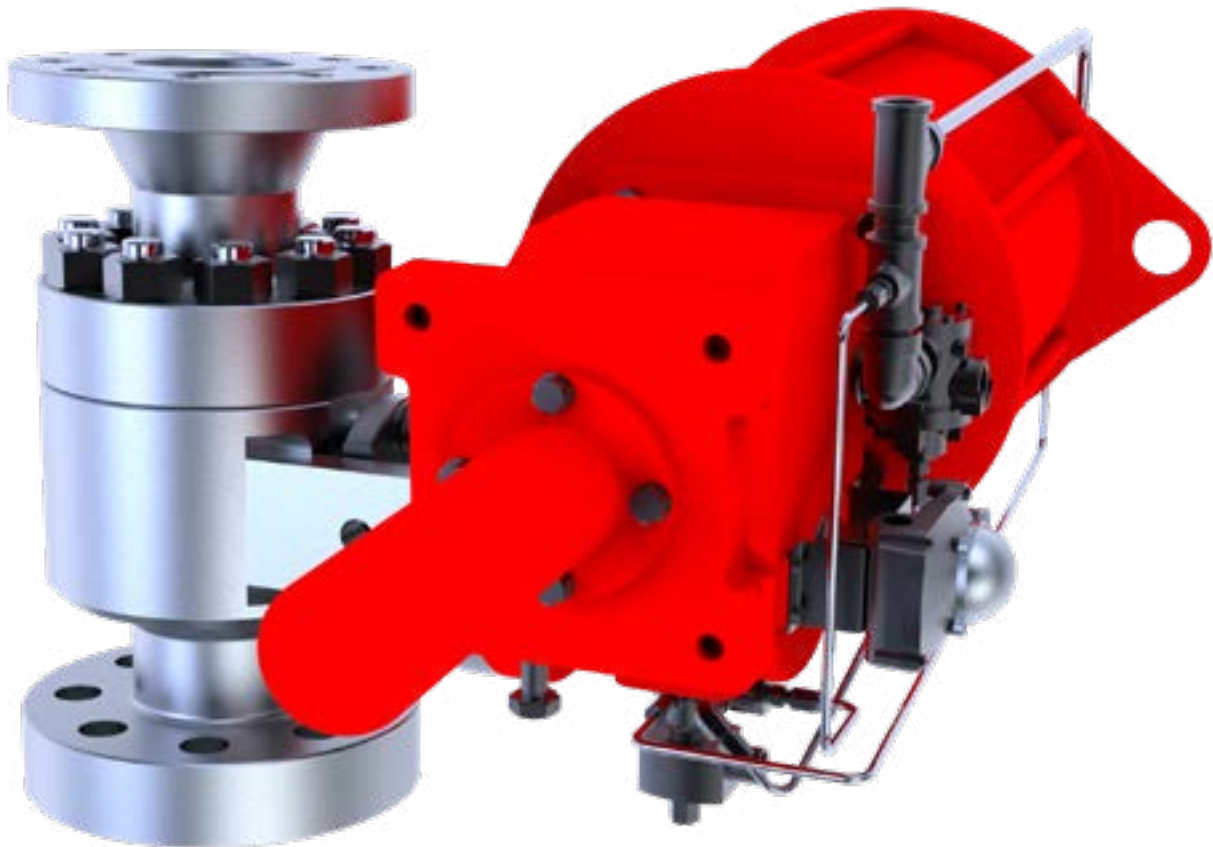


# Consolidated\* **3500-5 Series EBV**

Electromatic\* Ball Valve System

Provides automatic or manual overpressure startup for steam boiler systems and assists startup and shutdown venting



**BAKER  
HUGHES**  
a GE company



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# Why 3500-5 Series Electromatic Ball Valves?

## 3500-5 Series Electromatic Ball Valves deliver predictable reliability and performance

### • Advanced Ball Valve Design and Engineering Software

Proprietary software fast tracks optimal valve engineering. Extensive severe service ball valve engineering experience is combined with proprietary valve optimization CAD/CAM/CAE software that informs and fast tracks the advanced valve design. Service conditions are simulated, providing feedback with engineering analysis, finite element analysis (FEA) and computational fluid dynamics (CFD). Beginning to end, the most current product life cycle management (PLM) software is used.

