1630	76614	110297	196161	257515	306459	544936	-	-	-	-
1635	76871	110666	196818	258376	307484	546760	-	-	-	-
1640	77127	111036	197475	259239	308511	548585	-	-	-	-
1645	77384	111406	198133	260103	309539	550412	-	-	-	-
1650	77641	111776	198791	260967	310567	552241	-	-	-	-
1655	77899	112146	199450	261832	311597	554072	-	-	-	-
1660	78156	112517	200109	262698	312627	555904	-	-	-	-
1665	78414	112888	200769	263564	313658	557738	-	-	-	-
1670	78672	113260	201430	264432	314690	559573	-	-	-	-
1675	78930	113632	202091	265300	315723	561410	-	-	-	-
1680	79189	114004	202753	266169	316757	563249	-	-	-	-
1685	79448	114376	203416	267038	317792	565089	-	-	-	-
1690	79707	114749	204079	267909	318828	566931	-	-	-	-
1695	79966	115122	204743	268780	319865	568775	-	-	-	-
1700	80225	115496	205407	269652	320903	570621	-	-	-	-
1705	80485	115870	206072	270525	321942	572468	-	-	-	-
1710	80745	116244	206737	271399	322982	574317	-	-	-	-
1715	81005	116618	207404	272273	324023	576167	-	-	-	-
1720	81266	116993	208070	273149	325064	578020	-	-	-	-
1725	81526	117369	208738	274025	326107	579874	-	-	-	-
1730	81787	117744	209406	274902	327151	581730	-	-	-	-
1735	82049	118120	210075	275780	328196	583588	-	-	-	-
1740	82310	118497	210744	276659	329241	585447	-	-	-	-
1745	82572	118874	211414	277538	330288	587309	-	-	-	-
1750	82834	119251	212085	278419	331336	589172	-	-	-	-
1755	83096	119628	212756	279300	332385	591037	-	-	-	-
1760	83358	120006	213428	280182	333435	592903	-	-	-	-
1765	83621	120384	214101	281065	334485	594772	-	-	-	-
1770	83884	120763	214774	281949	335537	596642	-	-	-	-
1775	84147	121142	215448	282834	336590	598515	-	-	-	-
1780	84411	121521	216123	283719	337644	600389	-	-	-	-
1785	84674	121901	216798	284606	338699	602265	-	-	-	-
1790	84938	122281	217474	285493	339755	604143	-	-	-	-
1795	85203	122661	218151	286382	340812	606022	-	-	-	-
1800	85467	123042	218828	287271	341871	607904	-	-	-	-
1805	85732	123423	219506	288161	342930	609788	-	-	-	-
1810	85997	123805	220185	289052	343990	611673	-	-	-	-
1815	86263	124187	220864	289944	345052	613561	-	-	-	-
1820	86528	124569	221544	290837	346114	615450	-	-	-	-
1825	86794	124952	222225	291731	347178	617342	-	-	-	-
1830	87060	125336	222907	292625	348243	619235	-	-	-	-
1835	87327	125719	223589	293521	349309	621130	-	-	-	-
1840	87594	126103	224272	294418	350376	623028	-	-	-	-
1845	87861	126488	224956	295315	351444	624927	-	-	-	-

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
1850	88128	126872	225640	296214	352513	626828	-	-	-	-
1855	88395	127258	226325	297113	353583	628732	-	-	-	-
1860	88663	127643	227011	298014	354655	630637	-	-	-	-
1865	88932	128029	227698	298915	355728	632544	-	-	-	-
1870	89200	128416	228385	299817	356802	634454	-	-	-	-
1875	89469	128803	229073	300721	357877	636366	-	-	-	-
1880	89738	129190	229762	301625	358953	638279	-	-	-	-
1885	90007	129578	230452	302530	360030	640195	-	-	-	-
1890	90277	129966	231142	303437	361109	642113	-	-	-	-
1895	90547	130355	231833	304344	362189	644033	-	-	-	-
1900	90817	130744	232525	305252	363270	645955	-	-	-	-
1905	91088	131133	233218	306162	364352	647879	-	-	-	-
1910	91358	131523	233911	307072	365435	649806	-	-	-	-
1915	91630	131914	234606	307983	366520	651735	-	-	-	-
1920	91901	132304	235301	308896	367606	653665	-	-	-	-
1925	92173	132696	235997	309809	368693	655598	-	-	-	-
1930	92445	133087	236693	310724	369781	657534	-	-	-	-
1935	92717	133480	237391	311639	370871	659471	-	-	-	-
1940	92990	133872	238089	312556	371961	661411	-	-	-	-
1945	93263	134265	238788	313474	373054	663353	-	-	-	-
1950	93536	134659	239488	314393	374147	665297	-	-	-	-
1955	93810	135053	240188	315312	375242	667243	-	-	-	-
1960	94084	135447	240890	316233	376338	669192	-	-	-	-
1965	94358	135842	241592	317155	377435	671143	-	-	-	-
1970	94633	136237	242295	318078	378533	673097	-	-	-	-
1975	94908	136633	242999	319003	379633	675052	-	-	-	-
1980	95183	137030	243704	319928	380734	677011	-	-	-	-
1985	95459	137426	244410	320854	381837	678971	-	-	-	-
1990	95735	137824	245117	321782	382941	680934	-	-	-	-
1995	96011	138221	245824	322711	384046	682899	-	-	-	-
2000	96288	138620	246532	323640	385152	684867	-	-	-	-
2005	96565	139018	247241	324571	386260	686837	-	-	-	-
2010	96842	139418	247951	325503	387370	688809	-	-	-	-
2015	97120	139817	248662	326437	388480	690784	-	-	-	-
2020	97398	140218	249374	327371	389592	692761	-	-	-	-
2025	97676	140618	250087	328307	390706	694741	-	-	-	-
2030	97955	141020	250800	329243	391821	696724	-	-	-	-
2035	98234	141421	251515	330181	392937	698708	-	-	-	-
2040	98513	141824	252230	331121	394054	700696	-	-	-	-
2045	98793	142226	252947	332061	395174	702686	-	-	-	-
2050	99073	142630	253664	333003	396294	704678	-	-	-	-
2055	99354	143033	254382	333945	397416	706673	-	-	-	-
2060	99634	143438	255101	334889	398539	708671	-	-	-	-
2065	99916	143843	255821	335835	399664	710671	-	-	-	-
2070	100197	144248	256542	336781	400791	712674	-	-	-	-
2075	100479	144654	257264	337729	401918	714679	-	-	-	-
2080	100762	145060	257987	338678	403048	716687	-	-	-	-
2085	101044	145467	258711	339628	404179	718698	-	-	-	-
2090	101327	145875	259436	340579	405311	720712	-	-	-	-
2095	101611	146283	260161	341532	406445	722728	-	-	-	-

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2100	101895	146692	260888	342486	407580	724747	-	-	-	-
2105	102179	147101	261616	343442	408717	726769	-	-	-	-
2110	102464	147511	262345	344398	409856	728793	-	-	-	-
2115	102749	147921	263074	345356	410996	730820	-	-	-	-
2120	103034	148332	263805	346315	412137	732850	-	-	-	-
2125	103320	148743	264537	347276	413280	734883	-	-	-	-
2130	103606	149155	265269	348238	414425	736918	-	-	-	-
2135	103893	149568	266003	349201	415572	738957	-	-	-	-
2140	104179	149981	266738	350166	416719	740998	-	-	-	-
2145	104467	150395	267474	351132	417869	743042	-	-	-	-
2150	104755	150809	268211	352099	419020	745089	-	-	-	-
2155	105043	151224	268949	353068	420173	747139	-	-	-	-
2160	105332	151639	269688	354038	421328	749192	-	-	-	-
2165	105621	152056	270428	355010	422484	751248	-	-	-	-
2170	105910	152472	271169	355983	423642	753307	-	-	-	-
2175	106200	152890	271911	356957	424801	755369	-	-	-	-
2180	106490	153308	272654	357933	425962	757434	-	-	-	-
2185	106781	153726	273399	358910	427125	759501	-	-	-	-
2190	107072	154145	274144	359888	428290	761572	-	-	-	-
2195	107364	154565	274891	360869	429456	763646	-	-	-	-
2200	107656	154985	275638	361850	430624	765723	-	-	-	-
2205	107948	155407	276387	362833	431794	767804	-	-	-	-
2210	108241	155828	277137	363818	432966	769887	-	-	-	-
2215	108534	156251	277888	364804	434139	771973	-	-	-	-
2220	108828	156673	278641	365791	435314	774063	-	-	-	-
2225	109122	157097	279394	366780	436491	776156	-	-	-	-
2230	109417	157521	280148	367771	437670	778252	-	-	-	-
2235	109712	157946	280904	368763	438851	780351	-	-	-	-
2240	110008	158372	281661	369756	440033	782454	-	-	-	-
2245	110304	158798	282419	370751	441218	784560	-	-	-	-
2250	110601	159225	283178	371748	442404	786669	-	-	-	-
2255	110898	159653	283939	372746	443592	788781	-	-	-	-
2260	111195	160081	284700	373746	444782	790897	-	-	-	-
2265	111493	160510	285463	374748	445973	793016	-	-	-	-
2270	111791	160939	286227	375751	447167	795139	-	-	-	-
2275	112090	161370	286993	376755	448363	797265	-	-	-	-
2280	112390	161801	287759	377762	449560	799395	-	-	-	-
2285	112690	162232	288527	378770	450760	801527	-	-	-	-
2290	112990	162665	289296	379779	451961	803664	-	-	-	-
2295	113291	163098	290066	380790	453165	805804	-	-	-	-
2300	113592	163532	290838	381803	454370	807947	-	-	-	-
2305	113894	163966	291611	382818	455578	810094	-	-	-	-
2310	114196	164402	292385	383834	456787	812245	-	-	-	-
2315	114499	164838	293160	384852	457998	814399	-	-	-	-
2320	114803	165274	293937	385872	459212	816557	-	-	-	-
2325	115107	165712	294715	386893	460428	818718	-	-	-	-
2330	115411	166150	295495	387917	461645	820884	-	-	-	-
2335	115716	166589	296275	388942	462865	823052	-	-	-	-
2340	116021	167029	297057	389968	464087	825225	-	-	-	-
2345	116327	167469	297841	390997	465311	827402	-	-	-	-

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2350	116634	167911	298626	392027	466537	829582	-	-	-	-
2355	116941	168353	299412	393059	467765	831766	-	-	-	-
2360	117248	168796	300199	394093	468995	833954	-	-	-	-
2365	117557	169239	300988	395129	470228	836145	-	-	-	-
2370	117865	169684	301779	396166	471463	838341	-	-	-	-
2375	118175	170129	302570	397206	472700	840540	-	-	-	-
2380	118484	170575	303364	398247	473939	842744	-	-	-	-
2385	118795	171022	304158	399290	475180	844951	-	-	-	-
2390	119106	171469	304954	400335	476424	847163	-	-	-	-
2395	119417	171918	305752	401382	477670	849378	-	-	-	-
2400	119729	172367	306551	402431	478918	851598	-	-	-	-
2405	120042	172817	307351	403482	480169	853822	-	-	-	-
2410	120355	173268	308153	404535	481422	856050	-	-	-	-
2415	120669	173720	308957	405589	482677	858282	-	-	-	-
2420	120983	174172	309762	406646	483935	860518	-	-	-	-
2425	121298	174626	310568	407705	485194	862758	-	-	-	-
2430	121614	175080	311376	408766	486457	865003	-	-	-	-
2435	121930	175535	312186	409828	487722	867252	-	-	-	-
2440	122247	175991	312997	410893	488989	869505	-	-	-	-
2445	122564	176448	313810	411960	490258	871763	-	-	-	-
2450	122882	176906	314624	413029	491530	874025	-	-	-	-
2455	123201	177365	315440	414100	492805	876291	-	-	-	-
2460	123520	177824	316257	415173	494082	878562	-	-	-	-
2465	123840	178285	317076	416248	495362	880837	-	-	-	-
2470	124161	178746	317897	417326	496644	883117	-	-	-	-
2475	124482	179209	318719	418405	497928	885401	-	-	-	-
2480	124804	179672	319543	419487	499216	887690	-	-	-	-
2485	125126	180136	320369	420570	500505	889984	-	-	-	-
2490	125449	180601	321196	421656	501798	892282	-	-	-	-
2495	125773	181068	322025	422745	503093	894585	-	-	-	-
2500	126097	181535	322855	423835	504391	896892	-	-	-	-
2505	126422	182003	323688	424928	505691	899204	-	-	-	-
2510	126748	182472	324522	426023	506994	901522	-	-	-	-
2515	127075	182942	325358	427120	508300	903843	-	-	-	-
2520	127402	183413	326195	428220	509608	906170	-	-	-	-
2525	127730	183885	327035	429322	510920	908502	-	-	-	-
2530	128058	184357	327876	430426	512234	910839	-	-	-	-
2535	128387	184831	328719	431532	513551	913180	-	-	-	-
2540	128717	185306	329563	432641	514870	915527	-	-	-	-
2545	129048	185782	330410	433752	516193	917878	-	-	-	-
2550	129379	186259	331258	434866	517518	920235	-	-	-	-
2555	129711	186737	332109	435982	518846	922597	-	-	-	-
2560	130044	187217	332961	437101	520178	924964	-	-	-	-
2565	130378	187697	333815	438222	521512	927336	-	-	-	-
2570	130712	188178	334670	439345	522849	929714	-	-	-	-
2575	131047	188660	335528	440471	524189	932097	-	-	-	-
2780	131383	189144	336388	441600	525532	934485	-	-	-	-
2585	131719	189628	337249	442731	526878	936878	-	-	-	-
2590	132056	190114	338113	443865	528227	939277	-	-	-	-
2595	132394	190600	338978	445001	529579	941682	-	-	-	-

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2600	132733	191088	339846	446140	530935	944092	-	-	-	-
2605	133073	191577	340715	447281	532293	946507	-	-	-	-
2610	133413	192067	341587	448425	533654	948928	-	-	-	-
2615	133754	192558	342461	449572	535019	951355	-	-	-	-
2620	134096	193050	343336	450722	536387	953787	-	-	-	-
2625	134439	193544	344214	451874	537758	956225	-	-	-	-
2630	134783	194039	345094	453029	539133	958669	-	-	-	-
2635	135127	194534	345975	454186	540510	961119	-	-	-	-
2640	135472	195031	346859	455347	541891	963575	-	-	-	-
2645	135819	195530	347745	456510	543276	966036	-	-	-	-
2650	136165	196029	348634	457676	544663	968504	-	-	-	-
2655	136513	196530	349524	458845	546054	970977	-	-	-	-
2660	136862	197032	350417	460017	547449	973457	-	-	-	-
2665	137211	197535	351311	461191	548847	975942	-	-	-	-
2670	137562	198039	352208	462369	550248	978434	-	-	-	-
2675	137913	198545	353108	463549	551653	980932	-	-	-	-
2680	138265	199052	354009	464733	553061	983437	-	-	-	-
2685	138618	199560	354913	465919	554473	985947	-	-	-	-
2690	138972	200069	355819	467109	555889	988464	-	-	-	-
2695	139327	200580	356727	468301	557308	990988	-	-	-	-
2700	139682	201092	357638	469497	558731	993518	-	-	-	-
2705	140039	201606	358551	470695	560157	996054	-	-	-	-
2710	140396	202120	359467	471897	561587	998598	-	-	-	-
2715	140755	202636	360384	473102	563021	1001147	-	-	-	-
2720	141114	203154	361305	474310	564459	1003704	-	-	-	-
2725	141475	203673	362227	475521	565900	1006267	-	-	-	-
2730	141836	204193	363152	476736	567346	1008837	-	-	-	-
2735	142198	204714	364080	477954	568795	1011414	-	-	-	-
2740	142562	205237	365010	479175	570248	1013998	-	-	-	-
2745	142926	205762	365943	480399	571705	1016589	-	-	-	-
2750	143291	206288	366878	481627	573166	1019187	-	-	-	-
2755	143657	206815	367816	482858	574631	1021792	-	-	-	-
2760	144025	207344	368756	484092	576100	1024404	-	-	-	-
2765	144393	207874	369699	485330	577573	1027023	-	-	-	-
2770	144762	208405	370645	486571	579051	1029650	-	-	-	-
2775	145133	208939	371593	487816	580532	1032284	-	-	-	-
2780	145504	209473	372544	489065	582018	1034926	-	-	-	-
2785	145876	210010	373497	490316	583507	1037575	-	-	-	-
2790	146250	210547	374454	491572	585002	1040232	-	-	-	-
2795	146625	211087	375413	492831	586500	1042896	-	-	-	-
2800	147000	211627	376375	494094	588003	1045568	-	-	-	-
2805	147377	212170	377339	495360	589510	1048248	-	-	-	-
2810	147755	212714	378307	496630	591021	1050936	-	-	-	-
2815	148134	213259	379277	497904	592537	1053631	-	-	-	-
2820	148514	213807	380250	499182	594058	1056335	-	-	-	-
2825	148895	214355	381227	500463	595583	1059047	-	-	-	-
2830	149278	214906	382206	501748	597112	1061767	-	-	-	-
2835	149661	215458	383188	503037	598646	1064495	-	-	-	-
2840	150046	216012	384173	504330	600185	1067231	-	-	-	-
2845	150432	216567	385161	505627	601729	1069976	-	-	-	-

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2850	150819	217125	386152	506928	603277	1072729	-	-	-	-
2855	151207	217684	387146	508234	604830	1075490	-	-	-	-
2860	151597	218244	388143	509543	606388	1078260	-	-	-	-
2865	151987	218807	389143	510856	607951	1081039	-	-	-	-
2870	152379	219371	390147	512173	609518	1083827	-	-	-	-
2875	152772	219937	391153	513495	611091	1086623	-	-	-	-
2880	153167	220505	392163	514820	612669	1089429	-	-	-	-
2885	153562	221075	393176	516150	614251	1092243	-	-	-	-
2890	153959	221646	394193	517485	615839	1095067	-	-	-	-
2895	154358	222219	395212	518823	617432	1097899	-	-	-	-
2900	154757	222795	396235	520166	619031	1100741	-	-	-	-
2905	155158	223372	397262	521514	620634	1103593	-	-	-	-
2910	155560	223951	398292	522865	622243	1106453	-	-	-	-
2915	155964	224532	399325	524222	623857	1109324	-	-	-	-
2920	156369	225115	400361	525583	625477	1112203	-	-	-	-
2925	156775	225699	401402	526948	627102	1115093	-	-	-	-
2930	157183	226286	402445	528318	628732	1117992	-	-	-	-
2935	157592	226875	403493	529693	630368	1120902	-	-	-	-
2940	158002	227466	404543	531073	632010	1123821	-	-	-	-
2945	158414	228059	405598	532457	633657	1126750	-	-	-	-
2950	158827	228654	406656	533846	635311	1129690	-	-	-	-
2955	159242	229251	407718	535240	636970	1132640	-	-	-	-
2960	159658	229850	408784	536639	638634	1135600	-	-	-	-
2965	160076	230452	409853	538043	640305	1138571	-	-	-	-
2970	160495	231055	410926	539452	641982	1141552	-	-	-	-
2975	160916	231661	412003	540866	643664	1144545	-	-	-	-
2980	161338	232268	413084	542285	645353	1147547	-	-	-	-
2985	161762	232878	414169	543709	647048	1150561	-	-	-	-
2990	162187	233491	415258	545139	648749	1153586	-	-	-	-
2995	162614	234105	416351	546573	650457	1156622	-	-	-	-
3000	163042	234722	417448	548013	652170	1159670	-	-	-	-
3005	163472	235341	418549	549459	653891	1162728	-	-	-	-
3010	163904	235962	419654	550910	655617	1165799	-	-	-	-
3015	164337	236586	420764	552366	657350	1168880	-	-	-	-
3020	164772	237212	421877	553828	659090	1171974	-	-	-	-
3025	165209	237841	422995	555295	660836	1175079	-	-	-	-
3030	165647	238472	424117	556768	662590	1178197	-	-	-	-
3035	166087	239105	425244	558247	664349	1181326	-	-	-	-
3040	166529	239741	426375	559732	666116	1184468	-	-	-	-
3045	166972	240380	427510	561222	667890	1187622	-	-	-	-
3050	167417	241021	428650	562719	669671	1190788	-	-	-	-
3055	167864	241664	429794	564221	671459	1193967	-	-	-	-
3060	168313	242310	430943	565729	673254	1197159	-	-	-	-
3065	168764	242959	432097	567244	675056	1200364	-	-	-	-
3070	169216	243610	433255	568764	676866	1203582	-	-	-	-
3075	169670	244264	434418	570291	678683	1206813	-	-	-	-
3080	170126	244921	435586	571824	680507	1210057	-	-	-	-
3085	170584	245580	436759	573364	682339	1213315	-	-	-	-
3090	171044	246242	437936	574910	684179	1216586	-	-	-	-
3095	171506	246907	439119	576462	686026	1219871	-	-	-	-
3100	171970	247575	440306	578021	687881	1223170	-	-	-	-

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
100	5604	8068	14350	18838	22418	39864	62306	79954	90216	108767
105	5851	8424	14983	19669	23407	41622	65054	83481	94196	113565
110	6099	8780	15615	20500	24396	43381	67802	87007	98175	118362
115	6346	9136	16248	21331	25385	45139	70550	90534	102154	123159
120	6593	9492	16881	22161	26374	46897	73298	94060	106133	127957
125	6840	9848	17514	22992	27362	48655	76046	97587	110112	132754
130	7087	10204	18147	23823	28351	50414	78794	101113	114091	137551
135	7335	10559	18780	24654	29340	52172	81542	104640	118070	142348
140	7582	10915	19413	25485	30329	53930	84290	108166	122049	147146
145	7829	11271	20046	26316	31318	55688	87038	111693	126028	151943
150	8076	11627	20679	27147	32306	57447	89786	115219	130007	156740
155	8323	11983	21312	27978	33295	59205	92534	118745	133987	161538
160	8571	12339	21945	28809	34284	60963	95282	122272	137966	166335
165	8818	12695	22578	29639	35273	62722	98030	125798	141945	171132
170	9065	13051	23211	30470	36262	64480	100778	129325	145924	175929
175	9312	13406	23844	31301	37250	66238	103527	132851	149903	180727
180	9559	13762	24476	32132	38239	67996	106275	136378	153882	185524
185	9807	14118	25109	32963	39228	69755	109023	139904	157861	190321
190	10054	14474	25742	33794	40217	71513	111771	143431	161840	195119
195	10301	14830	26375	34625	41206	73271	114519	146957	165819	199916
200	10548	15186	27008	35456	42195	75029	117267	150484	169798	204713
205	10795	15542	27641	36287	43183	76788	120015	154010	173777	209511
210	11043	15898	28274	37117	44172	78546	122763	157537	177757	214308
215	11290	16254	28907	37948	45161	80304	125511	161063	181736	219105
220	11537	16609	29540	38779	46150	82062	128259	164590	185715	223902
225	11784	16965	30173	39610	47139	83821	131007	168116	189694	228700
230	12031	17321	30806	40441	48127	85579	133755	171643	193673	233497
235	12279	17677	31439	41272	49116	87337	136503	175169	197652	238294
240	12526	18033	32072	42103	50105	89095	139251	178696	201631	243092
245	12773	18389	32704	42934	51094	90854	141999	182222	205610	247889
250	13020	18745	33337	43764	52083	92612	144747	185748	209589	252686
255	13267	19101	33970	44595	53071	94370	147496	189275	213568	257484
260	13515	19456	34603	45426	54060	96129	150244	192801	217548	262281
265	13762	19812	35236	46257	55049	97887	152992	196328	221527	267078
270	14009	20168	35869	47088	56038	99645	155740	199854	225506	271875
275	14256	20524	36502	47919	57027	101403	158488	203381	229485	276673
280	14503	20880	37135	48750	58015	103162	161236	206907	233464	281470
285	14751	21236	37768	49581	59004	104920	163984	210434	237443	286267
290	14998	21592	38401	50412	59993	106678	166732	213960	241422	291065
295	15245	21948	39034	51242	60982	108436	169480	217487	245401	295862
300	15492	22303	39667	52073	61971	110195	172228	221013	249380	300659
305	15739	22659	40300	52904	62959	111953	174976	224540	253359	305457
310	15987	23015	40932	53735	63948	113711	177724	228066	257338	310254
315	16234	23371	41565	54566	64937	115469	180472	231593	261318	315051
320	16481	23727	42198	55397	65926	117228	183220	235119	265297	319848
325	16728	24083	42831	56228	66915	118986	185968	238646	269276	324646
330	16975	24439	43464	57059	67903	120744	188716	242172	273255	329443
335	17223	24795	44097	57890	68892	122502	191465	245699	277234	334240
340	17470	25151	44730	58720	69881	124261	194213	249225	281213	339038
345	17717	25506	45363	59551	70870	126019	196961	252751	285192	343835

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
350	17964	25862	45996	60382	71859	127777	199709	256278	289171	348632
355	18211	26218	46629	61213	72847	129536	202457	259804	293150	353429
360	18459	26574	47262	62044	73836	131294	205205	263331	297129	358227
365	18706	26930	47895	62875	74825	133052	207953	266857	301109	363024
370	18953	27286	48528	63706	75814	134810	210701	270384	305088	367821
375	19200	27642	49161	64537	76803	136569	213449	273910	309067	372619
380	19448	27998	49793	65367	77792	138327	216197	277437	313046	377416
385	19695	28353	50426	66198	78780	140085	218945	280963	317025	382213
390	19942	28709	51059	67029	79769	141843	221693	284490	321004	387011
395	20189	29065	51692	67860	80758	143602	224441	288016	324983	391808
400	20436	29421	52325	68691	81747	145360	227189	291543	328962	396605
405	20684	29777	52958	69522	82736	147118	229937	295069	332941	401402
410	20931	30133	53591	70353	83724	148876	232686	298596	336920	406200
415	21178	30489	54224	71184	84713	150635	235434	302122	340900	410997
420	21425	30845	54857	72015	85702	152393	238182	305649	344879	415794
425	21672	31201	55490	72845	86691	154151	240930	309175	348858	420592
430	21920	31556	56123	73676	87680	155909	243678	312702	352837	425389
435	22167	31912	56756	74507	88668	157668	246426	316228	356816	430186
440	22414	32268	57389	75338	89657	159426	249174	319754	360795	434984
445	22661	32624	58021	76169	90646	161184	251922	323281	364774	439781
450	22908	32980	58654	77000	91635	162943	254670	326807	368753	444578
455	23156	33336	59287	77831	92624	164701	257418	330334	372732	449375
460	23403	33692	59920	78662	93612	166459	260166	333860	376711	454173
465	23650	34048	60553	79493	94601	168217	262914	337387	380690	458970
470	23897	34403	61186	80323	95590	169976	265662	340913	384670	463767
475	24144	34759	61819	81154	96579	171734	268410	344440	388649	468565
480	24392	35115	62452	81985	97568	173492	271158	347966	392628	473362
485	24639	35471	63085	82816	98556	175250	273906	351493	396607	478159
490	24886	35827	63718	83647	99545	177009	276655	355019	400586	482957
495	25133	36183	64351	84478	100534	178767	279403	358546	404565	487754
500	25380	36539	64984	85309	101523	180525	282151	362072	408544	492551
505	25628	36895	65617	86140	102512	182283	284899	365599	412523	497348
510	25875	37250	66249	86970	103500	184042	287647	369125	416502	502146
515	26122	37606	66882	87801	104489	185800	290395	372652	420481	506943
520	26369	37962	67515	88632	105478	187558	293143	376178	424461	511740
525	26616	38318	68148	89463	106467	189316	295891	379705	428440	516538
530	26864	38674	68781	90294	107456	191075	298639	383231	432419	521335
535	27111	39030	69414	91125	108444	192833	301387	386758	436398	526132
540	27358	39386	70047	91956	109433	194591	304135	390284	440377	530930
545	27605	39742	70680	92787	110422	196350	306883	393810	444356	535727
550	27852	40098	71313	93618	111411	198108	309631	397337	448335	540524
555	28100	40453	71946	94448	112400	199866	312379	400863	452314	545321
560	28347	40809	72579	95279	113389	201624	315127	404390	456293	550119
565	28594	41165	73212	96110	114377	203383	317875	407916	460272	554916
570	28841	41521	73845	96941	115366	205141	320624	411443	464251	559713
575	29088	41877	74478	97772	116355	206899	323372	414969	468231	564511
580	29336	42233	75110	98603	117344	208657	326120	418496	472210	569308
585	29583	42589	75743	99434	118333	210416	328868	422022	476189	574105
590	29830	42945	76376	100265	119321	212174	331616	425549	480168	578902
595	30077	43300	77009	101096	120310	213932	334364	429075	484147	583700

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
600	30324	43656	77642	101926	121299	215690	337112	432602	488126	588497
605	30572	44012	78275	102757	122288	217449	339860	436128	492105	593294
610	30819	44368	78908	103588	123277	219207	342608	439655	496084	598092
615	31066	44724	79541	104419	124265	220965	345356	443181	500063	602889
620	31313	45080	80174	105250	125254	222723	348104	446708	504042	607686
625	31560	45436	80807	106081	126243	224482	350852	450234	508022	612484
630	31808	45792	81440	106912	127232	226240	353600	453761	512001	617281
635	32055	46147	82073	107743	128221	227998	356348	457287	515980	622078
640	32302	46503	82706	108574	129209	229757	359096	460813	519959	626875
645	32549	46859	83338	109404	130198	231515	361844	464340	523938	631673
650	32796	47215	83971	110235	131187	233273	364593	467866	527917	636470
655	33044	47571	84604	111066	132176	235031	367341	471393	531896	641267
660	33291	47927	85237	111897	133165	236790	370089	474919	535875	646065
665	33538	48283	85870	112728	134153	238548	372837	478446	539854	650862
670	33785	48639	86503	113559	135142	240306	375585	481972	543833	655659
675	34032	48995	87136	114390	136131	242064	378333	485499	547812	660457
680	34280	49350	87769	115221	137120	243823	381081	489025	551792	665254
685	34527	49706	88402	116051	138109	245581	383829	492552	555771	670051
690	34774	50062	89035	116882	139097	247339	386577	496078	559750	674848
695	35021	50418	89668	117713	140086	249097	389325	499605	563729	679646
700	35268	50774	90301	118544	141075	250856	392073	503131	567708	684443
705	35516	51130	90934	119375	142064	252614	394821	506658	571687	689240
710	35763	51486	91566	120206	143053	254372	397569	510184	575666	694038
715	36010	51842	92199	121037	144041	256130	400317	513711	579645	698835
720	36257	52197	92832	121868	145030	257889	403065	517237	583624	703632
725	36504	52553	93465	122699	146019	259647	405813	520764	587603	708430
730	36752	52909	94098	123529	147008	261405	408562	524290	591583	713227
735	36999	53265	94731	124360	147997	263164	411310	527816	595562	718024
740	37246	53621	95364	125191	148985	264922	414058	531343	599541	722821
745	37493	53977	95997	126022	149974	266680	416806	534869	603520	727619
750	37740	54333	96630	126853	150963	268438	419554	538396	607499	732416
755	37988	54689	97263	127684	151952	270197	422302	541922	611478	737213
760	38235	55044	97896	128515	152941	271955	425050	545449	615457	742011
765	38482	55400	98529	129346	153930	273713	427798	548975	619436	746808
770	38729	55756	99162	130177	154918	275471	430546	552502	623415	751605
775	38976	56112	99795	131007	155907	277230	433294	556028	627394	756402
780	39224	56468	100427	131838	156896	278988	436042	559555	631374	761200
785	39471	56824	101060	132669	157885	280746	438790	563081	635353	765997
790	39718	57180	101693	133500	158874	282504	441538	566608	639332	770794
795	39965	57536	102326	134331	159862	284263	444286	570134	643311	775592
800	40212	57892	102959	135162	160851	286021	447034	573661	647290	780389
805	40460	58247	103592	135993	161840	287779	449782	577187	651269	785186
810	40707	58603	104225	136824	162829	289537	452531	580714	655248	789984
815	40954	58959	104858	137654	163818	291296	455279	584240	659227	794781
820	41201	59315	105491	138485	164806	293054	458027	587767	663206	799578
825	41448	59671	106124	139316	165795	294812	460775	591293	667185	804375
830	41696	60027	106757	140147	166784	296571	463523	594819	671164	809173
835	41943	60383	107390	140978	167773	298329	466271	598346	675144	813970
840	42190	60739	108023	141809	168762	300087	469019	601872	679123	818767
845	42437	61094	108655	142640	169750	301845	471767	605399	683102	823565

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07	14.18	16	19.29	
Set Pressure (psig)										
850	42684	61450	109288	143471	170739	303604	474515	608925	687081	828362
855	42932	61806	109921	144302	171728	305362	477263	612452	691060	833159
860	43179	62162	110554	145132	172717	307120	480011	615978	695039	837957
865	43426	62518	111187	145963	173706	308878	482759	619505	699018	842754
870	43673	62874	111820	146794	174694	310637	485507	623031	702997	847551
875	43920	63230	112453	147625	175683	312395	488255	626558	706976	852348
880	44168	63586	113086	148456	176672	314153	491003	630084	710955	857146
885	44415	63942	113719	149287	177661	315911	493752	633611	714935	861943
890	44662	64297	114352	150118	178650	317670	496500	637137	718914	866740
895	44909	64653	114985	150949	179638	319428	499248	640664	722893	871538
900	45156	65009	115618	151780	180627	321186	501996	644190	726872	876335
905	45404	65365	116251	152610	181616	322944	504744	647717	730851	881132
910	45651	65721	116883	153441	182605	324703	507492	651243	734830	885930
915	45898	66077	117516	154272	183594	326461	510240	654770	738809	890727
920	46145	66433	118149	155103	184582	328219	512988	658296	742788	895524
925	46392	66789	118782	155934	185571	329978	515736	661822	746767	900321
930	46640	67144	119415	156765	186560	331736	518484	665349	750746	905119
935	46887	67500	120048	157596	187549	333494	521232	668875	754725	909916
940	47134	67856	120681	158427	188538	335252	523980	672402	758705	914713
945	47381	68212	121314	159257	189527	337011	526728	675928	762684	919511
950	47628	68568	121947	160088	190515	338769	529476	679455	766663	924308
955	47876	68924	122580	160919	191504	340527	532224	682981	770642	929105
960	48123	69280	123213	161750	192493	342285	534972	686508	774621	933903
965	48370	69636	123846	162581	193482	344044	537721	690034	778600	938700
970	48617	69991	124479	163412	194471	345802	540469	693561	782579	943497
975	48864	70347	125112	164243	195459	347560	543217	697087	786558	948294
980	49112	70703	125744	165074	196448	349318	545965	700614	790537	953092
985	49359	71059	126377	165905	197437	351077	548713	704140	794516	957889
990	49606	71415	127010	166735	198426	352835	551461	707667	798496	962686
995	49853	71771	127643	167566	199415	354593	554209	711193	802475	967484
1000	50100	72127	128276	168397	200403	356351	556957	714720	806454	972281
1005	50348	72483	128909	169228	201392	358110	559705	718246	810433	977078
1010	50595	72839	129542	170059	202381	359868	562453	721773	814412	981875
1015	50842	73194	130175	170890	203370	361626	565201	725299	818391	986673
1020	51089	73550	130808	171721	204359	363385	567949	728825	822370	991470
1025	51336	73906	131441	172552	205347	365143	570697	732352	826349	996267
1030	51584	74262	132074	173383	206336	366901	573445	735878	830328	1001065
1035	51831	74618	132707	174213	207325	368659	576193	739405	834307	1005862
1040	52078	74974	133340	175044	208314	370418	578941	742931	838287	1010659
1045	52325	75330	133972	175875	209303	372176	581690	746458	842266	1015457
1050	52572	75686	134605	176706	210291	373934	584438	749984	846245	1020254
1055	52820	76041	135238	177537	211280	375692	587186	753511	850224	1025051
1060	53067	76397	135871	178368	212269	377451	589934	757037	854203	1029848
1065	53314	76753	136504	179199	213258	379209	592682	760564	858182	1034646
1070	53561	77109	137137	180030	214247	380967	595430	764090	862161	1039443
1075	53808	77465	137770	180861	215235	382725	598178	767617	866140	1044240
1080	54056	77821	138403	181691	216224	384484	600926	771143	870119	1049038
1085	54303	78177	139036	182522	217213	386242	603674	774670	874098	1053835
1090	54550	78533	139669	183353	218202	388000	606422	778196	878077	1058632
1095	54797	78888	140302	184184	219191	389758	609170	781723	882057	1063430

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07	14.18	16	19.29	
Set Pressure (psig)										
1100	55044	79244	140935	185015	220179	391517	611918	785249	886036	1068227
1105	55292	79600	141568	185846	221168	393275	614666	788776	890015	1073024
1110	55539	79956	142200	186677	222157	395033	617414	792302	893994	1077821
1115	55786	80312	142833	187508	223146	396792	620162	795828	897973	1082619
1120	56033	80668	143466	188338	224135	398550	622910	799355	901952	1087416
1125	56281	81024	144099	189169	225124	400308	625659	802881	905931	1092213
1130	56528	81380	144732	190000	226112	402066	628407	806408	909910	1097011
1135	56775	81736	145365	190831	227101	403825	631155	809934	913889	1101808
1140	57022	82091	145998	191662	228090	405583	633903	813461	917868	1106605
1145	57269	82447	146631	192493	229079	407341	636651	816987	921848	1111403
1150	57517	82803	147264	193324	230068	409099	639399	820514	925827	1116200
1155	57764	83159	147897	194155	231056	410858	642147	824040	929806	1120997
1160	58011	83515	148530	194986	232045	412616	644895	827567	933785	1125794
1165	58258	83871	149163	195816	233034	414374	647643	831093	937764	1130592
1170	58505	84227	149796	196647	234023	416132	650391	834620	941743	1135389
1175	58753	84583	150429	197478	235012	417891	653139	838146	945722	1140186
1180	59000	84938	151061	198309	236000	419649	655887	841673	949701	1144984
1185	59247	85294	151694	199140	236989	421407	658635	845199	953680	1149781
1190	59494	85650	152327	199971	237978	423165	661383	848726	957659	1154578
1195	59741	86006	152960	200802	238967	424924	664131	852252	961638	1159375
1200	59989	86362	153593	201633	239956	426682	666879	855779	965618	1164173
1205	60236	86718	154226	202464	240944	428440	669628	859305	969597	1168970
1210	60483	87074	154859	203294	241933	430199	672376	862831	973576	1173767
1215	60730	87430	155492	204125	242922	431957	675124	866358	977555	1178565
1220	60977	87785	156125	204956	243911	433715	677872	869884	981534	1183362
1225	61225	88141	156758	205787	244900	435473	680620	873411	985513	1188159
1230	61472	88497	157391	206618	245888	437232	683368	876937	989492	1192957
1235	61719	88853	158024	207449	246877	438990	686116	880464	993471	1197754
1240	61966	89209	158657	208280	247866	440748	688864	883990	997450	1202551
1245	62213	89565	159289	209111	248855	442506	691612	887517	1001429	1207348
1250	62461	89921	159922	209941	249844	444265	694360	891043	1005409	1212146
1255	62708	90277	160555	210772	250832	446023	697108	894570	1009388	1216943
1260	62955	90633	161188	211603	251821	447781	699856	898096	1013367	1221740
1265	63202	90988	161821	212434	252810	449539	702604	901623	1017346	1226538
1270	63449	91344	162454	213265	253799	451298	705352	905149	1021325	1231335
1275	63697	91700	163087	214096	254788	453056	708100	908676	1025304	1236132
1280	63944	92056	163720	214927	255776	454814	710848	912202	1029283	1240930
1285	64191	92412	164353	215758	256765	456572	713597	915729	1033262	1245727
1290	64438	92768	164986	216589	257754	458331	716345	919255	1037241	1250524
1295	64685	93124	165619	217419	258743	460089	719093	922782	1041220	1255321
1300	64933	93480	166252	218250	259732	461847	721841	926308	1045199	1260119
1305	65180	93835	166885	219081	260721	463606	724589	929834	1049179	1264916
1310	65427	94191	167517	219912	261709	465364	727337	933361	1053158	1269713
1315	65674	94547	168150	220743	262698	467122	730085	936887	1057137	1274511
1320	65921	94903	168783	221574	263687	468880	732833	940414	1061116	1279308
1325	66169	95259	169416	222405	264676	470639	735581	943940	1065095	1284105
1330	66416	95615	170049	223236	265665	472397	738329	947467	1069074	1288903
1335	66663	95971	170682	224067	266653	474155	741077	950993	1073053	1293700
1340	66910	96327	171315	224897	267642	475913	743825	954520	1077032	1298497
1345	67157	96682	171948	225728	268631	477672	746573	958046	1081011	1303294

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
1350	67405	97038	172581	226559	269620	479430	749321	961573	1084990	1308092
1355	67652	97394	173214	227390	270609	481188	752069	965099	1088970	1312889
1360	67899	97750	173847	228221	271597	482946	754818	968626	1092949	1317686
1365	68146	98106	174480	229052	272586	484705	757566	972152	1096928	1322484
1370	68393	98462	175113	229883	273575	486463	760314	975679	1100907	1327281
1375	68641	98818	175745	230714	274564	488221	763062	979205	1104886	1332078
1380	68888	99174	176378	231544	275553	489979	765810	982732	1108865	1336876
1385	69135	99530	177011	232375	276541	491738	768558	986258	1112844	1341673
1390	69382	99885	177644	233206	277530	493496	771306	989785	1116823	1346470
1395	69629	100241	178277	234037	278519	495254	774054	993311	1120802	1351267
1400	69877	100597	178910	234868	279508	497013	776802	996837	1124781	1356065
1405	70124	100953	179543	235699	280497	498771	779550	1000364	1128761	1360862
1410	70371	101309	180176	236530	281485	500529	782298	1003890	1132740	1365659
1415	70618	101665	180809	237361	282474	502287	785046	1007417	1136719	1370457
1420	70865	102021	181442	238192	283463	504046	787794	1010943	1140698	1375254
1425	71120	102387	182094	239047	284482	505857	790625	1014576	1144796	1380195
1430	71389	102774	182782	239951	285557	507770	793615	1018413	1149126	1385415
1435	71658	103162	183472	240856	286634	509685	796608	1022253	1153459	1390639
1440	71928	103550	184162	241762	287712	511601	799603	1026097	1157796	1395868
1445	72197	103938	184852	242668	288791	513519	802601	1029944	1162137	1401101
1450	72467	104327	185543	243575	289870	515439	805601	1033794	1166481	1406339
1455	72737	104716	186235	244483	290951	517360	808604	1037648	1170830	1411582
1460	73008	105105	186927	245392	292032	519283	811610	1041505	1175182	1416828
1465	73278	105494	187620	246302	293115	521208	814618	1045365	1179537	1422080
1470	73549	105884	188313	247212	294198	523134	817629	1049229	1183897	1427336
1475	73820	106275	189007	248123	295282	525062	820642	1053096	1188261	1432597
1480	74092	106665	189702	249035	296368	526992	823659	1056967	1192628	1437862
1485	74363	107056	190397	249948	297454	528924	826678	1060841	1197000	1443133
1490	74635	107448	191093	250862	298541	530857	829699	1064718	1201375	1448408
1495	74907	107839	191790	251776	299630	532792	832724	1068600	1205754	1453687
1500	75179	108231	192487	252691	300719	534729	835751	1072484	1210137	1458972
1505	75452	108624	193185	253608	301809	536668	838781	1076372	1214524	1464261
1510	75725	109016	193883	254524	302900	538608	841814	1080264	1218916	1469555
1515	75998	109409	194582	255442	303992	540550	844849	1084159	1223311	1474854
1520	76271	109803	195282	256361	305086	542494	847887	1088058	1227710	1480158
1525	76545	110197	195983	257280	306180	544440	850928	1091961	1232114	1485467
1530	76818	110591	196684	258201	307275	546388	853972	1095867	1236521	1490781
1535	77092	110985	197385	259122	308371	548337	857019	1099777	1240933	1496100
1540	77367	111380	198088	260044	309469	550288	860069	1103690	1245349	1501424
1545	77641	111776	198791	260967	310567	552241	863121	1107607	1249769	1506752
1550	77916	112171	199495	261891	311667	554196	866177	1111528	1254193	1512086
1555	78191	112567	200199	262815	312767	556153	869235	1115453	1258621	1517425
1560	78467	112964	200904	263741	313868	558112	872296	1119381	1263054	1522769
1565	78742	113361	201610	264667	314971	560072	875361	1123314	1267491	1528119
1570	79018	113758	202316	265595	316075	562035	878428	1127250	1271932	1533473
1575	79294	114156	203023	266523	317179	563999	881498	1131189	1276377	1538833
1580	79571	114554	203731	267452	318285	565965	884571	1135133	1280827	1544197
1585	79848	114952	204440	268382	319392	567933	887647	1139081	1285282	1549568
1590	80125	115351	205149	269313	320500	569904	890727	1143032	1289740	1554943
1595	80402	115750	205859	270245	321609	571876	893809	1146988	1294203	1560324

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66 Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07	14.18	16	19.29	
Set Pressure (psig)										
1600	80679	116149	206569	271178	322719	573850	896894	1150947	1298671	1565710
1605	80957	116549	207281	272112	323831	575826	-	-	-	-
1610	81235	116950	207993	273047	324943	577804	-	-	-	-
1615	81514	117351	208706	273983	326057	579784	-	-	-	-
1620	81792	117752	209419	274919	327171	581766	-	-	-	-
1625	82071	118153	210133	275857	328287	583750	-	-	-	-
1630	82351	118555	210848	276795	329404	585736	-	-	-	-
1635	82630	118958	211564	277735	330522	587724	-	-	-	-
1640	82910	119361	212280	278675	331641	589715	-	-	-	-
1645	83190	119764	212997	279617	332762	591707	-	-	-	-
1650	83470	120167	213715	280559	333883	593701	-	-	-	-
1655	83751	120572	214434	281503	335006	595698	-	-	-	-
1660	84032	120976	215153	282447	336130	597696	-	-	-	-
1665	84313	121381	215874	283393	337255	599697	-	-	-	-
1670	84595	121786	216595	284339	338382	601700	-	-	-	-
1675	84877	122192	217316	285287	339509	603705	-	-	-	-
1680	85159	122598	218039	286235	340638	605712	-	-	-	-
1685	85442	123005	218762	287185	341768	607721	-	-	-	-
1690	85724	123412	219486	288135	342899	609733	-	-	-	-
1695	86007	123820	220211	289087	344031	611746	-	-	-	-
1700	86291	124228	220937	290039	345165	613762	-	-	-	-
1705	86575	124636	221663	290993	346300	615781	-	-	-	-
1710	86859	125045	222391	291948	347436	617801	-	-	-	-
1715	87143	125455	223119	292904	348574	619823	-	-	-	-
1720	87428	125865	223847	293860	349713	621848	-	-	-	-
1725	87713	126275	224577	294818	350853	623876	-	-	-	-
1730	87998	126686	225308	295777	351994	625905	-	-	-	-
1735	88284	127097	226039	296738	353136	627937	-	-	-	-
1740	88570	127509	226771	297699	354280	629971	-	-	-	-
1745	88856	127921	227504	298661	355426	632007	-	-	-	-
1750	89143	128333	228238	299625	356572	634046	-	-	-	-
1755	89430	128747	228973	300589	357720	636087	-	-	-	-
1760	89717	129160	229709	301555	358869	638131	-	-	-	-
1765	90005	129574	230445	302522	360020	640176	-	-	-	-
1770	90293	129989	231182	303490	361172	642225	-	-	-	-
1775	90581	130404	231921	304459	362325	644275	-	-	-	-
1780	90870	130819	232660	305429	363480	646329	-	-	-	-
1785	91159	131236	233400	306400	364636	648384	-	-	-	-
1790	91448	131652	234141	307373	365793	650442	-	-	-	-
1795	91738	132069	234882	308347	366952	652503	-	-	-	-
1800	92028	132487	235625	309321	368112	654566	-	-	-	-
1805	92318	132905	236368	310298	369274	656631	-	-	-	-
1810	92609	133323	237113	311275	370437	658700	-	-	-	-
1815	92900	133742	237858	312253	371601	660770	-	-	-	-
1820	93191	134162	238605	313233	372767	662843	-	-	-	-
1825	93483	134582	239352	314214	373935	664919	-	-	-	-
1830	93775	135003	240100	315196	375103	666998	-	-	-	-
1835	94068	135424	240849	316180	376274	669079	-	-	-	-
1840	94361	135846	241599	317164	377445	671162	-	-	-	-
1845	94654	136268	242350	318150	378619	673249	-	-	-	-

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
1850	94948	136691	243102	319137	379794	675337	-	-	-	-
1855	95242	137114	243855	320126	380970	677429	-	-	-	-
1860	95537	137538	244609	321115	382148	679523	-	-	-	-
1865	95831	137963	245364	322106	383327	681620	-	-	-	-
1870	96127	138388	246120	323099	384508	683720	-	-	-	-
1875	96422	138813	246876	324092	385690	685823	-	-	-	-
1880	96718	139239	247634	325087	386874	687928	-	-	-	-
1885	97015	139666	248393	326083	388060	690036	-	-	-	-
1890	97311	140093	249153	327081	389247	692147	-	-	-	-
1895	97608	140521	249914	328080	390435	694260	-	-	-	-
1900	97906	140949	250676	329080	391626	696377	-	-	-	-
1905	98204	141378	251439	330081	392818	698496	-	-	-	-
1910	98502	141808	252203	331084	394011	700619	-	-	-	-
1915	98801	142238	252968	332088	395206	702744	-	-	-	-
1920	99100	142669	253734	333094	396403	704872	-	-	-	-
1925	99400	143100	254501	334101	397601	707003	-	-	-	-
1930	99700	143532	255269	335109	398801	709137	-	-	-	-
1935	100000	143965	256038	336119	400003	711274	-	-	-	-
1940	100301	144398	256808	337130	401207	713413	-	-	-	-
1945	100603	144831	257580	338143	402412	715556	-	-	-	-
1950	100904	145266	258352	339157	403619	717702	-	-	-	-
1955	101206	145701	259126	340173	404827	719851	-	-	-	-
1960	101509	146136	259900	341190	406037	722003	-	-	-	-
1965	101812	146573	260676	342208	407249	724159	-	-	-	-
1970	102115	147009	261453	343228	408463	726317	-	-	-	-
1975	102419	147447	262231	344250	409679	728478	-	-	-	-
1980	102724	147885	263010	345272	410896	730643	-	-	-	-
1985	103028	148324	263791	346297	412115	732811	-	-	-	-
1990	103334	148763	264572	347323	413336	734982	-	-	-	-
1995	103639	149203	265355	348350	414559	737156	-	-	-	-
2000	103945	149644	266139	349379	415783	739333	-	-	-	-
2005	104252	150085	266924	350410	417010	741514	-	-	-	-
2010	104559	150527	267710	351442	418238	743698	-	-	-	-
2015	104867	150970	268497	352475	419468	745885	-	-	-	-
2020	105175	151414	269286	353510	420700	748076	-	-	-	-
2025	105483	151858	270076	354547	421934	750270	-	-	-	-
2030	105792	152302	270867	355586	423169	752467	-	-	-	-
2035	106101	152748	271659	356626	424407	754668	-	-	-	-
2040	106411	153194	272452	357667	425647	756872	-	-	-	-
2045	106722	153641	273247	358710	426888	759080	-	-	-	-
2050	107033	154088	274043	359755	428132	761291	-	-	-	-
2055	107344	154537	274840	360802	429377	763505	-	-	-	-
2060	107656	154985	275638	361850	430624	765723	-	-	-	-
2065	107968	155435	276438	362900	431874	767945	-	-	-	-
2070	108281	155886	277239	363952	433125	770170	-	-	-	-
2075	108594	156337	278042	365005	434379	772399	-	-	-	-
2080	108908	156789	278845	366060	435634	774632	-	-	-	-
2085	109223	157241	279650	367117	436892	776868	-	-	-	-
2090	109537	157695	280456	368175	438151	779108	-	-	-	-
2095	109853	158149	281264	369235	439413	781351	-	-	-	-