- Advanced ball/seat sealing engagement
- Line of sight bore for unobstructed media flow
- Advanced ball/stem tang interface

### • Excellent Valve Coatings

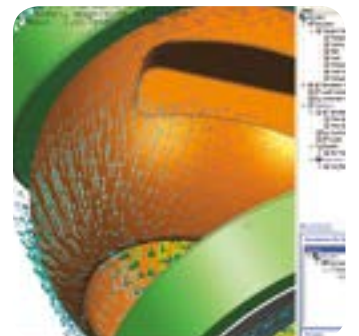
Performance-proven fused coatings on ball and seat provide excellent protection against high-temperature, high-pressure superheated steam for long valve life. Fused coatings is a more enhanced coating process that results in a metallurgically bonded coating to the ball and seat. The fully densified coating has zero porosity, extremely high tensile bond strength, and high wear-resistant strength for excellent performance and long-term isolation.

- Superior coating performance under thermal stress and media bombardment
- Longer valve life with smooth surface integrity
- No place for leak paths to develop
- Reduced torque values to operate the valve

### • OMNI-LAP 360°\*

This mate-lapping process laps the entire spherical surface of the ball and seat surface, not just the sealing band areas. Proprietary mate-lapping produces a tight, reliable seal.

- All metal seated ball valves rely on continuous, unbroken contact between the metal ball and seat to create an isolating seal. OMNI-LAP 360° mate-laps the entire ball and seat for optimal roundness, producing 100% ball-to-seat contact, regardless of positioning.



Computational fluid dynamics fast track advanced designs



OMNI-LAP 360°  
100% contact  
Seals in any  
position

- Traditional cup-lapping methods mate only the sealing band of the ball-to-seat surfaces, creating ridges that distort the ball’s roundness and compromise the coating thickness.
- The sealing “sweet spot” originates a leak path if even slightly misaligned, resulting in reduced valve life, more maintenance and higher actuation costs.

OMNI-LAP 360°	Traditional Lapping
<ul style="list-style-type: none"> <li>• Automated lapping of the entire spherical surface</li> <li>• Consistent 100% roundness</li> <li>• Uniform coating thickness</li> <li>• Seals in any position</li> <li>• 100% ball-to-seat contact</li> <li>• Smooth surfaces for reduced friction and lower torques</li> </ul>	<ul style="list-style-type: none"> <li>• Laps only a sealing band</li> <li>• Distorts roundness</li> <li>• Compromises coating thickness</li> <li>• Creates ridges around “sweet spot”</li> <li>• Has higher torques because of surface irregularities</li> </ul>



Traditional mate-lapping selectively laps the seat to only one side of the ball, resulting in imperfect spherical geometry and non-uniform coating thickness.

• **Vacuum Seal Test**

Ball and seat sealing is tested prior to valve assembly for seal integrity. Vacuum testing of every ball and seat prior to assembly verifies 100% ball-to-seat seal to Class VI shutoff.

- Higher seal reliability
- Lower costs with better manufacturing efficiency
- Easier valve assembly — in the factory and in the field

# Features & Benefits

## Body/End Connection

- Machined from forgings for highest material integrity
- End connections: RF-raised face flange, BW-butt weld – standard. Options available upon request: RTJ, hub connectors, male and female torque and groove, flanges

## Ball + Seat = the sealing assembly

- OMNI-LAP 360° optimizes the matched roundness of the ball and seat for 100% seal, regardless of positioning. The sealing surface is increased, providing a wide metal-to-metal seal. The seal is consistently reliable
- Corrosion-resistant materials with matched rates of thermal expansion are used on the sealing components to maintain seal integrity and reliability
- Parts are robotically coated for uniform surface thickness, coating density and excellent metallurgical bond to withstand quick thermal shocks
- The seats are self-cleaning, removing all debris from the ball with every stroking cycle, thus extending valve life
- When required, field repair is simpler and faster. The ball and seat assembly is vacuum-seal verified at the factory and easily replaced onsite

## Wave Spring

- Provides resilient loading of ball to seat
- Provides effective particulate exclusion