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2100	110169	158603	282073	370297	440677	783598	-	-	-	-
2105	110485	159059	282883	371361	441943	785849	-	-	-	-
2110	110802	159515	283695	372426	443211	788104	-	-	-	-
2115	111120	159973	284508	373494	444481	790363	-	-	-	-
2120	111438	160431	285322	374563	445753	792625	-	-	-	-
2125	111757	160889	286138	375634	447028	794892	-	-	-	-
2130	112076	161349	286955	376707	448305	797162	-	-	-	-
2135	112396	161809	287774	377781	449584	799436	-	-	-	-
2140	112716	162270	288594	378858	450865	801714	-	-	-	-
2145	113037	162732	289416	379936	452148	803996	-	-	-	-
2150	113358	163195	290238	381016	453434	806282	-	-	-	-
2155	113680	163658	291063	382099	454722	808572	-	-	-	-
2160	114003	164123	291889	383183	456012	810866	-	-	-	-
2165	114326	164588	292716	384269	457304	813165	-	-	-	-
2170	114649	165054	293545	385357	458599	815467	-	-	-	-
2175	114974	165521	294375	386447	459896	817774	-	-	-	-
2180	115299	165988	295207	387539	461196	820084	-	-	-	-
2185	115624	166457	296040	388633	462498	822399	-	-	-	-
2190	115950	166926	296875	389729	463802	824719	-	-	-	-
2195	116277	167397	297711	390827	465109	827042	-	-	-	-
2200	116604	167868	298549	391927	466418	829370	-	-	-	-
2205	116932	168340	299389	393029	467729	831702	-	-	-	-
2210	117260	168813	300230	394133	469043	834039	-	-	-	-
2215	117590	169287	301073	395239	470360	836380	-	-	-	-
2220	117919	169761	301917	396348	471679	838725	-	-	-	-
2225	118250	170237	302763	397458	473000	841075	-	-	-	-
2230	118581	170714	303610	398571	474324	843429	-	-	-	-
2235	118912	171191	304460	399686	475651	845788	-	-	-	-
2240	119245	171669	305310	400802	476980	848152	-	-	-	-
2245	119578	172149	306163	401922	478312	850520	-	-	-	-
2250	119911	172629	307017	403043	479646	852893	-	-	-	-
2255	120246	173110	307873	404166	480984	855270	-	-	-	-
2260	120580	173592	308730	405292	482323	857653	-	-	-	-
2265	120916	174076	309590	406420	483666	860040	-	-	-	-
2270	121252	174560	310451	407551	485011	862432	-	-	-	-
2275	121589	175045	311313	408683	486359	864828	-	-	-	-
2280	121927	175531	312178	409818	487709	867230	-	-	-	-
2285	122265	176018	313044	410955	489063	869636	-	-	-	-
2290	122604	176506	313912	412095	490419	872048	-	-	-	-
2295	122944	176995	314782	413237	491778	874464	-	-	-	-
2300	123284	177485	315654	414381	493139	876886	-	-	-	-
2305	123626	177976	316527	415528	494504	879312	-	-	-	-
2310	123968	178469	317403	416677	495872	881744	-	-	-	-
2315	124310	178962	318280	417828	497242	884181	-	-	-	-
2320	124653	179456	319159	418982	498615	886623	-	-	-	-
2325	124998	179951	320040	420139	499992	889070	-	-	-	-
2330	125342	180448	320923	421298	501371	891523	-	-	-	-
2335	125688	180945	321807	422459	502753	893980	-	-	-	-
2340	126034	181444	322694	423623	504138	896444	-	-	-	-
2345	126381	181944	323583	424790	505527	898912	-	-	-	-

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2350	126729	182444	324473	425959	506918	901386	-	-	-	-
2355	127078	182946	325366	427131	508313	903866	-	-	-	-
2360	127427	183449	326260	428305	509710	906351	-	-	-	-
2365	127777	183953	327157	429482	511111	908842	-	-	-	-
2370	128128	184459	328056	430662	512515	911338	-	-	-	-
2375	128480	184965	328956	431844	513922	913840	-	-	-	-
2380	128833	185473	329859	433029	515332	916348	-	-	-	-
2385	129186	185981	330764	434217	516746	918862	-	-	-	-
2390	129540	186491	331671	435408	518163	921381	-	-	-	-
2395	129895	187002	332580	436601	519583	923906	-	-	-	-
2400	130251	187515	333491	437797	521006	926438	-	-	-	-
2405	130608	188028	334404	438996	522433	928975	-	-	-	-
2410	130965	188543	335320	440198	523863	931518	-	-	-	-
2415	131324	189059	336237	441403	525297	934067	-	-	-	-
2420	131683	189576	337157	442610	526734	936623	-	-	-	-
2425	132043	190095	338079	443821	528175	939184	-	-	-	-
2430	132404	190614	339004	445034	529619	941752	-	-	-	-
2435	132766	191135	339930	446251	531066	944326	-	-	-	-
2440	133129	191658	340859	447470	532517	946906	-	-	-	-
2445	133493	192181	341790	448692	533972	949493	-	-	-	-
2450	133857	192706	342724	449918	535431	952086	-	-	-	-
2455	134223	193232	343660	451146	536893	954686	-	-	-	-
2460	134589	193760	344598	452378	538358	957292	-	-	-	-
2465	134957	194289	345538	453613	539828	959905	-	-	-	-
2470	135325	194819	346481	454851	541301	962525	-	-	-	-
2475	135694	195351	347427	456092	542778	965151	-	-	-	-
2480	136064	195884	348375	457336	544259	967784	-	-	-	-
2485	136435	196418	349325	458584	545743	970424	-	-	-	-
2490	136808	196954	350278	459834	547232	973071	-	-	-	-
2495	137181	197491	351233	461088	548724	975725	-	-	-	-
2500	137555	198029	352191	462346	550221	978386	-	-	-	-
2505	137930	198569	353151	463607	551721	981054	-	-	-	-
2510	138306	199111	354114	464871	553226	983729	-	-	-	-
2515	138683	199654	355080	466138	554734	986411	-	-	-	-
2520	139061	200198	356048	467409	556247	989101	-	-	-	-
2525	139440	200744	357019	468684	557763	991798	-	-	-	-
2530	139821	201291	357992	469962	559284	994502	-	-	-	-
2535	140202	201840	358969	471243	560809	997214	-	-	-	-
2540	140584	202391	359947	472528	562339	999933	-	-	-	-
2545	140968	202943	360929	473817	563872	1002661	-	-	-	-
2550	141352	203496	361914	475109	565410	1005395	-	-	-	-
2555	141738	204051	362901	476405	566952	1008138	-	-	-	-
2560	142124	204608	363891	477705	568499	1010888	-	-	-	-
2565	142512	205166	364884	479009	570050	1013646	-	-	-	-
2570	142901	205726	365879	480316	571606	1016412	-	-	-	-
2575	143291	206288	366878	481627	573166	1019187	-	-	-	-
2580	143682	206851	367880	482942	574731	1021969	-	-	-	-
2585	144075	207416	368884	484260	576300	1024760	-	-	-	-
2590	144468	207982	369892	485583	577874	1027558	-	-	-	-
2595	144863	208550	370902	486909	579453	1030366	-	-	-	-

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2600	145259	209120	371916	488240	581036	1033181	-	-	-	-
2605	145656	209692	372932	489575	582625	1036005	-	-	-	-
2610	146054	210265	373952	490913	584218	1038838	-	-	-	-
2615	146454	210840	374975	492256	585816	1041680	-	-	-	-
2620	146854	211417	376001	493603	587418	1044530	-	-	-	-
2625	147256	211996	377030	494954	589026	1047389	-	-	-	-
2630	147659	212576	378062	496309	590639	1050257	-	-	-	-
2635	148064	213159	379098	497669	592257	1053134	-	-	-	-
2640	148470	213743	380137	499033	593880	1056020	-	-	-	-
2645	148877	214329	381179	500401	595508	1058915	-	-	-	-
2650	149285	214917	382225	501773	597142	1061819	-	-	-	-
2655	149695	215506	383274	503150	598781	1064733	-	-	-	-
2660	150106	216098	384326	504532	600425	1067657	-	-	-	-
2665	150518	216692	385382	505918	602074	1070590	-	-	-	-
2670	150932	217287	386441	507308	603729	1073532	-	-	-	-
2675	151347	217885	387504	508703	605389	1076484	-	-	-	-
2680	151763	218484	388570	510103	607055	1079446	-	-	-	-
2685	152181	219086	389640	511508	608726	1082418	-	-	-	-
2690	152600	219690	390713	512917	610403	1085401	-	-	-	-
2695	153021	220295	391790	514331	612086	1088393	-	-	-	-
2700	153443	220903	392871	515750	613775	1091395	-	-	-	-
2705	153867	221513	393956	517173	615469	1094408	-	-	-	-
2710	154292	222125	395044	518602	617169	1097431	-	-	-	-
2715	154718	222739	396136	520036	618875	1100465	-	-	-	-
2720	155146	223355	397232	521474	620587	1103509	-	-	-	-
2725	155576	223973	398332	522918	622305	1106565	-	-	-	-
2730	156007	224594	399435	524367	624030	1109631	-	-	-	-
2735	156440	225217	400543	525821	625760	1112708	-	-	-	-
2740	156874	225842	401655	527280	627497	1115796	-	-	-	-
2745	157310	226469	402770	528745	629240	1118895	-	-	-	-
2750	157747	227099	403890	530215	630989	1122006	-	-	-	-
2755	158186	227731	405014	531690	632745	1125128	-	-	-	-
2760	158626	228365	406142	533171	634507	1128262	-	-	-	-
2765	159069	229002	407274	534658	636276	1131407	-	-	-	-
2770	159513	229641	408411	536150	638052	1134564	-	-	-	-
2775	159958	230282	409552	537647	639834	1137734	-	-	-	-
2780	160405	230926	410697	539151	641623	1140915	-	-	-	-
2785	160854	231572	411846	540660	643419	1144108	-	-	-	-
2790	161305	232221	413000	542174	645222	1147314	-	-	-	-
2795	161758	232872	414159	543695	647032	1150532	-	-	-	-
2800	162212	233526	415322	545222	648849	1153763	-	-	-	-
2805	162668	234183	416489	546755	650673	1157006	-	-	-	-
2810	163126	234842	417661	548294	652504	1160263	-	-	-	-
2815	163585	235504	418838	549839	654343	1163532	-	-	-	-
2820	164047	236168	420020	551390	656189	1166815	-	-	-	-
2825	164510	236835	421206	552947	658042	1170110	-	-	-	-
2830	164975	237505	422398	554511	659903	1173420	-	-	-	-
2835	165443	238178	423594	556081	661772	1176742	-	-	-	-
2840	165912	238853	424795	557658	663648	1180079	-	-	-	-
2845	166383	239531	426001	559241	665532	1183429	-	-	-	-

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

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W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K=.878 (4" Q — K = .792)
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Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1700.66. Review pressure temperature limits. Pressure temperature tables begin on page 1700.32. The 1700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q 4"=12.25 6"=11.05	8	R	RR
Orifice Area Sq. In.	0.994	1.431	2.545	3.341	3.976	7.07		14.18	16	19.29
Set Pressure (psig)										
2850	166856	240212	427212	560831	667424	1186794	-	-	-	-
2855	167331	240896	428428	562428	669324	1190172	-	-	-	-
2860	167808	241583	429649	564031	671233	1193565	-	-	-	-
2865	168287	242272	430876	565641	673149	1196973	-	-	-	-
2870	168768	242965	432108	567259	675074	1200395	-	-	-	-
2875	169251	243661	433345	568883	677006	1203832	-	-	-	-
2880	169737	244359	434588	570514	678948	1207284	-	-	-	-
2885	170224	245061	435836	572153	680898	1210752	-	-	-	-
2890	170714	245766	437090	573798	682856	1214234	-	-	-	-
2895	171206	246474	438349	575452	684824	1217732	-	-	-	-

Superheat Correction Factor

Notes:

1. For capacity on superheated steam, multiply saturated steam capacity by correction factor.

2. Convert set pressure from (psig) to (psia) flowing pressure.

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

Flowing Pressure*	Superheat Correction Factor K_{sh} Total Temperature, °F, of Superheated Steam																
(psia)	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
50	0.987	0.957	0.930	0.905	0.882	0.861	0.841	0.823	0.805	0.789	0.774	0.759	0.745	0.732	0.719	0.708	0.696
100	0.998	0.963	0.935	0.909	0.885	0.864	0.843	0.825	0.807	0.790	0.775	0.760	0.746	0.733	0.720	0.708	0.697
150	0.984	0.970	0.940	0.913	0.888	0.866	0.846	0.826	0.808	0.792	0.776	0.761	0.747	0.733	0.721	0.709	0.697
200	0.979	0.977	0.945	0.917	0.892	0.869	0.848	0.828	0.810	0.793	0.777	0.762	0.748	0.734	0.721	0.709	0.698
250	-	0.972	0.951	0.921	0.895	0.871	0.850	0.830	0.812	0.794	0.778	0.763	0.749	0.735	0.722	0.710	0.698
300	-	0.968	0.957	0.926	0.898	0.874	0.852	0.832	0.813	0.796	0.780	0.764	0.750	0.736	0.723	0.710	0.699
350	-	0.968	0.963	0.930	0.902	0.877	0.854	0.834	0.815	0.797	0.781	0.765	0.750	0.736	0.723	0.711	0.699
400	-	-	0.963	0.935	0.906	0.880	0.857	0.836	0.816	0.798	0.782	0.766	0.751	0.737	0.724	0.712	0.700
450	-	-	0.961	0.940	0.909	0.883	0.859	0.838	0.818	0.800	0.783	0.767	0.752	0.738	0.725	0.712	0.700
500	-	-	0.961	0.946	0.914	0.886	0.862	0.840	0.820	0.801	0.784	0.768	0.753	0.739	0.725	0.713	0.701
550	-	-	0.962	0.952	0.918	0.889	0.864	0.842	0.822	0.803	0.785	0.769	0.754	0.740	0.726	0.713	0.701
600	-	-	0.964	0.958	0.922	0.892	0.867	0.844	0.823	0.804	0.787	0.770	0.755	0.740	0.727	0.714	0.702
650	-	-	0.968	0.958	0.927	0.896	0.869	0.846	0.825	0.806	0.788	0.771	0.756	0.741	0.728	0.715	0.702
700	-	-	-	0.958	0.931	0.899	0.872	0.848	0.827	0.807	0.789	0.772	0.757	0.742	0.728	0.715	0.703
750	-	-	-	0.958	0.936	0.903	0.875	0.850	0.828	0.809	0.790	0.774	0.758	0.743	0.729	0.716	0.703
800	-	-	-	0.960	0.942	0.906	0.878	0.852	0.830	0.810	0.792	0.774	0.759	0.744	0.730	0.716	0.704
850	-	-	-	0.962	0.947	0.910	0.880	0.855	0.832	0.812	0.793	0.776	0.760	0.744	0.730	0.717	0.704
900	-	-	-	0.965	0.953	0.914	0.883	0.857	0.834	0.813	0.794	0.777	0.760	0.745	0.731	0.718	0.705
950	-	-	-	0.969	0.958	0.918	0.886	0.860	0.836	0.815	0.796	0.778	0.761	0.746	0.732	0.718	0.705
1000	-	-	-	0.974	0.959	0.923	0.890	0.862	0.838	0.816	0.797	0.779	0.762	0.747	0.732	0.719	0.706
1050	-	-	-	-	0.960	0.927	0.893	0.864	0.840	0.818	0.798	0.780	0.763	0.748	0.733	0.719	0.707
1100	-	-	-	-	0.962	0.931	0.896	0.867	0.842	0.820	0.800	0.781	0.764	0.749	0.734	0.720	0.707
1150	-	-	-	-	0.964	0.936	0.899	0.870	0.844	0.821	0.801	0.782	0.765	0.749	0.735	0.721	0.708
1200	-	-	-	-	0.966	0.941	0.903	0.872	0.846	0.823	0.802	0.784	0.766	0.750	0.735	0.721	0.708
1250	-	-	-	-	0.969	0.946	0.906	0.875	0.848	0.825	0.804	0.785	0.767	0.751	0.736	0.722	0.709
1300	-	-	-	-	0.973	0.952	0.910	0.878	0.850	0.826	0.805	0.786	0.768	0.752	0.737	0.723	0.709
1350	-	-	-	-	0.977	0.958	0.914	0.880	0.852	0.828	0.807	0.787	0.769	0.753	0.737	0.723	0.710
1400	-	-	-	-	0.982	0.963	0.918	0.883	0.854	0.830	0.808	0.788	0.770	0.754	0.738	0.724	0.710
1450	-	-	-	-	0.987	0.968	0.922	0.886	0.857	0.832	0.809	0.790	0.771	0.754	0.739	0.724	0.711
1500	-	-	-	-	0.993	0.970	0.926	0.889	0.859	0.833	0.811	0.791	0.772	0.755	0.740	0.725	0.711
1550	-	-	-	-	-	0.972	0.930	0.892	0.861	0.835	0.812	0.792	0.773	0.756	0.740	0.726	0.712
1600	-	-	-	-	-	0.973	0.934	0.894	0.863	0.836	0.813	0.792	0.774	0.756	0.740	0.726	0.712
1650	-	-	-	-	-	0.973	0.936	0.895	0.863	0.836	0.812	0.791	0.772	0.755	0.739	0.724	0.710
1700	-	-	-	-	-	0.973	0.938	0.895	0.863	0.835	0.811	0.790	0.771	0.754	0.738	0.723	0.709
1750	-	-	-	-	-	0.974	0.940	0.896	0.862	0.835	0.810	0.789	0.770	0.752	0.736	0.721	0.707
1800	-	-	-	-	-	0.975	0.942	0.897	0.862	0.834	0.810	0.788	0.768	0.751	0.735	0.720	0.705
1850	-	-	-	-	-	0.976	0.944	0.897	0.862	0.833	0.809	0.787	0.767	0.749	0.733	0.718	0.704
1900	-	-	-	-	-	0.977	0.946	0.898	0.862	0.832	0.807	0.785	0.766	0.748	0.731	0.716	0.702
1950	-	-	-	-	-	0.979	0.949	0.898	0.861	0.832	0.806	0.784	0.764	0.746	0.729	0.714	0.700
2000	-	-	-	-	-	0.982	0.952	0.899	0.861	0.831	0.805	0.782	0.762	0.744	0.728	0.712	0.698
2050	-	-	-	-	-	0.985	0.954	0.899	0.860	0.830	0.804	0.781	0.761	0.742	0.726	0.710	0.696
2100	-	-	-	-	-	0.988	0.956	0.900	0.860	0.828	0.802	0.779	0.759	0.740	0.724	0.708	0.694
2150	-	-	-	-	-	-	0.956	0.900	0.859	0.827	0.801	0.778	0.757	0.738	0.722	0.706	0.692
2200	-	-	-	-	-	-	0.955	0.901	0.859	0.826	0.799	0.776	0.755	0.736	0.720	0.704	0.690
2250	-	-	-	-	-	-	0.954	0.901	0.858	0.825	0.797	0.774	0.753	0.734	0.717	0.702	0.687
2300	-	-	-	-	-	-	0.953	0.901	0.857	0.823	0.795	0.772	0.751	0.732	0.715	0.699	0.685
2350	-	-	-	-	-	-	0.952	0.902	0.856	0.822	0.794	0.769	0.748	0.729	0.712	0.697	0.682
2400	-	-	-	-	-	-	0.952	0.902	0.855	0.820	0.791	0.767	0.746	0.727	0.710	0.694	0.679
2450	-	-	-	-	-	-	0.951	0.902	0.854	0.818	0.789	0.765	0.743	0.724	0.707	0.691	0.677
2500	-	-	-	-	-	-	0.951	0.902	0.852	0.816	0.787	0.762	0.740	0.721	0.704	0.688	0.674
2550	-	-	-	-	-	-	0.951	0.902	0.851	0.814	0.784	0.759	0.738	0.718	0.701	0.685	0.671
2600	-	-	-	-	-	-	0.951	0.903	0.849	0.812	0.782	0.756	0.735	0.715	0.698	0.682	0.664
2650	-	-	-	-	-	-	0.952	0.903	0.848	0.809	0.779	0.754	0.731	0.712	0.695	0.679	0.664
2700	-	-	-	-	-	-	0.952	0.903	0.846	0.807	0.776	0.750	0.728	0.708	0.691	0.675	0.661
2750	-	-	-	-	-	-	0.953	0.903	0.844	0.804	0.773	0.747	0.724	0.705	0.687	0.671	0.657
2800	-	-	-	-	-	-	0.956	0.903	0.842	0.801	0.769	0.743	0.721	0.701	0.684	0.668	0.653
2850	-	-	-	-	-	-	0.959	0.902	0.839	0.798	0.766	0.739	0.717	0.697	0.679	0.663	0.649
2900	-	-	-	-	-	-	0.963	0.902	0.836	0.794	0.762	0.735	0.713	0.693	0.675	0.659	0.645
2950	-	-	-	-	-	-	-	0.902	0.834	0.790	0.758	0.731	0.708	0.688	0.671	0.655	0.640
3000	-	-	-	-	-	-	-	0.901	0.831	0.786	0.753	0.726	0.704	0.684	0.666	0.650	0.635
3050	-	-	-	-	-	-	-	0.899	0.827	0.782	0.749	0.722	0.699	0.679	0.661	0.645	0.630
3100	-	-	-	-	-	-	-	0.896	0.823	0.777	0.744	0.716	0.693	0.673	0.656	0.640	0.625
3150	-	-	-	-	-	-	-	0.894	0.819	0.772	0.738	0.711	0.688	0.668	0.650	0.634	0.620
3200	-	-	-	-	-	-	-	0.889	0.815	0.767	0.733	0.705	0.682	0.662	0.644	0.628	0.614

Hydrostatic Test Plugs

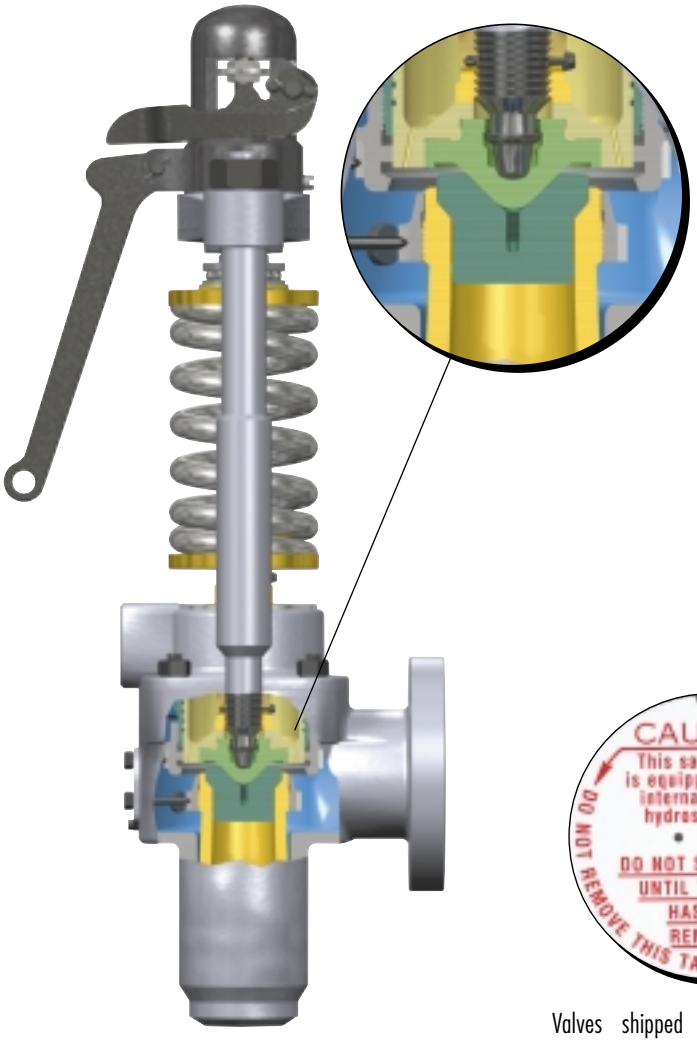
For buttweld inlet valves shipped, hydrostatic test plugs are normally installed to increase "set point" approximately 1.5 times the valve set pressure for hydrostatic testing. It is strongly recommended that hydrostatic test plugs be used, in conjunction with proper gag and gagging procedure, during hydrostatic testing to avoid valve component damage.

For flanged inlet valves shipped, hydrostatic test plugs are not normally installed. It is suggested that the valve not be installed until after the unit hydrostatic test has been performed utilizing "blind" flanges to blank-off the unit nozzles.

Note 1: Hydrostatic plugs may be added or deleted upon specific request.
Note 2: Consult maintenance manual for hydrostatic test and gag procedures.

1700

Inlet Type	Hydrostatic Test Plugs (Note 1) Installed Before Shipping
Flanged Inlet	No
Buttweld Inlet	Yes



1700

Valves shipped with hydroplug are identified by a Red on White Caution Tag which is attached to the valve by wires extending through the drain hole in the valve body.

2700
Safety Valves

Consolidated®

CONSOLIDATED Type 2700 safety valve is designed to meet the fast growing co-generation and waste-to-energy markets.

Table of Contents

2700

INLET SIZES — 1-1/2" through 6" in either flanged or weld neck design.

INLET RATINGS — ANSI Class 600, 900 & 1500

OUTLET SIZES — 3" through 8" flanged

OUTLET RATINGS — ANSI Class 150 and 300

ORIFICE SIZES — Seven sizes: 1 through Q

TEMPERATURE RANGE — -20°F to 1050°F

MATERIALS — Alloy and carbon steel cast body with stainless steel trim is standard. Special alloys are available for specific applications.

CERTIFICATION — ASME B&PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 25% of Set Pressure

Flanged Inlet - Class 600 Type 27_5

Inlet (Note 2)		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1050°F (566°C)	in^2	cm^2	
1-1/2"	600	3"	150	2715B	2715D	.994	6.413	1
2"	600	3"	150	2725B	2725D	1.431	9.232	2
2-1/2"	600	6"	150	2735B	2735D	2.545	16.420	3
3"	600	6"	150	2755B	2755D	3.341	21.555	5
3"	600	6"	150	2745B	2745D	3.976	25.652	4
4"	600	6"	150	2765B	2765D	7.070	45.613	6
6"	600	8"	150	2775QB	2775QD	12.250	79.032	Q

Flanged Inlet (Studded) - Class 600 Type 27_5

Inlet (Note 2)		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1050°F (566°C)	in^2	cm^2	
1-1/4"	600	3"	150	2715B	2715D	.994	6.413	1
1-1/2"	600	3"	150	2725B	2725D	1.431	9.232	2
2"	600	6"	150	2735B	2735D	2.545	16.420	3
2-1/2"	600	6"	150	2755B	2755D	3.341	21.555	5

Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available with ANSI B16.5 inlet flange facings. See page GI.22 for selections.

Flanged Inlet - Class 900 Type 27_6

Inlet (Note 2)		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1050°F (566°C)	in^2	cm^2	
1-1/2"	900	3"	150	2716B	2716D	.994	6.413	1
2"	900	3"	150	2726B	2726D	1.431	9.232	2
2-1/2"	900	6"	150	2736B	2736D	2.545	16.420	3
3"	900	6"	150	2756B	2756D	3.341	21.555	5
3"	900	6"	150	2746B	2746D	3.976	25.652	4
4"	900	6"	150	2766B	2766D	7.070	45.613	6
6"	900	8"	150	2776QB	2776QD	12.250	79.032	Q

Flanged Inlet (Studded) - Class 900 Type 27_6

Inlet (Note 2)		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1050°F (566°C)	in^2	cm^2	
1-1/4"	900	3"	150	2716B	2716D	.994	6.413	1
1-1/2"	900	3"	150	2726B	2726D	1.431	9.232	2
2"	900	6"	150	2736B	2736D	2.545	16.420	3
2-1/2"	900	6"	150	2756B	2756D	3.341	21.555	5

Flanged Inlet - Class 1500 Type 27_7

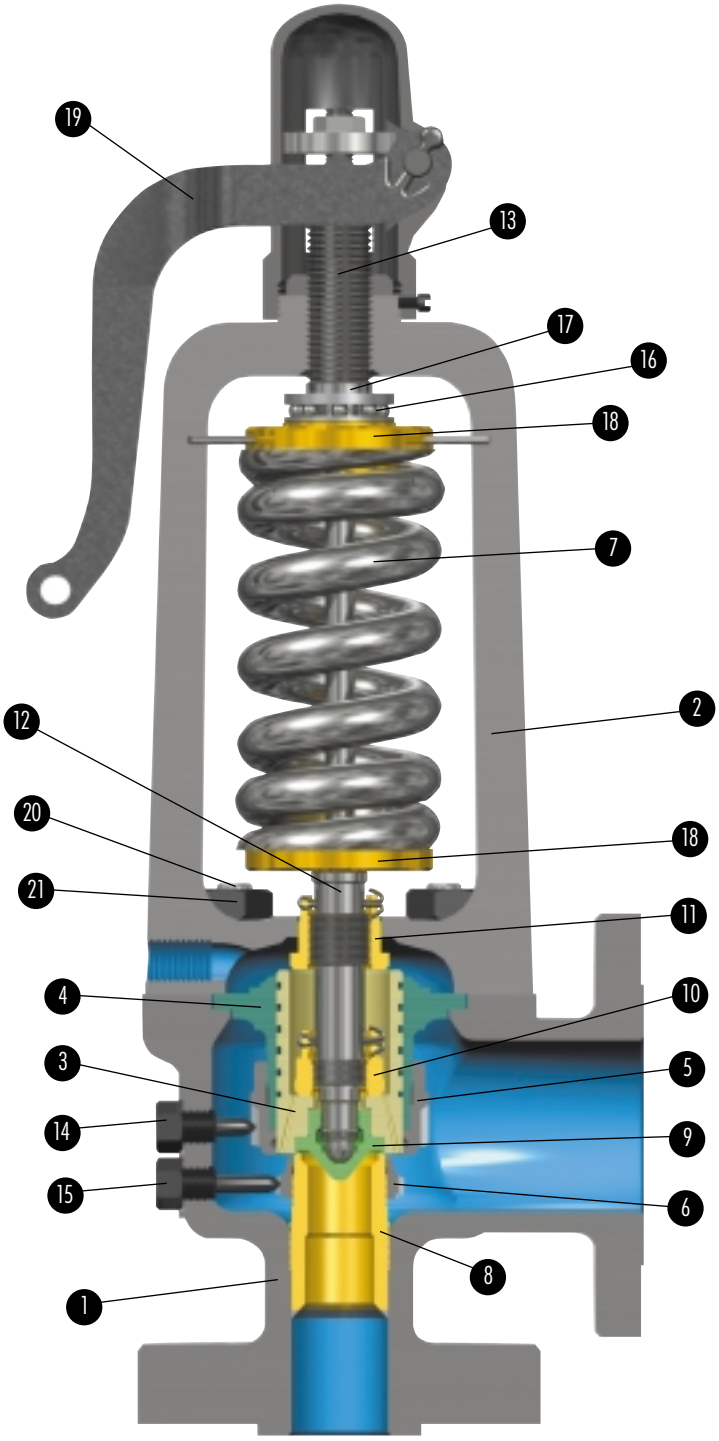
Inlet (Note 2)		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1050°F (566°C)	in^2	cm^2	
1-1/2"	1500	3"	150	2717B	2717D	.994	6.413	1
2"	1500	3"	150	2727B	2727D	1.431	9.232	2
2-1/2"	1500	6"	150	2737B	2737D	2.545	16.420	3
3"	1500	6"	150	2757B	2757D	3.341	21.555	5
3"	1500	6"	150	2747B	2747D	3.976	25.652	4
4"	1500	6"	150	2767B	2767D	7.070	45.613	6
6"	1500	8"	150	2777QB	2777QD	12.250	79.032	Q

Welded Inlet - Class 1500 Type 27_7

Inlet Buttweld		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1050°F (566°C)	in^2	cm^2	
1-1/2"	1500	3"	150	2717WB	2717WD	.994	6.413	1
2"	1500	3"	150	2727WB	2727WD	1.431	9.232	2
2-1/2"	1500	6"	150	2737WB	2737WD	2.545	16.420	3
3"	1500	6"	150	2757WB	2757WD	3.341	21.555	5
3"	1500	6"	150	2747WB	2747WD	3.976	25.652	4
4"	1500	6"	150	2767WB	2767WD	7.070	45.613	6
6"	1500	8"	150	2777QWB	2777QWD	12.250	79.032	Q

Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available with ANSI B16.5 inlet flange facings. See page GI.22 for selections.

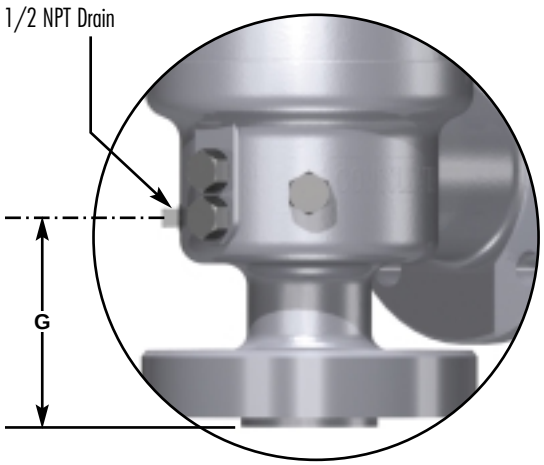
Buttweld Inlet

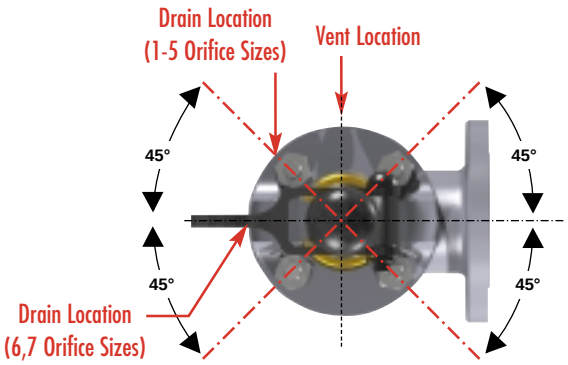


Flanged Inlet

Ref. No.	Part	Material
1	Body	
	2700B - Flanged	ASME SA217 WC6
	2700D - Flanged	ASME SA217 WC6
	2700B - Buttweld	ASME SA216 WCC
	2700D - Buttweld	ASME SA217 WC6
2	Yoke	ASME SA216 WCC
3	Disc Holder	
	2700B	Leaded Nickel Silver
	2700D	Monel
4	Guide	
	2700B	Leaded Nickel Silver
	2700D	Monel
5	Upper Adjusting Ring	Stainless Steel
6	Lower Adjusting Ring	Stainless Steel
7	Spring	Alloy Steel
8	Seat Bushing	Stainless Steel
9	Disc	Inconel
10	Disc Collar	Stainless Steel
11	Lift Stop	Stainless Steel
12	Spindle	Stainless Steel
13	Compression Screw	Silicone Brass
14	Upper Adjusting Ring Pin	Stainless Steel
15	Lower Adjusting Ring Pin	Stainless Steel
16	Thrust Bearing	Steel
17	Compression Screw	
	Adaptor (orifice 5 through Q only)	Stainless Steel
18	Spring Washer	Carbon Steel
19	Lifting Gear	Malleable Iron
20	Studs	B7 Alloy Steel
21	Nuts	2H Steel

Notes:
1. When using the EVT-I or the hydroset device 15" clearance is required.
2. When using the EVT-II 17" clearance is required. When using the assisted closing device an additional 8" clearance is required.



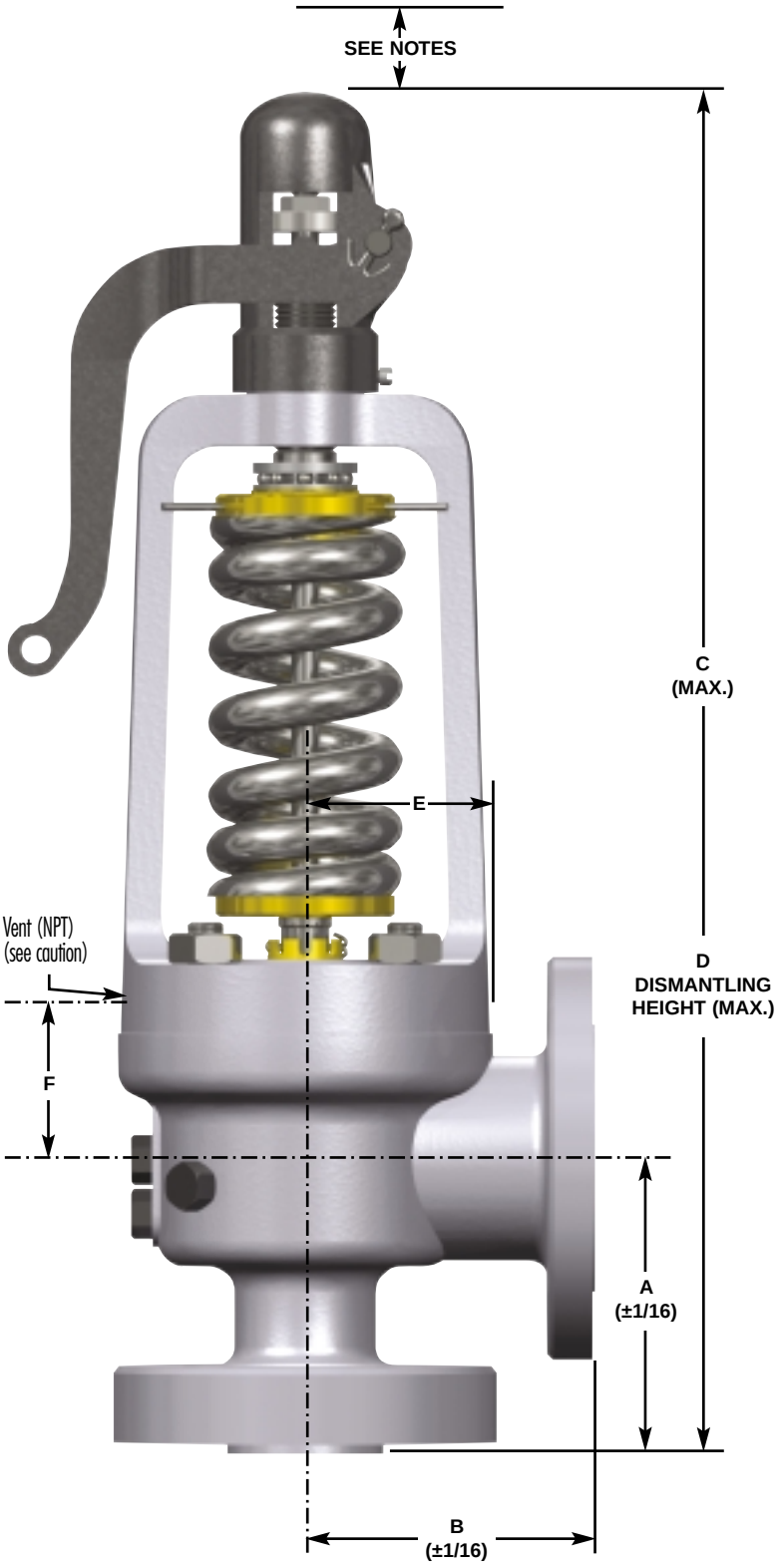


Cap and lever may be rotated horizontally 45° to either side of outlet centerline.

CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

For lever clearance dimensions see page 2700.17 and 2700.18.



600 Class Flanged Inlet

Size & Type	All Temperature Classes							Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.		
1-1/2" 2715	5-1/4	5-1/4	24-3/8	28-1/4	3-3/8	2-15/16	4-3/16	1/2	85
2" 2725	5-1/4	5-1/2	27-1/4	31-1/8	3-3/8	3-13/16	4-3/16	1/2	113
2-1/2" 2735	7-1/4	7	32-1/2	38-1/4	4-1/8	4-5/16	5-3/16	1/2	208
3" 2755	7-3/8	7-1/2	39-7/8	46-1/2	5-1/4	5-1/16	4-13/16	3/4	336
3" 2745	7-3/8	7-1/2	39-7/8	46-1/2	5-1/4	5-1/16	4-13/16	3/4	336
4" 2765	7-7/8	9	44-1/2	51-1/4	6-1/2	5-3/4	5-5/16	1	441
6" 2775Q	10-5/8	10-1/2	53-3/8	61-1/8	8-1/8	6-13/16	7-3/16	1	528

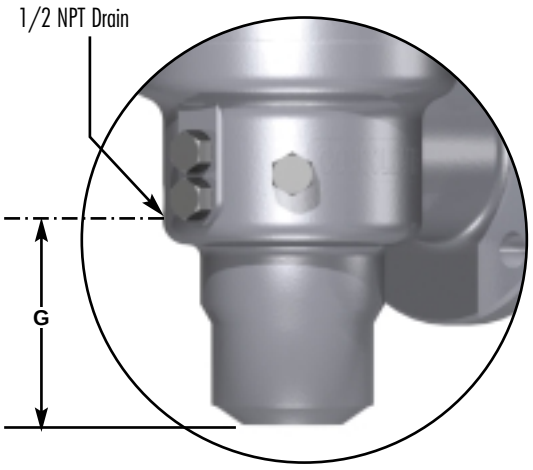
900 Class Flanged Inlet

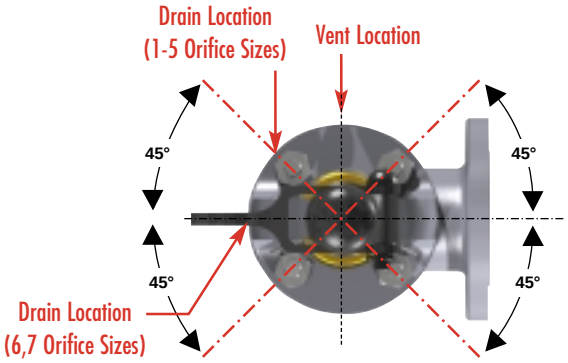
Size & Type	All Temperature Classes							Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.		
1-1/2" 2716	5-1/2	5-1/4	24-5/8	28-1/2	3-3/8	2-15/16	4-7/16	1/2	87
2" 2726	5-3/4	5-1/2	27-3/4	31-5/8	3-3/8	3-13/16	4-11/16	1/2	126
2-1/2" 2736	7-3/4	7	33	38-3/4	4-1/8	4-5/16	5-11/16	1/2	225
3" 2756	7-5/8	7-1/2	40-1/8	46-3/4	5-1/4	5-1/16	5-1/16	3/4	347
3" 2746	7-5/8	7-1/2	40-1/8	46-3/4	5-1/4	5-1/16	5-1/16	3/4	347
4" 2766	8-1/8	9	44-3/4	51-1/2	6-1/2	5-3/4	5-9/16	1	450
6" 2776Q	11	10-1/2	53-3/4	61-1/2	8-1/8	6-13/16	7-9/16	1	576

1500 Class Flanged Inlet

Size & Type	All Temperature Classes							Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.		
1-1/2" 2717	5-1/2	5-1/4	24-5/8	28-1/2	3-3/8	2-15/16	4-7/16	1/2	87
2" 2727	5-3/4	5-1/2	27-3/4	31-5/8	3-3/8	3-13/16	4-11/16	1/2	126
2-1/2" 2737	7-3/4	7	33	38-3/4	4-1/8	4-5/16	5-11/16	3/4	225
3" 2757	8	7-1/2	40-1/2	47-1/8	5-1/4	5-1/16	5-7/16	3/4	360
3" 2747	8	7-1/2	40-1/2	47-1/8	5-1/4	5-1/16	5-7/16	3/4	360
4" 2767	8-1/2	9	45-1/8	51-7/2	6-1/2	5-3/4	5-15/16	1	470
6" 2777Q	12	10-1/2	54-3/4	62-1/2	8-1/8	6-13/16	8-9/16	1	631

Notes:
1. When using the EVT-I or the hydroset device 15" clearance is required.
2. When using the EVT-II 17" clearance is required. When using the assisted closing device, an additional 8" clearance is required.



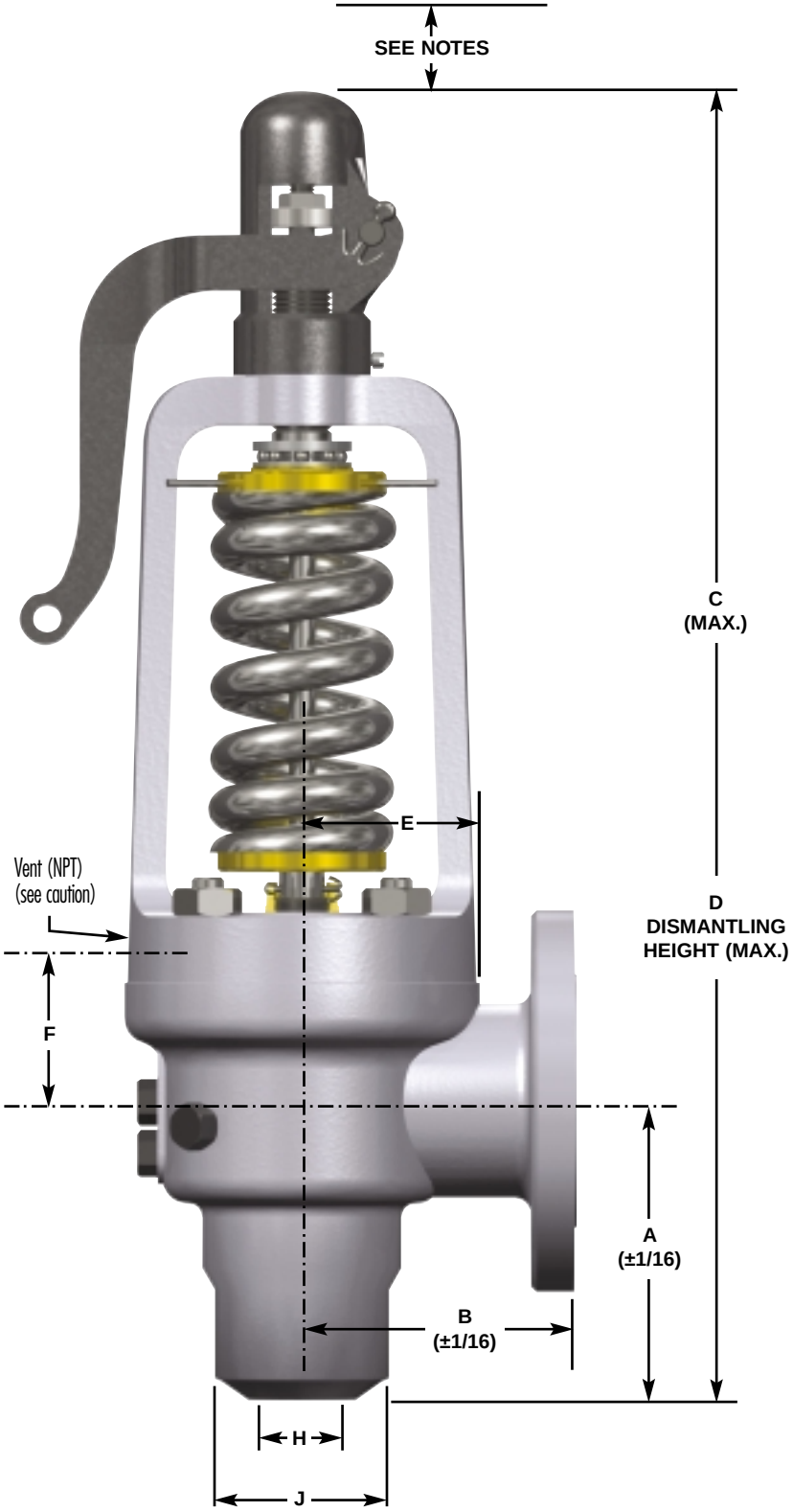


Cap and lever may be rotated horizontally 45° to either side of outlet centerline.

CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

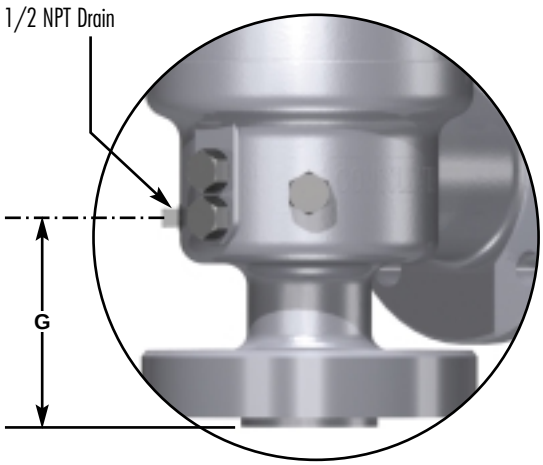
For lever clearance dimensions see page 2700.17 and 2700.18.

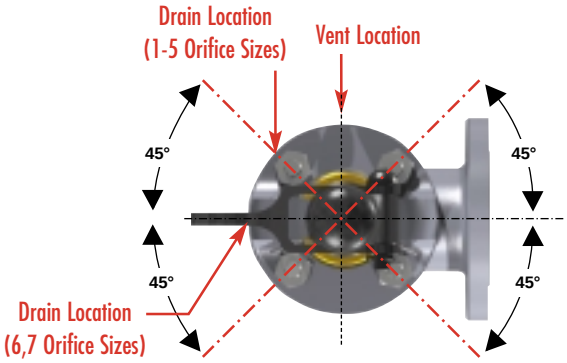


1500 Class Welded Inlet

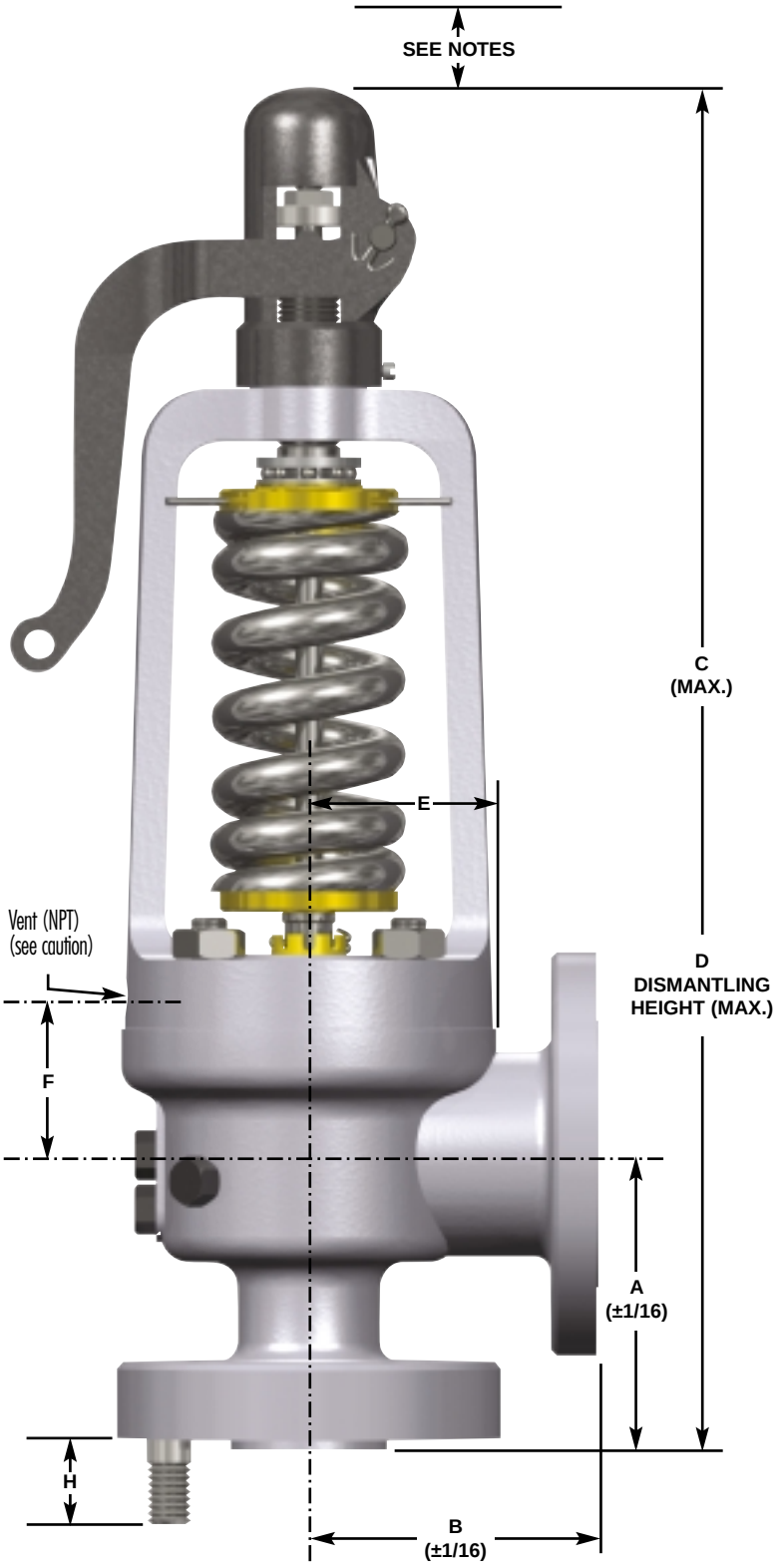
Size & Type	All Temperature Classes									Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.	J in.		
1-1/2" 2717W	5-3/4	5-1/4	24-7/8	28-3/4	3-3/8	2-15/16	4-11/16	1-1/2	3-3/8	1/2	87
2" 2727W	5-3/4	5-1/2	27-3/4	31-5/8	3-3/8	3-13/16	4-11/16	2	4	1/2	126
2-1/2" 2737W	8	7	33-1/4	39	4-1/8	4-5/16	5-15/16	2-1/2	4-3/4	1/2	225
3" 2757W	9	7-1/2	41-1/2	48-1/8	5-1/4	5-1/16	6-7/16	3	5-3/8	3/4	347
3" 2747W	9	7-1/2	41-1/2	48-1/8	5-1/4	5-1/16	6-7/16	3	5-5/8	3/4	347
4" 2767W	10	9	46-5/8	53-3/8	6-1/2	5-3/4	7-7/16	4	7	1	450
6" 2777QW	12	10-1/2	54-3/4	62-1/2	8-1/8	6-13/16	8-9/16	6	8-1/2	1	576

Notes:
1. When using the EVT-I or the hydroset device 15" clearance is required.
2. When using the EVT-II 17" clearance is required. When using the assisted closing device, an additional 8" clearance is required.





Cap and lever may be rotated horizontally 45° to either side of outlet centerline.



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

For lever clearance dimensions see page 2700.17 and 2700.18.

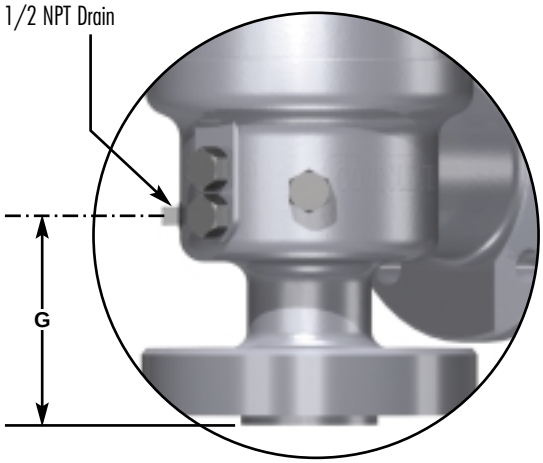
600 Class Alternate Studded Inlet

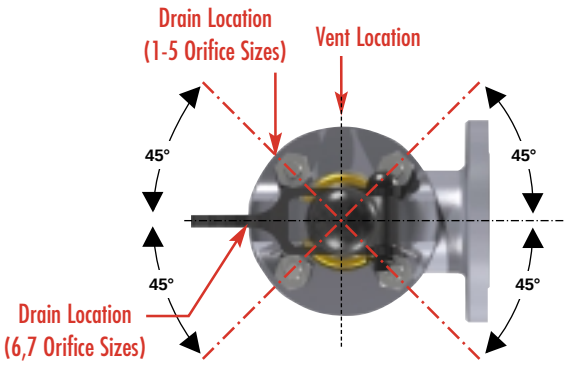
Size & Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.		
1-1/4" 2715	5-1/4	5-1/4	24-3/8	28-1/4	3-3/8	2-15/16	4-3/16	2-1/8	1/2	82
1-1/2" 2725	5-1/4	5-1/2	27-1/4	31-1/8	3-3/8	3-13/16	4-3/16	2-1/2	1/2	108
2" 2735	7-1/4	7	32-1/2	38-1/4	4-1/8	4-5/16	5-3/16	2-3/8	1/2	201
2-1/2" 2755	7-3/8	7-1/2	39-7/8	46-1/2	5-1/4	5-1/16	4-13/16	2-1/2	1/2	348

900 Class Alternate Studded Inlet

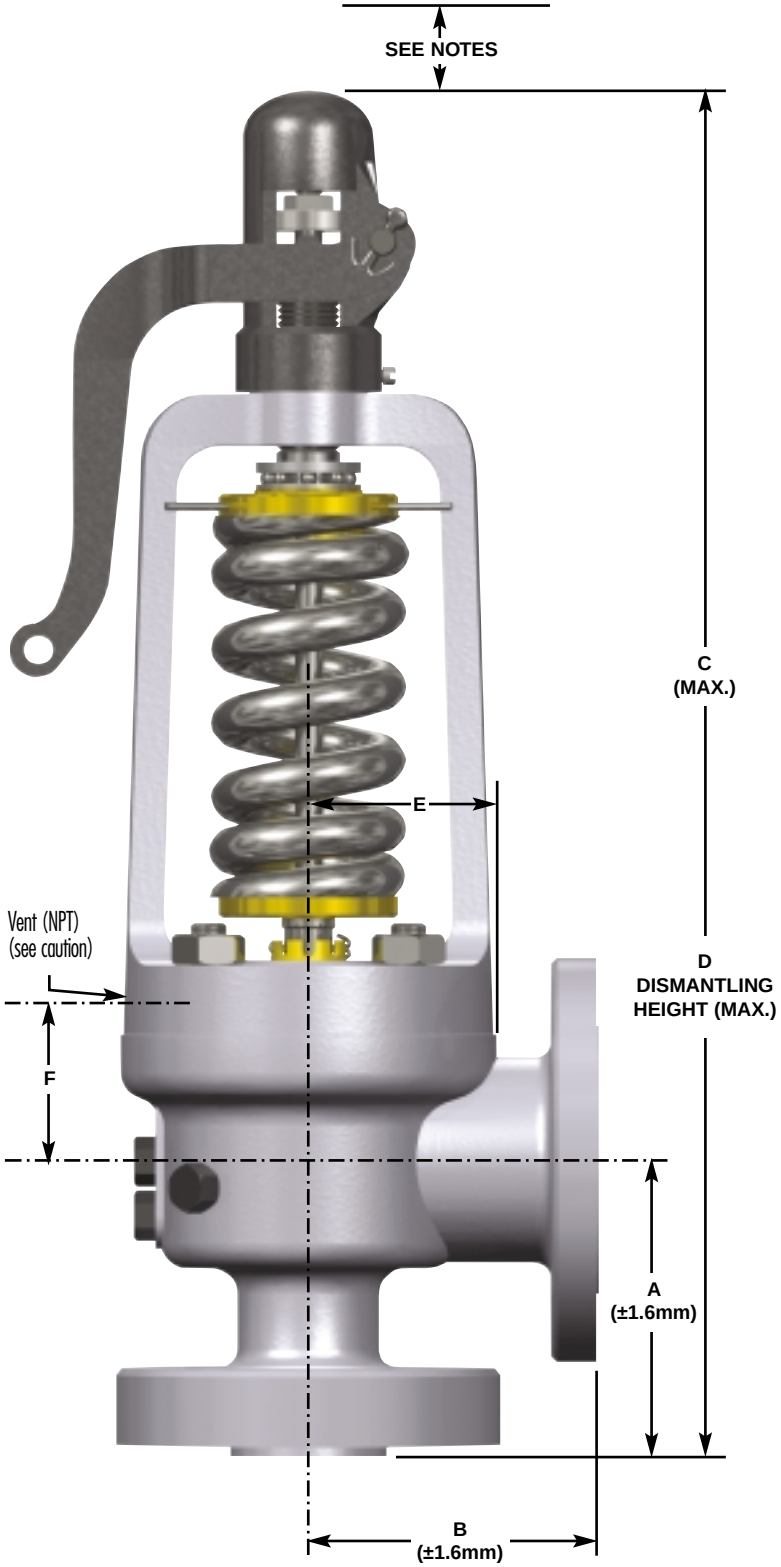
Size & Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight lbs.
	A in.	B in.	C in.	D in.	E in.	F in.	G in.	H in.		
1-1/4" 2716	5-1/2	5-1/4	24-5/8	28-1/2	3-3/8	2-15/16	4-7/16	2-3/4	1/2	82
1-1/2" 2726	5-3/4	5-1/2	27-3/4	31-5/8	3-3/8	3-13/16	4-9/16	2-7/8	1/2	108
2" 2736	7-3/4	7	33	38-3/4	4-1/8	4-5/16	5-11/16	3-1/8	1/2	201
2-1/2" 2756	7-5/8	7-1/2	40-1/8	46-3/4	5-1/4	5-1/16	5-1/16	3-1/8	1/2	348

Notes:
1. When using the EVT-I or the hydroset device 381mm clearance is required.
2. When using the EVT-II 432mm clearance is required. When using the assisted closing device, an additional 203mm clearance is required.





Cap and lever may be rotated horizontally 45° to either side of outlet centerline.



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

For lever clearance dimensions see page 2700.17 and 2700.18.

600 Class Flanged Inlet

Size & Type	All Temperature Classes							Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm		
1-1/2" 2715	133.4	133.4	619.1	717.6	85.7	74.6	106.4	1/2	39
2" 2725	133.4	139.7	692.2	790.6	85.7	96.8	106.4	1/2	51
2-1/2" 2735	184.2	177.8	825.5	971.6	104.8	109.5	131.8	1/2	95
3" 2755	187.3	190.5	1012.8	1181.1	133.4	128.6	122.2	3/4	153
3" 2745	187.3	190.5	1012.8	1181.1	133.4	128.6	122.2	3/4	153
4" 2765	200.0	228.6	1130.3	1301.8	165.1	146.1	134.9	1	201
6" 2775Q	269.9	266.7	1355.7	1552.6	206.4	173.0	182.6	1	240

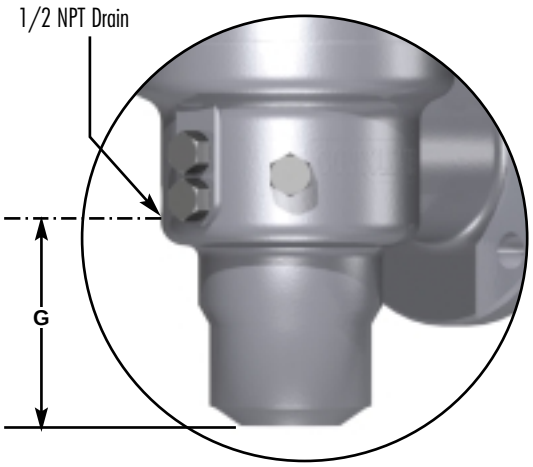
900 Class Flanged Inlet

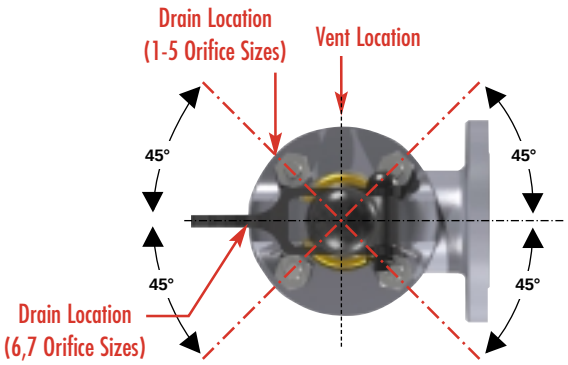
Size & Type	All Temperature Classes							Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm		
1-1/2" 2716	139.7	133.4	625.5	723.9	85.7	74.6	112.7	1/2	40
2" 2726	146.1	139.7	704.9	803.3	85.7	96.8	119.1	1/2	58
2-1/2" 2736	196.9	177.8	838.2	984.3	104.8	109.5	144.5	1/2	102
3" 2756	193.7	190.5	1019.2	1187.5	133.4	128.6	128.6	3/4	158
3" 2746	193.7	190.5	1019.2	1187.5	133.4	128.6	128.6	3/4	158
4" 2766	206.4	228.6	1136.7	1308.1	165.1	146.1	141.3	1	204
6" 2776Q	279.4	266.7	1365.3	1562.1	206.4	173.0	192.1	1	261

1500 Class Flanged Inlet

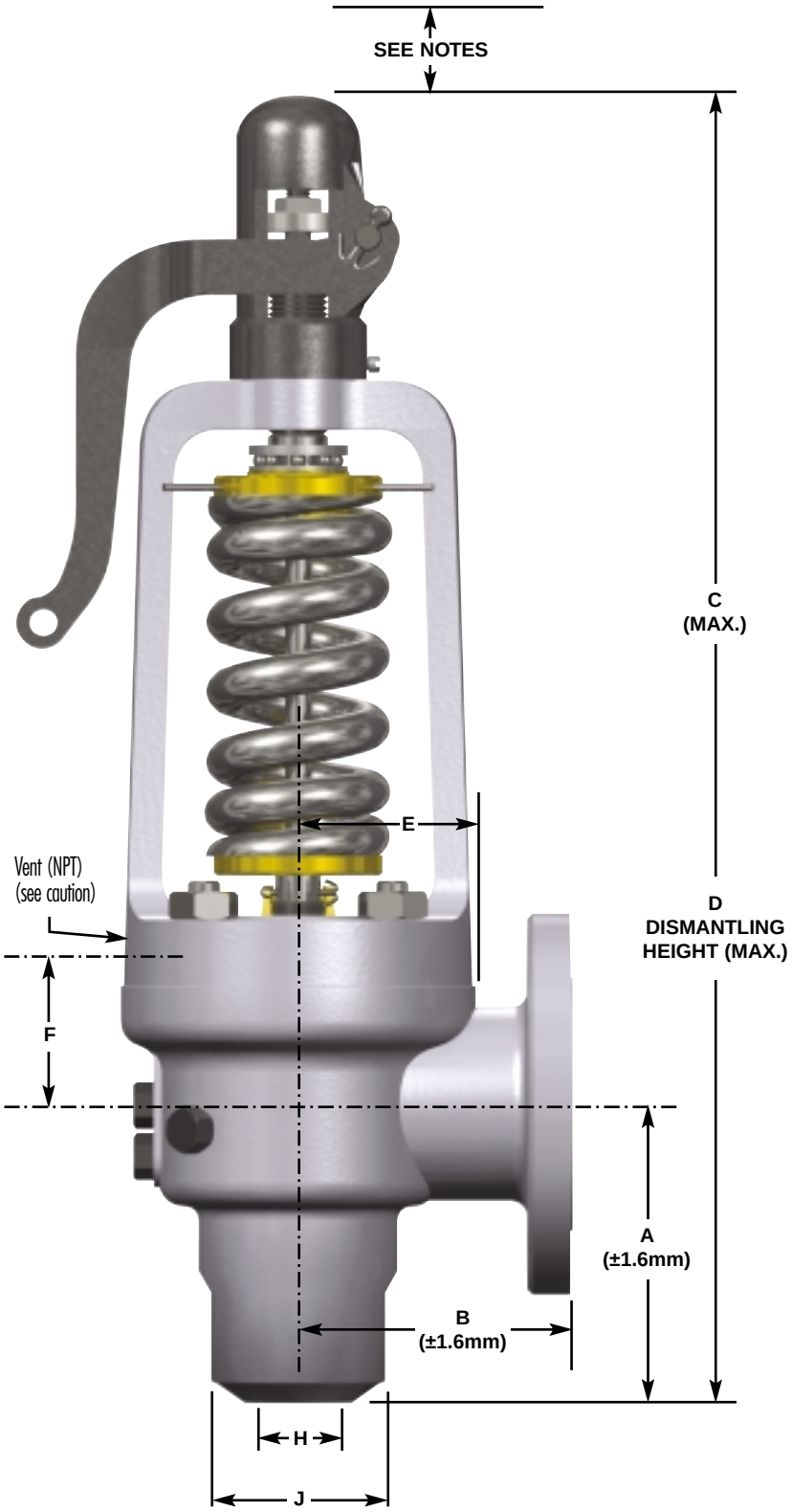
Size & Type	All Temperature Classes							Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm		
1-1/2" 2717	139.7	133.4	625.5	723.9	85.7	74.6	112.7	1/2	40
2" 2727	146.1	139.7	704.9	803.3	85.7	96.8	119.1	1/2	58
2-1/2" 2737	196.9	177.8	838.2	984.3	104.8	109.5	144.5	3/4	102
3" 2757	203.2	190.5	1028.7	1197.0	133.4	128.6	138.1	3/4	163
3" 2747	203.2	190.5	1028.7	1197.0	133.4	128.6	138.1	3/4	163
4" 2767	215.9	228.6	1146.2	1317.6	165.1	146.1	150.8	1	214
6" 2777Q	304.8	266.7	1390.7	1587.5	206.4	173.0	217.5	1	287

Notes:
1. When using the EVT-I or the hydroset device 381mm clearance is required.
2. When using the EVT-II 432mm clearance is required. When using the assisted closing device, an additional 203mm clearance is required.





Cap and lever may be rotated horizontally 45° to either side of outlet centerline.



CAUTION

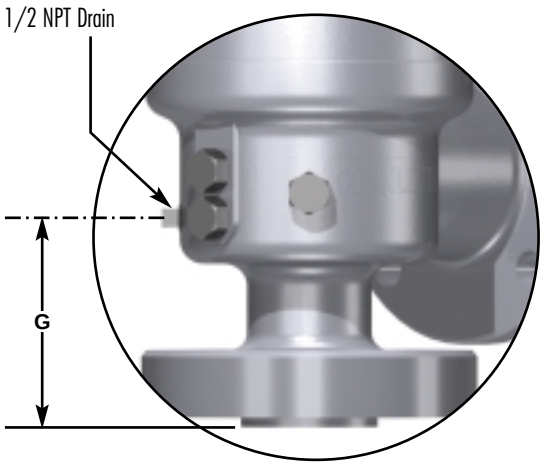
Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

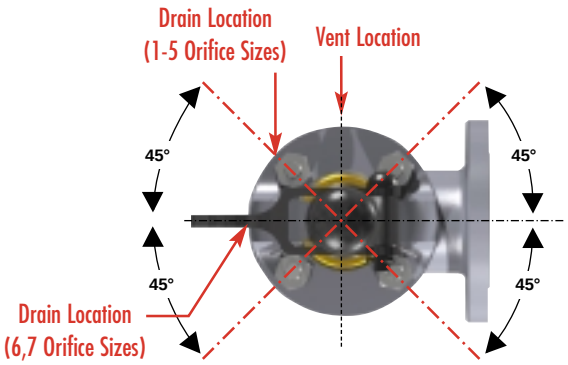
For lever clearance dimensions see page 2700.17 and 2700.18.

1500 Class Welded Inlet

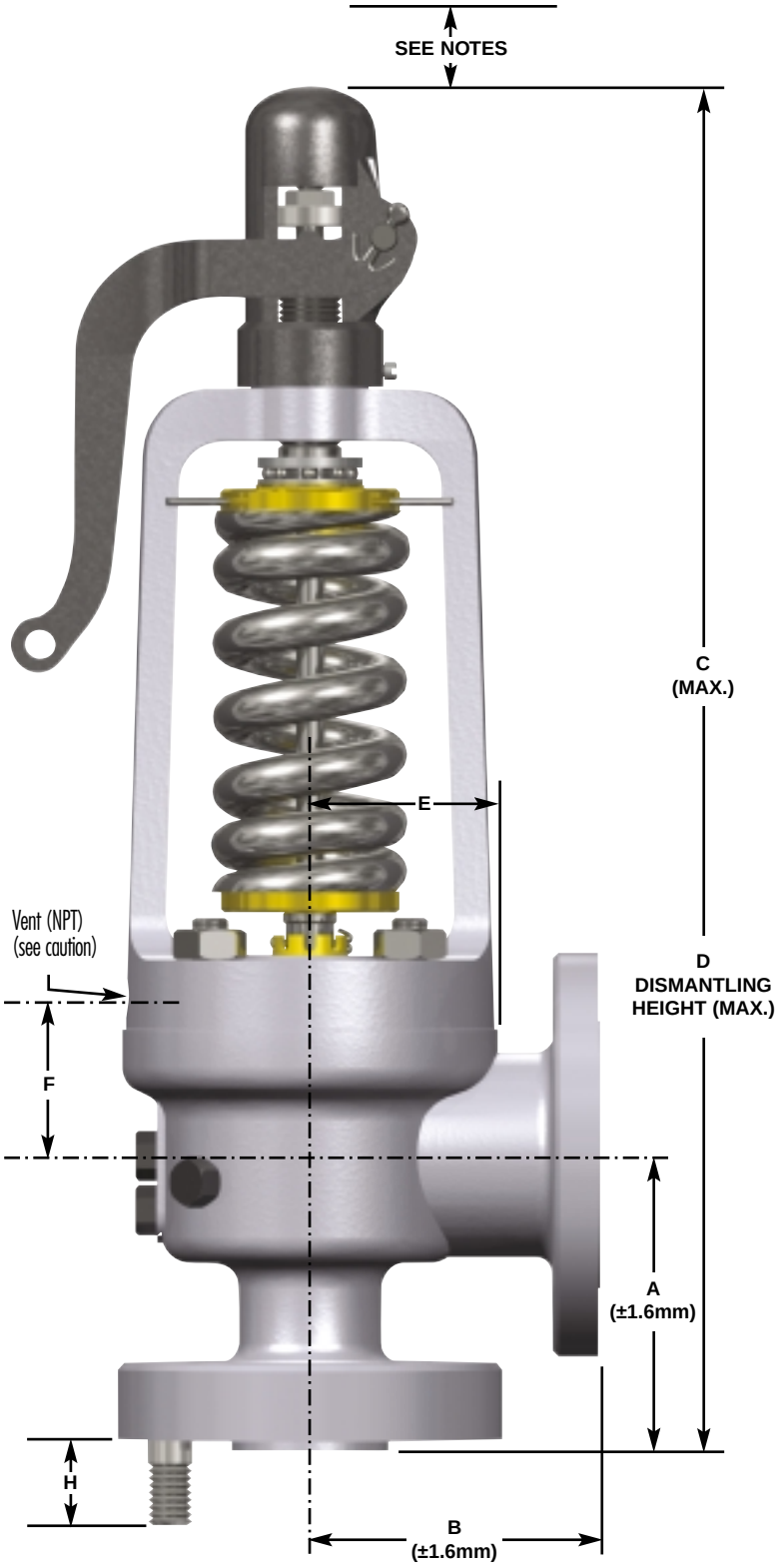
Size & Type	All Temperature Classes									Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	J mm		
1-1/2" 2717W	146.1	133.4	631.8	730.3	85.7	74.6	119.1	38.1	85.7	1/2	40
2" 2727W	146.1	139.7	704.9	803.3	85.7	96.8	119.1	50.8	101.6	1/2	58
2-1/2" 2737W	203.2	177.8	844.6	990.6	104.8	109.5	150.8	63.5	120.7	1/2	102
3" 2757W	228.6	190.5	1054.1	1222.4	133.4	128.6	163.5	76.2	136.5	3/4	158
3" 2747W	228.6	190.5	1054.1	1222.4	133.4	128.6	163.5	76.2	142.9	3/4	158
4" 2767W	254.0	228.6	1184.3	1355.7	165.1	146.1	188.9	101.6	177.8	1	204
6" 2777QW	304.8	266.7	1390.7	1587.5	206.4	173.0	242.9	152.4	215.9	1	261

Notes:
1. When using the EVT-I or the hydroset device 381mm clearance is required.
2. When using the EVT-II 432 mm clearance is required. When using the assisted closing device, an additional 203 mm clearance is required.





Cap and lever may be rotated horizontally 45° to either side of outlet centerline.



CAUTION

Steam flow will occur through the coverplate vent when the valve is in the open position. Do not plug. Pipe to safe location. Refer to maintenance manual for instructions.

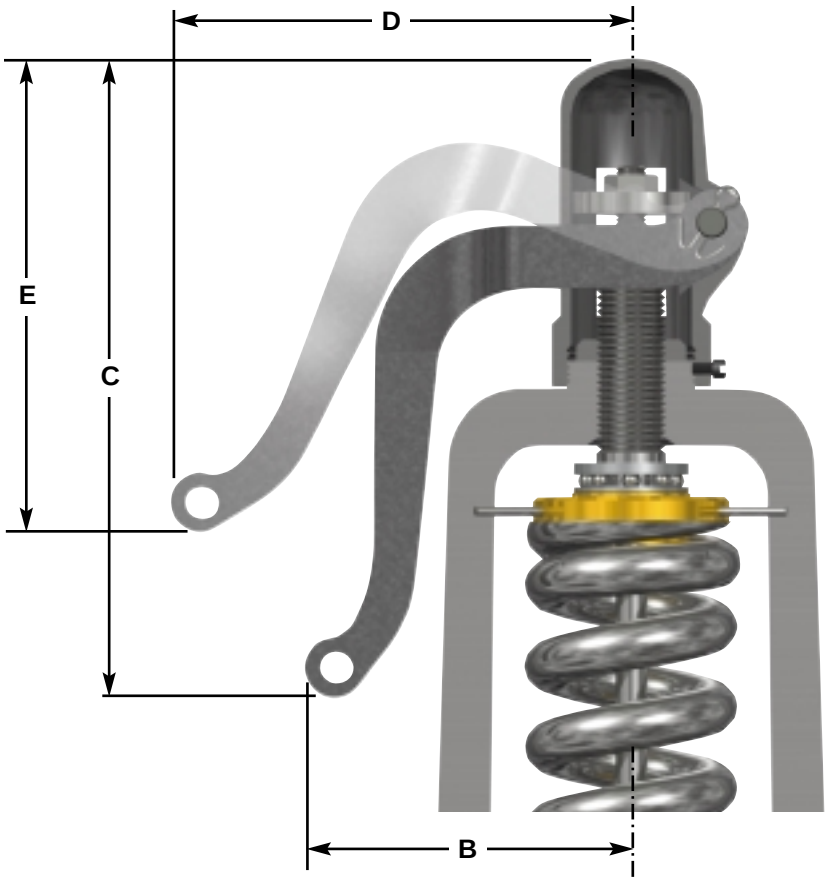
For lever clearance dimensions see page 2700.17 and 2700.18.

600 Class Alternate Studded Inlet

Size & Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm		
1-1/4" 2715	133.4	133.4	619.1	717.6	85.7	74.6	106.4	54.0	1/2	37
1-1/2" 2725	133.4	139.7	692.2	790.6	85.7	96.8	106.4	63.5	1/2	50
2" 2735	184.2	177.8	825.5	971.6	104.8	109.5	131.8	60.3	1/2	92
2-1/2" 2755	187.3	190.5	1012.8	1181.1	133.4	128.6	122.2	63.5	1/2	160

900 Class Alternate Studded Inlet

Size & Type	All Temperature Classes								Vent NPT (see caution)	Approx. Weight kg
	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm		
1-1/4" 2716	139.7	133.4	625.7	724.1	85.7	74.6	112.8	69.9	1/2	37
1-1/2" 2726	146.1	139.7	705.1	803.6	85.7	96.8	115.9	73.1	1/2	50
2" 2736	196.9	177.8	838.5	984.6	104.8	109.5	144.5	79.4	1/2	92
2-1/2" 2756	193.7	190.5	1019.5	1187.9	133.4	128.6	128.6	79.4	1/2	160


D
E
C
B

Lever Clearance Dimensions

Size & Type	All Temperature Classes			
	B in.	C in.	D in.	E in.
1-1/2" 2715 1-1/2" 2716 1-1/2" 2717	5-7/8	10-3/4	6-5/8	10-1/16
2" 2725 2" 2726 2" 2727	5-7/8	10-3/4	6-5/8	10-1/16
2-1/2" 2735 2-1/2" 2736 2-1/2" 2737	5-7/8	16-1/8	12-3/8	11-1/2
3" 2755 3" 2756 3" 2757	8-5/16	23-3/4	14-9/16	20
3" 2745 3" 2746 3" 2747	8-5/16	23-3/4	14-9/16	20
4" 2765 4" 2766 4" 2767	8-5/16	23-3/4	14-9/16	20
6" 2775Q 6" 2776Q 6" 2777Q	8-5/16	29	14-9/16	22

Lever Clearance Dimensions

Size & Type	All Temperature Classes			
	B mm	C mm	D mm	E mm
1-1/2" 2715 1-1/2" 2716 1-1/2" 2717	149.2	273.1	168.3	255.6
2" 2725 2" 2726 2" 2727	149.2	273.1	168.3	255.6
2-1/2" 2735 2-1/2" 2736 2-1/2" 2737	149.2	409.6	314.3	292.1
3" 2755 3" 2756 3" 2757	211.1	603.3	369.9	508.0
3" 2745 3" 2746 3" 2747	211.1	603.3	369.9	508.0
4" 2765 4" 2766 4" 2767	211.1	603.3	369.9	508.0
6" 2775Q 6" 2776Q 6" 2777Q	211.1	736.6	369.9	558.8

Set pressure limits (psig) for 2700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

600 Pressure class

Temperature Class			B	B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Valve Type	Inlet CL_600	Outlet Flange	100-300°F	350°F	400°F	450°F	500°F	550°F	600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1050°F
2715	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2725	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2735	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2755	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2745	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2765	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2775Q	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290

900 Pressure Class

Temperature Class			B	B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Valve Type	Inlet CL_900	Outlet Flange	100-300°F	350°F	400°F	450°F	500°F	550°F	600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1050°F
2716	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
2726	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
2736	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
2756	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
2746	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
2766	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
2776Q	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1525	1460	1350	955	650	562	430

Set pressure limits (psig) for 2700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition)

1500 Pressure Class

Temperature Class			B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Base Material Buttweld (Note 1)			WCC	WCC	WCC	WCC	WCC	WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Valve Type	Inlet CL_1500	Outlet Flange	100-350°F	400°F	450°F	500°F	550°F	600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1050°F
2717	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
2727	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1500 *1550
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1500 *1550
2737	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1400 *1550
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1400 *1550
2757	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1325 *1550
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1325 *1550
2747	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1325 *1550
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1325 *1550
2767	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1540 *1550	1175 *1550
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1540 *1550	1175 *1550
2777Q	Flange	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1595	1080	936	720
	ButtWeld	CL_150	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1200 *1550	1040 *1550	800 *1550
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1200 *1550	1040 *1550	800 *1550

Notes:

1. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.

*Meets ASME Section I, Code Case 1876-2, but does not meet ANSI B16.34 (1996 Edition)

Set pressure limits (psig) for 2700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II — (Note 1)

600 Pressure Class

Temperature Class			B	B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Valve Type	Inlet CL_600	Outlet Flange	100-300°F	350°F	400°F	450°F	500°F	550°F	600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1050°F
2715	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	812	637	430	374	275
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2725	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	863	734	624	510	417	308	267	206
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2735	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	275
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2755	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	275
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2745	Flange	CL_150	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	812	637	430	374	275
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2765	Flange	CL_150	1020	1020	1020	1020	1020	1020	1020	863	745	663	576	490	409	321	242	210	161
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290
2775Q	Flange	CL_150	1020	1020	1020	1020	1020	1020	1020	863	745	663	576	490	409	321	242	210	161
		CL_300	1445	1415	1385	1357	1330	1270	1210	1175	1135	1065	1015	975	900	640	430	374	290

900 Pressure Class

Temperature Class			B	B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Valve Type	Inlet CL_900	Outlet Flange	100-300°F	350°F	400°F	450°F	500°F	550°F	600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1050°F
2716	Flange	150#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1489	1241	1056	812	637	480	409	314
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430
2726	Flange	150#	1389	1389	1389	1389	1389	1389	1389	1192	1035	863	734	624	510	417	308	267	206
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430
2736	Flange	150#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	410
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430
2756	Flange	150#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1346	1077	796	588	510	392
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430
2746	Flange	150#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1459	1241	1035	812	637	480	409	314
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430
2766	Flange	150#	1020	1020	1020	1020	1020	1020	1020	863	749	663	576	490	409	321	242	210	161
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430
2776Q	Flange	150#	1020	1020	1020	1020	1020	1020	1020	863	749	663	576	490	409	321	242	210	161
		300#	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1525	1460	1350	955	650	562	430

Notes:

1. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature.
   The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34.
   The valve inlet pressure/temperature rating is in compliance with ASME B16.34.

Set pressure limits (psig) for 2700 flanged & buttweld safety valves at designated temperature (°F)

Meets ASME B&PVC Section I, (2001 Edition), ASME B16.34 and Non-Mandatory Code ASME B31.1-Appendix II) — (Note 1)

1500 Pressure Class

Temperature Class			B	B	B	B	B	B	B	B	B	D	D	D	D	D	D	D
Base Material Flanged			WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Base Material Buttweld (Note 2)			WCC	WCC	WCC	WCC	WCC	WCC	WCC	WCC	WCC	WC6	WC6	WC6	WC6	WC6	WC6	WC6
Valve Type	Inlet CL_1500	Outlet Flange	100-350°F	400°F	450°F	500°F	550°F	600°F	650°F	700°F	750°F	800°F	850°F	900°F	950°F	1000°F	1020°F	1050°F
2717	Flange	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1489	1241	1056	812	637	480	409	314
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1489	1241	1056	812	637	480	409	314
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1550
2727	Flange	CL_150	1389	1389	1389	1389	1389	1389	1192	1035	863	734	624	510	417	308	267	206
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1389	1389	1389	1389	1389	1389	1192	1035	863	734	624	510	417	308	267	206
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1485
2737	Flange	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1216	829	600	553
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1216	829	600	553
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1380
2757	Flange	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1346	1077	796	588	510	392
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1346	1077	796	588	510	392
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1305
2747	Flange	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1459	1241	1035	812	637	480	409	314
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1550	1550	1550	1550	1550	1550	1550	1550	1459	1241	1035	812	637	480	409	314
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1305
2767	Flange	CL_150	1020	1020	1020	1020	1020	1020	863	749	663	576	490	409	321	242	210	161
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1020	1020	1020	1020	1020	1020	863	749	663	576	490	409	321	242	210	161
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1150
2777Q	Flange	CL_150	1020	1020	1020	1020	1020	1020	863	749	663	576	490	409	321	242	210	161
		CL_300	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550	1080	936	720
	ButtWeld	CL_150	1020	1020	1020	1020	1020	1020	863	749	663	576	490	409	321	242	210	161
		CL_300	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1550	1550	760

Notes:

1. ASME B31.1 - Appendix II analysis is limited to calculating valve outlet pressure and temperature.
   The calculated outlet pressure and temperature, using ASME B31.1 Appendix II analysis, complies with ASME B16.34.
   The valve inlet pressure/temperature rating is in compliance with ASME B16.34.
2. Consult the factory. Set pressure limits for buttweld valves can be further limited by buttweld dimensions.

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits.
Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
100	5290	7615	13544	17780	21160	37626	65195
105	5521	7949	14137	18558	22086	39273	68047
110	5753	8282	14729	19336	23012	40919	70900
115	5984	8615	15322	20114	23938	42565	73752
120	6215	8948	15915	20892	24863	44212	76605
125	6447	9282	16507	21670	25789	45858	79458
130	6678	9615	17100	22449	26715	47505	82310
135	6910	9948	17693	23227	27641	49151	85163
140	7141	10281	18285	24005	28567	50797	88016
145	7373	10614	18878	24783	29493	52444	90868
150	7604	10948	19471	25561	30419	54090	93721
155	7836	11281	20063	26339	31345	55736	96573
160	8067	11614	20656	27117	32271	57383	99426
165	8299	11947	21249	27895	33196	59029	102279
170	8530	12281	21841	28673	34122	60676	105131
175	8762	12614	22434	29451	35048	62322	107984
180	8993	12947	23026	30229	35974	63968	110837
185	9225	13280	23619	31007	36900	65615	113689
190	9456	13614	24212	31785	37826	67261	116542
195	9688	13947	24804	32563	38752	68907	119394
200	9919	14280	25397	33341	39678	70554	122247
205	10150	14613	25990	34119	40603	72200	125100
210	10382	14946	26582	34897	41529	73847	127952
215	10613	15280	27175	35675	42455	75493	130805
220	10845	15613	27768	36453	43381	77139	133658
225	11076	15946	28360	37231	44307	78786	136510
230	11308	16279	28953	38009	45233	80432	139363
235	11539	16613	29546	38787	46159	82078	142215
240	11771	16946	30138	39565	47085	83725	145068
245	12002	17279	30731	40343	48010	85371	147921
250	12234	17612	31324	41121	48936	87018	150773
255	12465	17946	31916	41899	49862	88664	153626
260	12697	18279	32509	42677	50788	90310	156479
265	12928	18612	33101	43455	51714	91957	159331
270	13160	18945	33694	44233	52640	93603	162184
275	13391	19279	34287	45011	53566	95249	165036
280	13623	19612	34879	45789	54492	96896	167889
285	13854	19945	35472	46567	55418	98542	170742
290	14085	20278	36065	47345	56343	100189	173594
295	14317	20611	36657	48123	57269	101835	176447
300	14548	20945	37250	48901	58195	103481	179300
305	14780	21278	37843	49679	59121	105128	182152
310	15011	21611	38435	50457	60047	106774	185005
315	15243	21944	39028	51235	60973	108420	187857
320	15474	22278	39621	52013	61899	110067	190710
325	15706	22611	40213	52791	62825	111713	193563
330	15937	22944	40806	53569	63750	113360	196415
335	16169	23277	41399	54347	64676	115006	199268
340	16400	23611	41991	55125	65602	116652	202121
345	16632	23944	42584	55903	66528	118299	204973
350	16863	24277	43176	56681	67454	119945	207826
355	17095	24610	43769	57459	68380	121591	210679
360	17326	24943	44362	58237	69306	123238	213531
365	17558	25277	44954	59015	70232	124884	216384

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
370	17789	25610	45547	59793	71158	126531	219236
375	18020	25943	46140	60571	72083	128177	222089
380	18252	26276	46732	61349	73009	129823	224942
385	18483	26610	47325	62127	73935	131470	227794
390	18715	26943	47918	62905	74861	133116	230647
395	18946	27276	48510	63683	75787	134762	233500
400	19178	27609	49103	64461	76713	136409	236352
405	19409	27943	49696	65239	77639	138055	239205
410	19641	28276	50288	66017	78565	139701	242057
415	19872	28609	50881	66795	79490	141348	244910
420	20104	28942	51474	67573	80416	142994	247763
425	20335	29276	52066	68351	81342	144641	250615
430	20567	29609	52659	69129	82268	146287	253468
435	20798	29942	53252	69907	83194	147933	256321
440	21030	30275	53844	70685	84120	149580	259173
445	21261	30608	54437	71463	85046	151226	262026
450	21493	30942	55029	72241	85972	152872	264878
455	21724	31275	55622	73019	86898	154519	267731
460	21955	31608	56215	73797	87823	156165	270584
465	22187	31941	56807	74575	88749	157812	273436
470	22418	32275	57400	75353	89675	159458	276289
475	22650	32608	57993	76131	90601	161104	279142
480	22881	32941	58585	76909	91527	162751	281994
485	23113	33274	59178	77687	92453	164397	284847
490	23344	33608	59771	78465	93379	166043	287699
495	23576	33941	60363	79243	94305	167690	290552
500	23807	34274	60956	80021	95230	169336	293405
505	24039	34607	61549	80799	96156	170983	296257
510	24270	34940	62141	81577	97082	172629	299110
515	24502	35274	62734	82355	98008	174275	301963
520	24733	35607	63327	83133	98934	175922	304815
525	24965	35940	63919	83911	99860	177568	307668
530	25196	36273	64512	84689	100786	179214	310520
535	25428	36607	65104	85467	101712	180861	313373
540	25659	36940	65697	86245	102637	182507	316226
545	25890	37273	66290	87023	103563	184154	319078
550	26122	37606	66882	87801	104489	185800	321931
555	26353	37940	67475	88579	105415	187446	324784
560	26585	38273	68068	89357	106341	189093	327636
565	26816	38606	68660	90135	107267	190739	330489
570	27048	38939	69253	90913	108193	192385	333341
575	27279	39273	69846	91691	109119	194032	336194
580	27511	39606	70438	92469	110045	195678	339047
585	27742	39939	71031	93247	110970	197325	341899
590	27974	40272	71624	94025	111896	198971	344752
595	28205	40605	72216	94803	112822	200617	347605
600	28437	40939	72809	95581	113748	202264	350457
605	28668	41272	73402	96359	114674	203910	353310
610	28900	41605	73994	97138	115600	205556	356163
615	29131	41938	74587	97916	116526	207203	359015
620	29363	42272	75179	98694	117452	208849	361868
625	29594	42605	75772	99472	118377	210496	364720
630	29825	42938	76365	100250	119303	212142	367573
635	30057	43271	76957	101028	120229	213788	370426

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
640	30288	43605	77550	101806	121155	215435	373278
645	30520	43938	78143	102584	122081	217081	376131
650	30751	44271	78735	103362	123007	218727	378984
655	30983	44604	79328	104140	123933	220374	381836
660	31214	44937	79921	104918	124859	222020	384689
665	31446	45271	80513	105696	125785	223667	387541
670	31677	45604	81106	106474	126710	225313	390394
675	31909	45937	81699	107252	127636	226959	393247
680	32140	46270	82291	108030	128562	228606	396099
685	32372	46604	82884	108808	129488	230252	398952
690	32603	46937	83477	109586	130414	231898	401805
695	32835	47270	84069	110364	131340	233545	404657
700	33066	47603	84662	111142	132266	235191	407510
705	33298	47937	85254	111920	133192	236838	410362
710	33529	48270	85847	112698	134117	238484	413215
715	33760	48603	86440	113476	135043	240130	416068
720	33992	48936	87032	114254	135969	241777	418920
725	34223	49270	87625	115032	136895	243423	421773
730	34455	49603	88218	115810	137821	245069	424626
735	34686	49936	88810	116588	138747	246716	427478
740	34918	50269	89403	117366	139673	248362	430331
745	35149	50602	89996	118144	140599	250009	433183
750	35381	50936	90588	118922	141525	251655	436036
755	35612	51269	91181	119700	142450	253301	438889
760	35844	51602	91774	120478	143376	254948	441741
765	36075	51935	92366	121256	144302	256594	444594
770	36307	52269	92959	122034	145228	258240	447447
775	36538	52602	93552	122812	146154	259887	450299
780	36770	52935	94144	123590	147080	261533	453152
785	37001	53268	94737	124368	148006	263180	456004
790	37233	53602	95330	125146	148932	264826	458857
795	37464	53935	95922	125924	149857	266472	461710
800	37695	54268	96515	126702	150783	268119	464562
805	37927	54601	97107	127480	151709	269765	467415
810	38158	54934	97700	128258	152635	271411	470268
815	38390	55268	98293	129036	153561	273058	473120
820	38621	55601	98885	129814	154487	274704	475973
825	38853	55934	99478	130592	155413	276350	478825
830	39084	56267	100071	131370	156339	277997	481678
835	39316	56601	100663	132148	157264	279643	484531
840	39547	56934	101256	132926	158190	281290	487383
845	39779	57267	101849	133704	159116	282936	490236
850	40010	57600	102441	134482	160042	284582	493089
855	40242	57934	103034	135260	160968	286229	495941
860	40473	58267	103627	136038	161894	287875	498794
865	40705	58600	104219	136816	162820	289521	501647
870	40936	58933	104812	137594	163746	291168	504499
875	41168	59267	105405	138372	164672	292814	507352
880	41399	59600	105997	139150	165597	294461	510204
885	41630	59933	106590	139928	166523	296107	513057
890	41862	60266	107182	140706	167449	297753	515910
895	42093	60599	107775	141484	168375	299400	518762
900	42325	60933	108368	142262	169301	301046	521615
905	42556	61266	108960	143040	170227	302692	524468

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
910	42788	61599	109553	143818	171153	304339	527320
915	43019	61932	110146	144596	172079	305985	530173
920	43251	62266	110738	145374	173004	307632	533025
925	43482	62599	111331	146152	173930	309278	535878
930	43714	62932	111924	146930	174856	310924	538731
935	43945	63265	112516	147708	175782	312571	541583
940	44177	63599	113109	148486	176708	314217	544436
945	44408	63932	113702	149264	177634	315863	547289
950	44640	64265	114294	150042	178560	317510	550141
955	44871	64598	114887	150820	179486	319156	552994
960	45103	64931	115480	151598	180412	320803	555846
965	45334	65265	116072	152376	181337	322449	558699
970	45565	65598	116665	153154	182263	324095	561552
975	45797	65931	117257	153932	183189	325742	564404
980	46028	66264	117850	154710	184115	327388	567257
985	46260	66598	118443	155488	185041	329034	570110
990	46491	66931	119035	156266	185967	330681	572962
995	46723	67264	119628	157044	186893	332327	575815
1000	46954	67597	120221	157822	187819	333974	578667
1005	47186	67931	120813	158600	188744	335620	581520
1010	47417	68264	121406	159378	189670	337266	584373
1015	47649	68597	121999	160156	190596	338913	587225
1020	47880	68930	122591	160934	191522	340559	590078
1025	48112	69264	123184	161712	192448	342205	592931
1030	48343	69597	123777	162490	193374	343852	595783
1035	48575	69930	124369	163268	194300	345498	598636
1040	48806	70263	124962	164046	195226	347145	601488
1045	49038	70596	125555	164824	196152	348791	604341
1050	49269	70930	126147	165602	197077	350437	607194
1055	49500	71263	126740	166380	198003	352084	610046
1060	49732	71596	127332	167158	198929	353730	612899
1065	49963	71929	127925	167936	199855	355376	615752
1070	50195	72263	128518	168714	200781	357023	618604
1075	50426	72596	129110	169492	201707	358669	621457
1080	50658	72929	129703	170270	202633	360316	624309
1085	50889	73262	130296	171049	203559	361962	627162
1090	51121	73596	130888	171827	204484	363608	630015
1095	51352	73929	131481	172605	205410	365255	632867
1100	51584	74262	132074	173383	206336	366901	635720
1105	51815	74595	132666	174161	207262	368547	638573
1110	52047	74929	133259	174939	208188	370194	641425
1115	52278	75262	133852	175717	209114	371840	644278
1120	52510	75595	134444	176495	210040	373487	647131
1125	52741	75928	135037	177273	210966	375133	649983
1130	52972	76261	135630	178051	211891	376779	652836
1135	53204	76595	136222	178829	212817	378426	655688
1140	53435	76928	136815	179607	213743	380072	658541
1145	53667	77261	137408	180385	214669	381718	661394
1150	53898	77594	138000	181163	215595	383365	664246
1155	54130	77928	138593	181941	216521	385011	667099
1160	54361	78261	139185	182719	217447	386658	669952
1165	54593	78594	139778	183497	218373	388304	672804
1170	54824	78927	140371	184275	219299	389950	675657
1175	55056	79261	140963	185053	220224	391597	678509

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
1180	55287	79594	141556	185831	221150	393243	681362
1185	55519	79927	142149	186609	222076	394889	684215
1190	55750	80260	142741	187387	223002	396536	687067
1195	55982	80593	143334	188165	223928	398182	689920
1200	56213	80927	143927	188943	224854	399829	692773
1205	56445	81260	144519	189721	225780	401475	695625
1210	56676	81593	145112	190499	226706	403121	698478
1215	56907	81926	145705	191277	227631	404768	701330
1220	57139	82260	146297	192055	228557	406414	704183
1225	57370	82593	146890	192833	229483	408060	707036
1230	57602	82926	147483	193611	230409	409707	709888
1235	57833	83259	148075	194389	231335	411353	712741
1240	58065	83593	148668	195167	232261	413000	715594
1245	58296	83926	149260	195945	233187	414646	718446
1250	58528	84259	149853	196723	234113	416292	721299
1255	58759	84592	150446	197501	235039	417939	724151
1260	58991	84926	151038	198279	235964	419585	727004
1265	59222	85259	151631	199057	236890	421231	729857
1270	59454	85592	152224	199835	237816	422878	732709
1275	59685	85925	152816	200613	238742	424524	735562
1280	59917	86258	153409	201391	239668	426170	738415
1285	60148	86592	154002	202169	240594	427817	741267
1290	60380	86925	154594	202947	241520	429463	744120
1295	60611	87258	155187	203725	242446	431110	746972
1300	60842	87591	155780	204503	243371	432756	749825
1305	61074	87925	156372	205281	244297	434402	752678
1310	61305	88258	156965	206059	245223	436049	755530
1315	61537	88591	157558	206837	246149	437695	758383
1320	61768	88924	158150	207615	247075	439341	761236
1325	62000	89258	158743	208393	248001	440988	764088
1330	62231	89591	159335	209171	248927	442634	766941
1335	62463	89924	159928	209949	249853	444281	769793
1340	62694	90257	160521	210727	250779	445927	772646
1345	62926	90590	161113	211505	251704	447573	775499
1350	63157	90924	161706	212283	252630	449220	778351
1355	63389	91257	162299	213061	253556	450866	781204
1360	63620	91590	162891	213839	254482	452512	784057
1365	63852	91923	163484	214617	255408	454159	786909
1370	64083	92257	164077	215395	256334	455805	789762
1375	64315	92590	164669	216173	257260	457452	792615
1380	64546	92923	165262	216951	258186	459098	795467
1385	64777	93256	165855	217729	259111	460744	798320
1390	65009	93590	166447	218507	260037	462391	801172
1395	65240	93923	167040	219285	260963	464037	804025
1400	65472	94256	167633	220063	261889	465683	806878
1405	65703	94589	168225	220841	262815	467330	809730
1410	65935	94923	168818	221619	263741	468976	812583
1415	66166	95256	169410	222397	264667	470623	815436
1420	66398	95589	170003	223175	265593	472269	818288
1425	66629	95922	170596	223953	266519	473915	821141
1430	66861	96255	171188	224731	267444	475562	823993
1435	67092	96589	171781	225509	268370	477208	826846
1440	67324	96922	172374	226287	269296	478854	829699
1445	67555	97255	172966	227065	270222	480501	832551

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.03 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
1450	67787	97588	173559	227843	271148	482147	835404
1455	68018	97922	174152	228621	272074	483794	838257
1460	68250	98255	174744	229399	273000	485440	841109
1465	68481	98588	175337	230177	273926	487086	843962
1470	68712	98921	175930	230955	274851	488733	846814
1475	68944	99255	176522	231733	275777	490379	849667
1480	69175	99588	177115	232511	276703	492025	852520
1485	69407	99921	177708	233289	277629	493672	855372
1490	69638	100254	178300	234067	278555	495318	858225
1495	69870	100587	178893	234845	279481	496965	861078
1500	70101	100921	179486	235623	280407	498611	863930
1505	70333	101254	180078	236401	281333	500257	866783
1510	70564	101587	180671	237179	282258	501904	869635
1515	70796	101920	181263	237957	283184	503550	872488
1520	71027	102254	181856	238735	284110	505196	875341
1525	71279	102616	182501	239582	285117	506987	878443
1530	71531	102979	183146	240428	286125	508779	881548
1535	71783	103342	183791	241276	287134	510573	884656
1540	72035	103705	184438	242124	288143	512368	887767
1545	72288	104069	185084	242973	289154	514164	890879
1550	72541	104433	185732	243823	290165	515963	893995
1555	72794	104797	186379	244673	291177	517762	897113
1560	73047	105161	187028	245524	292190	519563	900233
1565	73300	105526	187676	246376	293203	521365	903356
1570	73554	105891	188326	247229	294218	523169	906482
1575	73808	106257	188976	248082	295233	524975	909610
1580	74062	106623	189626	248936	296249	526782	912741
1585	74316	106989	190277	249790	297266	528590	915874
1590	74571	107355	190929	250646	298284	530400	919010
1595	74825	107722	191581	251502	299303	532212	922149
1600	75080	108089	192233	252358	300323	534025	925291

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
100	5604	8068	14350	18838	22418	39864	69072
105	5851	8424	14983	19669	23407	41622	72118
110	6099	8780	15615	20500	24396	43381	75165
115	6346	9136	16248	21331	25385	45139	78211
120	6593	9492	16881	22161	26374	46897	81258
125	6840	9848	17514	22992	27362	48655	84304
130	7087	10204	18147	23823	28351	50414	87351
135	7335	10559	18780	24654	29340	52172	90397
140	7582	10915	19413	25485	30329	53930	93444
145	7829	11271	20046	26316	31318	55688	96490
150	8076	11627	20679	27147	32306	57447	99537
155	8323	11983	21312	27978	33295	59205	102583
160	8571	12339	21945	28809	34284	60963	105630
165	8818	12695	22578	29639	35273	62722	108676
170	9065	13051	23211	30470	36262	64480	111723
175	9312	13406	23844	31301	37250	66238	114769
180	9559	13762	24476	32132	38239	67996	117816
185	9807	14118	25109	32963	39228	69755	120862
190	10054	14474	25742	33794	40217	71513	123909
195	10301	14830	26375	34625	41206	73271	126955
200	10548	15186	27008	35456	42195	75029	130002
205	10795	15542	27641	36287	43183	76788	133048
210	11043	15898	28274	37117	44172	78546	136095
215	11290	16254	28907	37948	45161	80304	139141
220	11537	16609	29540	38779	46150	82062	142188
225	11784	16965	30173	39610	47139	83821	145234
230	12031	17321	30806	40441	48127	85579	148281
235	12279	17677	31439	41272	49116	87337	151327
240	12526	18033	32072	42103	50105	89095	154374
245	12773	18389	32704	42934	51094	90854	157420
250	13020	18745	33337	43764	52083	92612	160467
255	13267	19101	33970	44595	53071	94370	163513
260	13515	19456	34603	45426	54060	96129	166560
265	13762	19812	35236	46257	55049	97887	169606
270	14009	20168	35869	47088	56038	99645	172653
275	14256	20524	36502	47919	57027	101403	175699
280	14503	20880	37135	48750	58015	103162	178746
285	14751	21236	37768	49581	59004	104920	181792
290	14998	21592	38401	50412	59993	106678	184839
295	15245	21948	39034	51242	60982	108436	187885
300	15492	22303	39667	52073	61971	110195	190932
305	15739	22659	40300	52904	62959	111953	193978
310	15987	23015	40932	53735	63948	113711	197025
315	16234	23371	41565	54566	64937	115469	200071
320	16481	23727	42198	55397	65926	117228	203118
325	16728	24083	42831	56228	66915	118986	206164
330	16975	24439	43464	57059	67903	120744	209211
335	17223	24795	44097	57890	68892	122502	212257
340	17470	25151	44730	58720	69881	124261	215304
345	17717	25506	45363	59551	70870	126019	218350
350	17964	25862	45996	60382	71859	127777	221397
355	18211	26218	46629	61213	72847	129536	224443
360	18459	26574	47262	62044	73836	131294	227490
365	18706	26930	47895	62875	74825	133052	230536

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
370	18953	27286	48528	63706	75814	134810	233583
375	19200	27642	49161	64537	76803	136569	236629
380	19448	27998	49793	65367	77792	138327	239676
385	19695	28353	50426	66198	78780	140085	242722
390	19942	28709	51059	67029	79769	141843	245769
395	20189	29065	51692	67860	80758	143602	248815
400	20436	29421	52325	68691	81747	145360	251862
405	20684	29777	52958	69522	82736	147118	254908
410	20931	30133	53591	70353	83724	148876	257955
415	21178	30489	54224	71184	84713	150635	261001
420	21425	30845	54857	72015	85702	152393	264048
425	21672	31201	55490	72845	86691	154151	267094
430	21920	31556	56123	73676	87680	155909	270141
435	22167	31912	56756	74507	88668	157668	273187
440	22414	32268	57389	75338	89657	159426	276234
445	22661	32624	58021	76169	90646	161184	279280
450	22908	32980	58654	77000	91635	162943	282327
455	23156	33336	59287	77831	92624	164701	285373
460	23403	33692	59920	78662	93612	166459	288420
465	23650	34048	60553	79493	94601	168217	291466
470	23897	34403	61186	80323	95590	169976	294513
475	24144	34759	61819	81154	96579	171734	297559
480	24392	35115	62452	81985	97568	173492	300606
485	24639	35471	63085	82816	98556	175250	303652
490	24886	35827	63718	83647	99545	177009	306698
495	25133	36183	64351	84478	100534	178767	309745
500	25380	36539	64984	85309	101523	180525	312791
505	25628	36895	65617	86140	102512	182283	315838
510	25875	37250	66249	86970	103500	184042	318884
515	26122	37606	66882	87801	104489	185800	321931
520	26369	37962	67515	88632	105478	187558	324977
525	26616	38318	68148	89463	106467	189316	328024
530	26864	38674	68781	90294	107456	191075	331070
535	27111	39030	69414	91125	108444	192833	334117
540	27358	39386	70047	91956	109433	194591	337163
545	27605	39742	70680	92787	110422	196350	340210
550	27852	40098	71313	93618	111411	198108	343256
555	28100	40453	71946	94448	112400	199866	346303
560	28347	40809	72579	95279	113389	201624	349349
565	28594	41165	73212	96110	114377	203383	352396
570	28841	41521	73845	96941	115366	205141	355442
575	29088	41877	74478	97772	116355	206899	358489
580	29336	42233	75110	98603	117344	208657	361535
585	29583	42589	75743	99434	118333	210416	364582
590	29830	42945	76376	100265	119321	212174	367628
595	30077	43300	77009	101096	120310	213932	370675
600	30324	43656	77642	101926	121299	215690	373721
605	30572	44012	78275	102757	122288	217449	376768
610	30819	44368	78908	103588	123277	219207	379814
615	31066	44724	79541	104419	124265	220965	382861
620	31313	45080	80174	105250	125254	222723	385907
625	31560	45436	80807	106081	126243	224482	388954
630	31808	45792	81440	106912	127232	226240	392000
635	32055	46147	82073	107743	128221	227998	395047

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/ temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
640	32302	46503	82706	108574	129209	229757	398093
645	32549	46859	83338	109404	130198	231515	401140
650	32796	47215	83971	110235	131187	233273	404186
655	33044	47571	84604	111066	132176	235031	407233
660	33291	47927	85237	111897	133165	236790	410279
665	33538	48283	85870	112728	134153	238548	413326
670	33785	48639	86503	113559	135142	240306	416372
675	34032	48995	87136	114390	136131	242064	419419
680	34280	49350	87769	115221	137120	243823	422465
685	34527	49706	88402	116051	138109	245581	425512
690	34774	50062	89035	116882	139097	247339	428558
695	35021	50418	89668	117713	140086	249097	431605
700	35268	50774	90301	118544	141075	250856	434651
705	35516	51130	90934	119375	142064	252614	437698
710	35763	51486	91566	120206	143053	254372	440744
715	36010	51842	92199	121037	144041	256130	443791
720	36257	52197	92832	121868	145030	257889	446837
725	36504	52553	93465	122699	146019	259647	449884
730	36752	52909	94098	123529	147008	261405	452930
735	36999	53265	94731	124360	147997	263164	455977
740	37246	53621	95364	125191	148985	264922	459023
745	37493	53977	95997	126022	149974	266680	462070
750	37740	54333	96630	126853	150963	268438	465116
755	37988	54689	97263	127684	151952	270197	468163
760	38235	55044	97896	128515	152941	271955	471209
765	38482	55400	98529	129346	153930	273713	474256
770	38729	55756	99162	130177	154918	275471	477302
775	38976	56112	99795	131007	155907	277230	480349
780	39224	56468	100427	131838	156896	278988	483395
785	39471	56824	101060	132669	157885	280746	486442
790	39718	57180	101693	133500	158874	282504	489488
795	39965	57536	102326	134331	159862	284263	492535
800	40212	57892	102959	135162	160851	286021	495581
805	40460	58247	103592	135993	161840	287779	498628
810	40707	58603	104225	136824	162829	289537	501674
815	40954	58959	104858	137654	163818	291296	504721
820	41201	59315	105491	138485	164806	293054	507767
825	41448	59671	106124	139316	165795	294812	510814
830	41696	60027	106757	140147	166784	296571	513860
835	41943	60383	107390	140978	167773	298329	516907
840	42190	60739	108023	141809	168762	300087	519953
845	42437	61094	108655	142640	169750	301845	523000
850	42684	61450	109288	143471	170739	303604	526046
855	42932	61806	109921	144302	171728	305362	529093
860	43179	62162	110554	145132	172717	307120	532139
865	43426	62518	111187	145963	173706	308878	535186
870	43673	62874	111820	146794	174694	310637	538232
875	43920	63230	112453	147625	175683	312395	541279
880	44168	63586	113086	148456	176672	314153	544325
885	44415	63942	113719	149287	177661	315911	547372
890	44662	64297	114352	150118	178650	317670	550418
895	44909	64653	114985	150949	179638	319428	553465
900	45156	65009	115618	151780	180627	321186	556511
905	45404	65365	116251	152610	181616	322944	559558

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure, 90% of actual capacity

W=51.5KAP for "P" less than or equal to 1580 psia
W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review/pressure temperature limits.
Pressure/ temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
910	45651	65721	116883	153441	182605	324703	562604
915	45898	66077	117516	154272	183594	326461	565651
920	46145	66433	118149	155103	184582	328219	568697
925	46392	66789	118782	155934	185571	329978	571744
930	46640	67144	119415	156765	186560	331736	574790
935	46887	67500	120048	157596	187549	333494	577837
940	47134	67856	120681	158427	188538	335252	580883
945	47381	68212	121314	159257	189527	337011	583930
950	47628	68568	121947	160088	190515	338769	586976
955	47876	68924	122580	160919	191504	340527	590023
960	48123	69280	123213	161750	192493	342285	593069
965	48370	69636	123846	162581	193482	344044	596116
970	48617	69991	124479	163412	194471	345802	599162
975	48864	70347	125112	164243	195459	347560	602209
980	49112	70703	125744	165074	196448	349318	605255
985	49359	71059	126377	165905	197437	351077	608302
990	49606	71415	127010	166735	198426	352835	611348
995	49853	71771	127643	167566	199415	354593	614395
1000	50100	72127	128276	168397	200403	356351	617441
1005	50348	72483	128909	169228	201392	358110	620488
1010	50595	72839	129542	170059	202381	359868	623534
1015	50842	73194	130175	170890	203370	361626	626581
1020	51089	73550	130808	171721	204359	363385	629627
1025	51336	73906	131441	172552	205347	365143	632674
1030	51584	74262	132074	173383	206336	366901	635720
1035	51831	74618	132707	174213	207325	368659	638766
1040	52078	74974	133340	175044	208314	370418	641813
1045	52325	75330	133972	175875	209303	372176	644859
1050	52572	75686	134605	176706	210291	373934	647906
1055	52820	76041	135238	177537	211280	375692	650952
1060	53067	76397	135871	178368	212269	377451	653999
1065	53314	76753	136504	179199	213258	379209	657045
1070	53561	77109	137137	180030	214247	380967	660092
1075	53808	77465	137770	180861	215235	382725	663138
1080	54056	77821	138403	181691	216224	384484	666185
1085	54303	78177	139036	182522	217213	386242	669231
1090	54550	78533	139669	183353	218202	388000	672278
1095	54797	78888	140302	184184	219191	389758	675324
1100	55044	79244	140935	185015	220179	391517	678371
1105	55292	79600	141568	185846	221168	393275	681417
1110	55539	79956	142200	186677	222157	395033	684464
1115	55786	80312	142833	187508	223146	396792	687510
1120	56033	80668	143466	188338	224135	398550	690557
1125	56281	81024	144099	189169	225124	400308	693603
1130	56528	81380	144732	190000	226112	402066	696650
1135	56775	81736	145365	190831	227101	403825	699696
1140	57022	82091	145998	191662	228090	405583	702743
1145	57269	82447	146631	192493	229079	407341	705789
1150	57517	82803	147264	193324	230068	409099	708836
1155	57764	83159	147897	194155	231056	410858	711882
1160	58011	83515	148530	194986	232045	412616	714929
1165	58258	83871	149163	195816	233034	414374	717975
1170	58505	84227	149796	196647	234023	416132	721022
1175	58753	84583	150429	197478	235012	417891	724068

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W=51.5KAP x [.1906P-1000/.2292P-1061] for "P" greater than 1580 psia

K= .878
A= flow area in sq. in.
P= (1.10 x set pressure) + 14.7

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 2700.35. Review pressure/temperature limits. Pressure/ temperature tables begin on page 2700.19. The 2700 is certified as a restricted lift valve and capacities can be restricted down to 30% of its full rated capacity.

Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
1180	59000	84938	151061	198309	236000	419649	727115
1185	59247	85294	151694	199140	236989	421407	730161
1190	59494	85650	152327	199971	237978	423165	733208
1195	59741	86006	152960	200802	238967	424924	736254
1200	59989	86362	153593	201633	239956	426682	739301
1205	60236	86718	154226	202464	240944	428440	742347
1210	60483	87074	154859	203294	241933	430199	745394
1215	60730	87430	155492	204125	242922	431957	748440
1220	60977	87785	156125	204956	243911	433715	751487
1225	61225	88141	156758	205787	244900	435473	754533
1230	61472	88497	157391	206618	245888	437232	757580
1235	61719	88853	158024	207449	246877	438990	760626
1240	61966	89209	158657	208280	247866	440748	763673
1245	62213	89565	159289	209111	248855	442506	766719
1250	62461	89921	159922	209941	249844	444265	769766
1255	62708	90277	160555	210772	250832	446023	772812
1260	62955	90633	161188	211603	251821	447781	775859
1265	63202	90988	161821	212434	252810	449539	778905
1270	63449	91344	162454	213265	253799	451298	781952
1275	63697	91700	163087	214096	254788	453056	784998
1280	63944	92056	163720	214927	255776	454814	788045
1285	64191	92412	164353	215758	256765	456572	791091
1290	64438	92768	164986	216589	257754	458331	794138
1295	64685	93124	165619	217419	258743	460089	797184
1300	64933	93480	166252	218250	259732	461847	800231
1305	65180	93835	166885	219081	260721	463606	803277
1310	65427	94191	167517	219912	261709	465364	806324
1315	65674	94547	168150	220743	262698	467122	809370
1320	65921	94903	168783	221574	263687	468880	812417
1325	66169	95259	169416	222405	264676	470639	815463
1330	66416	95615	170049	223236	265665	472397	818510
1335	66663	95971	170682	224067	266653	474155	821556
1340	66910	96327	171315	224897	267642	475913	824603
1345	67157	96682	171948	225728	268631	477672	827649
1350	67405	97038	172581	226559	269620	479430	830696
1355	67652	97394	173214	227390	270609	481188	833742
1360	67899	97750	173847	228221	271597	482946	836789
1365	68146	98106	174480	229052	272586	484705	839835
1370	68393	98462	175113	229883	273575	486463	842882
1375	68641	98818	175745	230714	274564	488221	845928
1380	68888	99174	176378	231544	275553	489979	848975
1385	69135	99530	177011	232375	276541	491738	852021
1390	69382	99885	177644	233206	277530	493496	855068
1395	69629	100241	178277	234037	278519	495254	858114
1400	69877	100597	178910	234868	279508	497013	861161
1405	70124	100953	179543	235699	280497	498771	864207
1410	70371	101309	180176	236530	281485	500529	867254
1415	70618	101665	180809	237361	282474	502287	870300
1420	70865	102021	181442	238192	283463	504046	873347
1425	71120	102387	182094	239047	284482	505857	876485
1430	71389	102774	182782	239951	285557	507770	879799
1435	71658	103162	183472	240856	286634	509685	883117
1440	71928	103550	184162	241762	287712	511601	886438
1445	72197	103938	184852	242668	288791	513519	889761

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A= flow area in sq. in.
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Orifice Designation & Area - Square Inches

Orifice Designation	1	2	3	5	4	6	Q
Orifice Area Sq.In.	0.994	1.431	2.545	3.341	3.976	7.07	12.25
Set Pressure (psig)							
1450	72467	104327	185543	243575	289870	515439	893087
1455	72737	104716	186235	244483	290951	517360	896416
1460	73008	105105	186927	245392	292032	519283	899748
1465	73278	105494	187620	246302	293115	521208	903083
1470	73549	105884	188313	247212	294198	523134	906421
1475	73820	106275	189007	248123	295282	525062	909762
1480	74092	106665	189702	249035	296368	526992	913106
1485	74363	107056	190397	249948	297454	528924	916453
1490	74635	107448	191093	250862	298541	530857	919803
1495	74907	107839	191790	251776	299630	532792	923155
1500	75179	108231	192487	252691	300719	534729	926511
1505	75452	108624	193185	253608	301809	536668	929870
1510	75725	109016	193883	254524	302900	538608	933232
1515	75998	109409	194582	255442	303992	540550	936597
1520	76271	109803	195282	256361	305086	542494	939966
1525	76545	110197	195983	257280	306180	544440	943337
1530	76818	110591	196684	258201	307275	546388	946711
1535	77092	110985	197385	259122	308371	548337	950089
1540	77367	111380	198088	260044	309469	550288	953470
1545	77641	111776	198791	260967	310567	552241	956854
1550	77916	112171	199495	261891	311667	554196	960241
1555	78191	112567	200199	262815	312767	556153	963632
1560	78467	112964	200904	263741	313868	558112	967025
1565	78742	113361	201610	264667	314971	560072	970422
1570	79018	113758	202316	265595	316075	562035	973823
1575	79294	114156	203023	266523	317179	563999	977226
1580	79571	114554	203731	267452	318285	565965	980633
1585	79848	114952	204440	268382	319392	567933	984044
1590	80125	115351	205149	269313	320500	569904	987457
1595	80402	115750	205859	270245	321609	571876	990874
1600	80679	116149	206569	271178	322719	573850	994295

Superheat Correction Factor

Flowing Pressure* (psia)	Superheat Correction Factor K_{sh} Total Temperature, °F, of Superheated Steam																
	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
50	0.987	0.957	0.930	0.905	0.882	0.861	0.841	0.823	0.805	0.789	0.774	0.759	0.745	0.732	0.719	0.708	0.696
100	0.998	0.963	0.935	0.909	0.885	0.864	0.843	0.825	0.807	0.790	0.775	0.760	0.746	0.733	0.720	0.708	0.697
150	0.984	0.970	0.940	0.913	0.888	0.866	0.846	0.826	0.808	0.792	0.776	0.761	0.747	0.733	0.721	0.709	0.697
200	0.979	0.977	0.945	0.917	0.892	0.869	0.848	0.828	0.810	0.793	0.777	0.762	0.748	0.734	0.721	0.709	0.698
250	-	0.972	0.951	0.921	0.895	0.871	0.850	0.830	0.812	0.794	0.778	0.763	0.749	0.735	0.722	0.710	0.698
300	-	0.968	0.957	0.926	0.898	0.874	0.852	0.832	0.813	0.796	0.780	0.764	0.750	0.736	0.723	0.710	0.699
350	-	0.968	0.963	0.930	0.902	0.877	0.854	0.834	0.815	0.797	0.781	0.765	0.750	0.736	0.723	0.711	0.699
400	-	-	0.963	0.935	0.906	0.880	0.857	0.836	0.816	0.798	0.782	0.766	0.751	0.737	0.724	0.712	0.700
450	-	-	0.961	0.940	0.909	0.883	0.859	0.838	0.818	0.800	0.783	0.767	0.752	0.738	0.725	0.712	0.700
500	-	-	0.961	0.946	0.914	0.886	0.862	0.840	0.820	0.801	0.784	0.768	0.753	0.739	0.725	0.713	0.701
550	-	-	0.962	0.952	0.918	0.889	0.864	0.842	0.822	0.803	0.785	0.769	0.754	0.740	0.726	0.713	0.701
600	-	-	0.964	0.958	0.922	0.892	0.867	0.844	0.823	0.804	0.787	0.770	0.755	0.740	0.727	0.714	0.702
650	-	-	0.968	0.958	0.927	0.896	0.869	0.846	0.825	0.806	0.788	0.771	0.756	0.741	0.728	0.715	0.702
700	-	-	-	0.958	0.931	0.899	0.872	0.848	0.827	0.807	0.789	0.772	0.757	0.742	0.728	0.715	0.703
750	-	-	-	0.958	0.936	0.903	0.875	0.850	0.828	0.809	0.790	0.774	0.758	0.743	0.729	0.716	0.703
800	-	-	-	0.960	0.942	0.906	0.878	0.852	0.830	0.810	0.792	0.774	0.759	0.744	0.730	0.716	0.704
850	-	-	-	0.962	0.947	0.910	0.880	0.855	0.832	0.812	0.793	0.776	0.760	0.744	0.730	0.717	0.704
900	-	-	-	0.965	0.953	0.914	0.883	0.857	0.834	0.813	0.794	0.777	0.760	0.745	0.731	0.718	0.705
950	-	-	-	0.969	0.958	0.918	0.886	0.860	0.836	0.815	0.796	0.778	0.761	0.746	0.732	0.718	0.705
1000	-	-	-	0.974	0.959	0.923	0.890	0.862	0.838	0.816	0.797	0.779	0.762	0.747	0.732	0.719	0.706
1050	-	-	-	-	0.960	0.927	0.893	0.864	0.840	0.818	0.798	0.780	0.763	0.748	0.733	0.719	0.707
1100	-	-	-	-	0.962	0.931	0.896	0.867	0.842	0.820	0.800	0.781	0.764	0.749	0.734	0.720	0.707
1150	-	-	-	-	0.964	0.936	0.899	0.870	0.844	0.821	0.801	0.782	0.765	0.749	0.735	0.721	0.708
1200	-	-	-	-	0.966	0.941	0.903	0.872	0.846	0.823	0.802	0.784	0.766	0.750	0.735	0.721	0.708
1250	-	-	-	-	0.969	0.946	0.906	0.875	0.848	0.825	0.804	0.785	0.767	0.751	0.736	0.722	0.709
1300	-	-	-	-	0.973	0.952	0.910	0.878	0.850	0.826	0.805	0.786	0.768	0.752	0.737	0.723	0.709
1350	-	-	-	-	0.977	0.958	0.914	0.880	0.852	0.828	0.807	0.787	0.769	0.753	0.737	0.723	0.710
1400	-	-	-	-	0.982	0.963	0.918	0.883	0.854	0.830	0.808	0.788	0.770	0.754	0.738	0.724	0.710
1450	-	-	-	-	0.987	0.968	0.922	0.886	0.857	0.832	0.809	0.790	0.771	0.754	0.739	0.724	0.711
1500	-	-	-	-	0.993	0.970	0.926	0.889	0.859	0.833	0.811	0.791	0.772	0.755	0.740	0.725	0.711
1550	-	-	-	-	-	0.972	0.930	0.892	0.861	0.835	0.812	0.792	0.773	0.756	0.740	0.726	0.712
1600	-	-	-	-	-	0.973	0.934	0.894	0.863	0.836	0.813	0.792	0.774	0.756	0.740	0.726	0.712
1650	-	-	-	-	-	0.973	0.936	0.895	0.863	0.836	0.812	0.791	0.772	0.755	0.739	0.724	0.710
1700	-	-	-	-	-	0.973	0.938	0.895	0.863	0.835	0.811	0.790	0.771	0.754	0.738	0.723	0.709
1750	-	-	-	-	-	0.974	0.940	0.896	0.862	0.835	0.810	0.789	0.770	0.752	0.736	0.721	0.707
1800	-	-	-	-	-	0.975	0.942	0.897	0.862	0.834	0.810	0.788	0.768	0.751	0.735	0.720	0.705

Notes:

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

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

Hydrostatic Test Plugs

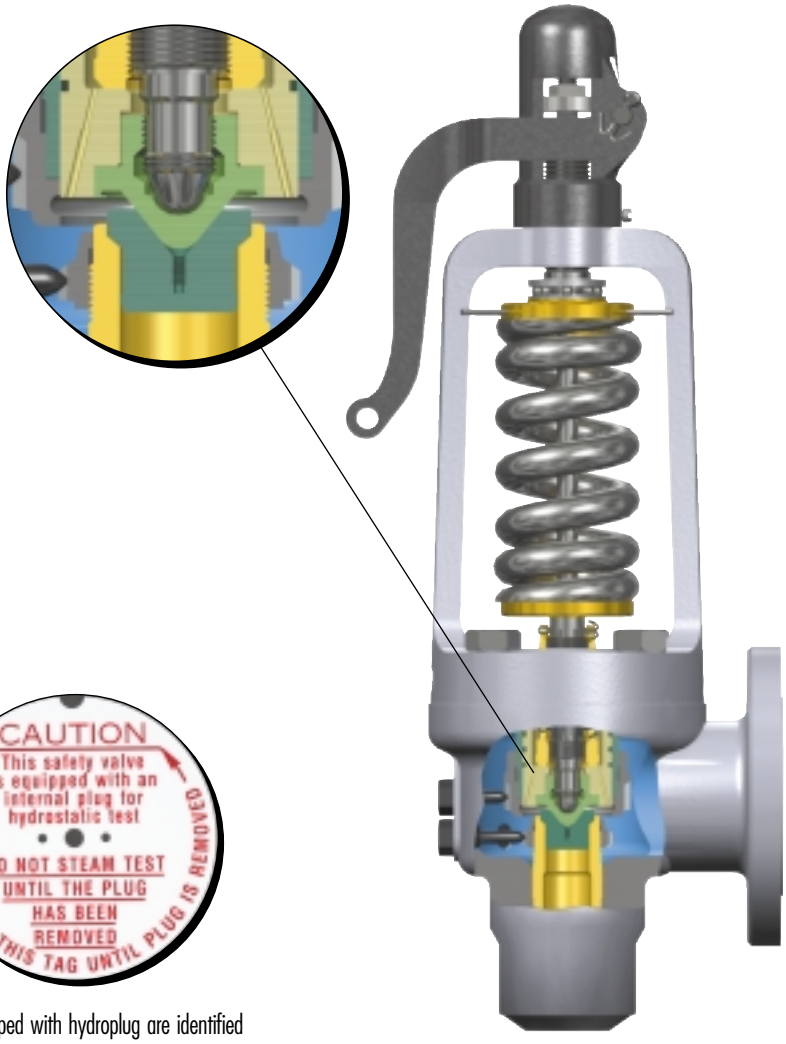
For buttweld inlet valves shipped, hydrostatic test plugs are normally installed to increase "set point" approximately 1.5 times the valve set pressure for hydrostatic testing. It is strongly recommended that hydrostatic test plugs be used, in conjunction with proper gag and gagging procedure, during hydrostatic testing to avoid valve component damage.

For flanged inlet valves shipped, hydrostatic test plugs are not normally installed. It is suggested that the valve not be installed until after the unit hydrostatic test has been performed utilizing "blind" flanges to blank-off the unit nozzles.

Note 1: Hydrostatic plugs may be added or deleted upon specific request.
Note 2: Consult maintenance manual for hydrostatic test and gag procedures.

2700

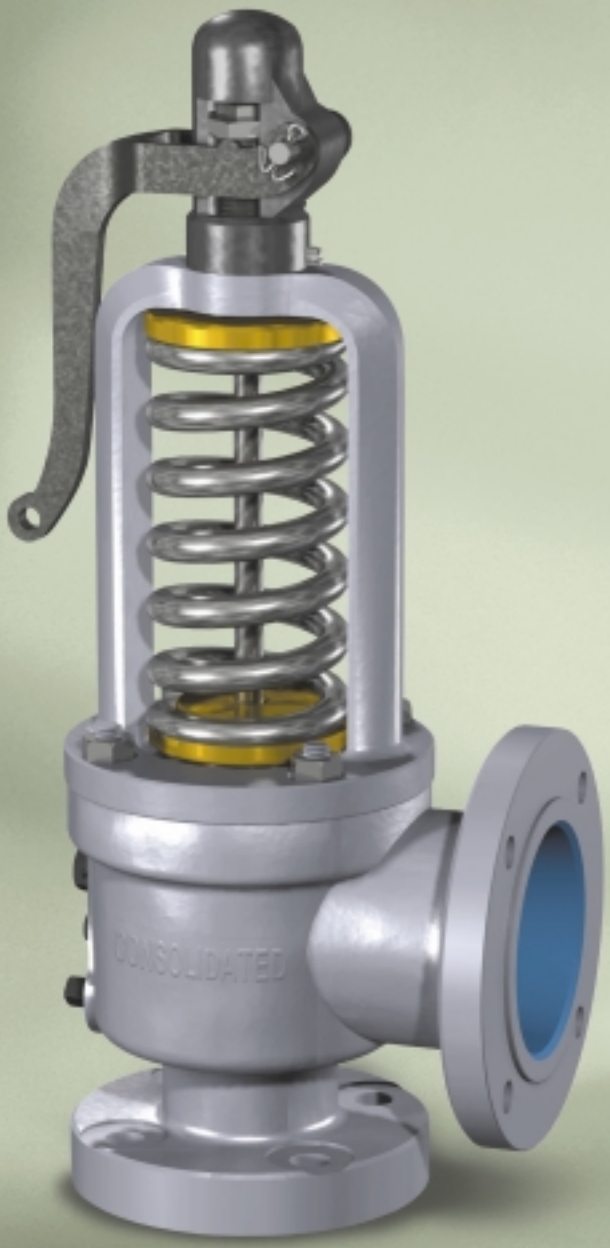
Inlet Type	Hydrostatic Test Plugs (Note 1) Installed Before Shipping
Flanged Inlet	No
Buttweld Inlet	Yes



Valves shipped with hydroplug are identified by a Red on White Caution Tag which is attached to the valve by wires extending through the drain hole in the valve body.

2700

1811
Safety Valves



Consolidated®

Table of Contents

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

1811

INLET SIZES — 1-1/4" through 6" flanged

INLET RATINGS — ANSI Class 300 & 600

OUTLET SIZES — 1-1/2" through 8" flanged

OUTLET RATINGS — ANSI Class 150

ORIFICE SIZES — Ten sizes: F through Q

TEMPERATURE RANGE — -20°F to 1000°F

MATERIALS — Alloy and carbon steel cast body with stainless steel trim is standard.

CERTIFICATION — ASME B&PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 20% of Set Pressure

Maximum Set Pressure*

Temperature		Pressure Class	
°F	Valve Temp. Class	600	300
750	1811B	725 psig	320 psig
950	1811D	725 psig	320 psig
1000		430 psig	215 psig

* For intermediate temperatures, interpolation is permitted per ANSI B16.34, 1996 edition, paragraph 2.1.
* For set pressures higher than those listed, factory approval is required.

! CAUTION

Because the 1811 valve is not totally enclosed, upon actuation the system media will escape from the following locations:
(1) The valve outlet which is the main discharge area.
(2) The open yoke will also allow a small amount of steam to exhaust vertically.
(3) The drain hole at the base of the valve.

Flanged Inlet - Type 1811, class 300

Inlet (Note 2) ANSI Std. R.F. Flange		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1000°F (538°C)	in^2	cm^2	
1-1/4"	300	1-1/2"	150	1811FB	1811FD	0.307	1.981	F
1-1/4"	300	1-1/2"	150	1811GB	1811GD	0.503	3.245	G
1-1/2"	300	2-1/2"	150	1811HB	1811HD	0.785	5.065	H
1-1/2"	300	2-1/2"	150	1811JB	1811JD	1.287	8.304	J
2"	300	3"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	300	4"	150	1811LB	1811LD	2.853	18.408	L
3"	300	4"	150	1811MB	1811MD	3.600	23.227	M
4"	300	6"	150	1811NB	1811ND	4.340	28.002	N
4"	300	6"	150	1811PB	1811PD	6.380	41.164	P
6"	300	8"	150	1811QB	1811QD	11.050	71.295	Q

Flanged Inlet - Type 1811, class 600

Inlet (Note 2) ANSI Std. R.F. Flange		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature (Note 1)		Orifice Discharge area		Designation
Size	Class	Size	Class	750°F (399°C)	1000°F (538°C)	in^2	cm^2	
1-1/4"	600	1-1/2"	150	1811FB	1811FD	0.307	1.981	F
1-1/4"	600	1-1/2"	150	1811GB	1811GD	0.503	3.245	G
1-1/2"	600	2-1/2"	150	1811HB	1811HD	0.785	5.065	H
1-1/2"	600	2-1/2"	150	1811JB	1811JD	1.287	8.304	J
2"	600	3"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	600	4"	150	1811LB	1811LD	2.853	18.408	L
3"	600	4"	150	1811MB	1811MD	3.600	23.227	M
4"	600	6"	150	1811NB	1811ND	4.340	28.002	N
4"	600	6"	150	1811PB	1811PD	6.380	41.164	P
6"	600	8"	150	1811QB	1811QD	11.050	71.295	Q

Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure/temperature table.
2. Available with ANSI B16.5 flange facings. See page GI.23 for selections.

Flanged Inlet - Type 1811, class 300

alternate inlet and outlet sizes for replacement valves only

Inlet ANSI Std. R.F. Flange		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1000°F (538°C)	in^2	cm^2	
1-1/2"	300	1-1/2"	150	1811FB	1811FD	0.307	1.981	F
2"	300	1-1/2"	150	1811FB	1811FD	0.307	1.985	F
1-1/2"	300	1-1/2"	150	1811GB	1811GD	0.503	3.245	G
2"	300	1-1/2"	150	1811GB	1811GD	0.503	3.245	G
2"	300	2-1/2"	150	1811HB	1811HD	0.785	5.065	H
2-1/2"	300	2-1/2"	150	1811HB	1811HD	0.785	5.065	H
2"	300	2-1/2"	150	1811JB	1811JD	1.287	8.304	J
2-1/2"	300	2-1/2"	150	1811JB	1811JD	1.287	8.304	J
2"	300	4"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	300	4"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	300	4"	150	1811KB	1811KD	1.840	11.872	K
3"	300	3"	150	1811KB	1811KD	1.840	11.872	K
3"	300	4"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	300	6"	150	1811LB	1811LD	2.853	18.408	L
3"	300	6"	150	1811LB	1811LD	2.853	18.408	L
3"	300	6"	150	1811LB	1811LD	2.853	18.408	L
4"	300	6"	150	1811LB	1811LD	2.853	18.408	L
3"	300	6"	150	1811MB	1811MD	3.600	23.227	M

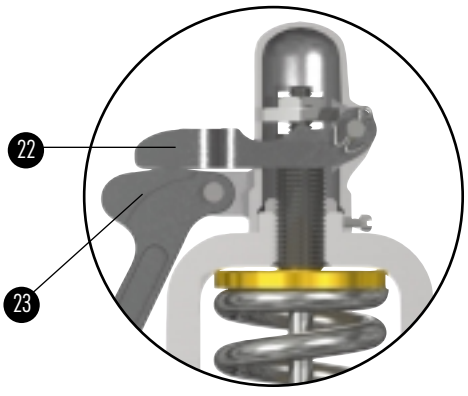
Flanged Inlet - Type 1811, class 600

alternate inlet and outlet sizes for replacement valves only

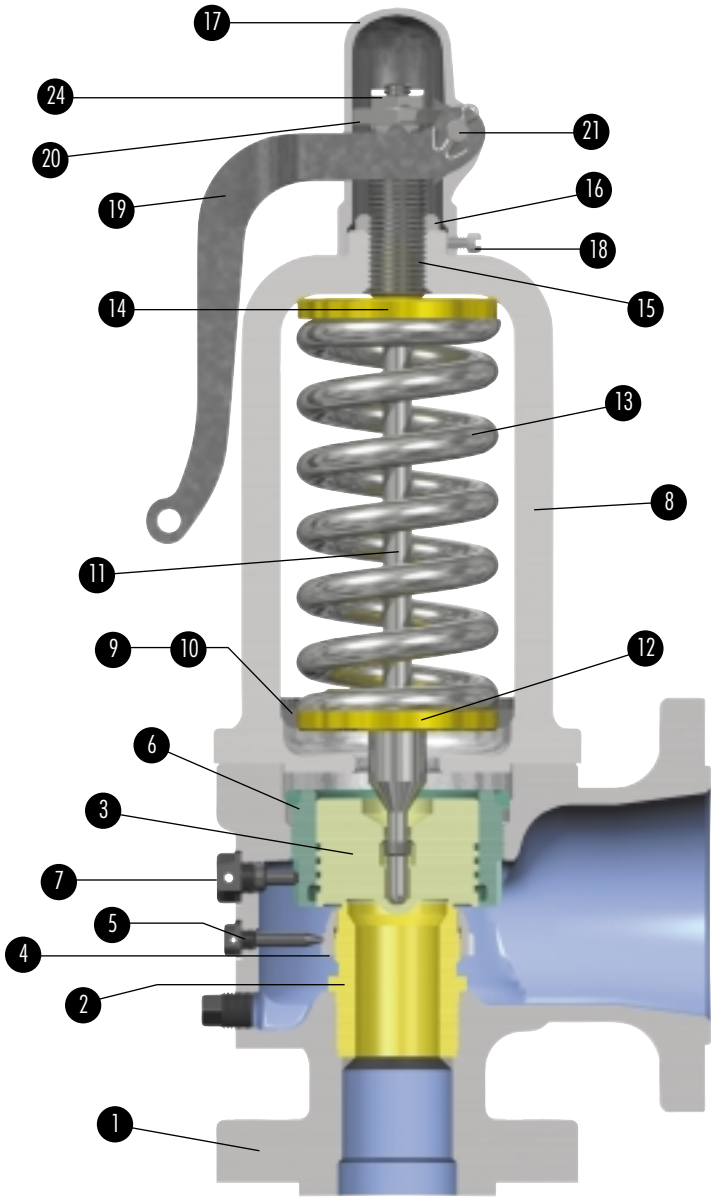
Inlet ANSI Std. R.F. Flange		Outlet ANSI Std. R.F. Flange		Type Numbers Maximum Temperature		Orifice Discharge Area		Designation
Size	Class	Size	Class	750°F (399°C)	1000°F (538°C)	in^2	cm^2	
1-1/2"	600	1-1/2"	150	1811FB	1811FD	0.307	1.981	F
2"	600	1-1/2"	150	1811FB	1811FD	0.307	1.985	F
1-1/2"	600	1-1/2"	150	1811GB	1811GD	0.503	3.245	G
2"	600	1-1/2"	150	1811GB	1811GD	0.503	3.245	G
2"	600	2-1/2"	150	1811HB	1811HD	0.785	5.065	H
2-1/2"	600	2-1/2"	150	1811HB	1811HD	0.785	5.065	H
2"	600	2-1/2"	150	1811JB	1811JD	1.287	8.304	J
2-1/2"	600	2-1/2"	150	1811JB	1811JD	1.287	8.304	J
2"	600	4"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	600	4"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	600	4"	150	1811KB	1811KD	1.840	11.872	K
3"	600	3"	150	1811KB	1811KD	1.840	11.872	K
3"	600	4"	150	1811KB	1811KD	1.840	11.872	K
2-1/2"	600	6"	150	1811LB	1811LD	2.853	18.408	L
3"	600	6"	150	1811LB	1811LD	2.853	18.408	L
3"	600	6"	150	1811LB	1811LD	2.853	18.408	L
4"	600	6"	150	1811LB	1811LD	2.853	18.408	L
3"	600	6"	150	1811MB	1811MD	3.600	23.227	M

300 & 600 ANSI Class

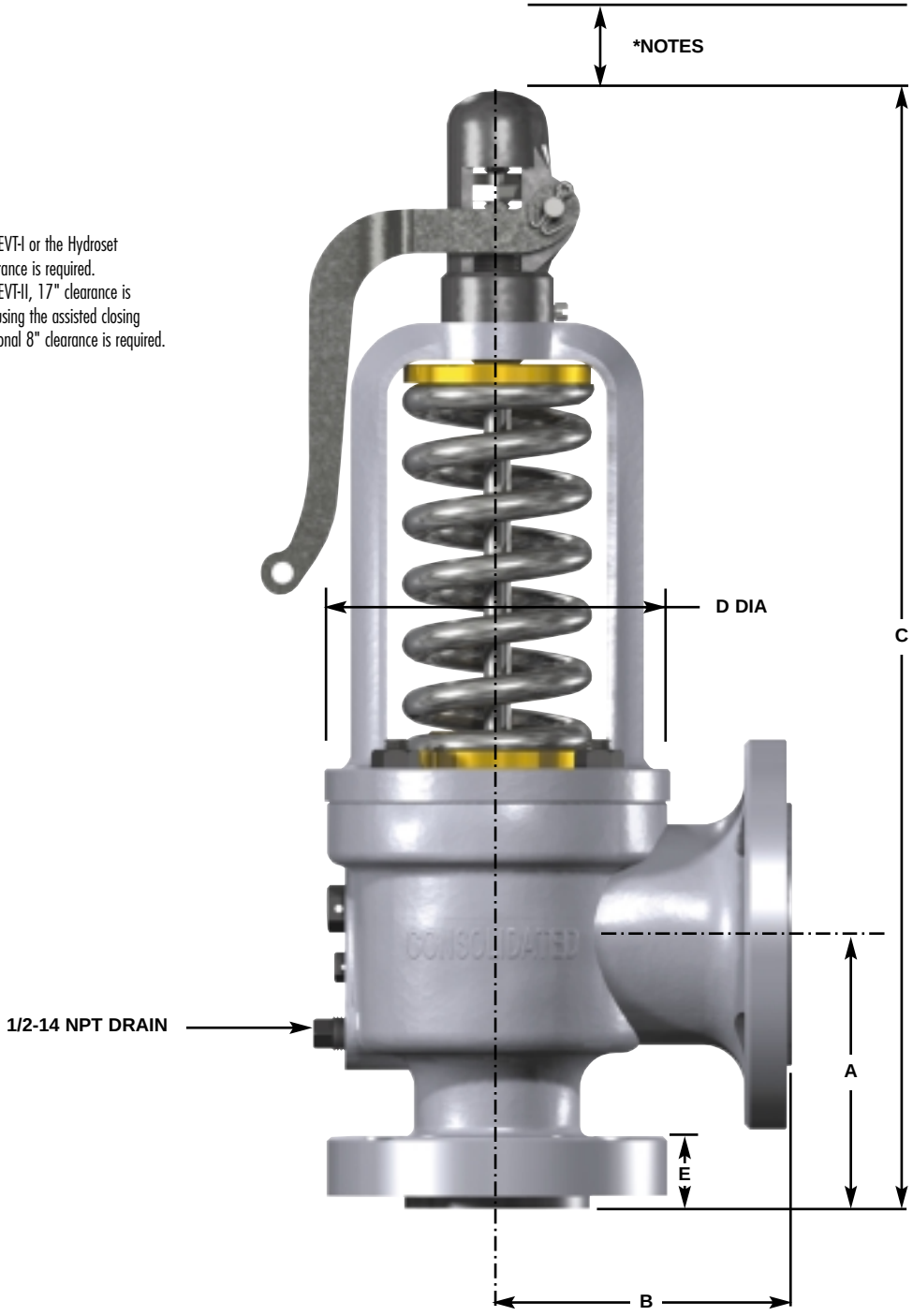
	Part	Material
1	Base - 1811B	SA216 WCC Carbon Steel
	Base - 1811D	SA217 WC6 Alloy Steel
2	Seat Bushing	Stainless Steel
3	Disc	Stainless Steel
4	Lower Adj. Ring	Stainless Steel
5	Lower Adj. Ring Pin	Stainless Steel
6	Upper Adj. Ring - 1811B	Leaded Nickel Silver
6	Upper Adj. Ring - 1811D	Monel
7	Upper Adj. Ring Pin	Stainless Steel
8	Yoke	SA216 WCC Carbon Steel
9	Base Stud	B7 Alloy Steel
10	Stud Nut	2H Carbon Steel
11	Spindle	Stainless Steel
12	Bottom Spring Washer	Carbon Steel
13	Spring	Alloy Steel
14	Top Spring Washer	Carbon Steel
15	Compression Screw	Brass
16	Compression Screw Nut	Brass
17	Cap 1811F, G, H & J	Bronze
	Cap 1811K, L, M, N, P & Q	Malleable Iron
18	Cap Set Screw	Carbon Steel
19	Lever	Malleable Iron
20	Release Nut	Carbon Steel
21	Lever Pin	Carbon Steel
22	Top Lever (4" & 6" sizes)	Malleable Iron
23	Drop Lever (4" & 6" sizes)	Malleable Iron
24	Release Lock Nut	Carbon Steel



Lifting Lever for 4"x 6" sizes



*Notes:
1. When using the EVT-I or the Hydroset device, 15" clearance is required.
2. When using the EVT-II, 17" clearance is required. When using the assisted closing device, an additional 8" clearance is required.



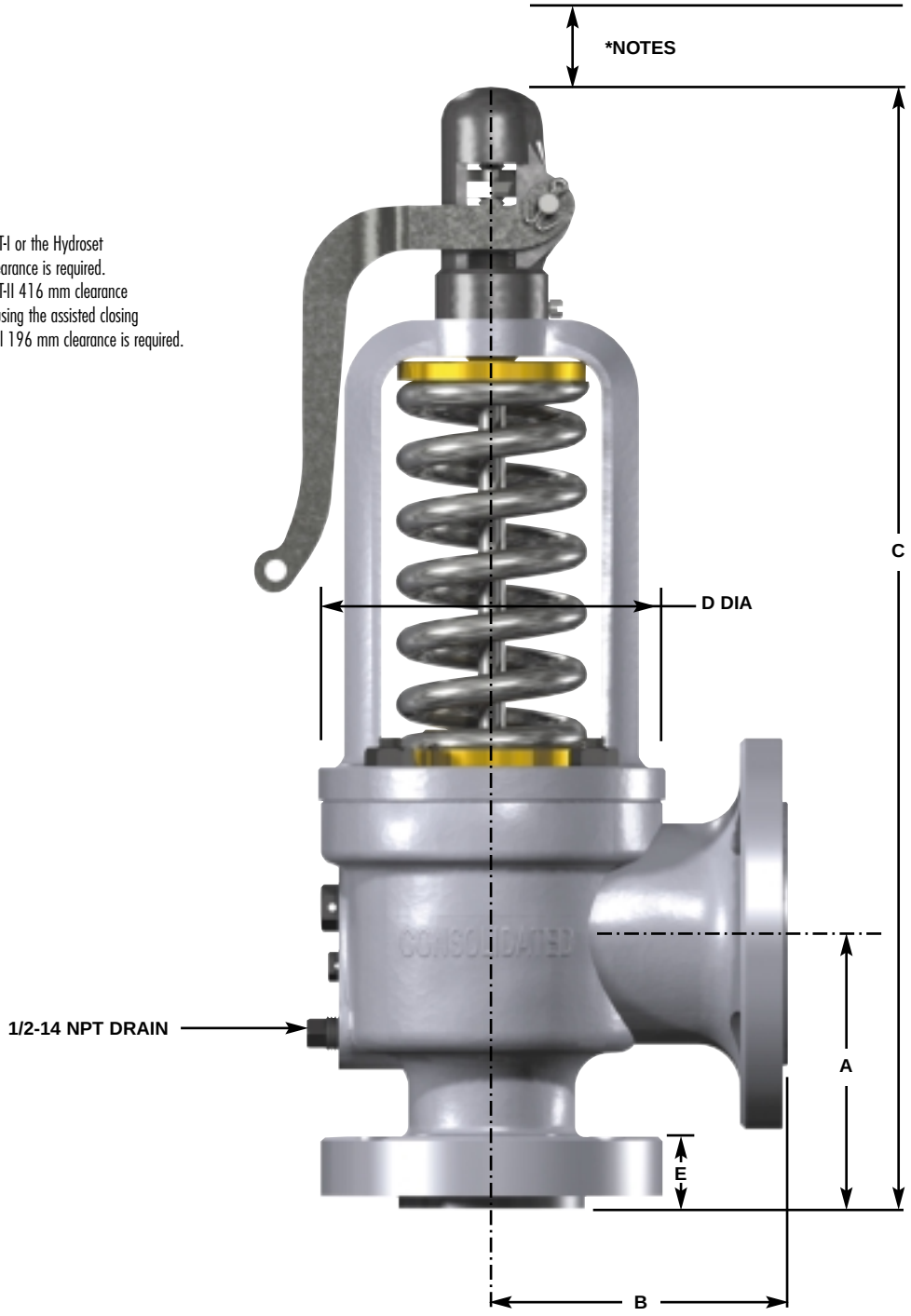
300 ANSI Class (USCS units)

General Dimensions								
Inlet Size	Type No.	A in.	B in.	C in.	D in.	E in.	Dismantling Height in.	Weight (lbs.)
1-1/4"	1811FB	4-13/32	4-3/16	14-3/8	4-5/8	1-1/16	16-5/8	35
	1811FD	5	4-3/16	15	4-5/8	1-5/16	17	35
1 -1/4"	1811GB	4-13/32	4-3/16	14-3/8	4-5/8	1-1/16	16-5/8	35
	1811GD	5	4-3/16	15	4-5/8	1-5/16	17	35
1-1/2"	1811HB	4-3/4	4-7/8	15-7/8	5-13/16	1-1/8	18-1/4	45
	1811HD	5-3/4	4-7/8	16-7/8	5-13/16	1-7/16	19-1/4	45
1-1/2"	1811JB	4-3/4	4-7/8	15-7/8	5-13/16	1-1/8	18-1/4	45
	1811JD	5-3/4	4-7/8	16-7/8	5-13/16	1-7/16	19-1/4	45
2"	1811KB	5-1/4	5-9/16	19-5/8	6-1/2	1-5/16	22-1/2	80
	1811KD	6-1/4	5-9/16	20-5/8	6-1/2	1-9/16	23-1/2	80
2 1/2"	1811LB	6-1/8	6-5/16	21	7-5/8	1-7/16	23-7/8	112
	1811LD	7-1/2	6-5/16	22-5/16	7-5/8	1-13/16	25-1/4	112
3"	1811MB	6-1/2	6-7/16	23-5/8	7-7/8	1-9/16	26-3/4	125
	1811MD	6-1/2	6-7/16	23-5/8	7-7/8	1-9/16	26-3/4	125
4"	1811NB	7-1/4	7-7/16	26	8-3/4	1-9/16	29-1/8	160
	1811ND	7-11/16	7-7/16	26-3/8	8-3/4	1-13/16	29-9/16	160
4"	1811PB	7-7/16	8-3/16	28-3/8	10-1/4	1-9/16	32-1/8	195
	1811PD	7-11/16	8-3/16	28-5/8	10-1/4	1-13/16	32-3/8	195
6"	1811QB	9-7/8	9-3/8	36-1/4	12-3/8	1-3/4	41-3/8	375
	1811QD	10-5/16	9-3/8	36-3/4	12-3/8	2-3/16	41-7/8	375

600 ANSI Class (USCS units)

General Dimensions								
Inlet Size	Type No.	A in.	B in.	C in.	D in.	E in.	Dismantling Height in.	Weight (lbs.)
1-1/4"	1811FB	4-13/32	4 3/16	14-3/8	4-5/8	1-1/16	16-5/8	35
	1811FD	5	4 3/16	15	4-5/8	1-5/16	17	35
1 -1/4"	1811GB	4-13/32	4 3/16	14-3/8	4-5/8	1-1/16	16-5/8	35
	1811GD	5	4 3/16	15	4-5/8	1-5/16	17	35
1-1/2"	1811HB	4-3/4	4-7/8	15-7/8	5-13/16	1-1/8	18-1/4	45
	1811HD	5-3/4	4-7/8	16-7/8	5-13/16	1-7/16	19-1/4	45
1-1/2"	1811JB	4-3/4	4-7/8	17-5/8	5-13/16	1-1/8	20-1/2	45
	1811JD	5-3/4	4-7/8	18-5/8	5-13/16	1-7/16	21-1/2	45
2"	1811KB	5-1/4	5-9/16	21-5/8	6-1/2	1-5/16	24-5/8	80
	1811KD	6-1/4	5-9/16	22-5/8	6-1/2	1-9/16	25-5/8	80
2 1/2"	1811LB	6-1/8	6-5/16	24-1/2	7-5/8	1-7/16	27-1/2	112
	1811LD	7-1/2	6-5/16	25-7/8	7-5/8	1-13/16	28-7/8	112
3"	1811MB	6-1/2	6-7/16	26	7-7/8	1-9/16	29-1/8	125
	1811MD	6-1/2	6-7/16	26	7-7/8	1-9/16	29-1/8	125
4"	1811NB	7-11/16	7-7/16	28-1/2	8-3/4	1-13/16	32-3/8	175
	1811ND	7-11/16	7-7/16	28-1/2	8-3/4	1-13/16	32-3/8	175
4"	1811PB	7-11/16	8-3/16	32-3/4	10-1/4	1-13/16	37-1/4	210
	1811PD	7-11/16	8-3/16	32-3/4	10-1/4	1-13/16	37-1/4	210
6"	1811QB	10-5/16	9-3/8	39-1/8	12-3/8	2-3/16	44-1/8	410
	1811QD	10-5/16	9-3/8	39-1/8	12-3/8	2-3/16	44-1/8	410

*Notes:
1. When using the EVT-I or the Hydroset device 381 mm clearance is required.
2. When using the EVT-II 416 mm clearance is required. When using the assisted closing device an additional 196 mm clearance is required.



300 ANSI Class (metric units)

General Dimensions								
Inlet Size	Type No.	A mm	B mm	C mm	D mm	E mm	Dismantling Height mm	Weight (kg)
1-1/4"	1811FB	111.9	106.4	365.1	117.5	27.0	422.3	16
	1811FD	127.0	106.4	381.0	117.5	33.3	431.8	16
1-1/4"	1811GB	111.9	106.4	365.1	117.5	27.0	422.3	16
	1811GD	127.0	106.4	381.0	117.5	33.3	431.8	16
1-1/2"	1811HB	120.7	123.8	403.2	147.6	28.6	463.6	21
	1811HD	146.1	123.8	428.6	147.6	36.5	489.0	21
1-1/2"	1811JB	120.7	123.8	403.2	147.6	28.6	463.6	21
	1811JD	146.1	123.8	428.6	147.6	36.5	489.0	21
2"	1811KB	133.4	141.3	498.5	165.1	33.3	571.5	37
	1811KD	158.8	141.3	523.9	165.1	39.7	596.9	37
2-1/2"	1811LB	155.6	160.3	533.4	193.7	36.5	606.4	52
	1811LD	190.5	160.3	566.7	193.7	46.0	641.4	52
3"	1811MB	165.1	163.5	600.1	200.0	39.7	679.5	58
	1811MD	165.1	163.5	600.1	200.0	39.7	679.5	58
4"	1811NB	184.2	188.9	660.4	222.3	39.7	739.8	74
	1811ND	195.2	188.9	669.9	222.3	46.0	750.9	74
4"	1811PB	188.9	207.9	720.7	260.4	39.7	815.9	89
	1811PD	195.2	207.9	727.1	260.4	46.0	822.3	89
6"	1811QB	250.8	238.1	920.8	314.3	44.5	1050.9	170
	1811QD	261.9	238.1	933.5	314.3	55.5	1063.6	170

600 ANSI Class (metric units)

Inlet Size	Type No.	A mm	B mm	C mm	D mm	E mm	Dismantling Height mm	Weight (kg)
1-1/4"	1811FB	111.9	106.4	365.1	117.5	27.0	422.3	16
	1811FD	127.0	106.4	381.0	117.5	33.3	431.8	16
1-1/4"	1811GB	111.9	106.4	365.1	117.5	27.0	422.3	16
	1811GD	127.0	106.4	381.0	117.5	33.3	431.8	16
1-1/2"	1811HB	120.7	123.8	403.2	147.6	28.6	463.6	21
	1811HD	146.1	123.8	428.6	147.6	36.5	489.0	21
1-1/2"	1811JB	120.7	123.8	447.7	147.6	28.6	520.7	21
	1811JD	146.1	123.8	473.1	147.6	36.5	546.1	21
2"	1811KB	133.4	141.3	549.3	165.1	33.3	625.5	37
	1811KD	158.8	141.3	574.7	165.1	39.7	650.9	37
2-1/2"	1811LB	155.6	160.3	622.3	193.7	36.5	698.5	52
	1811LD	190.5	160.3	657.2	193.7	46.0	733.4	52
3"	1811MB	165.1	163.5	660.4	200.0	39.7	739.8	58
	1811MD	165.1	163.5	660.4	200.0	39.7	739.8	58
4"	1811NB	195.2	188.9	723.9	222.3	46.0	822.3	80
	1811ND	195.2	188.9	723.9	222.3	46.0	822.3	80
4"	1811PB	195.2	207.9	831.9	260.4	46.0	946.2	96
	1811PD	195.2	207.9	831.9	260.4	46.0	946.2	96
6"	1811QB	261.9	238.1	993.8	314.3	55.5	1120.8	186
	1811QD	261.9	238.1	993.8	314.3	55.5	1120.8	186

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure or 2 psig, whichever is greater, 90% of actual capacity

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

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.15. Review pressure/temperature limits on page 1811.1.

Orifice Designation & Area - Square Inches

Orifice Designation	F	G	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.307	0.503	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)										
15	439	720	1123	1842	2634	4084	5154	6213	9134	15820
20	508	833	1301	2133	3049	4729	5967	7193	10575	18316
25	578	947	1478	2423	3465	5373	6780	8173	12016	20811
30	647	1060	1655	2714	3880	6017	7593	9154	13456	23306
35	716	1174	1833	3005	4296	6661	8406	10134	14897	25802
40	786	1288	2010	3295	4712	7306	9219	11114	16338	28297
45	855	1401	2187	3586	5127	7950	10032	12094	17779	30793
50	924	1515	2364	3877	5543	8594	10845	13074	19219	33288
55	994	1628	2542	4167	5958	9239	11658	14054	20660	35783
60	1063	1742	2719	4458	6374	9883	12471	15034	22101	38279
65	1132	1856	2896	4749	6789	10527	13284	16014	23542	40774
70	1203	1971	3077	5045	7213	11184	14113	17014	25011	43320
75	1274	2088	3260	5344	7641	11848	14950	18023	26495	45890
80	1346	2205	3442	5644	8069	12512	15788	19033	27979	48460
85	1417	2322	3625	5943	8497	13175	16625	20042	29463	51030
90	1489	2439	3807	6242	8925	13839	17462	21052	30947	53601
95	1560	2556	3990	6542	9353	14502	18300	22061	32431	56171
100	1632	2673	4173	6841	9781	15166	19137	23071	33915	58741
105	1703	2790	4355	7141	10209	15830	19974	24080	35399	61311
110	1774	2907	4538	7440	10637	16493	20812	25090	36883	63882
115	1846	3024	4720	7739	11065	17157	21649	26099	38367	66452
120	1917	3141	4903	8039	11493	17820	22486	27109	39851	69022
125	1989	3258	5086	8338	11921	18484	23324	28118	41335	71592
130	2060	3375	5268	8637	12349	19148	24161	29128	42819	74163
135	2131	3492	5451	8937	12777	19811	24999	30137	44303	76733
140	2203	3609	5633	9236	13205	20475	25836	31147	45787	79303
145	2274	3726	5816	9535	13633	21139	26673	32156	47271	81873
150	2346	3843	5998	9835	14061	21802	27511	33166	48755	84444
155	2417	3960	6181	10134	14489	22466	28348	34175	50239	87014
160	2488	4077	6364	10433	14917	23129	29185	35185	51723	89584
165	2560	4194	6546	10733	15345	23793	30023	36194	53207	92154
170	2631	4311	6729	11032	15773	24457	30860	37204	54691	94725
175	2703	4428	6911	11332	16201	25120	31698	38213	56175	97295
180	2774	4545	7094	11631	16629	25784	32535	39223	57659	99865
185	2845	4662	7277	11930	17057	26447	33372	40232	59143	102435
190	2917	4779	7459	12230	17485	27111	34210	41242	60627	105006
195	2988	4896	7642	12529	17913	27775	35047	42251	62112	107576
200	3060	5013	7824	12828	18341	28438	35884	43261	63596	110146
205	3131	5130	8007	13128	18769	29102	36722	44270	65080	112716
210	3203	5247	8190	13427	19197	29766	37559	45280	66564	115287
215	3274	5364	8372	13726	19625	30429	38396	46289	68048	117857
220	3345	5481	8555	14026	20053	31093	39234	47299	69532	120427
225	3417	5598	8737	14325	20481	31756	40071	48308	71016	122997
230	3488	5715	8920	14625	20909	32420	40909	49318	72500	125568
235	3560	5832	9103	14924	21337	33084	41746	50327	73984	128138
240	3631	5949	9285	15223	21765	33747	42583	51337	75468	130708
245	3702	6066	9468	15523	22193	34411	43421	52346	76952	133278
250	3774	6183	9650	15822	22621	35074	44258	53356	78436	135849
255	3845	6300	9833	16121	23049	35738	45095	54365	79920	138419
260	3917	6417	10016	16421	23477	36402	45933	55375	81404	140989

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure or 2 psig, whichever is greater, 90% of actual capacity

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

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.15. Review pressure/temperature limits on page 1811.1.

Orifice Designation & Area - Square Inches

Orifice Designation	F	G	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.307	0.503	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)										
265	3988	6534	10198	16720	23905	37065	46770	56384	82888	143560
270	4059	6651	10381	17019	24333	37729	47608	57394	84372	146130
275	4131	6768	10563	17319	24760	38392	48445	58403	85856	148700
280	4202	6885	10746	17618	25188	39056	49282	59413	87340	151270
285	4274	7002	10928	17917	25616	39720	50120	60422	88824	153841
290	4345	7119	11111	18217	26044	40383	50957	61432	90308	156411
295	4416	7236	11294	18516	26472	41047	51794	62441	91792	158981
300	4488	7353	11476	18816	26900	41711	52632	63451	93276	161551
305	4559	7470	11659	19115	27328	42374	53469	64460	94760	164122
310	4631	7587	11841	19414	27756	43038	54306	65470	96244	166692
315	4702	7704	12024	19714	28184	43701	55144	66479	97728	169262
320	4773	7821	12207	20013	28612	44365	55981	67489	99212	171832
325	4845	7938	12389	20312	29040	45029	56819	68498	100696	174403
330	4916	8055	12572	20612	29468	45692	57656	69508	102180	176973
335	4988	8172	12754	20911	29896	46356	58493	70517	103664	179543
340	5059	8289	12937	21210	30324	47019	59331	71527	105148	182113
345	5131	8406	13120	21510	30752	47683	60168	72536	106632	184684
350	5202	8523	13302	21809	31180	48347	61005	73546	108116	187254
355	5273	8640	13485	22108	31608	49010	61843	74555	109600	189824
360	5345	8757	13667	22408	32036	49674	62680	75565	111084	192394
365	5416	8874	13850	22707	32464	50338	63518	76574	112568	194965
370	5488	8991	14033	23007	32892	51001	64355	77584	114052	197535
375	5559	9108	14215	23306	33320	51665	65192	78593	115536	200105
380	5630	9225	14398	23605	33748	52328	66030	79603	117020	202675
385	5702	9342	14580	23905	34176	52992	66867	80612	118504	205246
390	5773	9459	14763	24204	34604	53656	67704	81622	119988	207816
395	5845	9576	14946	24503	35032	54319	68542	82631	121472	210386
400	5916	9693	15128	24803	35460	54983	69379	83640	122956	212956
405	5987	9810	15311	25102	35888	55646	70216	84650	124440	215527
410	6059	9927	15493	25401	36316	56310	71054	85659	125924	218097
415	6130	10044	15676	25701	36744	56974	71891	86669	127408	220667
420	6202	10161	15858	26000	37172	57637	72729	87678	128892	223237
425	6273	10278	16041	26300	37600	58301	73566	88688	130376	225808
430	6344	10395	16224	26599	38028	58965	74403	89697	131860	228378
435	6416	10512	16406	26898	38456	59628	75241	90707	133344	230948
440	6487	10629	16589	27198	38884	60292	76078	91716	134828	233518
445	6559	10746	16771	27497	39312	60955	76915	92726	136312	236089
450	6630	10863	16954	27796	39740	61619	77753	93735	137796	238659
455	6702	10980	17137	28096	40168	62283	78590	94745	139280	241229
460	6773	11097	17319	28395	40596	62946	79428	95754	140764	243799
465	6844	11214	17502	28694	41024	63610	80265	96764	142248	246370
470	6916	11331	17684	28994	41452	64273	81102	97773	143732	248940
475	6987	11448	17867	29293	41880	64937	81940	98783	145216	251510
480	7059	11565	18050	29592	42308	65601	82777	99792	146700	254081
485	7130	11682	18232	29892	42736	66264	83614	100802	148184	256651
490	7201	11799	18415	30191	43164	66928	84452	101811	149668	259221
495	7273	11916	18597	30491	43592	67592	85289	102821	151152	261791
500	7344	12033	18780	30790	44020	68255	86126	103830	152636	264362
505	7416	12150	18963	31089	44448	68919	86964	104840	154120	266932
510	7487	12267	19145	31389	44876	69582	87801	105849	155604	269502

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure or 2 psig, whichever is greater, 90% of actual capacity

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Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.15. Review pressure/temperature limits on page 1811.1.

Orifice Designation & Area - Square Inches

Orifice Designation	F	G	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.307	0.503	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)										
515	7558	12384	19328	31688	45304	70246	88639	106859	157088	272072
520	7630	12501	19510	31987	45732	70910	89476	107868	158572	274643
525	7701	12618	19693	32287	46160	71573	90313	108878	160056	277213
530	7773	12735	19876	32586	46588	72237	91151	109887	161540	279783
535	7844	12852	20058	32885	47016	72900	91988	110897	163024	282353
540	7915	12969	20241	33185	47444	73564	92825	111906	164508	284924
545	7987	13086	20423	33484	47872	74228	93663	112916	165992	287494
550	8058	13203	20606	33783	48300	74891	94500	113925	167476	290064
555	8130	13320	20788	34083	48728	75555	95338	114935	168960	292634
560	8201	13437	20971	34382	49156	76219	96175	115944	170444	295205
565	8273	13554	21154	34682	49584	76882	97012	116954	171928	297775
570	8344	13671	21336	34981	50012	77546	97850	117963	173412	300345
575	8415	13788	21519	35280	50440	78209	98687	118973	174896	302915
580	8487	13905	21701	35580	50868	78873	99524	119982	176380	305486
585	8558	14022	21884	35879	51296	79537	100362	120992	177864	308056
590	8630	14139	22067	36178	51724	80200	101199	122001	179348	310626
595	8701	14256	22249	36478	52152	80864	102036	123011	180832	313196
600	8772	14373	22432	36777	52580	81527	102874	124020	182316	315767
605	8844	14490	22614	37076	53008	82191	103711	125030	183800	318337
610	8915	14607	22797	37376	53436	82855	104549	126039	185284	320907
615	8987	14724	22980	37675	53864	83518	105386	127049	186768	323477
620	9058	14841	23162	37975	54292	84182	106223	128058	188252	326048
625	9129	14958	23345	38274	54720	84846	107061	129068	189736	328618
630	9201	15075	23527	38573	55148	85509	107898	130077	191220	331188
635	9272	15192	23710	38873	55576	86173	108735	131087	192704	333758
640	9344	15309	23893	39172	56004	86836	109573	132096	194188	336329
645	9415	15426	24075	39471	56432	87500	110410	133106	195672	338899
650	9486	15543	24258	39771	56860	88164	111248	134115	197156	341469
655	9558	15660	24440	40070	57288	88827	112085	135125	198640	344039
660	9629	15777	24623	40369	57716	89491	112922	136134	200124	346610
665	9701	15894	24806	40669	58144	90154	113760	137144	201608	349180
670	9772	16011	24988	40968	58572	90818	114597	138153	203092	351750
675	9844	16128	25171	41267	59000	91482	115434	139163	204576	354320
680	9915	16245	25353	41567	59428	92145	116272	140172	206060	356891
685	9986	16362	25536	41866	59856	92809	117109	141182	207544	359461
690	10058	16479	25718	42166	60284	93472	117946	142191	209028	362031
695	10129	16596	25901	42465	60712	94136	118784	143201	210512	364601
700	10201	16713	26084	42764	61139	94800	119621	144210	211996	367172
705	10272	16830	26266	43064	61567	95463	120459	145220	213480	369742
710	10343	16947	26449	43363	61995	96127	121296	146229	214964	372312
715	10415	17064	26631	43662	62423	96791	122133	147239	216448	374883
720	10486	17181	26814	43962	62851	97454	122971	148248	217932	377453
725	10558	17298	26997	44261	63279	98118	123808	149258	219416	380023

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure or 3 psig, whichever is greater, 90% of actual capacity

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

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.15. Review pressure/temperature limits on page 1811.1.

Orifice Designation & Area - Square Inches

Orifice Designation	F	G	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.307	0.503	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)										
15	453	742	1159	1900	2717	4213	5316	6409	9422	16319
20	522	856	1336	2191	3133	4857	6129	7389	10863	18815
25	592	970	1513	2482	3548	5502	6942	8369	12304	21310
30	661	1083	1691	2772	3964	6146	7755	9350	13745	23806
35	737	1208	1886	3092	4421	6855	8650	10428	15329	26550
40	813	1333	2081	3412	4878	7563	9544	11506	16914	29295
45	890	1458	2276	3731	5335	8272	10438	12584	18499	32040
50	966	1583	2471	4051	5792	8981	11332	13662	20084	34785
55	1042	1708	2666	4371	6249	9690	12227	14740	21669	37530
60	1118	1833	2861	4690	6706	10398	13121	15818	23254	40275
65	1195	1958	3056	5010	7163	11107	14015	16896	24839	43020
70	1271	2083	3251	5330	7620	11816	14910	17974	26423	45765
75	1347	2208	3446	5650	8077	12524	15804	19052	28008	48510
80	1424	2333	3641	5969	8534	13233	16698	20131	29593	51255
85	1500	2458	3836	6289	8991	13942	17592	21209	31178	54000
90	1576	2583	4031	6609	9448	14651	18487	22287	32763	56745
95	1652	2708	4226	6928	9906	15359	19381	23365	34348	59490
100	1729	2832	4421	7248	10363	16068	20275	24443	35933	62235
105	1805	2957	4616	7568	10820	16777	21169	25521	37517	64980
110	1881	3082	4811	7887	11277	17485	22064	26599	39102	67724
115	1957	3207	5006	8207	11734	18194	22958	27677	40687	70469
120	2034	3332	5201	8527	12191	18903	23852	28755	42272	73214
125	2110	3457	5396	8847	12648	19612	24747	29833	43857	75959
130	2186	3582	5591	9166	13105	20320	25641	30912	45442	78704
135	2262	3707	5786	9486	13562	21029	26535	31990	47027	81449
140	2339	3832	5981	9806	14019	21738	27429	33068	48611	84194
145	2415	3957	6176	10125	14476	22446	28324	34146	50196	86939
150	2491	4082	6371	10445	14933	23155	29218	35224	51781	89684
155	2567	4207	6566	10765	15390	23864	30112	36302	53366	92429
160	2644	4332	6761	11085	15848	24573	31007	37380	54951	95174
165	2720	4457	6956	11404	16305	25281	31901	38458	56536	97919
170	2796	4582	7151	11724	16762	25990	32795	39536	58121	100664
175	2872	4707	7346	12044	17219	26699	33689	40614	59705	103409
180	2949	4832	7541	12363	17676	27407	34584	41693	61290	106154
185	3025	4957	7736	12683	18133	28116	35478	42771	62875	108898
190	3101	5082	7931	13003	18590	28825	36372	43849	64460	111643
195	3178	5207	8126	13322	19047	29534	37266	44927	66045	114388
200	3254	5331	8321	13642	19504	30242	38161	46005	67630	117133
205	3330	5456	8516	13962	19961	30951	39055	47083	69215	119878
210	3406	5581	8711	14282	20418	31660	39949	48161	70799	122623
215	3483	5706	8906	14601	20875	32368	40844	49239	72384	125368
220	3559	5831	9101	14921	21332	33077	41738	50317	73969	128113
225	3635	5956	9296	15241	21790	33786	42632	51395	75554	130858
230	3711	6081	9491	15560	22247	34495	43526	52474	77139	133603
235	3788	6206	9686	15880	22704	35203	44421	53552	78724	136348
240	3864	6331	9881	16200	23161	35912	45315	54630	80309	139093
245	3940	6456	10076	16519	23618	36621	46209	55708	81893	141838
250	4016	6581	10271	16839	24075	37329	47104	56786	83478	144583
255	4093	6706	10466	17159	24532	38038	47998	57864	85063	147328
260	4169	6831	10661	17479	24989	38747	48892	58942	86648	150072

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure or 3 psig, whichever is greater, 90% of actual capacity

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

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.15. Review pressure/temperature limits on page 1811.1.

Orifice Designation & Area - Square Inches

Orifice Designation	F	G	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.307	0.503	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)										
265	4245	6956	10856	17798	25446	39456	49786	60020	88233	152817
270	4321	7081	11051	18118	25903	40164	50681	61098	89818	155562
275	4398	7206	11246	18438	26360	40873	51575	62176	91403	158307
280	4474	7331	11441	18757	26817	41582	52469	63255	92987	161052
285	4550	7456	11636	19077	27274	42290	53363	64333	94572	163797
290	4627	7581	11831	19397	27731	42999	54258	65411	96157	166542
295	4703	7706	12026	19717	28189	43708	55152	66489	97742	169287
300	4779	7830	12221	20036	28646	44417	56046	67567	99327	172032
305	4855	7955	12416	20356	29103	45125	56941	68645	100912	174777
310	4932	8080	12611	20676	29560	45834	57835	69723	102497	177522
315	5008	8205	12806	20995	30017	46543	58729	70801	104081	180267
320	5084	8330	13001	21315	30474	47251	59623	71879	105666	183012
325	5160	8455	13196	21635	30931	47960	60518	72958	107251	185757
330	5237	8580	13391	21954	31388	48669	61412	74036	108836	188502
335	5313	8705	13586	22274	31845	49378	62306	75114	110421	191246
340	5389	8830	13781	22594	32302	50086	63200	76192	112006	193991
345	5465	8955	13976	22914	32759	50795	64095	77270	113591	196736
350	5542	9080	14171	23233	33216	51504	64989	78348	115175	199481
355	5618	9205	14366	23553	33673	52212	65883	79426	116760	202226
360	5694	9330	14561	23873	34131	52921	66778	80504	118345	204971
365	5770	9455	14756	24192	34588	53630	67672	81582	119930	207716
370	5847	9580	14951	24512	35045	54339	68566	82660	121515	210461
375	5923	9705	15146	24832	35502	55047	69460	83739	123100	213206
380	5999	9830	15341	25151	35959	55756	70355	84817	124685	215951
385	6075	9955	15536	25471	36416	56465	71249	85895	126269	218696
390	6152	10080	15731	25791	36873	57173	72143	86973	127854	221441
395	6228	10205	15926	26111	37330	57882	73038	88051	129439	224186
400	6304	10329	16121	26430	37787	58591	73932	89129	131024	226931
405	6381	10454	16316	26750	38244	59300	74826	90207	132609	229676
410	6457	10579	16511	27070	38701	60008	75720	91285	134194	232420
415	6533	10704	16706	27389	39158	60717	76615	92363	135779	235165
420	6609	10829	16901	27709	39615	61426	77509	93441	137363	237910
425	6686	10954	17096	28029	40072	62134	78403	94520	138948	240655
430	6762	11079	17291	28349	40530	62843	79297	95598	140533	243400
435	6838	11204	17486	28668	40987	63552	80192	96676	142118	246145
440	6914	11329	17681	28988	41444	64261	81086	97754	143703	248890
445	6991	11454	17876	29308	41901	64969	81980	98832	145288	251635
450	7067	11579	18071	29627	42358	65678	82875	99910	146873	254380
455	7143	11704	18266	29947	42815	66387	83769	100988	148457	257125
460	7219	11829	18461	30267	43272	67095	84663	102066	150042	259870
465	7296	11954	18656	30586	43729	67804	85557	103144	151627	262615
470	7372	12079	18851	30906	44186	68513	86452	104222	153212	265360
475	7448	12204	19046	31226	44643	69222	87346	105301	154797	268105
480	7524	12329	19241	31546	45100	69930	88240	106379	156382	270850
485	7601	12454	19436	31865	45557	70639	89135	107457	157967	273594
490	7677	12579	19631	32185	46014	71348	90029	108535	159551	276339
495	7753	12704	19826	32505	46472	72056	90923	109613	161136	279084
500	7830	12828	20021	32824	46929	72765	91817	110691	162721	281829
505	7906	12953	20216	33144	47386	73474	92712	111769	164306	284574
510	7982	13078	20411	33464	47843	74183	93606	112847	165891	287319
515	8058	13203	20606	33783	48300	74891	94500	113925	167476	290064

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure or 3 psig, whichever is greater, 90% of actual capacity

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

Apply correction factor for capacities on superheated steam. Correction factor tables begin on page 1811.15. Review pressure/temperature limits on page 1811.1.

Orifice Designation & Area - Square Inches

Orifice Designation	F	G	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.307	0.503	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)										
520	8135	13328	20801	34103	48757	75600	95394	115003	169061	292809
525	8211	13453	20996	34423	49214	76309	96289	116082	170645	295554
530	8287	13578	21191	34743	49671	77017	97183	117160	172230	298299
535	8363	13703	21386	35062	50128	77726	98077	118238	173815	301044
540	8440	13828	21581	35382	50585	78435	98972	119316	175400	303789
545	8516	13953	21776	35702	51042	79144	99866	120394	176985	306534
550	8592	14078	21971	36021	51499	79852	100760	121472	178570	309279
555	8668	14203	22166	36341	51956	80561	101654	122550	180155	312024
560	8745	14328	22361	36661	52414	81270	102549	123628	181739	314768
565	8821	14453	22556	36981	52871	81978	103443	124706	183324	317513
570	8897	14578	22751	37300	53328	82687	104337	125784	184909	320258
575	8973	14703	22946	37620	53785	83396	105232	126863	186494	323003
580	9050	14828	23141	37940	54242	84105	106126	127941	188079	325748
585	9126	14953	23336	38259	54699	84813	107020	129019	189664	328493
590	9202	15078	23531	38579	55156	85522	107914	130097	191249	331238
595	9278	15203	23726	38899	55613	86231	108809	131175	192833	333983
600	9355	15328	23921	39218	56070	86939	109703	132253	194418	336728
605	9431	15452	24116	39538	56527	87648	110597	133331	196003	339473
610	9507	15577	24311	39858	56984	88357	111491	134409	197588	342218
615	9584	15702	24506	40178	57441	89066	112386	135487	199173	344963
620	9660	15827	24701	40497	57898	89774	113280	136565	200758	347708
625	9736	15952	24896	40817	58355	90483	114174	137644	202343	350453
630	9812	16077	25091	41137	58813	91192	115069	138722	203927	353198
635	9889	16202	25286	41456	59270	91900	115963	139800	205512	355942
640	9965	16327	25481	41776	59727	92609	116857	140878	207097	358687
645	10041	16452	25676	42096	60184	93318	117751	141956	208682	361432
650	10117	16577	25871	42416	60641	94027	118646	143034	210267	364177
655	10194	16702	26066	42735	61098	94735	119540	144112	211852	366922
660	10270	16827	26261	43055	61555	95444	120434	145190	213437	369667
665	10346	16952	26456	43375	62012	96153	121328	146268	215021	372412
670	10422	17077	26651	43694	62469	96861	122223	147346	216606	375157
675	10499	17202	26846	44014	62926	97570	123117	148425	218191	377902
680	10575	17327	27041	44334	63383	98279	124011	149503	219776	380647
685	10651	17452	27236	44653	63840	98988	124906	150581	221361	383392
690	10727	17577	27431	44973	64297	99696	125800	151659	222946	386137
695	10804	17702	27626	45293	64755	100405	126694	152737	224531	388882
700	10880	17827	27821	45613	65212	101114	127588	153815	226115	391627
705	10956	17951	28016	45932	65669	101822	128483	154893	227700	394372
710	11033	18076	28211	46252	66126	102531	129377	155971	229285	397116
715	11109	18201	28406	46572	66583	103240	130271	157049	230870	399861
720	11185	18326	28601	46891	67040	103949	131166	158127	232455	402606
725	11261	18451	28796	47211	67497	104657	132060	159206	234040	405351

Notes:

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

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

Superheat Correction Factor

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

1511
Safety Valves

Consolidated®

Table of Contents

CONSOLIDATED Type 1511 safety valves are designed for low pressure, steam heating boilers and steam generators as well as air service applications.

1511

INLET SIZES — 1-1/2" through 6" in either flanged or threaded design.

INLET RATINGS — ANSI Class 250

OUTLET SIZES — 2-1/2" through 4" threaded, 6" and 8" in either flanged or threaded design.

OUTLET RATINGS — ANSI Class 125

ORIFICE SIZES — Eight sizes: H through Q

TEMPERATURE RANGE — -20°F to 406°F

MATERIALS — Cast iron body with brass trim is standard. Stainless steel trim is optional.

CERTIFICATION — ASME B&PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 20% of Set Pressure

Scope of Design

Inlet Size	Valve Type	Orifice Discharge Area Sq. in	Orifice Discharge Area Sq. cm	Connections Inlet* ANSI STD RF	Connections Outlet ANSI STD
1-1/2"	1511H	0.785	5.065	1-1/2" 250 class	2-1/2" NPT(internal)
1-1/2"	1511J	1.287	8.304	1-1/2" 250 class	2-1/2" NPT(internal)
2"	1511K	1.840	11.872	2" 250 class	3" NPT(internal)
2-1/2"	1511L	2.853	18.408	2-1/2" 250 class	4" NPT (internal)
3"	1511M	3.600	23.227	3" 250 class	4" NPT(internal)
4"	1511N	4.340	28.002	4" 250 class	6" 125 class F.F.
4"	1511P	6.380	41.164	4" 250 class	6" 125 class F.F.
6"	1511Q	11.050	71.295	6" 250 class	8" 125 class F.F.

* Inlet connection available with ANSI class 125 FF on application

Oversize Inlet Flange Option
ANSI Class 250 Replacement Valves

Orifice	Oversize Inlet Flange
H	2", 2-1/2", 3"
J	2", 2-1/2", 3"
K	2-1/2", 3", 3-1/2", 4"
L	3", 3-1/2", 4"
M	3-1/2", 4", 4-1/2"

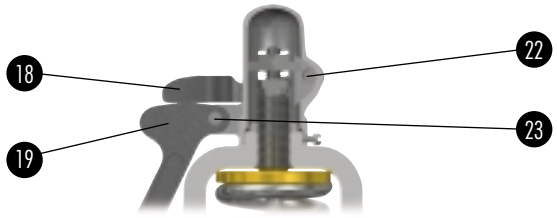
Pressure/Temperature Limits

Valve Type	Set Pressure Limit	Temperature Limit
1511	250 PSIG	406°F 207°C
1511_S	250 PSIG	406°F 207°C

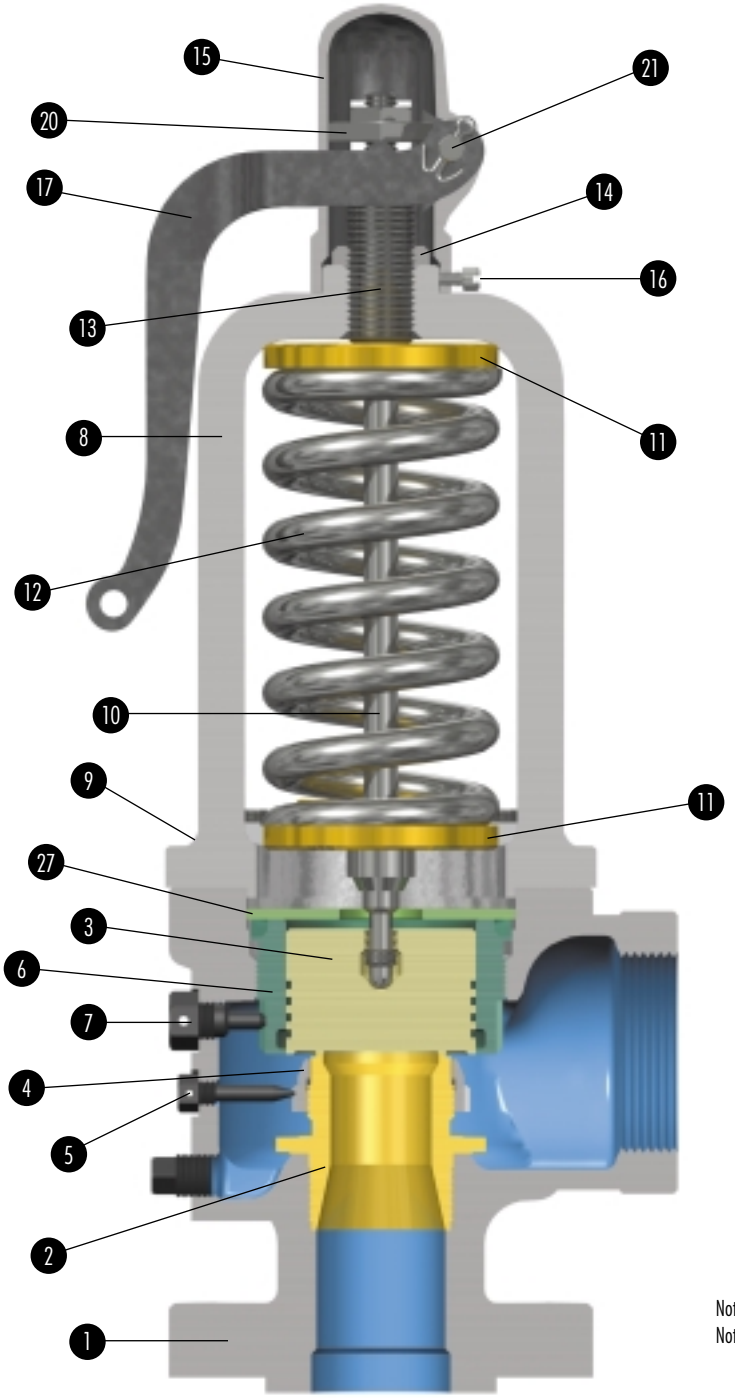
! CAUTION

Because the 1511 valve is not totally enclosed, upon actuation the system media will escape from the following locations:

(1) The valve outlet which is the main discharge area.
(2) The open yoke will also allow a small amount of steam to exhaust vertically.
(3) The drain hole at the base of the valve.

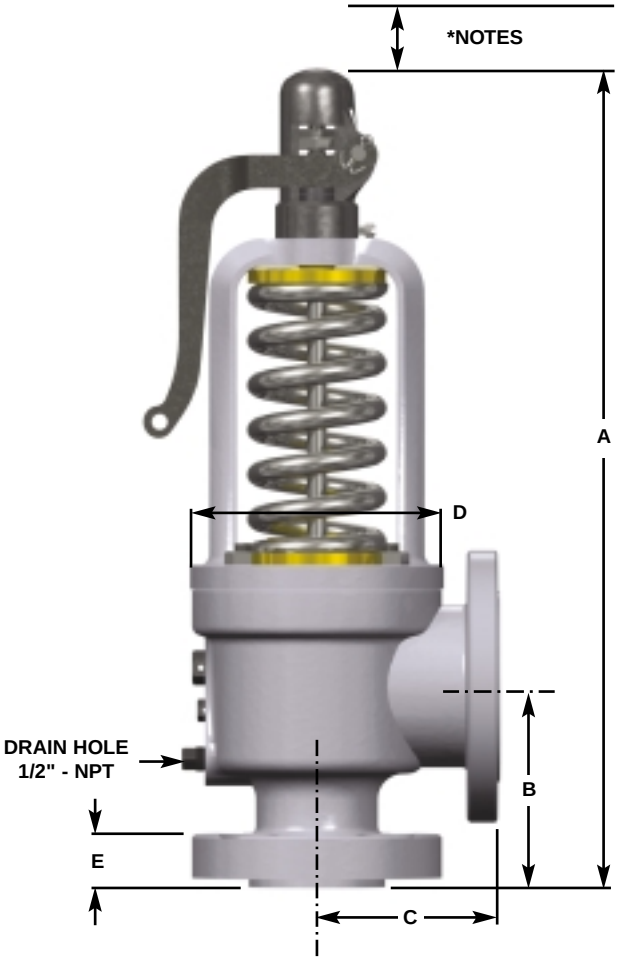


Lifting lever for 4" & 6" sizes

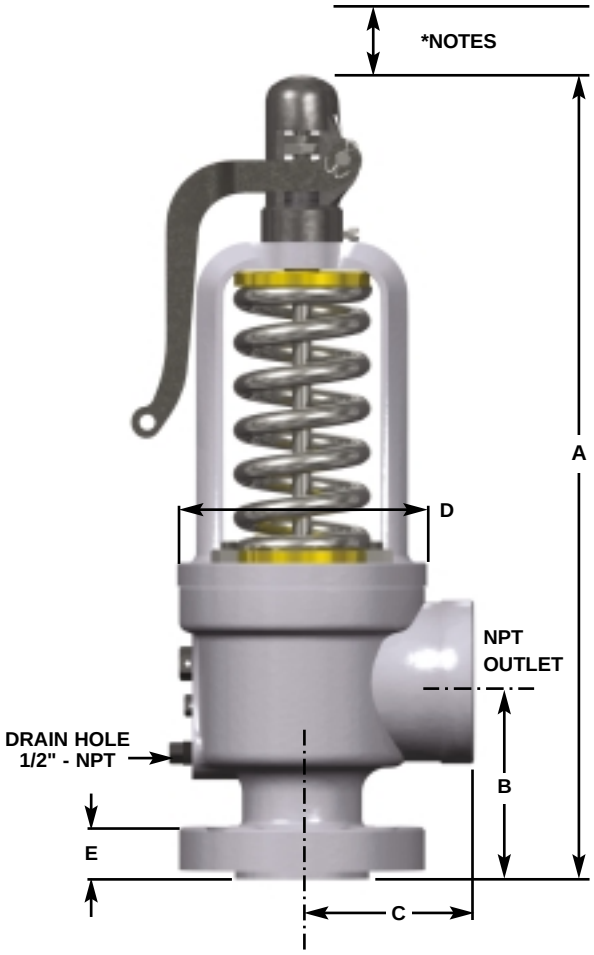


	Part	Material
1	Base	Iron
2	Seat Bushing (Note 2)	Bronze
3	Disc (Notes 1&2)	Bronze
4	Lower Adj. Ring (H-L Orifice)	Brass
4	Lower Adj. Ring (M-Q Orifice)	Bronze
5	Lower Adj. Ring Pin	Brass
6	Upper Adj. Ring (H-L Orifice)	Brass
6	Upper Adj. Ring (M-Q Orifice)	Bronze
7	Upper Adj. Ring Pin	Brass
8	Yoke	Iron
9	Yoke Cap Screws (Not Shown)	Iron
10	Spindle Assembly (H-M Orifice)	
	Spindle	Carbon Steel
	Spindle Collar	Stainless Steel
10	Spindle Assembly (N-Q Orifice)	
	Spindle Head	Carbon Steel
	Spindle Stem	Carbon Steel
	Roll Pin	Carbon Steel
11	Spring Washer	Carbon Steel
12	Spring	Chrome Alloy (Aluminum Metallized)
13	Compression Screw (H-N Orifice)	Brass
13	Compression Screw (P-Q Orifice)	Bronze
14	Compression Screw Nut (H-L Orifice)	Iron
14	Compression Screw Nut (M-P Orifice)	Brass
14	Compression Screw Nut (Q Orifice)	Bronze
15	Cap	Malleable Iron
16	Cap Set Screw	Brass
17	Lever (H-M Orifice)	Malleable Iron
18	Top Lever (N-Q Orifice)	Malleable Iron
19	Drop Lever (N-Q Orifice)	Malleable Iron
20	Release Nut (H-L Orifice)	Brass
20	Release Nut (M-Q Orifice)	Carbon Steel
21	Lever Pin (H-M Orifice)	Carbon Steel
22	Top Lever Pin (N-Q Orifice)	Carbon Steel
23	Drop Lever Pin (N-Q Orifice)	Carbon Steel
24	Spring Cover Option (not shown)	Carbon Steel
25	Cover Bolt (not shown)	Carbon Steel
26	Cover Nut (not shown)	Carbon Steel
27	Floating Washer (H, J, K only)	Carbon Steel

Note 1: Material for "J" orifice disc is brass.
Note 2: Stainless steel materials are available as an alternate for disc and seat bushing; select 1511_S.



4" & 6" size



1-1/2" to 3" size

*Notes:

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

Dimensions & Weights (USCS)

Inlet Size	Valve Type	A in	B in	C in	D in	E in	Dismantling Height(in.)	Approximate Weight (lbs.)
1-1/2"	1511H	14-1/2	4-1/4	4	5-1/2	13/16	17-3/8	30
1-1/2"	1511J	14-1/2	4-1/4	4	5-1/2	13/16	17-3/8	36
2"	1511K	18-1/8	4-3/8	4-1/4	6-1/8	7/8	21-5/8	57
2-1/2"	1511L	19	5-1/2	5-1/4	7-1/4	1	22-5/8	79
3"	1511M	22-1/8	5-5/8	5-1/2	7-7/8	1-1/8	25-7/8	88
4"	1511N	24	6-3/4	7-1/4	8-5/8	1-1/4	27-1/2	142
4"	1511P	25-7/8	6-3/4	7-1/4	10-1/8	1-1/4	30	172
6"	1511Q	33-3/4	9-1/4	9	12-7/8	1-7/16	39-1/4	338

Dimensions & Weights (metric)

Inlet Size	Valve Type	A mm	B mm	C mm	D mm	E mm	Dismantling Height (mm)	Approximate Weight (kg)
1-1/2"	1511H	368.3	108.0	101.6	139.7	20.6	441.3	13.6
1-1/2"	1511J	368.3	108.0	101.6	139.7	20.6	441.3	16.3
2"	1511K	460.4	111.1	108.0	155.6	22.2	549.3	25.9
2-1/2"	1511L	482.6	139.7	133.4	184.2	25.4	574.7	35.8
3"	1511M	562.0	142.9	139.7	200.0	28.6	657.2	39.9
4"	1511N	609.6	171.5	184.2	219.1	31.8	698.5	64.4
4"	1511P	657.2	171.5	184.2	257.2	31.8	762.0	78.0
6"	1511Q	857.3	235.0	228.6	327.0	36.5	997.0	153.3

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure or 2 psig, whichever is greater, 90% of actual capacity

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

Not for use on superheated steam.
Review pressure/temperature limits on page 1511.1.

Orifice Designation & Discharge Area - Square Inches

Orifice Designation	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)								
15	1123	1842	2634	4084	5154	6213	9134	15820
20	1301	2133	3049	4729	5967	7193	10575	18316
25	1478	2423	3465	5373	6780	8173	12016	20811
30	1655	2714	3880	6017	7593	9154	13456	23306
35	1833	3005	4296	6661	8406	10134	14897	25802
40	2010	3295	4712	7306	9219	11114	16338	28297
45	2187	3586	5127	7950	10032	12094	17779	30793
50	2364	3877	5543	8594	10845	13074	19219	33288
55	2542	4167	5958	9239	11658	14054	20660	35783
60	2719	4458	6374	9883	12471	15034	22101	38279
65	2896	4749	6789	10527	13284	16014	23542	40774
70	3077	5045	7213	11184	14113	17014	25011	43320
75	3260	5344	7641	11848	14950	18023	26495	45890
80	3442	5644	8069	12512	15788	19033	27979	48460
85	3625	5943	8497	13175	16625	20042	29463	51030
90	3807	6242	8925	13839	17462	21052	30947	53601
95	3990	6542	9353	14502	18300	22061	32431	56171
100	4173	6841	9781	15166	19137	23071	33915	58741
105	4355	7141	10209	15830	19974	24080	35399	61311
110	4538	7440	10637	16493	20812	25090	36883	63882
115	4720	7739	11065	17157	21649	26099	38367	66452
120	4903	8039	11493	17820	22486	27109	39851	69022
125	5086	8338	11921	18484	23324	28118	41335	71592
130	5268	8637	12349	19148	24161	29128	42819	74163
135	5451	8937	12777	19811	24999	30137	44303	76733
140	5633	9236	13205	20475	25836	31147	45787	79303
145	5816	9535	13633	21139	26673	32156	47271	81873
150	5998	9835	14061	21802	27511	33166	48755	84444
155	6181	10134	14489	22466	28348	34175	50239	87014
160	6364	10433	14917	23129	29185	35185	51723	89584
165	6546	10733	15345	23793	30023	36194	53207	92154
170	6729	11032	15773	24457	30860	37204	54691	94725
175	6911	11332	16201	25120	31698	38213	56175	97295
180	7094	11631	16629	25784	32535	39223	57659	99865
185	7277	11930	17057	26447	33372	40232	59143	102435
190	7459	12230	17485	27111	34210	41242	60627	105006
195	7642	12529	17913	27775	35047	42251	62112	107576
200	7824	12828	18341	28438	35884	43261	63596	110146
205	8007	13128	18769	29102	36722	44270	65080	112716
210	8190	13427	19197	29766	37559	45280	66564	115287
215	8372	13726	19625	30429	38396	46289	68048	117857
220	8555	14026	20053	31093	39234	47299	69532	120427
225	8737	14325	20481	31756	40071	48308	71016	122997
230	8920	14625	20909	32420	40909	49318	72500	125568
235	9103	14924	21337	33084	41746	50327	73984	128138
240	9285	15223	21765	33747	42583	51337	75468	130708
245	9468	15523	22193	34411	43421	52346	76952	133278
250	9650	15822	22621	35074	44258	53356	78436	135849

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure or 3 psig, whichever is greater, 90% of actual capacity

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

Not for use on superheated steam.
Review pressure/temperature limits on page 1511.1.

Orifice Designation & Discharge Area - Square Inches

Orifice Designation	H	J	K	L	M	N	P	Q
Orifice Area (sq. in.)	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
Set Pressure (psig)								
15	1159	1900	2717	4213	5316	6409	9422	16319
20	1336	2191	3133	4857	6129	7389	10863	18815
25	1513	2482	3548	5502	6942	8369	12304	21310
30	1691	2772	3964	6146	7755	9350	13745	23806
35	1886	3092	4421	6855	8650	10428	15329	26550
40	2081	3412	4878	7563	9544	11506	16914	29295
45	2276	3731	5335	8272	10438	12584	18499	32040
50	2471	4051	5792	8981	11332	13662	20084	34785
55	2666	4371	6249	9690	12227	14740	21669	37530
60	2861	4690	6706	10398	13121	15818	23254	40275
65	3056	5010	7163	11107	14015	16896	24839	43020
70	3251	5330	7620	11816	14910	17974	26423	45765
75	3446	5650	8077	12524	15804	19052	28008	48510
80	3641	5969	8534	13233	16698	20131	29593	51255
85	3836	6289	8991	13942	17592	21209	31178	54000
90	4031	6609	9448	14651	18487	22287	32763	56745
95	4226	6928	9906	15359	19381	23365	34348	59490
100	4421	7248	10363	16068	20275	24443	35933	62235
105	4616	7568	10820	16777	21169	25521	37517	64980
110	4811	7887	11277	17485	22064	26599	39102	67724
115	5006	8207	11734	18194	22958	27677	40687	70469
120	5201	8527	12191	18903	23852	28755	42272	73214
125	5396	8847	12648	19612	24747	29833	43857	75959
130	5591	9166	13105	20320	25641	30912	45442	78704
135	5786	9486	13562	21029	26535	31990	47027	81449
140	5981	9806	14019	21738	27429	33068	48611	84194
145	6176	10125	14476	22446	28324	34146	50196	86939
150	6371	10445	14933	23155	29218	35224	51781	89684
155	6566	10765	15390	23864	30112	36302	53366	92429
160	6761	11085	15848	24573	31007	37380	54951	95174
165	6956	11404	16305	25281	31901	38458	56536	97919
170	7151	11724	16762	25990	32795	39536	58121	100664
175	7346	12044	17219	26699	33689	40614	59705	103409
180	7541	12363	17676	27407	34584	41693	61290	106154
185	7736	12683	18133	28116	35478	42771	62875	108898
190	7931	13003	18590	28825	36372	43849	64460	111643
195	8126	13322	19047	29534	37266	44927	66045	114388
200	8321	13642	19504	30242	38161	46005	67630	117133
205	8516	13962	19961	30951	39055	47083	69215	119878
210	8711	14282	20418	31660	39949	48161	70799	122623
215	8906	14601	20875	32368	40844	49239	72384	125368
220	9101	14921	21332	33077	41738	50317	73969	128113
225	9296	15241	21790	33786	42632	51395	75554	130858
230	9491	15560	22247	34495	43526	52474	77139	133603
235	9686	15880	22704	35203	44421	53552	78724	136348
240	9881	16200	23161	35912	45315	54630	80309	139093
245	10076	16519	23618	36621	46209	55708	81893	141838
250	10271	16839	24075	37329	47104	56786	83478	144583

ASME, B & PVC, Section VIII rating - 2001 Edition

Standard Cubic Feet per minute of Air (60°F) at 10% overpressure or 3 psig, whichever is greater

W=18.331*A*P*K
K=.877
A= flow area in sq. in.
P= (1.10*set pressure) + 14.7 or
P= (3 + set pressure) + 14.7

Not for use on superheated steam.
Review pressure temperature limits
on page 1511.1.

1511 Capacity Table - Air at 10% Overpressure

Set Pressure	Orifice Type & Discharge Area - Square Inches							
	H	J	K	L	M	N	P	Q
Psig	0.785	1.287	1.840	2.853	3.600	4.340	6.380	11.050
15	413	677	968	1501	1894	2283	3356	5812
20	476	780	1116	1730	2183	2632	3869	6701
25	539	884	1264	1960	2473	2981	4382	7590
30	602	987	1412	2189	2762	3330	4895	8478
35	672	1101	1575	2441	3081	3714	5460	9456
40	741	1215	1737	2694	3399	4098	6024	10434
45	811	1329	1900	2946	3718	4482	6589	11411
50	880	1443	2063	3199	4036	4866	7153	12389
55	950	1557	2226	3451	4355	5250	7717	13366
60	1019	1671	2388	3703	4673	5634	8282	14344
65	1088	1785	2551	3956	4992	6018	8846	15322
70	1158	1898	2714	4208	5310	6402	9411	16299
75	1227	2012	2877	4461	5629	6786	9975	17277
80	1297	2126	3040	4713	5947	7170	10540	18254
85	1366	2240	3202	4965	6266	7554	11104	19232
90	1436	2354	3365	5218	6584	7937	11668	20210
95	1505	2468	3528	5470	6903	8321	12233	21187
100	1575	2582	3691	5723	7221	8705	12797	22165
105	1644	2695	3854	5975	7540	9089	13362	23142
110	1713	2809	4016	6228	7858	9473	13926	24120
115	1783	2923	4179	6480	8177	9857	14491	25097
120	1852	3037	4342	6732	8495	10241	15055	26075
125	1922	3151	4505	6985	8814	10625	15620	27053
130	1991	3265	4667	7237	9132	11009	16184	28030
135	2061	3379	4830	7490	9451	11393	16748	29008
140	2130	3492	4993	7742	9769	11777	17313	29985
145	2200	3606	5156	7994	10088	12161	17877	30963
150	2269	3720	5319	8247	10406	12545	18442	31941
155	2339	3834	5481	8499	10724	12929	19006	32918
160	2408	3948	5644	8752	11043	13313	19571	33896
165	2477	4062	5807	9004	11361	13697	20135	34873
170	2547	4176	5970	9256	11680	14081	20700	35851
175	2616	4289	6133	9509	11998	14465	21264	36829
180	2686	4403	6295	9761	12317	14849	21828	37806
185	2755	4517	6458	10014	12635	15233	22393	38784
190	2825	4631	6621	10266	12954	15617	22957	39761
195	2894	4745	6784	10518	13272	16001	23522	40739
200	2964	4859	6946	10771	13591	16385	24086	41717
205	3033	4973	7109	11023	13909	16769	24651	42694
210	3102	5086	7272	11276	14228	17153	25215	43672
215	3172	5200	7435	11528	14546	17536	25779	44649
220	3241	5314	7598	11780	14865	17920	26344	45627
225	3311	5428	7760	12033	15183	18304	26908	46605
230	3380	5542	7923	12285	15502	18688	27473	47582
235	3450	5656	8086	12538	15820	19072	28037	48560
240	3519	5770	8249	12790	16139	19456	28602	49537
245	3589	5884	8412	13042	16457	19840	29166	50515
250	3658	5997	8574	13295	16776	20224	29731	51493

1541/1543

Safety Valves

Consolidated®

Table of Contents

CONSOLIDATED Type 1541 and 1543 safety valves are designed for steam and other compressible fluids. They are most commonly used in pharmaceutical, dying and process plants.

1541 / 1543

INLET SIZES — 1/2" through 2-1/2" threaded

OUTLET SIZES — 3/4" through 2-1/2" threaded

ORIFICE SIZES — Six sizes: D through J

PRESSURE RANGE — 5 psig to 350 psig

TEMPERATURE RANGE — -20°F to 420°F

MATERIALS — Cast iron bonnet with brass base and trim is standard. Available with bronze bonnet. Stainless steel base and disc are also optional.

CERTIFICATION — ASME B&PVC Section I and VIII

BLOWDOWN — 4%

BACK PRESSURE LIMIT — 10% of Set Pressure

Product Applications

Options

1543-3: A duplicate of the 1543 valve, but supplied with a 304 stainless base and disc.

1541-3: A duplicate of 1541 valve, but supplied with a 304 stainless steel base and disc.

Bronze Bonnet: When cast iron bonnets are not permitted, a bronze bonnet option is available.

Soft Seats: A PTFE soft seat option is available for improved tightness. This option is only available for ASME Code Section VIII application.

Low Pressures: For low pressures, we supply a special low pressure design to ensure maximum flow capacities against atmospheric pressure.

Spring: When chrome alloy springs are not permitted, A 17-7PHSS is available.

Connections

The 1541 valve is supplied with inlet sizes of 3/4" (19.1 mm) to 2-1/2" (63.5mm). The 1543 sizes are supplied with inlet connections of 1/2" (12.7mm) to 2" (50.8 mm). All inlet connections are male NPT with standard hex head on surfaces for easy wrenching.

! CAUTION

The discharged fluid may escape to the atmosphere through the bonnet vent and drain hole, so toxic or hazardous applications must be avoided.

Valve Sizes / 1541

Inlet Size Male NPT	Orifice Designation	Discharge Area		Outlet Size Female NPT
		$in.^2$	cm^2	
3/4"	D	.110	.710	3/4"
1"	E	.196	1.265	1"
1-1/4"	F	.307	1.981	1-1/4"
1-1/2"	G	.503	3.245	1-1/2"
2"	H	.785	5.065	2"
2-1/2"	J	1.287	8.304	2-1/2"

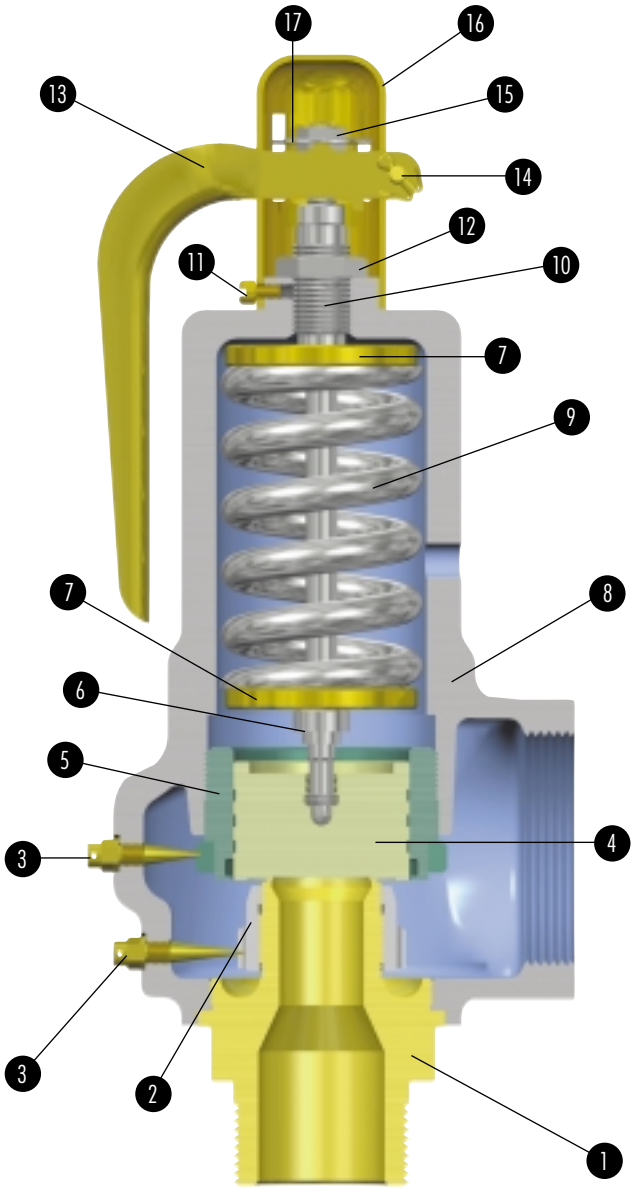
Valve Sizes / 1543

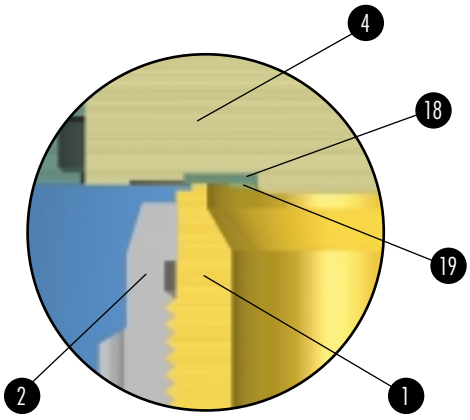
Inlet Size Male NPT	Orifice Designation	Discharge Area		Outlet Size Female NPT
		$in.^2$	cm^2	
1/2"	D	.110	.710	3/4"
3/4"	E	.196	1.265	1"
1"	F	.307	1.981	1-1/4"
1-1/4"	G	.503	3.245	1-1/2"
1-1/2"	H	.785	5.065	2"
2"	J	1.287	8.304	2-1/2"

Pressure/Temperature Limits

Valve Type	Set Pressure		Range Temperature				Back Pressure
	Steam	Air	Minimum		Maximum		(max)
	psig	psig	°F	°C	°F	°C	psig
1541	5-250	5-300	-20	-28	406	207	*
1541-BR	5-250	5-300	-20	-28	406	207	*
1541-3	5-300	5-350	-20	-28	420	215	*
1541-3-BR	5-300	5-350	-20	-28	420	215	*
1543	5-250	5-300	-20	-28	406	207	*
1543-BR	5-250	5-300	-20	-28	406	207	*
1543-3	5-300	5-350	-20	-28	420	215	*
1543-3-BR	5-300	5-350	-20	-28	420	215	*

* Maximum backpressure not to exceed 10% of valve set pressure

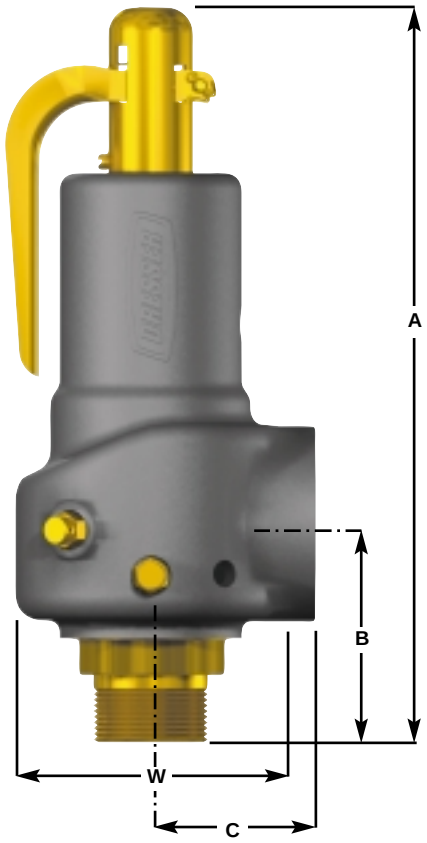




Soft Seat Design

	Part	Material
1	Base	Brass (Stainless Steel on -3 design)
2	Lower Adjusting Ring	Brass
3	Adjusting Ring Pin	Brass
4	Disc	Brass (Stainless Steel on -3 design)
5	Upper Adjusting Ring	Brass
6	Spindle (D & E orifice)	Carbon Steel
6	Spindle Assembly (F,G,H, & J Orifice)	
	Spindle	Carbon Steel
	Collar	Stainless Steel
7	Spring Washer	Carbon Steel
8	Bonnet (Note 1)	Iron (Phosphate Coated)
9	Spring	Chrome Alloy (Aluminum Metallized)
10	Compression Screw	Brass
11	Cap Screw	Carbon Steel (Zinc Plated)
12	Compression Screw Nut	Carbon Steel
13	Lever	Brass
14	Lever Pin	Brass
15	Lifting Washer Nut	Carbon Steel
16	Cap	Brass
17	Lifting Washer	Carbon Steel (Zinc Plated)
18	Soft Seat	PTFE
19	Seat Retainer Ring	Stainless Steel

Notes:
1. Available with bronze bonnet.



*Notes:
1. 1/4" (6.3mm) diameter drain hole located 60 degrees to the left when facing outlet.
2. 1/4" (6.3mm) diameter drain hole located 90 degrees to the left when facing outlet.
3. 1/4" (6.3mm) diameter drain hole located 105 degrees to the left when facing outlet.
4. 1/4" (6.3mm) diameter drain hole located 110 degrees to the left when facing outlet.

1541 (USCS)

Inlet Size	Type	A in	B in	C in	W in	Dismantling Height (in.)	Approximate Weight (lbs.)	Drain Hole Location
3/4"	1541D	6-11/16	2-5/16	1-7/16	2-1/4	8-1/4	2.0	Note 1
1"	1541E	7-1/16	2-9/16	1-9/16	2-1/2	8-5/8	3.0	Note 1
1-1/4"	1541F	8-15/16	2-15/16	1-15/16	3	10-1/2	4.5	Note 3
1-1/2"	1541G	9-3/4	3-1/8	2-1/4	3-1/2	11-5/8	7.7	Note 4
2"	1541H	11-5/16	3-11/16	2-5/8	4-3/8	13-1/8	10.5	Note 2
2-1/2"	1541J	13-1/16	4-1/4	3-3/8	5-1/8	15-1/8	17.7	Note 2

1543 (USCS)

Inlet Size	Type	A in	B in	C in	W in	Dismantling Height (in.)	Approximate Weight (lbs.)	Drain Hole Location
1/2"	1543D	6-5/8	2-1/4	1-7/16	2-1/4	8-1/4	2.0	Note 1
3/4"	1543E	6-15/16	2-7/16	1-9/16	2-1/2	8-1/2	2.7	Note 1
1"	1543F	8-3/4	2-3/4	1-15/16	3	10-1/4	4.2	Note 3
1-1/4"	1543G	9-11/16	3-1/16	2-1/4	3-1/2	11-1/2	7.5	Note 4
1-1/2"	1543H	11-3/16	3-9/16	2-5/8	4-3/8	13-1/4	10.0	Note 2
2"	1543J	12-13/16	4	3-3/8	5-1/8	14-7/8	16.7	Note 2

1541 (metric units)

Inlet Size	Type	A mm	B mm	C mm	W mm	Dismantling Height (mm)	Approximate Weight (kg)	Drain Hole Location
3/4"	1541D	169.8	58.7	36.5	57.2	209.6	0.9	Note 1
1"	1541E	179.4	65.1	39.7	63.5	219.1	1.4	Note 1
1-1/4"	1541F	227.0	74.6	49.2	76.2	266.7	2.1	Note 3
1-1/2"	1541G	247.7	79.4	57.2	88.9	295.3	3.5	Note 4
2"	1541H	287.3	93.6	66.7	111.1	333.4	4.8	Note 2
2-1/2"	1541J	331.8	107.9	85.7	130.2	384.2	8.1	Note 2

1543 (metric units)

Inlet Size	Type	A mm	B mm	C mm	W mm	Dismantling Height (mm)	Approximate Weight (kg)	Drain Hole Location
1/2"	1543D	168.3	57.2	36.5	57.2	209.6	0.9	Note 1
3/4"	1543E	176.2	61.9	39.7	63.5	215.9	1.2	Note 1
1"	1543F	222.3	69.9	49.2	76.2	260.4	1.9	Note 3
1-1/4"	1543G	246.0	77.8	57.2	88.9	292.1	3.4	Note 4
1-1/2"	1543H	284.1	90.5	66.7	111.1	336.6	4.5	Note 2
2"	1543J	325.4	101.6	85.7	130.2	377.8	7.6	Note 2

! CAUTION

Do not plug drain holes. The discharged fluid may escape to the atmosphere through the bonnet vent and drain connections, so toxic or hazardous applications must be avoided.

ASME, B & PVC, Section I rating - 2001 Edition

pounds per hour saturated steam at 3% overpressure or 2 psig, whichever is greater, 90% of actual capacity

W=51.5KAP
K=.878
A=flow area in sq. in.
P=(1.03 x set pressure) + 14.7
or P=(2 psig + set pressure) + 14.7

Not for use on superheated steam.
Review pressure/temperature limits on page 1541/1543.2.

Orifice Designation & Area - Square Inches

Orifice Designation	D	E	F	G	H	J
Orifice Area Sq. In.	0.110	0.196	0.307	0.503	0.785	1.287
Set Pressure (psig)						
15	157	280	440	720	1125	1844
20	182	325	509	834	1302	2135
25	207	369	578	948	1480	2426
30	232	413	648	1062	1657	2717
35	257	458	717	1175	1835	3008
40	282	502	787	1289	2012	3299
45	306	546	856	1403	2190	3590
50	331	591	925	1517	2367	3881
55	356	635	995	1630	2545	4172
60	381	679	1064	1744	2722	4463
65	406	724	1134	1858	2899	4754
70	431	769	1204	1974	3080	5051
75	457	814	1276	2091	3263	5350
80	482	860	1347	2208	3446	5650
85	508	906	1419	2325	3629	5950
90	534	951	1490	2442	3812	6250
95	559	997	1562	2559	3995	6549
100	585	1043	1633	2676	4177	6849
105	611	1088	1705	2794	4360	7149
110	636	1134	1776	2911	4543	7448
115	662	1180	1848	3028	4726	7748
120	687	1225	1919	3145	4909	8048
125	713	1271	1991	3262	5091	8347
130	739	1316	2062	3379	5274	8647
135	764	1362	2134	3496	5457	8947
140	790	1408	2205	3614	5640	9247
145	815	1453	2277	3731	5823	9546
150	841	1499	2348	3848	6005	9846
155	867	1545	2420	3965	6188	10146
160	892	1590	2491	4082	6371	10445
165	918	1636	2563	4199	6554	10745
170	944	1682	2634	4316	6737	11045
175	969	1727	2706	4433	6919	11344
180	995	1773	2777	4551	7102	11644
185	1020	1819	2849	4668	7285	11944
190	1046	1864	2920	4785	7468	12244
195	1072	1910	2992	4902	7651	12543
200	1097	1955	3063	5019	7833	12843
205	1123	2001	3135	5136	8016	13143
210	1148	2047	3206	5253	8199	13442
215	1174	2092	3278	5371	8382	13742
220	1200	2138	3349	5488	8565	14042
225	1225	2184	3421	5605	8747	14341
230	1251	2229	3492	5722	8930	14641
235	1277	2275	3564	5839	9113	14941
240	1302	2321	3635	5956	9296	15241
245	1328	2366	3707	6073	9479	15540
250	1353	2412	3778	6190	9661	15840
255	1379	2458	3850	6308	9844	16140
260	1405	2503	3921	6425	10027	16439
265	1430	2549	3993	6542	10210	16739
270	1456	2594	4064	6659	10393	17039
275	1481	2640	4136	6776	10575	17338
280	1507	2686	4207	6893	10758	17638
285	1533	2731	4279	7010	10941	17938
290	1558	2777	4350	7128	11124	18238
295	1584	2823	4421	7245	11307	18537
300	1610	2868	4493	7362	11489	18837

ASME, B & PVC, Section VIII rating - 2001 Edition

pounds per hour saturated steam at 10% overpressure or 3 psig, whichever is greater, 90% of actual capacity

W=51.5KAP
K=.878
A=flow area in sq. in.
P=(1.10 x set pressure) + 14.7
or P=(3 psig + set pressure) + 14.7

Not for use on superheated steam.
Review pressure/temperature limits
on page 1541/1543.2.

Orifice Designation & Area - Square Inches

Orifice Designation	D	E	F	G	H	J
Orifice Area Sq. In.	0.110	0.196	0.307	0.503	0.785	1.287
Set Pressure (psig)						
15	162	289	453	743	1160	1902
20	187	334	523	857	1338	2193
25	212	378	592	971	1515	2484
30	237	422	662	1084	1693	2775
35	264	471	738	1209	1888	3095
40	291	520	814	1335	2083	3416
45	319	568	891	1460	2278	3736
50	346	617	967	1585	2474	4056
55	374	666	1043	1710	2669	4376
60	401	715	1120	1835	2864	4696
65	428	763	1196	1960	3059	5016
70	456	812	1272	2085	3254	5336
75	483	861	1349	2210	3450	5656
80	510	910	1425	2335	3645	5976
85	538	958	1501	2460	3840	6296
90	565	1007	1578	2586	4035	6616
95	592	1056	1654	2711	4231	6936
100	620	1105	1731	2836	4426	7256
105	647	1153	1807	2961	4621	7576
110	674	1202	1883	3086	4816	7896
115	702	1251	1960	3211	5011	8217
120	729	1300	2036	3336	5207	8537
125	757	1348	2112	3461	5402	8857
130	784	1397	2189	3586	5597	9177
135	811	1446	2265	3711	5792	9497
140	839	1495	2341	3836	5988	9817
145	866	1543	2418	3962	6183	10137
150	893	1592	2494	4087	6378	10457
155	921	1641	2570	4212	6573	10777
160	948	1690	2647	4337	6768	11097
165	975	1738	2723	4462	6964	11417
170	1003	1787	2799	4587	7159	11737
175	1030	1836	2876	4712	7354	12057
180	1057	1885	2952	4837	7549	12377
185	1085	1933	3028	4962	7745	12697
190	1112	1982	3105	5087	7940	13018
195	1140	2031	3181	5212	8135	13338
200	1167	2080	3258	5338	8330	13658
205	1194	2128	3334	5463	8525	13978
210	1222	2177	3410	5588	8721	14298
215	1249	2226	3487	5713	8916	14618
220	1276	2275	3563	5838	9111	14938
225	1304	2323	3639	5963	9306	15258
230	1331	2372	3716	6088	9502	15578
235	1358	2421	3792	6213	9697	15898
240	1386	2469	3868	6338	9892	16218
245	1413	2518	3945	6463	10087	16538
250	1440	2567	4021	6588	10283	16858
255	1468	2616	4097	6714	10478	17178
260	1495	2664	4174	6839	10673	17499
265	1522	2713	4250	6964	10868	17819
270	1550	2762	4326	7089	11063	18139
275	1577	2811	4403	7214	11259	18459
280	1605	2859	4479	7339	11454	18779
285	1632	2908	4555	7464	11649	19099
290	1659	2957	4632	7589	11844	19419
295	1687	3006	4708	7714	12040	19739
300	1714	3054	4784	7839	12235	20059

ASME, B & PVC, Section VIII rating - 2001 Edition

Standard Cubic Feet per minute of Air (60F) at 10% overpressure or 3 psig, whichever is greater

W=18.331*A*P*K
K=.878
A= flow area in sq. in.
P=(1.10*set pressure) + 14.7
or P=(3 + set pressure) + 14.7

Orifice Designation & Area - Square Inches

Orifice Designation	D	E	F	G	H	J
Orifice Area Sq. In.	0.110	0.196	0.307	0.503	0.785	1.287
Set Pressure (psig)						
15	58	103	161	265	413	677
20	67	119	186	305	476	780
25	76	135	211	345	539	884
30	84	150	236	386	602	987
35	94	168	263	430	672	1101
40	104	185	290	475	741	1215
45	114	202	317	519	811	1329
50	123	220	344	564	880	1443
55	133	237	371	608	950	1557
60	143	254	399	653	1019	1671
65	153	272	426	697	1088	1785
70	162	289	453	742	1158	1898
75	172	306	480	786	1227	2012
80	182	324	507	831	1297	2126
85	191	341	534	875	1366	2240
90	201	358	561	920	1436	2354
95	211	376	589	964	1505	2468
100	221	393	616	1009	1575	2582
105	230	410	643	1053	1644	2695
110	240	428	670	1098	1713	2809
115	250	445	697	1142	1783	2923
120	260	463	724	1187	1852	3037
125	269	480	752	1231	1922	3151
130	279	497	779	1276	1991	3265
135	289	515	806	1320	2061	3379
140	298	532	833	1365	2130	3492
145	308	549	860	1409	2200	3606
150	318	567	887	1454	2269	3720
155	328	584	915	1498	2339	3834
160	337	601	942	1543	2408	3948
165	347	619	969	1587	2477	4062
170	357	636	996	1632	2547	4176
175	367	653	1023	1676	2616	4289
180	376	671	1050	1721	2686	4403
185	386	688	1078	1765	2755	4517
190	396	705	1105	1810	2825	4631
195	406	723	1132	1854	2894	4745
200	415	740	1159	1899	2964	4859

Orifice Designation & Area - Square Inches

Orifice Designation	D	E	F	G	H	J
Orifice Area Sq. In.	0.110	0.196	0.307	0.503	0.785	1.287
Set Pressure (psig)						
205	425	757	1186	1943	3033	4973
210	435	775	1213	1988	3102	5086
215	444	792	1240	2032	3172	5200
220	454	809	1268	2077	3241	5314
225	464	827	1295	2121	3311	5428
230	474	844	1322	2166	3380	5542
235	483	861	1349	2210	3450	5656
240	493	879	1376	2255	3519	5770
245	503	896	1403	2299	3589	5884
250	513	913	1431	2344	3658	5997
255	522	931	1458	2388	3728	6111
260	532	948	1485	2433	3797	6225
265	542	965	1512	2477	3866	6339
270	552	983	1539	2522	3936	6453
275	561	1000	1566	2566	4005	6567
280	571	1017	1594	2611	4075	6681
285	581	1035	1621	2655	4144	6794
290	590	1052	1648	2700	4214	6908
295	600	1069	1675	2744	4283	7022
300	610	1087	1702	2789	4353	7136
305	620	1104	1729	2833	4422	7250
310	629	1121	1757	2878	4491	7364
315	639	1139	1784	2922	4561	7478
320	649	1156	1811	2967	4630	7591
325	659	1173	1838	3011	4700	7705
330	668	1191	1865	3056	4769	7819
335	678	1208	1892	3100	4839	7933
340	688	1225	1919	3145	4908	8047
345	697	1243	1947	3189	4978	8161
350	707	1260	1974	3234	5047	8275

Capacities For Set Pressure Less Than 15 psig.

ASME Code Stamping not allowed.

Capacities (<15 Psig) Steam

lb/hr Steam, 3 psi Overpressure
Orifice Designation & Discharge Area - Sq. Inches

Orifice Designation Orifice Area Sq. In. Set Pressure (psig)	D 0.110	E 0.196	F 0.307	G 0.503	H 0.785	J 1.287
5	110	195	306	502	783	1283
6	116	207	324	530	827	1356
7	122	217	340	557	869	1425
8	127	227	355	582	908	1489
9	133	236	370	606	946	1550
10	138	245	384	629	982	1610
11	143	254	398	652	1017	1668
12	148	263	412	675	1053	1726
13	152	272	426	697	1088	1784
14	157	281	439	720	1124	1842

Capacities (<15 Psig) Air

SCFM Air, 3 psi Overpressure
Orifice Designation & Discharge Area - Sq. Inches

Orifice Designation Orifice Area Sq. In. Set Pressure (psig)	D 0.110	E 0.196	F 0.307	G 0.503	H 0.785	J 1.287
5	39	69	108	178	277	455
6	41	73	115	188	294	481
7	43	77	121	198	309	506
8	45	81	126	207	323	530
9	47	84	132	216	337	552
10	49	87	137	224	350	573
11	51	91	142	232	362	594
12	53	94	147	240	375	615
13	54	97	152	248	388	636
14	56	100	157	257	400	656

2478

Safety Valves

Consolidated®

Table of Contents

CONSOLIDATED Type 2478 pressure relief valve is a totally enclosed design for non-corrosive, thermal relief, liquid service.

2478

INLET SIZES — 1/2" through 2-1/2" threaded.

OUTLET SIZES — 3/4" through 2-1/2" threaded.

ORIFICE SIZES — Six sizes: D through J

PRESSURE RANGE — 5 psig to 300 psig

TEMPERATURE RANGE — -325°F to 406°F

MATERIALS — Cast bronze bonnet, brass base & trim and PTFE soft seats are standard.

CERTIFICATION — Non-Coded

BLOWDOWN — 7 - 15%

BACK PRESSURE LIMIT — 10% of Set Pressure

Product Applications

Design limits of 300 psig and -325°F (-198°C) to +406°F (+207°C). This product should only be used for non-corrosive liquids. The 2478 is not ASME Code capacity certified. Cryogenic service applications can be satisfied by consulting the factory.

Connections

The 2478 is supplied with 1/2" through 2-1/2" male NPT inlet sizes. The inlet is equipped with a standard hexagon surface for easy wrenching.

Options

- Sealed Lifting Lever Assembly
- Spring 17-7 PH SS is available

Scope of Design

Inlet Size Male NPT	Orifice Designation	Discharge Area in.²	Discharge Area cm.²	Outlet Size Female NPT
1/2"	D	.110	.710	3/4"
3/4"	D	.110	.710	3/4"
1"	E	.196	1.265	1"
1-1/4"	F	.307	1.981	1-1/4"
1-1/2"	G	.503	3.245	1-1/2"
2"	H	.785	5.065	2"
2-1/2"	J	1.287	8.304	2-1/2"

Pressure Temperature Limits

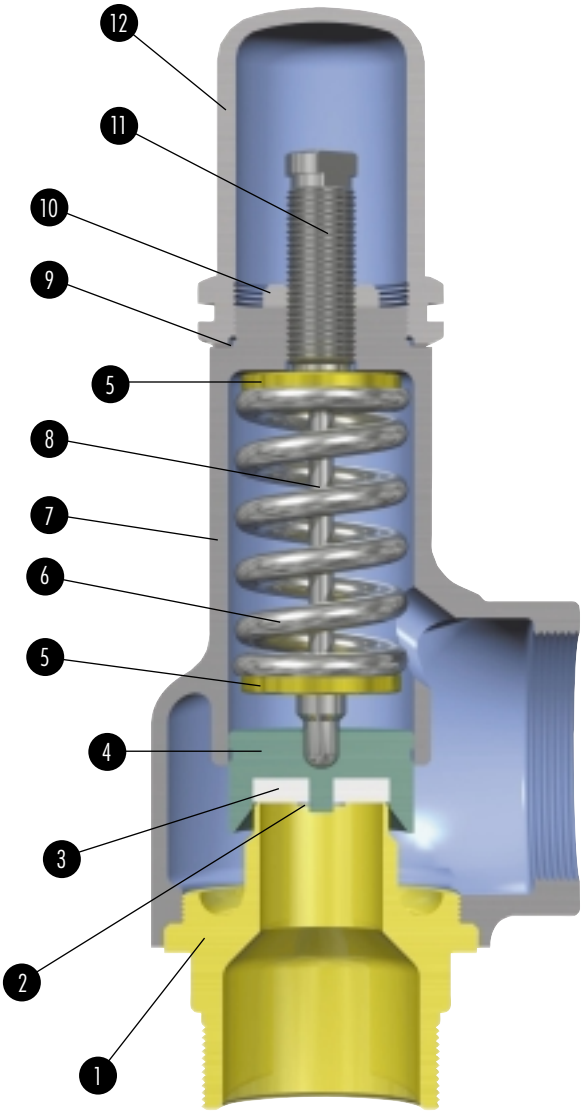
Pressure/Temperature Limits		
Valve Type	Pressure Limit Liquid (PSI)	Temperature Limit
2478	300	-325°F to + 406°F (-198°C to + 207°C)

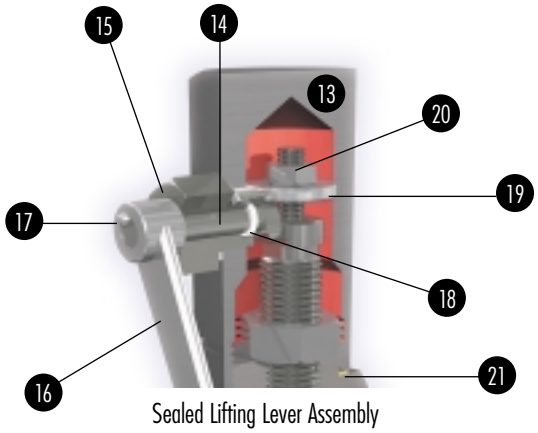
Ref. No.	Part	Material
1	Base	Brass
2	Seat Retainer Ring	Stainless Steel
3	Soft Seat	PTFE
4	Disc	Brass
5	Spring Washer	Brass
6	Spring*	Chrome Alloy Aluminum Metallized
7	Bonnet	Bronze
8	Spindle	Brass
9	O-Ring	Viton
10	Compression Screw Locknut	Brass
11	Compression Screw	Brass
12	Screwed Cap	Brass

*Stainless Steel Spring is recommended for temperatures below -20°F (-28°C) and cryogenic applications. Inconel X-750 or Phosphorus Bronze Springs are recommended for salt water service.

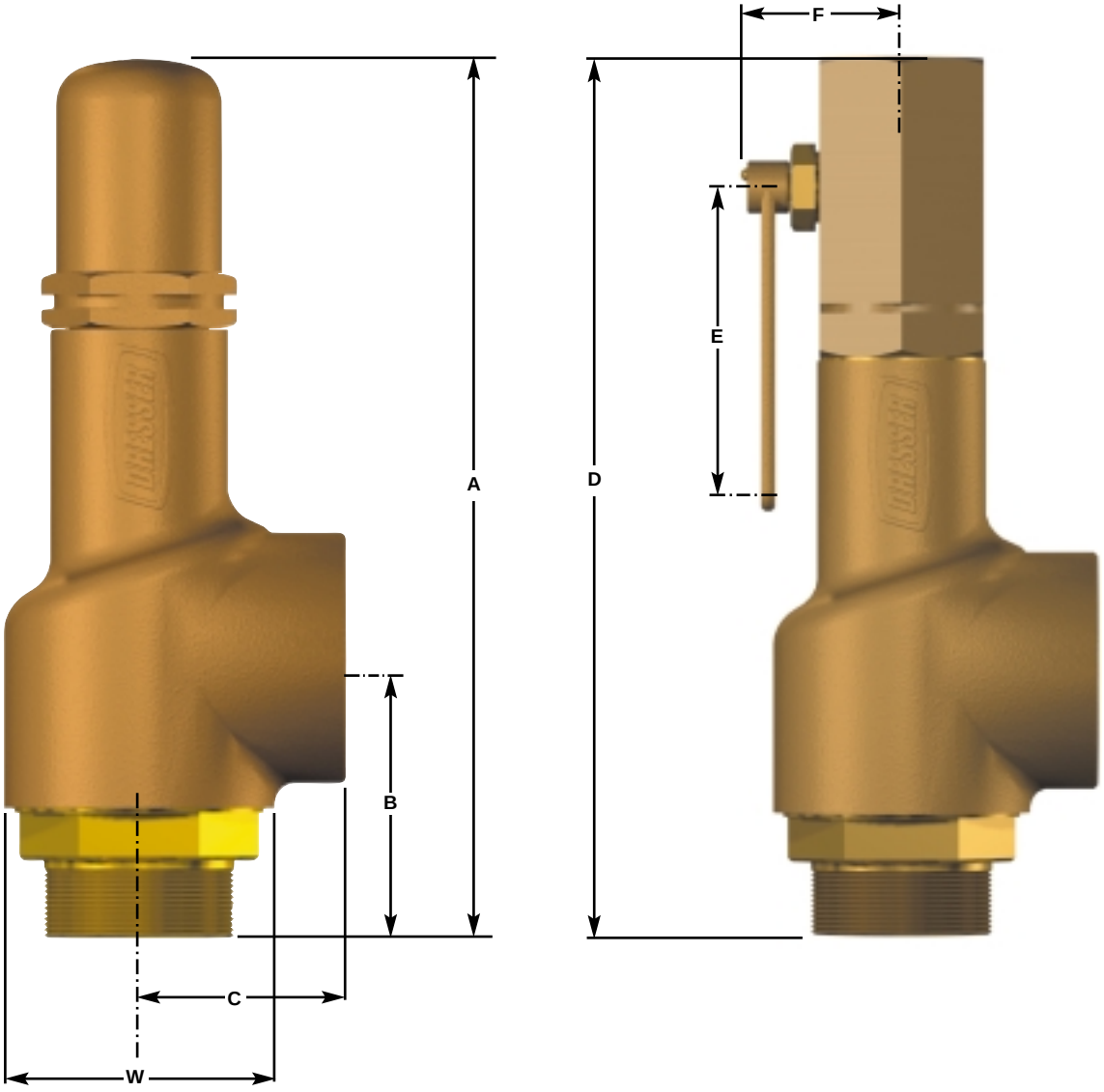
Lifting Lever Assembly

Ref. No.	Part	Material
13	Packed Cap	Brass
14	Cam Shaft	Stainless Steel
15	Bushing	Stainless Steel
16	Lever	Iron
17	Drive Screw	Stainless Steel
18	O-Ring	Buna N (70)
19	Release Nut	Stainless Steel
20	Release Locknut	Carbon Steel
21	O-Ring	Viton





Sealed Lifting Lever Assembly



2478 (USCS)

Size & Type	A in.	B in.	C in.	D in.	E in.	F in.	W in.	Dismantling Height (in.)	Approx. Weight (lbs.)
1/2" 2478D	6-9/16	2-1/4	1-7/16	6-11/16	2-7/16	1-1/4	1-3/4	7-3/4	1.8
3/4" 2478D	6-5/8	2-5/16	1-7/16	6-3/4	2-7/16	1-1/4	1-3/4	7-13/16	1.9
1" 2478E	7-3/16	2-9/16	1-5/8	7-5/16	2-7/16	1-1/4	2	8-1/2	2.3
1-1/4" 2478F	8-5/8	2-15/16	1-7/8	8-11/16	3-1/2	2	2-1/2	10-1/8	3.8
1-1/2" 2478G	9-1/4	3-1/8	2-1/8	9-5/16	3-1/2	2	2-7/8	10-7/8	5.3
2" 2478H	11-7/16	3-3/4	2-3/8	11-5/8	4-3/4	2-1/8	3-1/4	13-7/16	8.5
2-1/2" 2478J	12-3/4	4-1/4	3	12-15/16	4-3/4	2-1/8	4	14-15/16	13.0

2478 (metric units)

Size & Type	A mm	B mm	C mm	D mm	E mm	F mm	W mm	Dismantling Height (mm)	Approx. Weight (kg)
1/2" 2478D	166.7	57.2	36.5	169.9	61.9	31.8	44.5	196.9	0.8
3/4" 2478D	168.3	58.7	36.5	171.5	61.9	31.8	44.5	198.4	0.9
1" 2478E	182.6	65.1	41.3	185.7	61.9	31.8	50.8	215.9	1.0
1-1/4" 2478F	219.1	74.6	47.6	220.7	88.9	50.8	63.5	257.2	1.7
1-1/2" 2478G	235.0	79.4	54.0	236.5	88.9	50.8	73.0	276.2	2.4
2" 2478H	290.5	95.3	60.3	295.3	120.7	54.0	82.6	341.3	3.9
2-1/2" 2478J	323.9	108.0	76.2	328.6	120.7	54.0	101.6	379.4	5.9

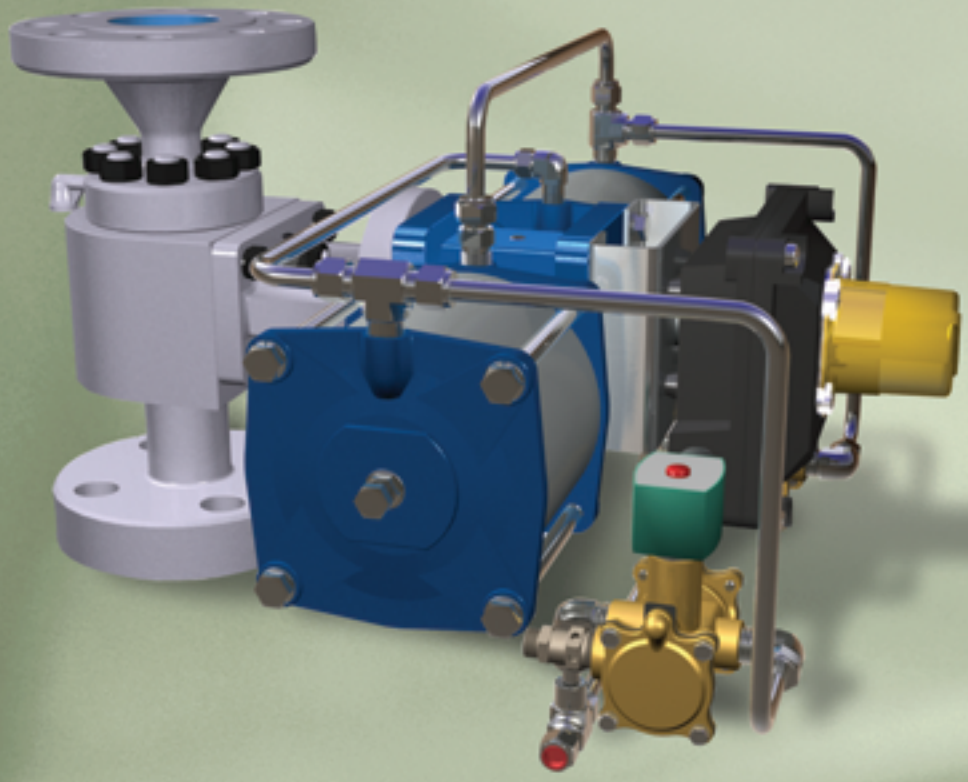
Capacities (Not ASME Capacity Certified)
U.S. Gallons Of Water Per Minute At 25% Overpressure

Orifice Designation & Discharge Area - Square Inches

Orifice Designation	D	E	F	G	H	J
Orifice Area (sq. in.)	.110	.196	.307	.503	.785	1.287
Set Pressure (psig)						
5	7	10	17	31	47	73
10	9	14	24	44	67	104
15	11	17	29	54	82	127
20	13	19	33	63	94	146
25	15	22	37	70	105	164
30	16	24	41	77	115	179
35	17	26	44	83	125	194
40	18	28	47	89	133	207
45	20	29	50	94	141	220
50	21	31	53	99	149	232
55	22	32	55	104	156	243
60	23	34	58	108	163	254
65	24	35	60	113	170	264
70	24	36	62	117	176	274
75	25	38	65	121	183	284
80	26	39	67	125	189	293
85	27	40	69	129	194	302
90	28	41	71	133	200	311
95	28	42	73	137	205	319
100	29	43	74	140	211	327
105	30	45	76	144	216	336
110	31	46	78	147	221	343
115	31	47	80	150	226	351
120	32	48	82	153	231	359
125	33	49	83	157	236	366
130	33	50	85	160	240	373
135	34	51	87	163	245	380
140	35	51	88	166	249	387
145	35	52	90	169	254	394
150	36	53	91	172	258	401
155	36	54	93	174	262	408
160	37	55	94	177	267	414
165	37	56	96	180	271	421
170	38	57	97	183	275	427
175	39	58	99	185	279	433
180	39	58	100	188	283	439
185	40	59	101	191	287	445
190	40	60	103	193	291	451
195	41	61	104	196	294	457
200	41	61	105	198	298	463
205	42	62	107	201	302	469
210	42	63	108	203	305	475
215	43	64	109	205	309	480
220	43	65	110	208	313	486
225	44	65	112	210	316	491
230	44	66	113	212	320	497
235	45	67	114	215	323	502
240	45	67	115	217	327	507
245	46	68	117	219	330	513
250	46	69	118	221	333	518
255	47	69	119	224	337	523
260	47	70	120	225	340	528
265	47	71	121	228	343	533
270	48	71	122	230	346	538
275	48	72	124	232	350	543
280	49	73	125	234	353	548
285	49	73	126	236	356	553
290	50	74	127	239	359	558
295	50	75	128	241	362	562
300	51	75	129	243	365	567

3500 EBV

Safety Valves



Consolidated®

The **Consolidated** Series 3500 Electromatic Ball Valve is designed to provide automatic or manual overpressure protection for steam boiler systems, and can also be used to assist start-up and shut-down venting.

3500EBV

INLET SIZES — 1-1/2", 2" and 2-1/2" in either flanged or weld neck design.

INLET RATINGS — ASME Class 1500 thru 4500

OUTLET SIZES — 3" and 4"

OUTLET RATINGS — ASME Class 300 and 900

BORE SIZES — .875 through 2.000. Reduced bores are available.

TEMP. RANGE — To 1100° F

MATERIALS — Alloy steel body with Titanium alloy seat and ball.

CERTIFICATION — ASME B & PVC Section I

Flanged Inlet - Type 351_, class 1500

Inlet [2] ASME Std. R.F. Flange		Outlet ASME Std. R.F. Flange		Type Number Max. Temp.[1]	Orifice Discharge Area		Orifice Designation
Size	Class	Size	Class	1050°F (566°C)	in^2	cm^2	
1-1/2"	1500	3"	300	3515F	0.875	5.645	5
2"	1500	3"	300	3516F	1.000	6.451	6
2-1/2"	1500	4"	300	3517F	1.750	11.289	7

Flanged Inlet - Type 352_, class 2500

Inlet [2] ASME Std. R.F. Flange		Outlet ASME Std. R.F. Flange		Type Number Max. Temp.[1]	Orifice Discharge Area		Orifice Designation
Size	Class	Size	Class	1050°F (566°C)	in^2	cm^2	
1-1/2"	2500	3"	300	3525F	0.875	5.645	5
2"	2500	3"	300	3526F	1.000	6.451	6
2-1/2"	2500	4"	300	3527F	1.750	11.289	7

Welded Inlet - Type 352_, class 2658 Ltd.

Inlet Buttweld		Outlet ASME Std. R.F. Flange		Type Number Max. Temp.[1]	Orifice Discharge Area		Orifice Designation
Size	Class	Size	Class	1050°F (566°C)	in^2	cm^2	
1-1/2"	2658	3"	300	3525W	0.875	5.645	5
2"	2658	3"	300	3526W	1.000	6.451	6

Welded Inlet - Type 353_, class 3090 Ltd.

Inlet Buttweld		Outlet ASME Std. R.F. Flange		Type Number Max. Temp.[1]	Orifice Discharge Area		Orifice Designation
Size	Class	Size	Class	1050°F (566°C)	in^2	cm^2	
2-1/2"	3090	4"	300	3537W	1.750	11.289	7
2-1/2"	3090	4"	900	3538W	2.000	11.903	8

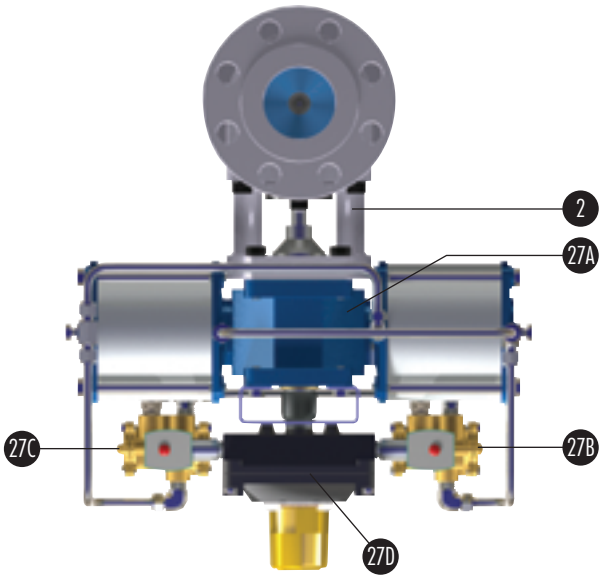
Welded Inlet - Type 354_, class 4500

Inlet Buttweld		Outlet ASME Std. R.F. Flange		Type Number Max. Temp.[1]	Orifice Discharge Area		Orifice Designation
Size	Class	Size	Class	1100°F (593°C)	in^2	cm^2	
2-1/2"	4500	4"	900	3547W	1.750	11.289	7

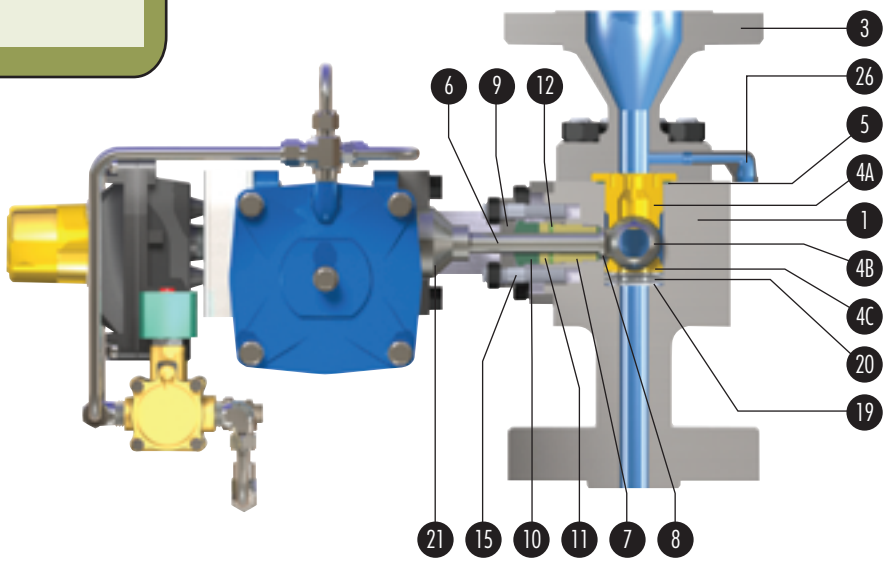
Notes:
1. To determine the maximum allowable pressure at a given temperature refer to the appropriate pressure temperature table. See page 3500EBV.14.
2. Available with ASME B16.5 inlet flange facings. See General Info Section page GI.26.1 for selections.

	Nomenclature	Material
1	Body (Butt Weld)	SA182 GR. F22 Alloy Steel
	Body (Flanged)	SA217 WC9 Alloy Steel
2	Yoke	SA217 WC9 Alloy Steel
3	Discharge Collar	SA217 WC9 Alloy Steel
4	Ball & Seat Assembly	
4A	Seat	Titanium Alloy Steel (Carbide Coated)
4B	Ball	Titanium Alloy Steel (Carbide Coated)
4C	Ball & Seat Loader	410 Stainless Steel (Carbide Coated)
5	Gasket	Grafoil
6	Stem	416 Stainless Steel (Carbide Coated)
7	Stem Nut	420 Stainless Steel
8	Bearing Washer	410 Stainless Steel (Carbide Coated)
9	Packing Gland Flange	SA105 Carbon Steel
10	Packing Gland	420 Stainless Steel
11	Packing Ring	Grafoil
12	Packing Stop Washer	410 Stainless Steel
13	Stud Body*	B16 Alloy Steel
14	Nut Body*	GR. 4 Alloy Steel
15	Stud Packing Gland	B16 Alloy Steel
16	Nut Packing Gland*	GR. 4 Alloy Steel
17	Cap Screw Yoke/Body*	B7 Alloy Steel
18	Lock Washer Yoke/Body*	Carbon Steel
19	Belleville Washer	17-4 Stainless Steel
20	Spacer	410 Stainless Steel
21	Drive Bushing	410 Stainless Steel
22	Cap Screw Yoke/Act. (Not Shown)	B7 Alloy Steel
23	Lock Washer Yoke/Act. (Not Shown)	Carbon Steel
24	Key Stem/Bushing*	Tool Steel
25	Set Screw*	Carbon Steel
26	Drain	Carbon Steel
27	Actuator Assembly	
27A	Actuator	Ledeen
27B	Solenoid	ASCO
27C	Solenoid	ASCO
27D	Westlock Switch w/Monitor	Westlock

* Not Shown

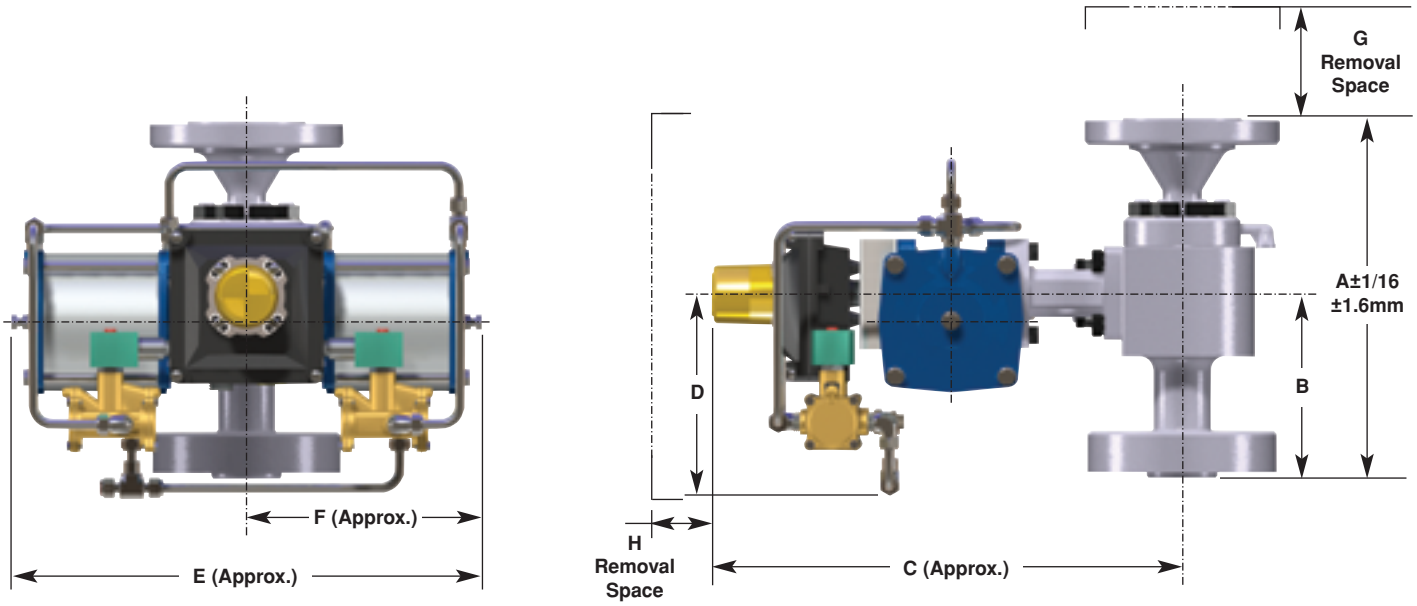


Top View

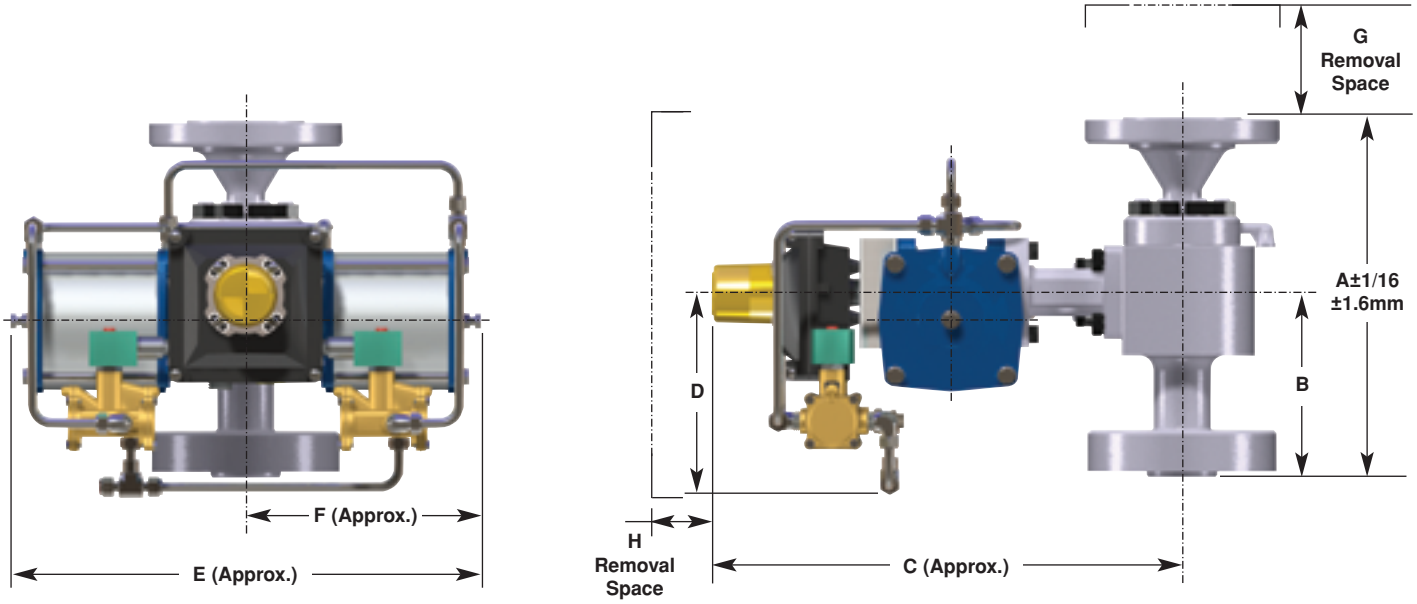


Front View

3500 Flange x Flange



3515, 3525, 3516 & 3526F w/Ledeen VA115DA Actuator



3515, 3525, 3516 & 3526F w/Ledeen VA123DA Actuator

3500 Flange x Flange

3515, 3525, 3516 & 3526F - w/ Ledeen VA115DA Actuator

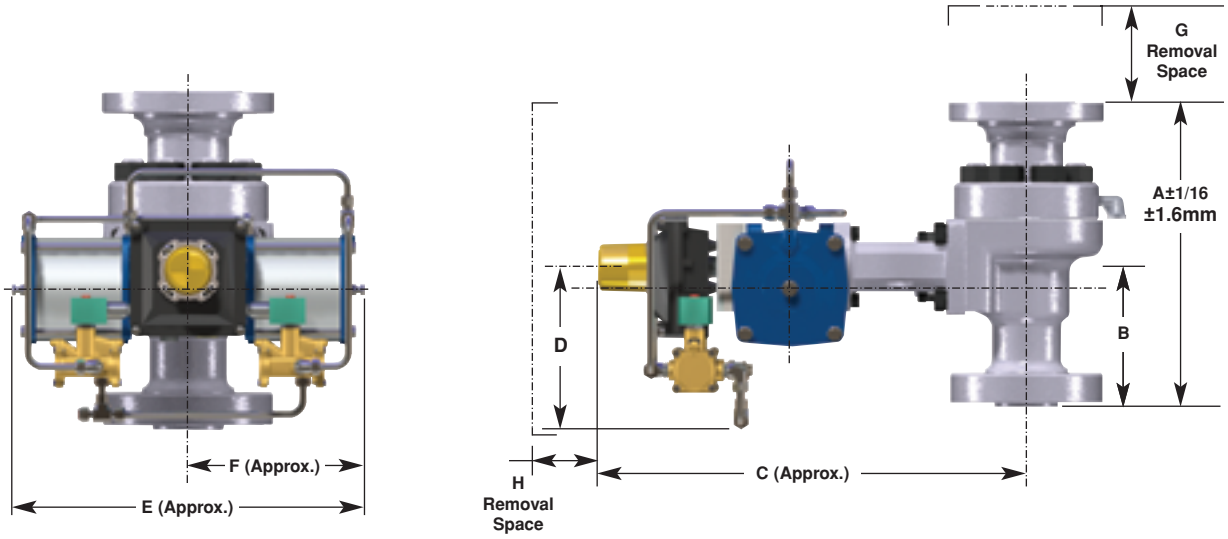
Valve Type	Actuator Type	Inlet[1] ASME Std. Flange	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	Approx. Weight lbs. (kg)
3515F	VA115DA	1-1/2" Class 1500 RF or RJ	3" Class 300 RF	15-1/4 387.4	7-1/2 190.5	19-1/2 495.3	6-3/8 161.9	27-7/8 708.0	13-15/16 354.0	3 76.2	5 127.0	190 86.2
3525F	VA115DA	1-1/2" Class 2500 RF or RJ	3" Class 300 RF	15-3/4 400.1	8 203.2	19-1/2 495.3	6-3/8 161.9	27-7/8 708.0	13-15/16 354.0	3 76.2	5 127.0	190 86.2
3516F	VA115DA	2" Class 1500 RF or RJ	3" Class 300 RF	15-1/2 393.7	7-3/4 196.9	19-1/2 495.3	6-3/8 161.9	27-7/8 708.0	13-15/16 354.0	3 76.2	5 127.0	190 86.2
3526F	VA115DA	2" Class 2500 RF or RJ	3" Class 300 RF	16 406.4	8-1/4 209.6	19-1/2 495.3	6-3/8 161.9	27-7/8 708.0	13-15/16 354.0	3 76.2	5 127.0	190 86.2

3515, 3525, 3516 & 3526F - w/ Ledeen VA123DA Actuator

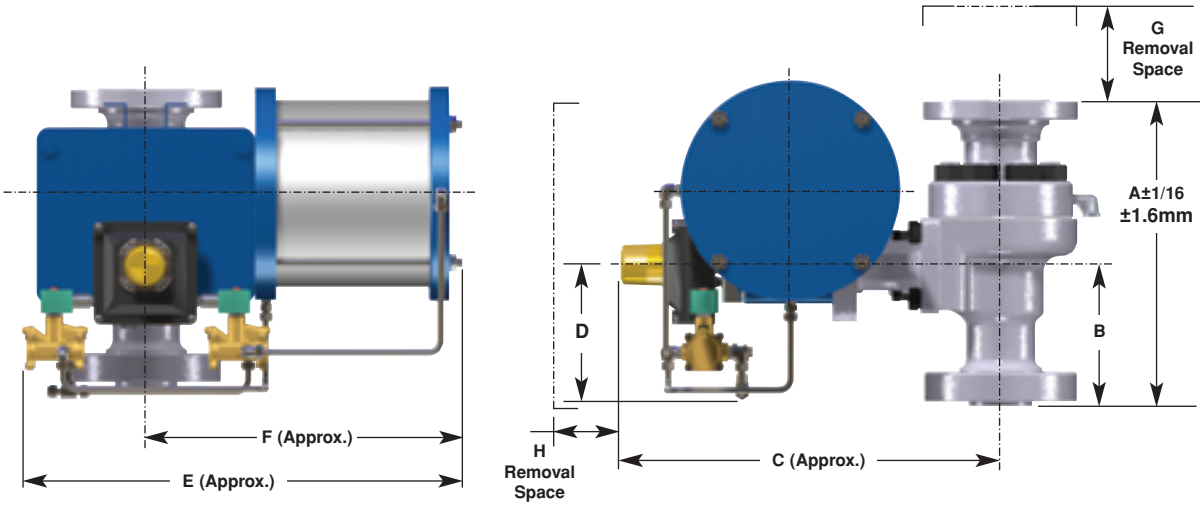
Valve Type	Actuator Type	Inlet[1]	Outlet	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	Approx. Weight lbs. (kg)
3515F	VA123DA	1-1/2" Class 1500 RF or RJ	3" Class 300 RF	15-1/4 387.4	7-1/2 190.5	19-1/2 495.3	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	3 76.2	5 127.0	212 96.2
3525F	VA123DA	1-1/2" Class 2500 RF or RJ	3" Class 300 RF	15-3/4 400.1	8 203.2	19-1/2 495.3	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	3 76.2	5 127.0	212 96.2
3516F	VA123DA	2" Class 1500 RF or RJ	3" Class 300 RF	15-1/2 393.7	7-3/4 196.9	19-1/2 495.3	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	3 76.2	5 127.0	212 96.2
3526F	VA123DA	2" Class 2500 RF or RJ	3" Class 300 RF	16 406.4	8-1/4 209.6	19-1/2 495.3	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	3 76.2	5 127.0	212 96.2

Note:
1. Available with ASME B16.5 inlet flange facings. See General Info Section page GI.26.1 for selections.

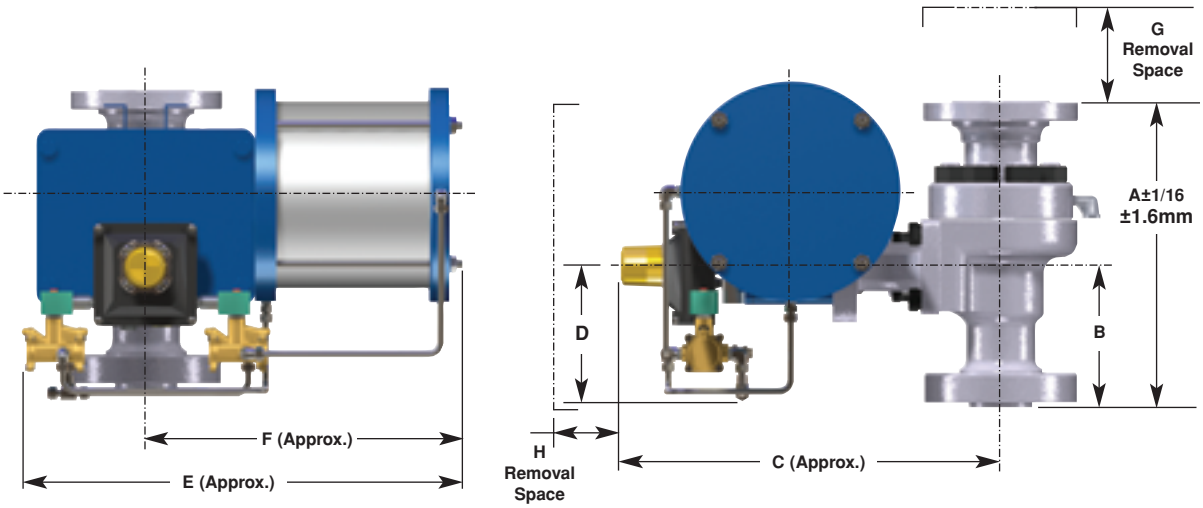
3500 Flange x Flange



3517 & 3527F w/Ledeen VA123DA Actuator



3517 & 3527F w/Ledeen GS620 Actuator



3517 & 3527F w/Ledeen GS628 Actuator

3500 Flange x Flange

3517 & 3527F - w/ Ledeen VA123DA Actuator

Valve Type	Actuator Type	Inlet[1] ASME Std. Flange	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	Approx. Weight lbs. (kg)
3517F	VA123DA	2-1/2" Class 1500 RF or RJ	4" Class 300 RF	19 482.6	8-5/8 219.1	23-1/2 596.9	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	4-1/2 114.3	7-1/2 190.5	212 96.2
3527F	VA123DA	2-1/2" Class 2500 RF or RJ	4" Class 300 RF	19 482.6	8-5/8 219.1	23-1/2 596.9	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	4-1/2 114.3	7-1/2 190.5	212 96.2

3517 & 3527F - w/ Ledeen GS620 Actuator

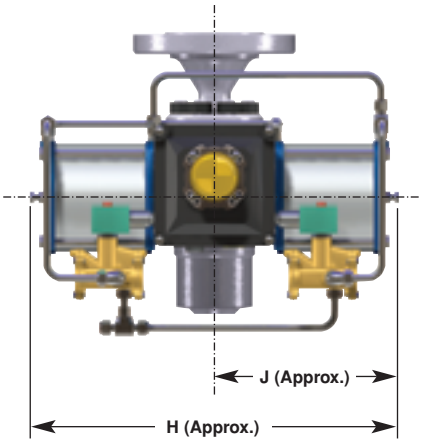
Valve Type	Actuator Type	Inlet[1] ASME Std. Flange	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	Approx. Weight lbs. (kg)
3517F	GS620	2-1/2" Class 1500 RF or RJ	4" Class 300 RF	19 482.6	8-5/8 219.1	22-3/8 568.3	6-3/8 161.9	27-5/16 693.7	19-9/16 242.9	4-1/2 114.3	7-1/2 190.5	520 235.9
3527F	GS620	2-1/2" Class 2500 RF or RJ	4" Class 300 RF	19 482.6	9-1/4 253.0	22-3/8 568.3	6-3/8 161.9	27-5/16 693.7	19-9/16 242.9	4-1/2 114.3	7-1/2 190.5	520 235.9

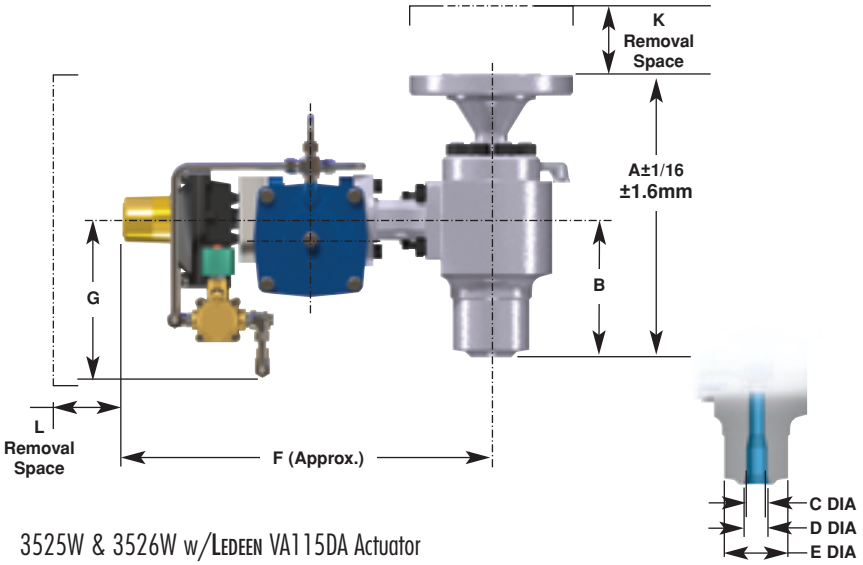
3517 & 3527F - w/ Ledeen GS628 Actuator

Valve Type	Actuator Type	Inlet[1] ASME Std. Flange	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	Approx. Weight lbs. (kg)
3517F	GS628	2-1/2" Class 1500 RF or RJ	4" Class 300 RF	19 482.6	8-5/8 219.1	22-3/8 568.3	6-3/8 161.9	27-5/16 693.7	19-9/16 242.9	4-1/2 114.3	7-1/2 190.5	546 247.7
3527F	GS628	2-1/2" Class 2500 RF or RJ	4" Class 300 RF	19 482.6	8-5/8 219.1	22-3/8 568.3	6-3/8 161.9	27-5/16 693.7	19-9/16 242.9	4-1/2 114.3	7-1/2 190.5	546 247.7

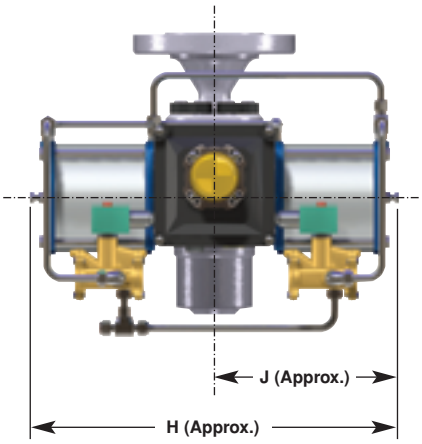
Note:
1. Available with ASME B16.5 inlet flange facings. See General Info Section page GI.26.1 for selections.

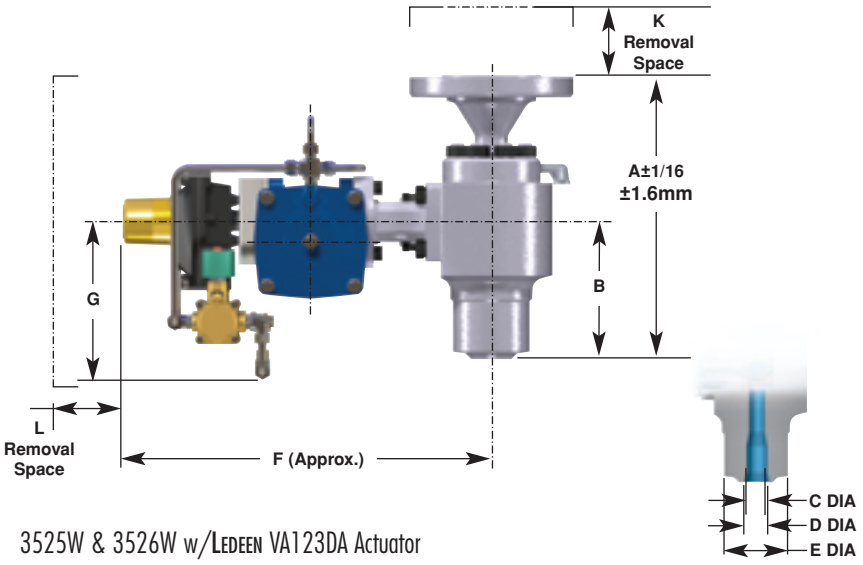
3500 Butt Weld x Flange



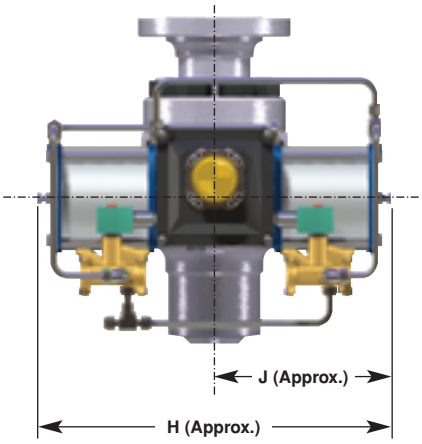


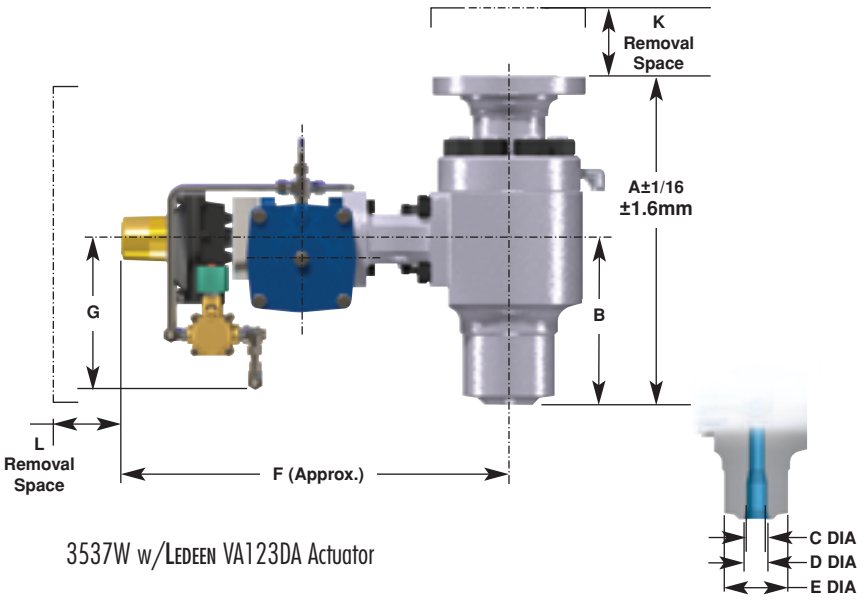
3525W & 3526W w/Ledeen VA115DA Actuator





3525W & 3526W w/Ledeen VA123DA Actuator





3537W w/Ledeen VA123DA Actuator

3500 Butt Weld x Flange

3525W & 3526W - w/ Ledeen VA115DA Actuator

Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3525W	VA115DA	1-1/2" Butt Weld	3" Class 300 RF	14 355.6	6-1/4 158.8	1.105 28.06	1-1/2 38.1	4-1/2 114.3	19-1/2 495.3	6-3/8 161.9	27-7/8 708.0	13-15/16 354.0	3 76.2	5 127.0	212 96.2
3526W	VA115DA	2" Butt Weld	3" Class 300 RF	14 355.6	6-1/4 158.8	1-1/2 38.1	2 50.8	4-1/2 114.3	19-1/2 495.3	6-3/8 161.9	27-7/8 708.0	13-15/16 354.0	3 76.2	5 127.0	212 96.2

3525W & 3526W - w/ Ledeen VA123DA Actuator

Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3525W	VA123DA	1-1/2" Butt Weld	3" Class 300 RF	14 355.6	6-1/4 158.8	1.105 28.06	1-1/2 38.1	4-1/2 114.3	19-1/2 495.3	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	3 76.2	5 127.0	212 96.2
3526W	VA123DA	2" Butt Weld	3" Class 300 RF	14 355.6	6-1/4 158.8	1-1/2 38.1	2 50.8	4-1/2 114.3	19-1/2 495.3	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	3 76.2	5 127.0	212 96.2

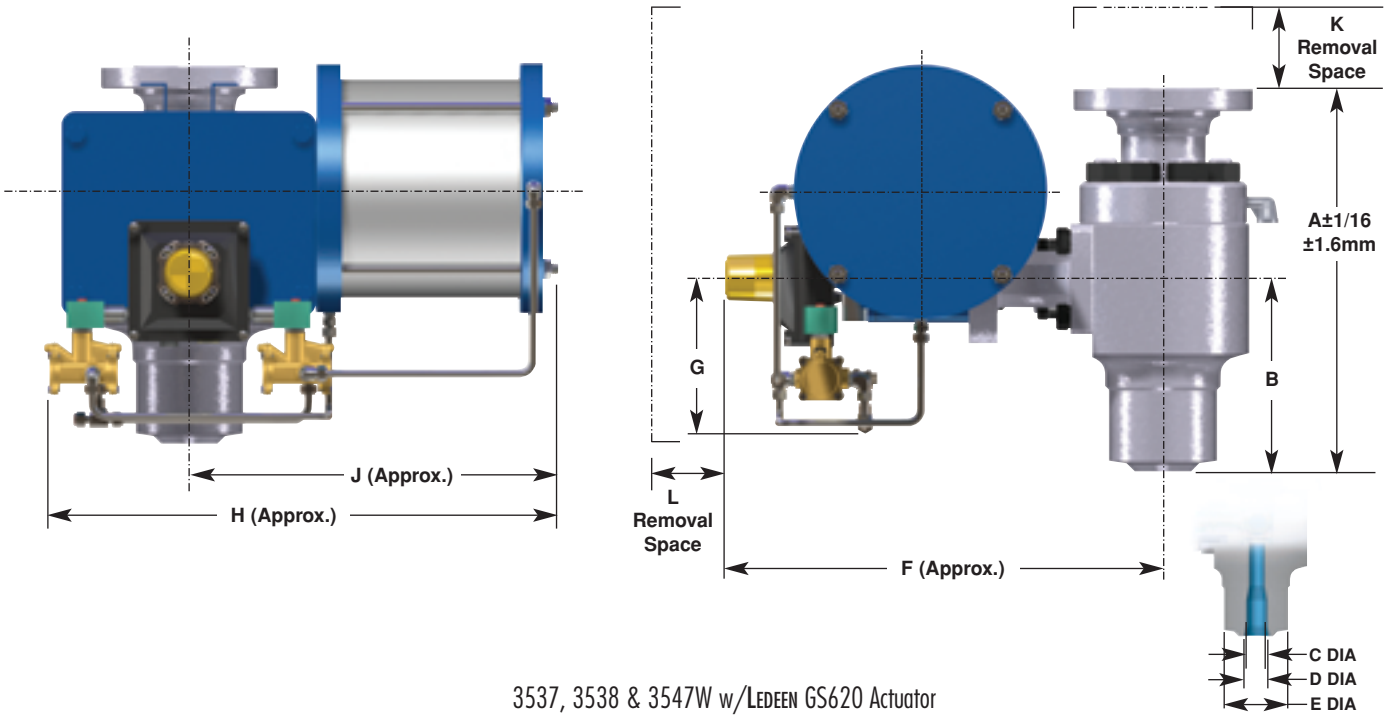
3537W - w/ Ledeen VA123DA Actuator

Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3537W	VA123DA	1-1/2" Butt Weld	4" Class 300 RF	20-1/4 514.4	9-7/8 250.8	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	23-1/2 596.9	6-3/8 161.9	21-5/8 549.3	10-13/16 274.6	4-1/2 114.3	7-1/2 190.5	370 167.8

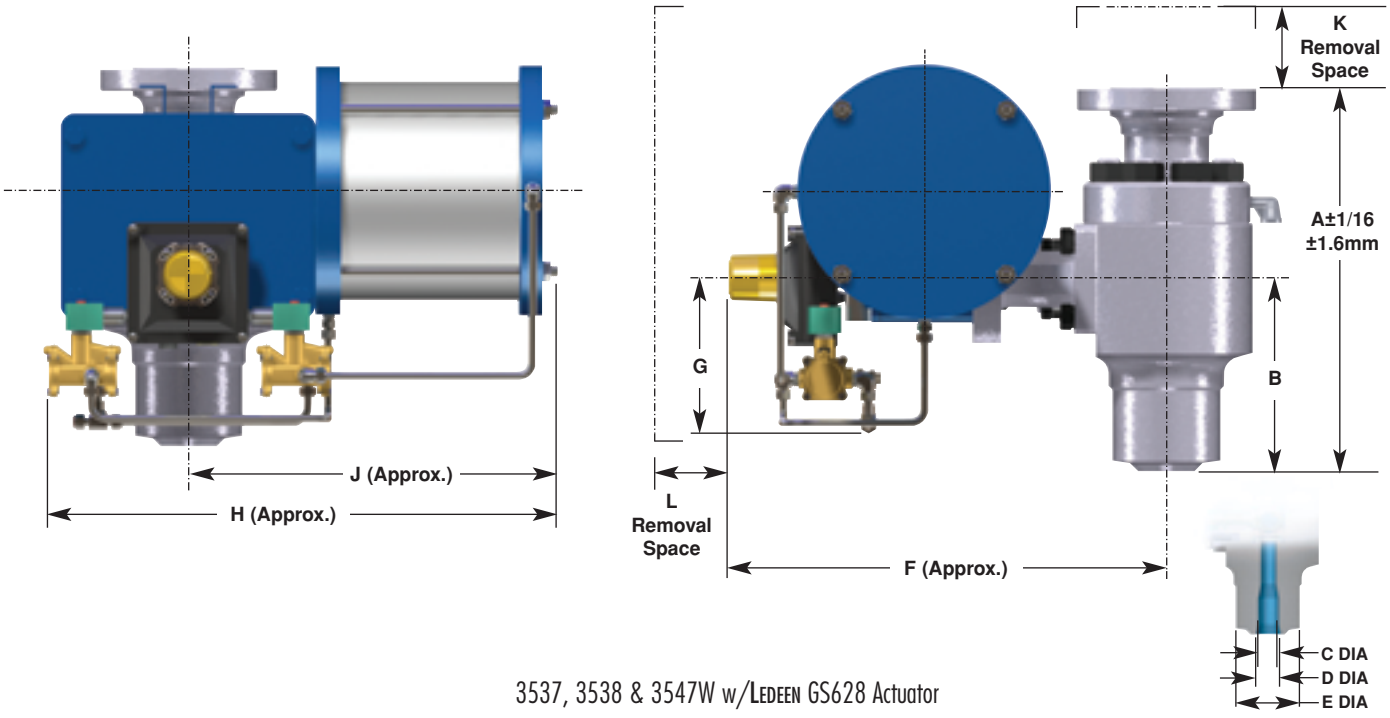
Note:

Inside and outside diameters other than those specified may reduce the valve pressure/temperature rating.
Engineering review and approval is required for dimensions other than those specified in the tables.

3500 Butt Weld x Flange



3537, 3538 & 3547W w/Ledeen GS620 Actuator



3537, 3538 & 3547W w/Ledeen GS628 Actuator

3500 Butt Weld x Flange

3537, 3538 & 3547W - w/ Ledeen GS620 Actuator

Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3537W	GS620	2-1/2" Butt Weld	4" Class 300 RF	20-1/4 514.4	9-7/8 250.8	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	22-3/8 568.3	6-3/8 161.9	27-5/16 693.7	19-9/16 496.9	4-1/2 114.3	7-1/2 190.5	520 235.9
3538W	GS620	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 59.9	6-5/8 168.3	23-9/16 598.4	6-3/8 161.9	27-5/16 693.7	19-9/16 496.9	6 152.4	10 254.0	520 235.9
3547W	GS620	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	22-9/16 598.4	6-3/8 161.9	27-5/16 693.7	19-9/16 496.9	6 152.4	10 254.0	520 235.9

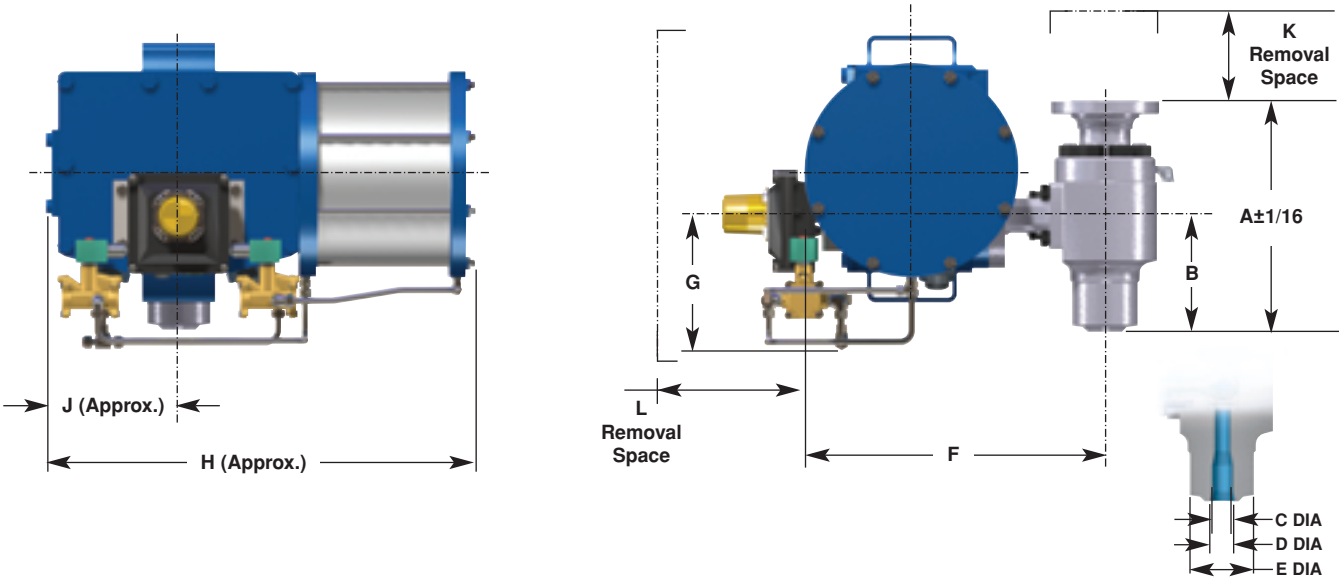
3537, 3538 & 3547W - w/ Ledeen GS628 Actuator

Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3537W	GS628	2-1/2" Butt Weld	4" Class 300 RF	20-1/4 514.4	9-7/8 250.8	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	22-3/8 568.3	6-3/8 161.9	27-5/16 693.7	19-9/16 496.9	4-1/2 114.3	7-1/2 190.5	546 247.7
3538W	GS628	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 59.9	6-5/8 168.3	23-9/16 598.4	6-3/8 161.9	27-5/16 693.7	19-9/16 496.9	6 152.4	10 254.0	575 260.8
3547W	GS628	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	23-9/16 598.4	6-3/8 161.9	27-5/16 693.7	19-9/16 496.9	6 152.4	10 254.0	575 260.8

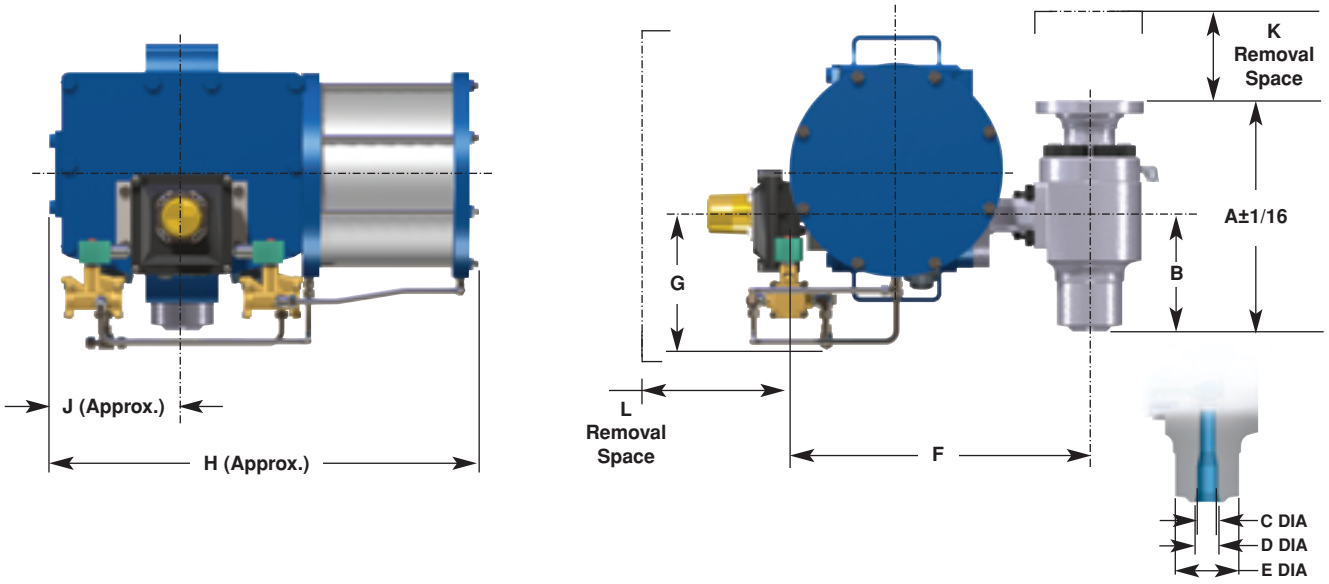
Note:

Inside and outside diameters other than those specified may reduce the valve pressure/temperature rating.
Engineering review and approval is required for dimensions other than those specified in the tables.

3500 Butt Weld x Flange



3538W & 3547W w/Ledeen SY1032 Actuator



3538W & 3547W w/Ledeen SY1043 Actuator

3500 Butt Weld x Flange

3538W & 3547W - w/ Ledeen SY1032 Actuator

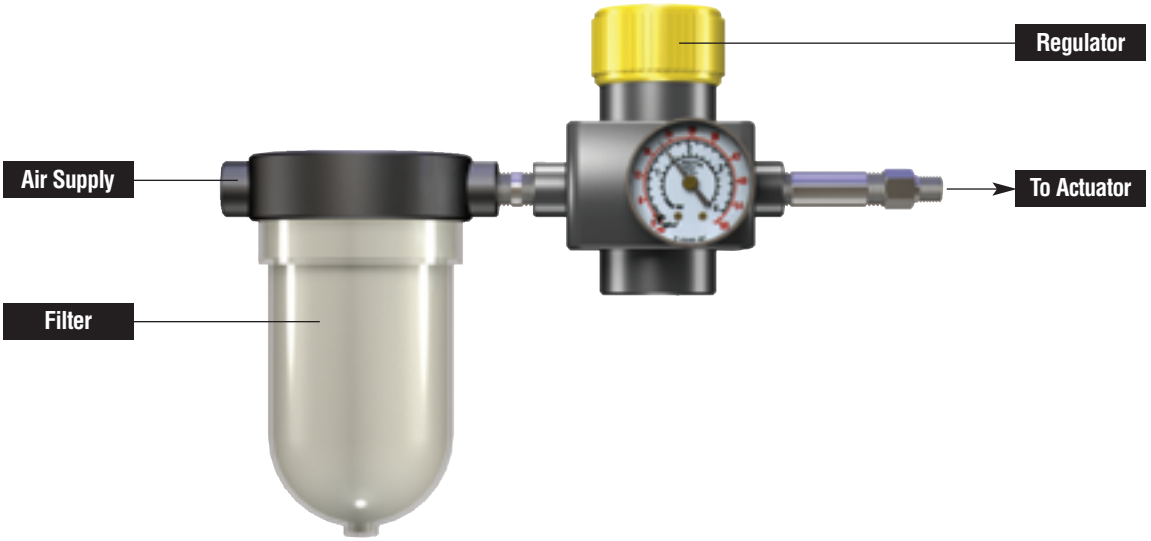
Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3538W	SY1032	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	26-3/16 665.2	6-3/8 161.9	31-1/2 800.1	21-11/16 550.9	6 152.4	10 254.0	807 366.0
3547W	SY1032	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	26-3/16 665.2	6-3/8 161.9	31-1/2 800.1	21-11/16 550.9	6 152.4	10 254.0	807 366.0

3538W & 3547W - w/ Ledeen SY1043 Actuator

Valve Type	Actuator Type	Inlet	Outlet ASME Std. Flange	A in. (mm)	B in. (mm)	C in. (mm)	D in. (mm)	E in. (mm)	F in. (mm)	G in. (mm)	H in. (mm)	J in. (mm)	K in. (mm)	L in. (mm)	Approx. Weight lbs. (kg)
3538W	SY1043	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	26-3/16 665.2	6-3/8 161.9	31-1/2 800.1	21-11/16 550.9	6 152.4	10 254.0	973 441.4
3547W	SY1043	2-1/2" Butt Weld	4" Class 900 RF	24-5/8 625.5	9-3/8 238.1	2-3/8 60.3	2-3/4 69.9	6-5/8 168.3	26-3/16 665.2	6-3/8 161.9	31-1/2 800.1	21-11/16 550.9	6 152.4	10 254.0	973 441.4

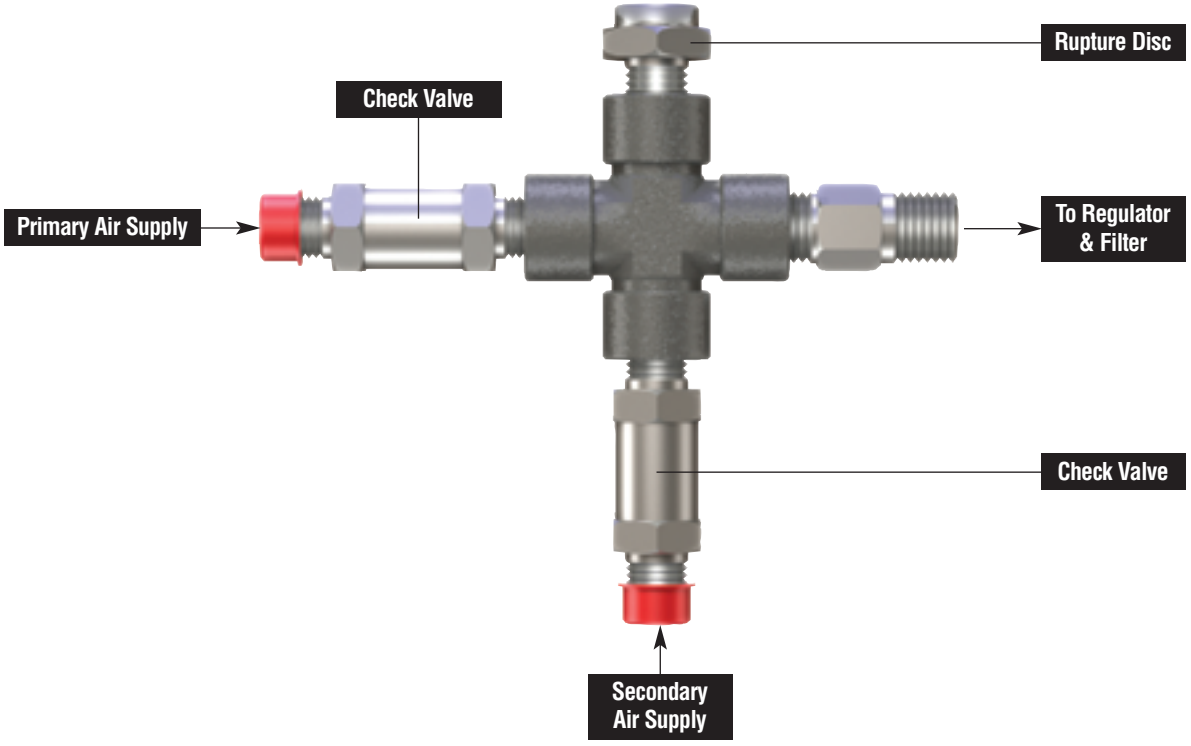
Note:

Inside and outside diameters other than those specified may reduce the valve pressure/temperature rating.
Engineering review and approval is required for dimensions other than those specified in the tables.



Pressure Regulator and Filter

Note:
Pressure regulator & filter are required prior to 3500EBV actuator.
A quotation for a filter regulator can be provided on request.



Auxiliary Supply Manifold

Note:
When an alternate or backup is required to the instrument air supply, an auxiliary supply manifold can be quoted. The auxiliary supply can be connected to a secondary air supply or nitrogen bottle. In the event that the regulator on the auxiliary supply pressure fails, a rupture disc is supplied as standard on the auxiliary supply manifold.

Meets ASME B&PVC Section I, (2001 Edition), and ASME B16.34, (1996 Edition.)

Valve Type & Pressure Class

TEMP. (DEG F)	1-1/2" 3515F 2" 3516F 2-1/2" 3517F 1500 STD. Class (PSIG)	1-1/2" 3525F 2" 3526F 2-1/2" 3527F 2500 STD. Class (PSIG)	1-1/2" 3525W 2" 3526W 2658 LTD. Class (PSIG)	2-1/2" 3537W 2-1/2" 3538W 3092 LTD. Class (PSIG)	2-1/2" 3547W 4500 LTD. Class (PSIG)
1100	N/A	N/A	N/A	1630	2546
1075	N/A	N/A	N/A	2113	3305
1050	875	1455	1935	2596	4064
1040	961	1598	2125	2851	4461
1030	1047	1741	2316	3000	4500
1020	1133	1884	2500	3000	4500
1010	1219	2027	2500	3000	4500
1000	1305	2170	2500	3000	4500
990	1421	2366	2500	3000	4500
985	1479	2465	2500	3000	4500
980	1537	2500	2500	3000	4500
970	1653	2500	2500	3000	4500
960	1769	2500	2500	3000	4500
950	1885	2500	2500	3000	4500
940	1957	2500	2500	3000	4500
930	2029	2500	2500	3000	4500
920	2101	2500	2500	3000	4500
910	2173	2500	2500	3000	4500
900	2245	2500	2500	3000	4500
890	2283	2500	2500	3000	4500
880	2321	2500	2500	3000	4500
870	2359	2500	2500	3000	4500
860	2379	2500	2500	3000	4500
850	2435	2500	2500	3000	4500
840	2456	2500	2500	3000	4500
830	2477	2500	2500	3000	4500
820	2498	2500	2500	3000	4500
810	2500	2500	2500	3000	4500

Note:

Inside and outside diameters other than those specified may reduce the valve pressure/temperature rating. Engineering review and approval is required for dimensions other than those specified in the dimensions & weights section of this catalog. See pages 3500EBV.3 thru 3500EBV.12.

Sizing Examples

The 3500 Series Electromatic Ball Valve is supplied with standard orifice bores. Capacity tables on pages 3500EBV.17 through .22 specify the relieving capabilities of these valves with a maximum or standard orifice size. Orifice sizes smaller than standard may be specified to reduce the capacity to less than that stated in the capacity tables.

Dresser, Inc. recommends that the 3500 EBV be sized as an integral part of the total safety valve system in order to ensure that the safety valves operate properly and within ASME requirements for set pressure, lift and blowdown. Total system sizing is not included in the following examples. For total system sizing, refer to Safety Valve Product Information Sheet SV/PI-53, or submit the total information required in the "Ordering Information" section to the factory for review.

Example 1

For a new installation with no piping connections specified:

Set Pressure: **2000 psig**
Required Capacity: **90,000 pph steam @ 1000°F and 3% overpressure**
Non-ASME Section I rated

Step 1

Determine the saturated capacity and full bore size from the appropriate capacity tables on pages 3500EBV.17 through .22. The selected capacity should be greater than or equal to the required capacity. If not, select the next larger bore size.

Page 3500EBV.18 "Capacity Tables"
1.750 Bore, 2-1/2", 35_7
Capacity at 2000 psig = 258,364 pph saturated
258,364 pph ≥ 90,000 pph
Select #7 orifice designation

Step 2

Correct for superheated steam temperatures using the "Superheat Correction Factors" on page 3500EBV.26. Convert the set pressure from psig to psia flowing pressure then determine the superheat correction factor at the relieving temperature (interpolate when necessary). Multiply the saturated steam capacity calculated in Step 1 by the selected correction factor. The calculated capacity should be greater than or equal to the required capacity. If not, repeat Step 1 and select a larger bore size.

"Superheat Correction Factors"
PSIA = (2000 psig x 1.03) + 14.7 = 2074 psia
2074.7 psia @ 1000°F = 0.760 SHCF
0.760 x 258,364 pph = 196,396 pph
196,396 pph ≥ 90,000 pph

Step 3

Determine any required reduction in capacity or bore size. Calculate the percentage of required capacity versus the full capacity as calculated in Steps 1 and 2. Using the section titled "Reduced Bore Selection and Capacity Factor" on page 3500EBV.23, refer to the table that corresponds to the full bore size selected. From the column marked "Relation to 100%", select the percentage that is equal to or greater than the calculated percentage. Multiply the full capacity corrected for temperature by the capacity factor selected. The reduced bore capacity should be greater than or equal to the required capacity.

Required capacity / Full bore capacity @ 1000°F
90,000 pph / 196,396 pph = 45.8%

Page 3500EBV.23 "Reduced Bore Selection and Capacity Factor",
1.750 Bore, 2-1/2", 3517, 3527 3537 & 3547
46% ≥ 45.8%
.46 x 196,396 pph = 90,342 pph
90,342 pph ≥ 90,000 pph
Select 1-3/16 Reduced Bore

Step 4

Verify "Pressure Class" using page 3500EBV.14 for "Maximum Pressure and Temperature" for 3500 EBV.

2000 psig @ 1000°F, 1.750 Bore (#7 designation)
2-1/2" 35_27F, 2170 psig > 2000 psig
or
2-1/2" 35_37W, 3000 psig > 2000 psig

Step 5

Review section titled "Scope of Design" on Page 3500EBV.1.

Replace With

3527F = 2500 Class, 2-1/2" 2500 Class Flange x 4" 300 Class Flange
Reduced bore from 1.750 to 1-3/16
Set 2000 psig 90,342 pph @ 1000°F

or 3537W = 3000 Class, 2-1/2" Buttweld x 4" 300 Class Flange
Reduced bore from 1.750 to 1-3/16
Set 2000 psig 90,342 pph @ 1000°F

Example 2

For replacement valve selection when valve type and/or a serial number is provided:

Replace a 2-1/2" 2533VX (15) - XI S/N BV03275
Set 1200 psig
Required capacity is 100,856 pph at 900°F
3% overpressure 100% of Actual Capacity -
Non-ASME Section I Rated
Full 1-5/8" bore, 1500 Class Inlet Flange

Step 1

Review section titled "Scope of Design" on page 3500EBV.1.

3517F, 1500 Class, Bore 1.750, 2-1/2"
1500 Class Flange x 4" 300 Class Flange

Step 2

Verify "Maximum Pressure Temperature Limits" on page 3500EBV.14. Maximum pressure for valve selected at a given temperature must be greater than or equal to the set pressure of the valve being replaced.

Page 3500EBV.14 for 3517F @ 900°F = 2245 psig
2245 psig ≥ 1200 psig

Step 3

Verify capacity in section titled "Capacity Tables" on pages 3500EBV.17 through .22.

Page 3500EBV.18 1.750 bore, #7 orifice designation, 2-1/2", 3517 at 3% overpressure 100% of actual capacity - non-ASME Section I rated.
At 1200 psig set pressure = 150,834 pph saturated steam capacity.
150,834 pph ≥ 100,856 pph

Step 4

Correct for superheated steam temperatures using the "Superheat Correction Factors" on page 3500EBV.26. Convert psig to psia. Select correction factor for set pressure psia at the required relieving temperature and multiply saturated steam capacity calculated in Step 3 by correction factor. Verify it is greater than or equal to the required capacity.

1200 psig = (1200 x 1.03) + 14.7 = 1250 psia
1250 psia @ 900°F = .804 SHCF
.804 x 150,834 pph = 121,270 pph @ 900°F
121,270 pph ≥ 100,856 pph

Step 5

Select reduced bore if required. Calculate the percentage of required capacity versus the full bore capacity as calculated in Step 4. Using the section titled "Reduced Bore Selection and Capacity Factor"on page 3500EBV.23, refer to the Tables that corresponds to the 1.750 full bore size selected. From the column marked "Relation to 100%", select the percentage that is equal to or greater than the calculated percentage. Multiply the full capacity corrected for temperature by the capacity factor selected. The reduced bore capacity should be greater than or equal to the required capacity.

Required capacity / Full bore capacity @ 900°F
100,856 pph / 121,270 pph = 84%
Select 1-5/8, 86.2% ≥ 84%
Use 3517F with 1-5/8 reduced bore
121,270 pph (full bore capacity) x .862 = 104,534 pph
104,534 pph ≥ 100,856 pph

Replace With

2-1/2" 3517F-1-X1, 2-1/2" 1500 Class Flange
x 4" 300 Class Flange with 1-5/8 Reduced Bore
Set 1200 psig
104,534 pph @ 900°F

Non ASME Rated

pounds per hour saturated steam at 3% overpressure, 100% of actual capacity

W = Slope x P for P less than or equal to 1580 psia
W = Slope x P x [.1906 x P - 1000/.2292 x P - 1061] for P greater than 1580 psia

P = (1.03 x set pressure) + 14.7

3500 Series EBV Ball Valve

Set Pressure (psig)[1]	Slope 29.9	37.8	120.6	157.4
	Flow Area .875	1.000	1.750	2.000
	Designation 5	6	7	8
100	3519	4449	14195	18526
110	3827	4838	15437	20147
120	4135	5228	16679	21768
130	4443	5617	17921	23390
140	4751	6006	19163	25011
150	5059	6396	20406	26632
160	5367	6785	21648	28253
170	5675	7174	22890	29875
180	5983	7564	24132	31496
190	6291	7953	25374	33117
200	6599	8342	26616	34738
210	6907	8732	27859	36359
220	7215	9121	29101	37981
230	7523	9510	30343	39602
240	7831	9900	31585	41223
250	8139	10289	32857	42844
260	8447	10679	34070	44466
270	8755	11068	35312	46087
280	9063	11457	36554	47708
290	9371	11847	37796	49329
300	9679	12236	39038	50950
310	9987	12625	40280	52572
320	10295	13015	41523	54193
330	10603	13404	42765	55814
340	10911	13793	44007	57435
350	11218	14183	45249	59056
360	11526	14572	46491	60678
370	11834	14961	47733	62299
380	12142	15351	48976	63920
390	12450	15740	50218	65541
400	12758	16129	51460	67163
410	13066	16519	52702	68784
420	13374	16908	53944	70405
430	13682	17297	55187	72026
440	19990	17687	56429	73647
450	14298	18076	57671	75269
460	14606	18465	58913	76890
470	14914	18855	60155	78511
480	15222	19244	61397	80132
490	15530	19633	62640	81754
500	15838	20023	63882	83375
510	16146	20412	65124	84996
520	16454	20801	66366	86617
530	16762	21191	67608	88238
540	17070	21580	68851	89860
550	17378	21969	70093	91481
560	17686	22359	71335	93102
570	17994	22748	72577	94723
580	18302	23137	73819	96345
590	18610	23527	75061	97966

Set Pressure (psig)[1]	Slope 29.9	37.8	120.6	157.4
	Flow Area .875	1.000	1.750	2.000
	Designation 5	6	7	8
600	18918	23916	76304	99587
610	19226	24305	77546	101208
620	19534	24695	78788	102829
630	19842	25084	80030	104451
640	20150	25473	81272	106072
650	20458	25863	82515	107693
660	20766	26252	83757	109314
670	21074	26641	84999	110936
680	21381	27031	86241	112557
690	21689	27420	87483	114178
700	21997	27809	88725	115799
710	22305	28199	89968	117420
720	22613	28588	91210	119042
730	22921	28977	92452	120663
740	23229	29367	93694	122284
750	23537	29756	94936	123905
760	23845	30146	96179	125527
770	24153	30535	97421	127148
780	24461	30924	98663	128769
790	24769	31314	99905	130390
800	25077	31703	101147	132011
810	25385	32092	102389	133633
820	25693	32482	103632	135254
830	26001	32871	104874	136875
840	26309	33260	106116	138496
850	26617	33650	107358	140117
860	26925	34039	108600	141739
870	27233	34428	109842	143360
880	27541	34818	111085	144981
890	27849	35207	112327	146602
900	28157	35596	113569	148224
910	28465	35986	114811	149845
920	28773	36375	116053	151466
930	29081	36764	117296	153087
940	29389	37154	118538	154708
950	29697	37543	119780	156330
960	30005	37932	121022	157951
970	30313	38322	122264	159572
980	30621	38711	123506	161193
990	30929	39100	124749	162815
1000	31237	39490	125991	164436
1010	31545	39879	127233	166057
1020	31852	40268	128475	167678
1030	32160	40658	129717	169299
1040	32468	41047	130960	170921
1050	32776	41436	132202	172542
1060	33084	41826	133444	174163
1070	33392	42215	134686	175784
1080	33700	42604	135928	177406
1090	34008	42994	137170	179027

Note:
1. The minimum set pressure is 50 psig. For set pressures 50 psig to 99 psig contact the factory.

Non ASME Rated

pounds per hour saturated steam at 3% overpressure, 100% of actual capacity

W = Slope x P for P less than or equal to 1580 psia
W = Slope x P x [.1906 x P - 1000/.2292 x P - 1061] for P greater than 1580 psia

P = (1.03 x set pressure) + 14.7

3500 Series EBV Ball Valve

Set Pressure (psig)[1]	Slope 29.9	37.8	120.6	157.4
	Flow Area .875	1.000	1.750	2.000
	Designation 5	6	7	8
1100	34316	43383	138413	180648
1110	34624	43772	139655	182269
1120	34932	44162	140897	183890
1130	35240	44551	142139	185512
1140	35548	44940	143381	187133
1150	35856	45330	144624	188754
1160	36164	45719	145866	190375
1170	36472	46108	147108	191997
1180	36780	46498	148350	193618
1190	37088	46887	149592	195239
1200	37396	47276	150834	196860
1210	37704	47666	152077	198481
1220	38012	48055	153319	200103
1230	38320	48444	154561	201724
1240	38628	48834	155803	203345
1250	38936	49223	157045	204966
1260	39244	49613	158288	206588
1270	39552	50002	159530	208209
1280	39860	50391	160772	209830
1290	40168	50781	162014	211451
1300	40476	51170	163256	213072
1310	40784	51559	164498	214694
1320	41092	51949	165741	216315
1330	41400	52388	166983	217936
1340	41708	52727	168225	219557
1350	42015	53117	169467	221178
1360	42323	53506	170709	222800
1370	42631	53895	171951	224421
1380	42939	54285	173194	226042
1390	43247	54674	174436	227663
1400	43555	55063	175678	229285
1410	43863	55453	176920	230906
1420	44171	55842	178162	232527
1430	44479	56231	179405	234148
1440	44787	56621	180647	235769
1450	45095	57010	181889	237391
1460	45251	57207	182518	239012
1470	45583	57627	183857	240633
1480	45916	58047	185199	242254
1490	46249	58468	186542	243876
1500	46582	58890	187887	245497
1510	46916	59312	189235	247118
1520	47251	59735	190584	248739
1530	47586	60159	191936	250503
1540	47922	60583	193290	252270
1550	48258	61008	194646	254040
1560	48595	61434	196004	255813
1570	48932	61860	197364	257588
1580	49270	62288	198727	259367
1590	49608	62715	200092	261149

Set Pressure (psig)[1]	Slope 29.9	37.8	120.6	157.4
	Flow Area .875	1.000	1.750	2.000
	Designation 5	6	7	8
1600	49947	63144	201460	262933
1610	50287	63573	202829	264721
1620	50627	64003	204201	266511
1630	50968	64434	205576	268305
1640	51309	64866	206952	270102
1650	51651	65298	208332	271902
1660	51994	65731	209713	273706
1670	52337	66165	211098	275512
1680	52681	66600	212484	277322
1690	53025	67035	213873	279135
1700	53370	67471	215265	280952
1710	53716	67908	216660	282771
1720	54062	68346	218057	284595
1730	54409	68785	219456	286421
1740	54757	69224	220859	288252
1750	55105	69665	222264	290085
1760	55454	70106	223671	291923
1770	55804	70548	225082	293764
1780	56154	70991	226495	295608
1790	56505	71435	227911	297456
1800	56857	71880	229330	299308
1810	57210	72325	230752	301164
1820	57563	72772	232177	303024
1830	57917	73219	233605	304887
1840	58272	73668	235036	306755
1850	58627	74117	236469	308626
1860	58983	74568	237906	310501
1870	59340	75019	239346	312381
1880	59698	75471	240789	314264
1890	60057	75925	242236	316152
1900	60416	76379	243685	318043
1910	60776	76834	245138	319939
1920	61137	77291	246594	321840
1930	61499	77748	248053	323744
1940	61862	78206	249516	325653
1950	62225	78666	250982	327566
1960	62589	79126	252451	329484
1970	62955	79588	253924	331407
1980	63321	80051	255401	333334
1990	63688	80515	256881	335265
2000	64055	80980	258364	337202
2010	64424	81446	259852	339143
2020	64794	81913	261343	341089
2030	65164	82382	262837	343040
2040	65536	82852	264336	344995
2050	65908	83322	265838	346956
2060	66282	83794	267344	348922
2070	66656	84268	268854	350893
2080	67032	84742	270369	352869
2090	67408	85218	271887	354851

Note:
1. The minimum set pressure is 50 psig. For set pressures 50 psig to 99 psig contact the factory.

Non ASME Rated

pounds per hour saturated steam at 3% overpressure, 100% of actual capacity

W = Slope x P for P less than or equal to 1580 psia
W = Slope x P x [.1906 x P - 1000/.2292 x P - 1061] for P greater than 1580 psia

P = (1.03 x set pressure) + 14.7

3500 Series EBV Ball Valve

Set Pressure (psig)[1]	Slope 29.9	37.8	120.6	157.4
	Flow Area .875	1.000	1.750	2.000
	Designation 5	6	7	8
2100	67785	85695	273409	356837
2110	68164	86174	274935	358829
2120	68543	86653	276466	360827
2130	68924	87135	278001	362830
2140	69305	87617	279540	364839
2150	69688	88101	281083	366853
2160	70072	88586	282631	368873
2170	70457	89072	284183	370899
2180	70843	89560	285740	372931
2190	71230	90050	287301	374969
2200	71618	90540	288867	377013
2210	72007	91033	290438	379063
2220	72398	91527	292013	381119
2230	72790	92022	293594	383181
2240	73183	92519	295179	385250
2250	73577	93017	296769	387325
2260	73973	93517	298364	389407
2270	74369	94019	299964	391496
2280	74767	94522	301570	393591
2290	75167	95027	303180	395693
2300	75567	95533	304796	397802
2310	75969	96041	306417	399918
2320	76372	96551	308044	402041
2330	76777	97063	309676	404171
2340	77183	97576	311314	406309
2350	77591	98091	312958	408454
2360	78000	98608	314607	410606
2370	78410	99127	316262	412767
2380	78822	99648	317923	414934
2390	79235	100170	319590	417110
2400	79650	100694	321263	419294
2410	80066	101221	322943	421486
2420	80484	101749	324628	423686
2430	80904	102279	326320	425894
2440	81325	102812	328019	428111
2450	81747	103346	329724	430336
2460	82172	103883	331435	432570
2470	82598	104421	333154	434812
2480	83026	104962	334879	437064
2490	83455	105505	336611	439325
2500	83886	106050	338350	441595
2510	—	—	340097	443874
2520	—	—	341850	446163
2530	—	—	343612	448462
2540	—	—	345380	450770
2550	—	—	347156	453088
2560	—	—	348940	455416
2570	—	—	350732	457755
2580	—	—	352532	460104
2590	—	—	354340	462464

Set Pressure (psig)[1]	Slope 29.9	37.8	120.6	157.4
	Flow Area .875	1.000	1.750	2.000
	Designation 5	6	7	8
2600	—	—	356156	464834
2610	—	—	357981	467215
2620	—	—	359814	469608
2630	—	—	361656	472012
2640	—	—	363506	474427
2650	—	—	365366	476854
2660	—	—	367234	479292
2670	—	—	369112	481743
2680	—	—	370999	484206
2690	—	—	372896	486682
2700	—	—	374802	489170
2710	—	—	376718	491671
2720	—	—	378645	494185
2730	—	—	380581	496712
2740	—	—	382528	499253
2750	—	—	384486	501808
2760	—	—	386454	504377
2770	—	—	388433	506960
2780	—	—	390423	509557
2790	—	—	392425	512170
2800	—	—	394438	514797
2810	—	—	396463	517440
2820	—	—	398500	520098
2830	—	—	400549	522773
2840	—	—	402610	525463
2850	—	—	404684	528170
2860	—	—	406771	530894
2870	—	—	408871	533634
2880	—	—	410984	536392
2890	—	—	413111	539168
2900	—	—	415252	541962
2910	—	—	417407	544775
2920	—	—	419576	547606
2930	—	—	421760	550456
2940	—	—	423959	553326
2950	—	—	426173	556215
2960	—	—	428402	559125
2970	—	—	430648	562056
2980	—	—	432909	565008
2990	—	—	435187	567981
3000	—	—	437482	570976
3010	—	—	439795	573994
3020	—	—	442124	577034
3030	—	—	444472	580098
3040	—	—	446837	583186
3050	—	—	449222	586298
3060	—	—	451625	589435
3070	—	—	454048	592597
3080	—	—	456491	595785
3090	—	—	458954	599000

Note:
1. The minimum set pressure is 50 psig. For set pressures 50 psig to 99 psig contact the factory.

Capacity Tables for 3547 EBV
ASME B & PVC Section I, 90% of actual capacity

W = 1135.8 x 0.90 x Slope x (P/V) 0.5/51.45
P = (Set x 1.03) + 14.7

Slope = 120.6
V = specific volume
For Non-Code applications multiply capacity by 1.1

3500 Series EBV Ball Valve

Temp°F	750°F	760°F	770°F	780°F	790°F	800°F	810°F	820°F	830°F	840°F	850°F	860°F	870°F	880°F
Press	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP
3100	377402	369184	361481	354241	347419	340977	336420	332042	327830	323774	319865	316662	313553	310534
3150	387217	378405	370169	362448	355191	348353	343573	338985	334576	330335	326251	322925	319699	316567
3200	397331	387848	379012	370754	363014	355739	350708	345885	341255	336807	332528	329081	325739	322497
3250	407757	397547	388068	379236	370980	363242	357947	352877	348017	343353	338871	335280	331801	328428
3300	418695	407651	397437	387954	379119	370861	365315	360010	354929	350058	345382	341639	338015	334504
3350	429996	418008	406970	396763	387287	378459	372656	367111	361807	356726	351854	347957	344186	340535
3400	441889	428428	416126	404826	394399	384739	378707	372950	367447	362181	357136	353361	349704	346157
3450	454438	440202	427225	415332	404380	394251	387831	381714	375878	370301	364966	360768	356712	352790
3500	467714	452134	438014	425139	413337	402466	395678	389222	383072	377204	371599	367232	363017	358943
3550	482066	466485	452324	439378	427484	416507	407902	399810	392181	384973	378148	373637	369285	365081
3600	497368	478163	461023	445603	431634	418901	411403	404294	397541	391116	384993	380275	375727	371338
3650	513744	492378	473473	456591	441395	427621	419692	412188	405073	398313	391882	387003	382302	377768
3700	531681	507621	486558	467916	451265	436273	427937	420060	412604	405530	398809	393738	388856	384151
3750	550703	523585	500115	479543	461317	445023	436261	427998	420186	412788	405767	400499	395431	390551
3800	571336	540673	514470	491741	471781	454069	444814	436102	427883	420112	412749	407280	402022	396963
3850	593842	559037	529712	504565	482690	463434	453689	444533	435911	427772	420072	414383	408919	403666
3900	616006	577109	544757	517300	493615	472912	462612	452957	443883	435333	427258	421352	415683	410238
3950	637962	594993	559680	529989	504573	482494	471613	461437	451893	442917	434456	428326	422449	416808
4000	662414	614429	575559	543240	515819	492170	480729	470051	460054	450669	441836	435472	429376	423528
4050	688513	635028	592340	557244	527729	502455	490346	479072	468542	458677	449410	442799	436471	430407
4100	709737	652417	607062	570018	539020	512585	499846	488012	476981	466665	456992	450090	443943	437177
4150	728509	668284	620886	582326	550160	522795	509349	496889	485301	474488	464367	457255	450460	443960
4200	749194	685592	635850	595569	562086	533681	519450	506300	494101	482743	472134	464751	457705	450969
4250	771195	703725	651340	609145	574213	544675	529682	515863	503072	491188	480107	472398	465048	458031
4300	786919	718210	664837	621831	586218	556098	540223	525634	512167	499684	488072	480027	472367	465062
4350	802247	732501	678265	634529	598292	567629	550766	535321	521107	507969	495776	487490	479605	472092
4400	817082	746846	692079	647827	611105	579994	562029	545637	530600	516742	503915	495317	487145	479364
4450	833505	762221	706568	661560	624185	592504	573451	556125	540281	525718	512272	503297	494778	486677
4500	844856	774356	718994	674027	636563	604724	584571	566308	549656	534391	520331	511035	502220	493845

Capacity Tables for 3547 EBV
ASME B & PVC Section I, 90% of actual capacity

W = 1135.8 x 0.90 x Slope x (P/V) 0.5/51.45
P = (Set x 1.03) + 14.7

Slope = 120.6
V = specific volume
For Non-Code applications multiply capacity by 1.1

3500 Series EBV Ball Valve

Temp°F	890°F	900°F	910°F	920°F	930°F	940°F	950°F	960°F	970°F	980°F	990°F
Press	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP
3100	307600	304748	302304	299917	297586	295309	293083	291014	288987	287003	285059
3150	313526	310571	308573	306614	304691	302804	300951	298278	295675	293138	290666
3200	319350	316293	314543	312822	311128	309462	307823	304739	301747	298840	296017
3250	325156	321979	319636	317343	315099	312902	310750	308141	305596	303113	300690
3300	331100	327798	324960	322194	319498	316868	314303	312015	309776	307585	305440
3350	336998	333570	330642	327791	325012	322302	319659	317305	315002	312748	310542
3400	342717	339377	336152	333017	329968	327001	324113	321712	319363	317065	314816
3450	348994	345318	342185	339136	336167	333275	330456	328000	325598	323248	320948
3500	355003	351190	347963	344823	341767	338790	335890	333366	330898	328484	326122
3550	361017	357087	353743	350491	347327	344248	341249	338658	336125	333648	331225
3600	367099	363003	359583	356257	353023	349875	346810	344109	341471	338892	336371
3650	373392	369164	365617	362171	358820	355560	352388	349614	346904	344257	341669
3700	379612	375231	371581	368035	364589	361238	357978	355110	352309	349574	346902
3750	385847	381309	377531	373862	370299	366835	363467	360526	357656	354853	352115
3800	392090	387392	383508	379738	376077	372521	369063	366047	363104	360231	357424
3850	398611	393740	389716	385812	382024	378345	374770	371676	368657	365711	362835
3900	405001	399959	395796	391761	387846	384046	380356	377187	374095	371079	368134
3950	411387	406171	401895	397751	393733	389834	386049	382777	379588	376477	373441
4000	417913	412516	408093	403810	399659	395633	391726	388377	385112	381927	378821
4050	424589	419000	414454	410052	405788	401654	397644	394184	390813	387527	384322
4100	431123	425314	420649	416134	411761	407523	403414	399846	396371	392985	389684
4150	437733	431760	426908	422216	417675	413277	409016	405370	401819	398361	394990
4200	444523	438345	433329	428481	423793	419255	414860	411129	407497	403960	400513
4250	451322	444900	439752	434780	429972	425320	420816	416968	413225	409580	406030
4300	458086	451415	446137	441040	436113	431348	426736	422771	418915	415163	411509
4350	464920	458066	452580	447286	442174	437234	432455	428407	424471	420642	416914
4400	471944	464858	459192	453727	448453	443359	438434	434296	430274	426360	422552
4450	478961	471601	465790	460189	454785	449568	444526	440262	436119	432091	428172
4500	485876	478281	472289	466517	460951	455580	450392	446041	441813	437704	433707

Capacity Tables for 3547 EBV
ASME B & PVC Section I, 90% of actual capacity

W = 1135.8 x 0.90 x Slope x (P/V) 0.5/51.45
P = (Set x 1.03) + 14.7

Slope = 120.6
V = specific volume
For Non-Code applications multiply capacity by 1.1

3500 Series EBV Ball Valve

Temp°F	1000°F	1010°F	1020°F	1030°F	1040°F	1050°F	1060°F	1070°F	1080°F	1090°F	1100°F
Press	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP	CAP
3100	283154	281432	279740	278079	276447	274844	273268	271719	270196	268698	267745
3150	288255	286480	284737	283025	281344	279693	278070	276475	274907	273366	272281
3200	293271	290756	288305	285914	283582	281306	279084	276914	274794	272722	276903
3250	298324	292334	286690	281362	276320	271539	266999	262679	258562	254632	281500
3300	303339	295573	288375	281678	275427	269574	264079	258908	254028	249415	286126
3350	308382	303940	299684	295602	291683	287915	284290	280798	277432	274184	290776
3400	312614	310606	308636	306703	304806	302944	301115	299320	297556	295822	294624
3450	318697	316600	314545	312529	310551	308610	306706	304836	302999	301196	300016
3500	323810	321659	319550	317482	315454	313464	311511	309594	307712	305864	304660
3550	328855	326650	324489	322370	320292	318254	316254	314292	312366	310474	309246
3600	333906	331664	329467	327313	325201	323129	321096	319101	317143	315221	313910
3650	339139	336841	334588	332380	330216	328093	326010	323967	321961	319993	318655
3700	344289	341936	339629	337369	335153	332981	330850	328759	326708	324695	323409
3750	349439	347030	344670	342357	340091	337869	335689	333552	331455	329396	328008
3800	354683	352216	349801	347434	345115	342841	340612	338426	336281	334177	332763
3850	360025	357479	354986	352545	350154	347810	345513	343261	341053	338886	337515
3900	365259	362655	360107	357611	355167	352772	350424	348124	345867	343655	342260
3950	370478	367817	365213	362663	360166	357720	355323	352974	350671	348412	346906
4000	375789	373069	370408	367802	365251	362752	360304	357904	355552	353246	351715
4050	381196	378415	375694	373031	370424	367870	365369	362918	360516	358160	356509
4100	386465	383603	380804	378064	375384	372759	370189	367671	365203	362785	361284
4150	391703	388807	385974	383202	380489	377833	375231	372683	370186	367739	366034
4200	397153	394170	391254	388401	385611	382879	380205	377585	375020	372506	370857
4250	402571	399527	396551	393641	390793	388007	385280	382609	379993	377430	375756
4300	407950	404820	401761	398770	395844	392983	390182	387441	384756	382126	380518
4350	413284	410094	406976	403929	400949	398034	395182	392390	389656	386979	385239
4400	418844	415562	412355	409222	406159	403164	400234	397367	394560	391813	390141
4450	424359	421012	417743	414549	411428	408375	405390	402469	399611	396812	395002
4500	429818	426379	423022	419743	416539	413407	410345	407350	404419	401551	399816

Reduced Bore Selection and Capacity Factor

3500 Series EBV Ball Valve

.875 Bore, 1-1/2" 3515 & 3525	
Orifice	Relation to 100%
7/8	100
27/32	92.9
13/16	86.2
25/32	79.7
3/4	73.4
23/32	67.4
11/16	61.7
21/32	56.2
5/8	51
19/32	46
9/16	41.3

1.000 Bore, 2" 3516 & 3526	
Orifice	Relation to 100%
1	100
31/32	93.8
15/16	87.8
29/32	82.1
7/8	76.5
27/32	71.1
13/16	66
25/32	61
3/4	56.2
23/32	51.6
11/16	47.2
5/8	39

1.750 Bore, 2-1/2" 3517, 3527, 3537 & 3547			
Orifice	Relation to 100%	Orifice	Relation to 100%
1-3/4	100	1-3/8	61.7
1-23/32	96.4	1-11/32	58.9
1-11/16	92.9	1-5/16	56.2
1-21/32	89.5	1-9/32	53.6
1-5/8	86.2	1-3/16	46
1-19/32	82.9	1-5/32	43.6
1-9/16	79.3	1-1/8	41.3
1-17/32	76.5	1-3/32	39
1-1/2	73.4	1-1/16	36.8
1-15/32	70.4	1-1/32	34.8
1-7/16	67.4	1	32.6
1-13/32	64.5	-	-

Note:
1. Reduced bore selection not available on the 3538W.

Reaction Forces

Illustrated to the right is a **Consolidated** Electromatic Ball Valve. When the valve is closed, an upward force is exerted in the valve neck (F_P), due to valve internal pressure. Valve necks are designed to resist the force and circumferential stresses due to valve internal pressure.

When the valve opens, the force remains constant until some overpressure occurs. The force resulting from set pressure plus overpressure (F_{SP}) must be balanced by resisting forces in the valve neck.

Once flow has been established, the steam escapes upward through the discharge connection; this results in force (F_R) acting downward at the center line of the discharge pipe.

Force F_R is represented by the equation:

$$F = MV + PA$$

A = area of outlet, sq. in.

$$M = \frac{W}{g} = \frac{lb/sec}{ft/sec^2} = \frac{lb \cdot sec}{ft}$$

P = static pressure, lb/sq. in.

V = velocity, ft/sec.

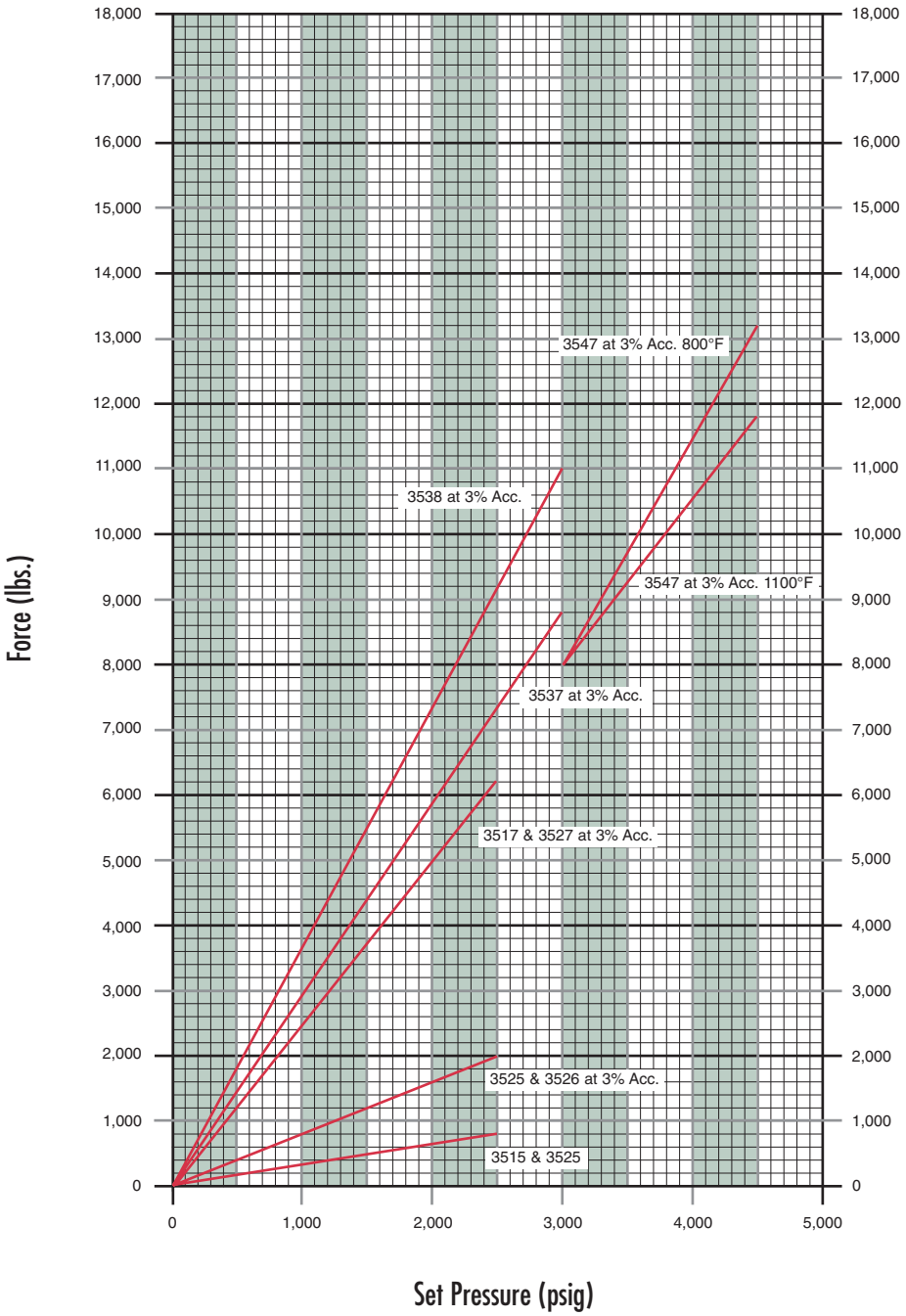
In addition to actual valve capacities, reaction force valves are based on pressure, temperature, and valve configuration. Forces for a particular valve type will apply regardless of inlet connection used; i.e. flange, screwed, or welded.

For valve installations which vent to a closed system or solidly piped discharge lines, changes which occur in reaction forces, and the effects on nozzles, headers, and discharge lines should be considered.

Force values indicated apply only when valves have been installed in accordance with ASME Code or Dresser Maintenance Manual recommendations.

Typical Vertical Discharge
Consolidated Electromatic Ball Valve

Reaction Forces - Steam



Superheat Correction Factor

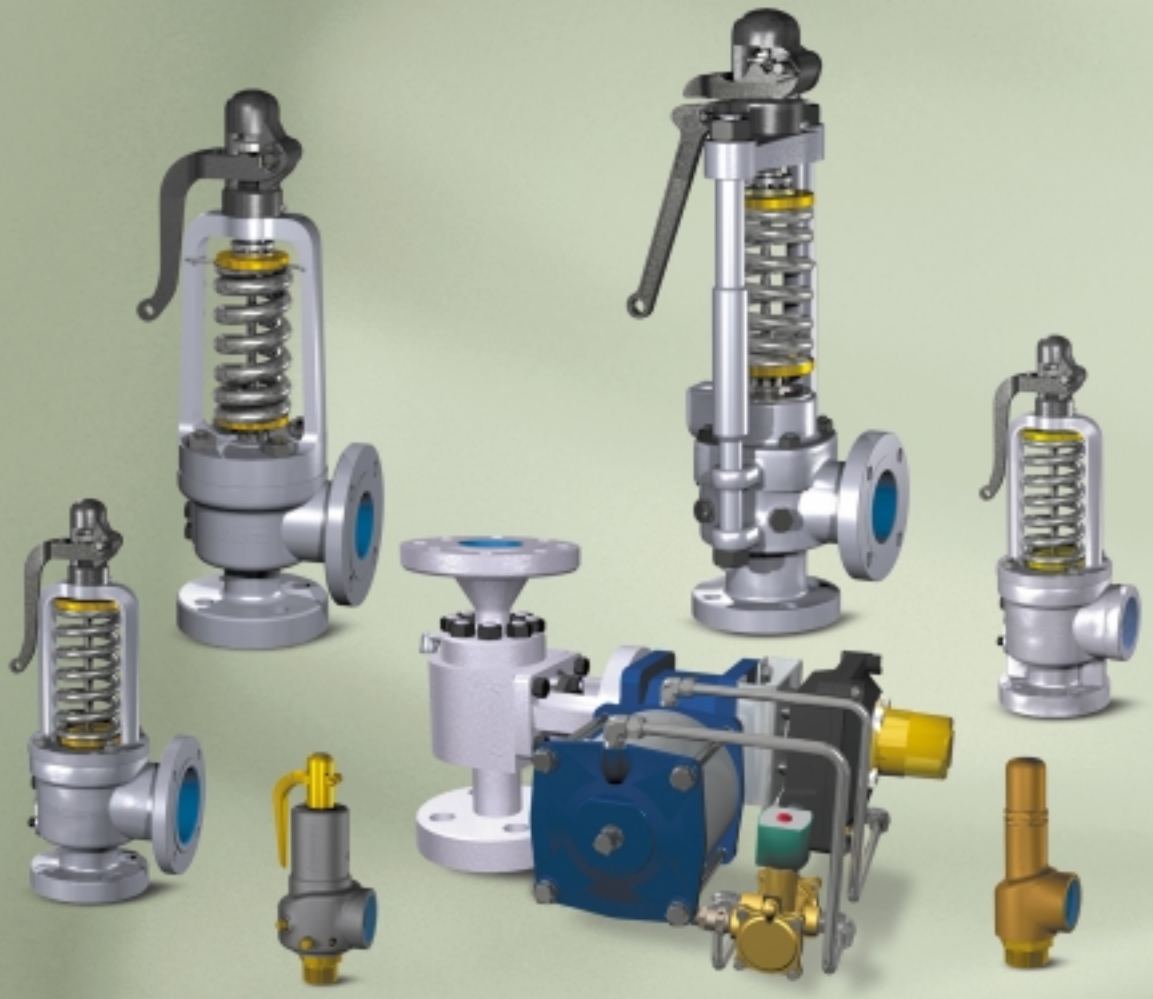
Flowing Pressure* (psia)	Superheat Correction Factor K_{sh} Total Temperature, °F, of Superheated Steam																
	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200
50	0.987	0.957	0.930	0.905	0.882	0.861	0.841	0.823	0.805	0.789	0.774	0.759	0.745	0.732	0.719	0.708	0.696
100	0.998	0.963	0.935	0.909	0.885	0.864	0.843	0.825	0.807	0.790	0.775	0.760	0.746	0.733	0.720	0.708	0.697
150	0.984	0.970	0.940	0.913	0.888	0.866	0.846	0.826	0.808	0.792	0.776	0.761	0.747	0.733	0.721	0.709	0.697
200	0.979	0.977	0.945	0.917	0.892	0.869	0.848	0.828	0.810	0.793	0.777	0.762	0.748	0.734	0.721	0.709	0.698
250	-	0.972	0.951	0.921	0.895	0.871	0.850	0.830	0.812	0.794	0.778	0.763	0.749	0.735	0.722	0.710	0.698
300	-	0.968	0.957	0.926	0.898	0.874	0.852	0.832	0.813	0.796	0.780	0.764	0.750	0.736	0.723	0.710	0.699
350	-	0.968	0.963	0.930	0.902	0.877	0.854	0.834	0.815	0.797	0.781	0.765	0.750	0.736	0.723	0.711	0.699
400	-	-	0.963	0.935	0.906	0.880	0.857	0.836	0.816	0.798	0.782	0.766	0.751	0.737	0.724	0.712	0.700
450	-	-	0.961	0.940	0.909	0.883	0.859	0.838	0.818	0.800	0.783	0.767	0.752	0.738	0.725	0.712	0.700
500	-	-	0.961	0.946	0.914	0.886	0.862	0.840	0.820	0.801	0.784	0.768	0.753	0.739	0.725	0.713	0.701
550	-	-	0.962	0.952	0.918	0.889	0.864	0.842	0.822	0.803	0.785	0.769	0.754	0.740	0.726	0.713	0.701
600	-	-	0.964	0.958	0.922	0.892	0.867	0.844	0.823	0.804	0.787	0.770	0.755	0.740	0.727	0.714	0.702
650	-	-	0.968	0.958	0.927	0.896	0.869	0.846	0.825	0.806	0.788	0.771	0.756	0.741	0.728	0.715	0.702
700	-	-	-	0.958	0.931	0.899	0.872	0.848	0.827	0.807	0.789	0.772	0.757	0.742	0.728	0.715	0.703
750	-	-	-	0.958	0.936	0.903	0.875	0.850	0.828	0.809	0.790	0.774	0.758	0.743	0.729	0.716	0.703
800	-	-	-	0.960	0.942	0.906	0.878	0.852	0.830	0.810	0.792	0.774	0.759	0.744	0.730	0.716	0.704
850	-	-	-	0.962	0.947	0.910	0.880	0.855	0.832	0.812	0.793	0.776	0.760	0.744	0.730	0.717	0.704
900	-	-	-	0.965	0.953	0.914	0.883	0.857	0.834	0.813	0.794	0.777	0.760	0.745	0.731	0.718	0.705
950	-	-	-	0.969	0.958	0.918	0.886	0.860	0.836	0.815	0.796	0.778	0.761	0.746	0.732	0.718	0.705
1000	-	-	-	0.974	0.959	0.923	0.890	0.862	0.838	0.816	0.797	0.779	0.762	0.747	0.732	0.719	0.706
1050	-	-	-	-	0.960	0.927	0.893	0.864	0.840	0.818	0.798	0.780	0.763	0.748	0.733	0.719	0.707
1100	-	-	-	-	0.962	0.931	0.896	0.867	0.842	0.820	0.800	0.781	0.764	0.749	0.734	0.720	0.707
1150	-	-	-	-	0.964	0.936	0.899	0.870	0.844	0.821	0.801	0.782	0.765	0.749	0.735	0.721	0.708
1200	-	-	-	-	0.966	0.941	0.903	0.872	0.846	0.823	0.802	0.784	0.766	0.750	0.735	0.721	0.708
1250	-	-	-	-	0.969	0.946	0.906	0.875	0.848	0.825	0.804	0.785	0.767	0.751	0.736	0.722	0.709
1300	-	-	-	-	0.973	0.952	0.910	0.878	0.850	0.826	0.805	0.786	0.768	0.752	0.737	0.723	0.709
1350	-	-	-	-	0.977	0.958	0.914	0.880	0.852	0.828	0.807	0.787	0.769	0.753	0.737	0.723	0.710
1400	-	-	-	-	0.982	0.963	0.918	0.883	0.854	0.830	0.808	0.788	0.770	0.754	0.738	0.724	0.710
1450	-	-	-	-	0.987	0.968	0.922	0.886	0.857	0.832	0.809	0.790	0.771	0.754	0.739	0.724	0.711
1500	-	-	-	-	0.993	0.970	0.926	0.889	0.859	0.833	0.811	0.791	0.772	0.755	0.740	0.725	0.711
1550	-	-	-	-	-	0.972	0.930	0.892	0.861	0.835	0.812	0.792	0.773	0.756	0.740	0.726	0.712
1600	-	-	-	-	-	0.973	0.934	0.894	0.863	0.836	0.813	0.792	0.774	0.756	0.740	0.726	0.712
1650	-	-	-	-	-	0.973	0.936	0.895	0.863	0.836	0.812	0.791	0.772	0.755	0.739	0.724	0.710
1700	-	-	-	-	-	0.973	0.938	0.895	0.863	0.835	0.811	0.790	0.771	0.754	0.738	0.723	0.709
1750	-	-	-	-	-	0.974	0.940	0.896	0.862	0.835	0.810	0.789	0.770	0.752	0.736	0.721	0.707
1800	-	-	-	-	-	0.975	0.942	0.897	0.862	0.834	0.810	0.788	0.768	0.751	0.735	0.720	0.705
1850	-	-	-	-	-	0.976	0.944	0.897	0.862	0.833	0.809	0.787	0.767	0.749	0.733	0.718	0.704
1900	-	-	-	-	-	0.977	0.946	0.898	0.862	0.832	0.807	0.785	0.766	0.748	0.731	0.716	0.702
1950	-	-	-	-	-	0.979	0.949	0.898	0.861	0.832	0.806	0.784	0.764	0.746	0.729	0.714	0.700
2000	-	-	-	-	-	0.982	0.952	0.899	0.861	0.831	0.805	0.782	0.762	0.744	0.728	0.712	0.698
2050	-	-	-	-	-	0.985	0.954	0.899	0.860	0.830	0.804	0.781	0.761	0.742	0.726	0.710	0.696
2100	-	-	-	-	-	0.988	0.956	0.900	0.860	0.828	0.802	0.779	0.759	0.740	0.724	0.708	0.694
2150	-	-	-	-	-	-	0.956	0.900	0.859	0.827	0.801	0.778	0.757	0.738	0.722	0.706	0.692
2200	-	-	-	-	-	-	0.955	0.901	0.859	0.826	0.799	0.776	0.755	0.736	0.720	0.704	0.690
2250	-	-	-	-	-	-	0.954	0.901	0.858	0.825	0.797	0.774	0.753	0.734	0.717	0.702	0.687
2300	-	-	-	-	-	-	0.953	0.901	0.857	0.823	0.795	0.772	0.751	0.732	0.715	0.699	0.685
2350	-	-	-	-	-	-	0.952	0.902	0.856	0.822	0.794	0.769	0.748	0.729	0.712	0.697	0.682
2400	-	-	-	-	-	-	0.952	0.902	0.855	0.820	0.791	0.767	0.746	0.727	0.710	0.694	0.679
2450	-	-	-	-	-	-	0.951	0.902	0.854	0.818	0.789	0.765	0.743	0.724	0.707	0.691	0.677
2500	-	-	-	-	-	-	0.951	0.902	0.852	0.816	0.787	0.762	0.740	0.721	0.704	0.688	0.674
2550	-	-	-	-	-	-	0.951	0.902	0.851	0.814	0.784	0.759	0.738	0.718	0.701	0.685	0.671
2600	-	-	-	-	-	-	0.951	0.903	0.849	0.812	0.782	0.756	0.735	0.715	0.698	0.682	0.664
2650	-	-	-	-	-	-	0.952	0.903	0.848	0.809	0.779	0.754	0.731	0.712	0.695	0.679	0.664
2700	-	-	-	-	-	-	0.952	0.903	0.846	0.807	0.776	0.750	0.728	0.708	0.691	0.675	0.661
2750	-	-	-	-	-	-	0.953	0.903	0.844	0.804	0.773	0.747	0.724	0.705	0.687	0.671	0.657
2800	-	-	-	-	-	-	0.956	0.903	0.842	0.801	0.769	0.743	0.721	0.701	0.684	0.668	0.653
2850	-	-	-	-	-	-	0.959	0.902	0.839	0.798	0.766	0.739	0.717	0.697	0.679	0.663	0.649
2900	-	-	-	-	-	-	0.963	0.902	0.836	0.794	0.762	0.735	0.713	0.693	0.675	0.659	0.645
2950	-	-	-	-	-	-	-	0.902	0.834	0.790	0.758	0.731	0.708	0.688	0.671	0.655	0.640
3000	-	-	-	-	-	-	-	0.901	0.831	0.786	0.753	0.726	0.704	0.684	0.666	0.650	0.635
3050	-	-	-	-	-	-	-	0.899	0.827	0.782	0.749	0.722	0.699	0.679	0.661	0.645	0.630
3100	-	-	-	-	-	-	-	0.896	0.823	0.777	0.744	0.716	0.693	0.673	0.656	0.640	0.625
3150	-	-	-	-	-	-	-	0.894	0.819	0.772	0.738	0.711	0.688	0.668	0.650	0.634	0.620
3200	-	-	-	-	-	-	-	0.889	0.815	0.767	0.733	0.705	0.682	0.662	0.644	0.628	0.614

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

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

Codes & Standards

Safety Valves



Consolidated®

ASME Section I Boiler and Pressure Vessel Code for Fired Vessels

	Conditions	Requirements			
		Single Valve	Multiple Valves	Superheater	Reheater
SIZING	Number of valves	Boilers less than 500 sq. ft. heating surface and generates less than 4000#/hr. (PG-67.1)	When only two valves are used, capacity of smaller shall not be less than 50% of the larger. (PG-71.1)	At least one valve shall be installed on the superheater outlet.	At least one or more valves to relieve maximum reheater steam flow. There shall be at least one valve on the reheater outlet such that the relieving capacity shall not be less than 15% of the required total.
SIZING	Required Capacity		The complement of spring loaded valves must relieve 100% of boiler steaming capacity. (PG-67.2)	The superheater valve capacity may be included in the complement of valve capacities provided the aggregate capacity of the drum valves is at least 75% of the boiler steaming capacity. (PG-68.1 & PG-68.2)	Credit for reheater valves cannot be taken in determining required capacity for drum and superheater valves. (PG-68.4)
SIZING	Set pressure	At least one valve must be set at or below the design pressure.	Any additional valves cannot be set in excess of 3% above design pressure. Set pressure range for saturated steam valves shall not exceed 10% of the highest valve set pressure.	The low set superheater valve shall be the first to open and the last to close.	At least one reheater outlet valve shall be the first of the reheater valves to open and the last of the reheater valves to close.
SIZING	Blowdown	For valves set above 100 psig, blowdown shall be between 2% and 4%. For valves set at or below 100 psig, blowdown shall be between 2 and 4 psi.	After blowing down, all valves shall close at a pressure not lower than 96% of their set pressure, except that all drum valves installed on a single boiler may be set to reseat at a pressure not lower than 96% of the set pressure of the lowest set drum valve.	The superheater valve should be set to be the last valve to close.	At least one of the reheater outlet valves should be the last to close.
OTHER	Set pressure (opening pressure) tolerance	Pressures above 15 psig, up to and including 70 psig = ±2 psi. Pressures over 70 psig, up to and including 300 psig = ±3%. Pressures over 300 psig, up to and including 1000 psig = ±10 psi. Pressures over 1000 psig = ±1%.			
OTHER	Blowdown (closing pressure) tolerance	**Minimum Blowdown** - Minimum blowdown, regardless of set pressure, is 2 psi. For pressures above 100 psig, the blowdown shall not be less than 2% of the set pressure. **Maximum Blowdown** - After blowing down, all valves set at pressures of 375 psi or greater shall close at a pressure not lower than 96% of their set pressure, except that all drum valves installed on a single boiler may be set to reseat at a pressure not lower than 96% of the set pressure of the lowest set drum valve. For pressures below 375 psi, blowdown shall not exceed that specified in the following table:			
OTHER	Tightness	A tightness test shall be conducted at the maximum expected operating pressure, but at a pressure not exceeding the reseating pressure of the valve. When testing, a valve exhibiting no visible signs of leakage shall be considered tight.			
OTHER	Recommended operating gap	Boiler Design Pressure (psig) 15 to 300 301 to 1000 1001 to 2000 2000 and above	Min. Differential as a Percent of Boiler Design Pressure 10% but not less than 7 psi 7% but not less than 30 psi 5% but not less than 70 psi Per designer's judgement		
OTHER	Nameplate Stamping	Valves shall be stamped with ASME Symbol V. Official stamped relieving capacity is at 3% accumulation or 2 psig, whichever is greater.			

Set Pressure, psi	15-66	67-250	251-374
Maximum Blowdown	4 psi	6% of set pressure	15 psi

Note: The following information has been extracted from the ASME Boiler and Pressure Vessel Code Section I (2001) to be used purely as a reference source and is not intended to be a complete reproduction of that document. Paragraphs PG-67.1, PG-67.2, PG-67.3, PG-72.1, and PG-72.2 are referenced.

ASME Section VIII Pressure Vessel Code for Unfired Vessels

Sizing Condition	Single valve on vessel other than unfired steam boilers	Multiple Valves On Vessel Other Than Unfired Steam Boilers	Fire and/or External Heat Protection of Vessels Other Than Unfired Steam Boilers	Fire and/or external heat protection of vessels having no permanent supply connection and used for non-refrigerated liquefied compressed gases
ASME P.V. CODE SEC. VIII (REF)	UG - 125(c), UG - 134(a), UG - 134(e)	UG - 125(c)(1), UG - 133(a), UG - 134(e)	UG - 125(c)(2), UG - 133(b), UG - 134(e)	UG - 125(c)(3), UG - 134(e)(2)
Sizing	The single valve shall prevent vessel pressure from rising more than 10% above the maximum allowable working pressure.	The aggregate capacity of multiple valves connected to any vessel or system of vessels for the release of liquid, air, steam or other vapor shall be sufficient to relieve the maximum capacity that can be generated or supplied to the attached equipment without permitting a rise in vessel pressure to more than 16% above the maximum allowable working pressure.	Supplemental valves for the protection from unexpected sources of external heat shall be capable or preventing vessel pressure from rising more than 21% above the maximum allowable working pressure.	Valves shall be sized to prevent the pressure from rising more than 20% above the maximum allowable working pressure of the vessel.
Set Point (Note: The pressure setting of each valve shall include the effects of static head and constant back pressure.)	Single valve shall be set to relieve at a pressure not to exceed the maximum allowable working pressure of the vessel.	One valve is to be set at or below the maximum allowable working pressure, the balance of valves may be set at higher pressures up to but not to exceed 105% of the maximum allowable working pressure.	Valves used to provide protection against excessive pressure caused by exposure to fire or other sources of external heat shall be set to operate at a pressure not in excess of 110% of the maximum allowable working pressure (Note: if a single valve is used to protect a vessel and to provide fire/external heat protection, it shall not be set at a pressure over the maximum allowable working pressure).	Valve set pressure must not exceed the maximum allowable working pressure of the vessel.
Set Point Tolerance	The set pressure tolerance, (plus or minus), of pressure relief valves shall not exceed 2 psi (13.6kPa) for pressures up to and including 70 psi (483 kPa) and 3% for pressures above 70 psi (483 kPa).			The set pressure tolerance of pressure relief valves shall be within -0%, +10%
Blowdown	Valves designed and capacity tested in accordance with Code Section VIII are capable of being set for 7% Blowdown. Section VIII does not require a specific blowdown setting by the valve manufacturer. (The user should specify the required blowdown that will permit reclosing of valve above the normal operating pressure.)			
Tightness UG - 136(d)(2)	Code requires a tightness test be conducted at the maximum expected operating pressure. This maximum pressure is not to exceed the resealing pressure of the valve. Then testing with either water or steam, a valve exhibiting no visible signs of leakage shall be considered adequately tight. Leakage tests conducted with air shall be in accordance with industry standards.			
Recommended Operating Gap (Appendix UA358 c)	Set pressures to 70 psi (483 kPa) - Minimum operating gap 5 psi. Set pressures from 71 psi to 1000 psi (over 483 kPa to 8000 kPa) - Minimum operating differential of 10% Set pressures above 1000 psi (8000 kPa) - Minimum operating differential of 7%.			

Note: The following information has been extracted from the ASME Boiler and Pressure Vessel Code Section I (1998) to be used purely as a reference source and is not intended to be a complete reproduction of that document.

Bronze Flanges ANSI B16.24 Class 150

Nominal pipe size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	3-1/2"	3-7/8"	4-1/4"	4-5/8"	5"	6"	7"	7-1/2"	8-1/2"	9"	10"	11"	13-1/2"
Flange thickness	5/16"	11/32"	3/8"	13/32"	7/16"	1/2"	9/16"	5/8"	11/16"	11/16"	3/4"	13/16"	15/16"
Raised face diameter	-	-	-	-	-	-	-	-	-	-	-	-	-
Bolt circle diameter	2-3/8"	2-3/4"	3-1/8"	3-1/2"	3-7/8"	4-3/4"	5-1/2"	6"	7"	7-1/2"	8-1/2"	9-1/2"	11-3/4"
Number of bolts	4"	4"	4"	4"	4"	4"	4"	4"	8"	8"	8"	8"	8"
Size of bolts	1/2"	1/2"	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"

Cast Iron Flanges ANSI B16.1 Class 125

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	4-1/4"	4-5/8"	5"	6"	7"	7-1/2"	8-1/2"	9"	10"	11"	13-1/2"
Flange thickness (*)	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	15/16"	5/16"	1"	1-1/8"
Raised face diameter	-	-	-	-	-	-	-	-	-	-	-
Bolt circle diameter	3-1/8"	3-1/2"	3-7/8"	4-3/4"	5-1/2"	6"	7"	7-1/2"	8-1/2"	9-1/2"	11-3/4"
Number of bolts	4"	4"	4"	4"	4"	4"	8"	8"	8"	8"	8"
Size of bolts	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"

Cast Iron Flanges ANSI B16.1 Class 250

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	4-7/8"	5-1/4"	6-1/8"	6-1/2"	7-1/2"	8-1/4"	9"	10"	11"	12-1/2"	15"
Flange thickness (*)	11/16"	3/4"	13/16"	7/8"	1"	1-1/8"	1-3/16"	1-1/4"	1-3/8"	1-7/16"	1-5/8"
Raised face diameter	2-11/16"	3-1/16"	3-9/16"	4-13/16"	4-5/16"	5-11/16"	6-5/16"	6-15/16"	8-5/16"	9-11/16"	11-15/16"
Bolt circle diameter	3-1/2"	3-7/8"	4-1/2"	5"	5-7/8"	6-5/8"	7-1/14"	7-7/8"	9-1/4"	10-5/8"	13"
Number of bolts	4"	4"	4"	8"	8"	8"	8"	8"	8"	12"	12"
Size of bolts	5/8"	5/8"	3/4"	5/8"	3-4"	3/4"	3/4"	3/4"	3/4"	3/4"	7/8"

Steel & Alloy Flanges ANSI B16.5 Class 150

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	4-1/4"	4-5/8"	5"	6"	7"	7-1/2"	8-1/2"	9"	10"	11"	13-1/2"
Flange thickness (*)	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	15/16"	15/16"	1"	1-1/8"
Raised face diameter	2"	2-1/2"	2-7/8"	3-5/8"	4-1/8"	5"	5-1/2"	6-3/16"	7-5/16"	8-1/2"	10-5/8"
Bolt circle diameter	3-1/8"	3-1/2"	3-7/8"	4-3/4"	5-1/2"	6"	7"	7-1/2"	8-1/2"	9-1/2"	11-3/4"
Number of bolts	4"	4"	4"	4"	4"	4"	8"	8"	8"	8"	8"
Size of bolts	1/2"	1/2"	1/2"	5/8"	5/8"	5/8"	5/8"	5/8"	3/4"	3/4"	3/4"

Steel & Alloy Flanges ANSI B16.5 Class 300

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	4-7/8"	5-1/4"	6-1/8"	6-1/2"	7-1/2"	8-1/4"	9"	10"	11"	12-1/2"	15"
Flange thickness (*)	11/16"	3/4"	13/16"	7/8"	1"	1-1/8"	1-3/16"	1-1/4"	1-3/8"	1-7/16"	1-5/8"
Raised face diameter	2"	2-1/2"	2-7/8"	3-5/8"	4-1/8"	5"	5-1/2"	6-3/16"	7-5/16"	8-1/2"	10-5/8"
Bolt circle diameter	3-1/2"	3-7/8"	4-1/2"	5"	5-7/8"	6-5/8"	7-1/4"	7-7/8"	9-1/4"	10-5/8"	13"
Number of bolts	4"	4"	4"	8"	8"	8"	8"	8"	8"	12"	12"
Size of bolts	5/8"	5/8"	3/4"	5/8"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	7/8"

(*) ANSI flange thickness (Min.) includes 1/16" raised face.
(***) Not applicable to hubbed flanges 3/4" thru 3", Class 150. Refer to ANSI B16.5

Steel & Alloy Flanges ANSI B16.5 Class 600

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	4-7/8"	5-1/4"	6-1/8"	6-1/2"	7-1/2"	8-1/4"	9"	10-3/4"	13"	14"	16-1/2"
Flange thickness (**)	11/16"	13/16"	7/8"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-3/4"	1-7/8"	2-3/16"
Raised face diameter	2"	2-1/2"	2-7/8"	3-5/8"	4-1/8"	5"	5-1/2"	6-3/16"	7-5/16"	8-1/2"	10-5/8"
Bolt circle diameter	3-1/2"	3-7/8"	4-1/2"	5"	5-7/8"	6-5/8"	7-1/4"	8-1/2"	10-1/2"	11-1/2"	13-3/4"
Number of bolts	4"	4"	4"	8"	8"	8"	8"	8"	8"	12"	12"
Size of bolts	5/8"	5/8"	3/4"	5/8"	3/4"	3/4"	7/8"	7/8"	1"	1"	1-1/8"

Steel & Alloy Flanges ANSI B16.5 Class 900

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	5-7/8"	6-1/4"	7"	8-1/2"	9-5/8"	9-1/2"	-	11-1/2"	13-3/4"	15"	18-1/2"
Flange thickness (**)	1-1/8"	1-1/8"	1-1/4"	1-1/2"	1-5/8"	1-1/2"	-	1-3/4"	2"	2-3/16"	2-1/2"
Raised face diameter	2"	2-1/2"	2-7/8"	3-5/8"	4-1/8"	5"	-	6-3/16"	7-5/16"	8-1/2"	10-5/8"
Bolt circle diameter	4"	4-3/8"	4-7/8"	6-1/2"	7-1/2"	7-1/2"	-	9-1/4"	11"	12-1/2"	15-1/2"
Number of bolts	4"	4"	4"	8"	8"	8"	-	8"	8"	12"	12"
Size of bolts	7/8"	7/8"	1"	7/8"	1"	7/8"	-	1-1/8"	1-1/4"	1-1/8"	1-3/8"

Steel & Alloy Flanges ANSI B16.5 Class 1500

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	5-7/8"	6-1/4"	7"	8-1/2"	9-5/8"	10-1/2"	-	12-1/4"	14-3/4"	15-1/2"	19"
Flange thickness (**)	1-1/8"	1-1/8"	1-1/4"	1-1/2"	1-5/8"	1-7/8"	-	2-1/8"	2-7/8"	3-1/4"	3-5/8"
Raised face diameter	2"	2-1/2"	2-7/8"	3-5/8"	4-1/8"	5"	-	6-3/16"	7-5/6"	8-1/2"	10-5/8"
Bolt circle diameter	4"	4-3/8"	4-7/8"	6-1/2"	7-1/2"	8"	-	9-1/2"	11-1/2"	12-1/2"	15-1/2"
Number of bolts	4"	4"	4"	8"	8"	8"	-	8"	8"	12"	12"
Size of bolts	7/8"	7/8"	1"	7/8"	1"	1-1/8"	-	1-1/4"	1-1/2"	1-3/8"	1-5/8"

Steel & Alloy Flanges ANSI B16.5 Class 2500

Nominal pipe size	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	3-1/2"	4"	5"	6"	8"
Flange diameter	6-1/4"	7-1/4"	8"	9-1/4"	10-1/2"	12"	-	14"	16-1/2"	19"	21-3/4"
Flange thickness (**)	1-3/8"	1-1/2"	1-3/4"	2"	2-1/4"	2-5/8"	-	3"	3-5/8"	4-1/4"	5"
Raised face diameter	2"	2-1/2"	2-7/8"	3-5/8"	4-1/8"	5"	-	6-3/16"	7-5/16"	8-1/2"	10-5/8"
Bolt circle diameter	4-1/4"	5-1/8"	5-3/4"	6-3/4"	7-3/4"	9"	-	10-3/4"	12-3/4"	14-1/2"	17-1/4"
Number of bolts	4"	4"	4"	8"	8"	8"	-	8"	8"	8"	12"
Size of bolts	7/8"	1"	1-1/8"	1"	1-1/8"	1-1/4"	-	1-1/2"	1-3/4"	2"	2"

(**) ANSI flange thickness (Min.) does not include 1/4" raised face.