## Stem

- Surface modification eliminates galling
- Blow-out proof per ASME B16.34

## Inner Stem Seal

- Provides primary metal-to-metal stem seal

## Packing Bushing

- Prevents stem packing intrusion into body
- Works with stem bearing to prevent lateral stem motion

## Packing Rings

- Reinforced graphite

## Anti-Extrusion Rings

- Prevent packing extrusion

## Packing Follower

- Thermally matched to stem material
- Prevents galling and contains upper packing

## Articulating Gland Flange

- Spherically engages the packing follower to prevent stem binding and galling during adjustments

## Belleville Springs

- Live load springs on the packing box eliminate routine gland adjustments
- Reduced maintenance

## Stem Retaining Ring

- Prevents stem misalignment during actuator installation
- Means stem cannot be forced into ball stem slot

## Mounting Flange

- Precision machined to ISO 5211
- External mounting flange provides rigid mounting for ease of adjustment
- Direct mounting option reduces hysteresis and stem deflection

## Body Gasket

- Spiral wound gaskets, grafoil filled

# Digital Controller

The MVC-5000 is a highly integrated process controller that adds decentralized automation to distributed flow control devices.

## Features:

- Compact design
- High resolution analog (16 bit)
- Touchscreen interface
- Nema 4X housing
- DCS and Modbus compatible
- Universal power supply

The PARV MVC-5000 is factory programmed to automatically control an open/close actuator in Power Automated Relief Valve applications. It uses industry standard digital and 4-20mA analog I/O, as well as Modbus RTU serial communication. For more information please visit the following links:

MVC-5000 Installation Operation and Maintenance Manual:

<http://mightyinstruments.com/images/datasheets/MVC-5000PARV%20-%20IOM%202.pdf>

MVC-5000 Datasheet:

<http://mightyinstruments.com/images/datasheets/MVC-5000%20Datasheet%20PARV%20R3.pdf>

## ASME Section I PARV Configuration for the BHGE EBV

In the PARV configuration, the MVC-5000 operates as a sophisticated digital pressure switch. While continuously monitoring process pressure through a high precision ADC, the MVC-5000 automatically operates a power-actuated relief valve according to the user's programmed set pressure and blow down criteria. This configuration can be used to control ASME and non-ASME capacity certified EBVs. The EBV configuration also includes provisions for DCS and manual override.



3500-5 EBV  
Digital Controller

## External Switchbox

The ASME-certified MVC-5000 housing is sealed closed after installation, leaving the local touch screen inaccessible in normal operating conditions. The MVC-5000 switchbox is a simple bolt-on that outfits the MVC with local hand controls so that the operator can control the device without removing the cover. Each box contains a three-position, normally closed, selector switch. Two positions initiate commands (Auto and Open), while the third mid position removes both commands from the MVC so that other devices may take control.

- Ingress Protection: NEMA 4X, IP66



3500-5 EBV  
Digital Controller  
with External Switchbox

## Remote Panel Options

The remote panels, which are offered in two varieties (DCS push buttons and Modbus touchscreen), are small units that can be mounted on the plant control panel. The DCS control station is hardwired to the MVC's discrete I/O, while the Modbus control station is connected to the MVC's RS-485 serial port. Both versions provide for remote control and communication with the MVC-5000.

### DCS Remote Panel

The DCS remote panel consists of two lights and a three-position switch. The Open and Closed lights indicate actual valve position. The selector switch is used to command the controller either in Auto mode or Open mode. In Auto mode, the controller operates the valve autonomously in response to system pressure. In Open mode, the controller manually opens the valve, regardless of system pressure.

- Ingress Protection: IP65 (panel mounted)



DCS Push Button  
Remote Panel

### Modbus Touchscreen Remote Panel

The Modbus touchscreen remote panel consists of a 3.5-inch color touchscreen, which duplicates the local MVC-5000 touchscreen display. Commands and feedback are sent through the MVC-5000's RS-485 Modbus link. Auto/Open modes and device configuration parameters can all be set from the Modbus control station. Set/Re-Seat and actual system pressure also are relayed to the control station for remote readout.

- Ingress Protection: IP66 (panel mounted)



Modbus Touchscreen  
Remote Panel

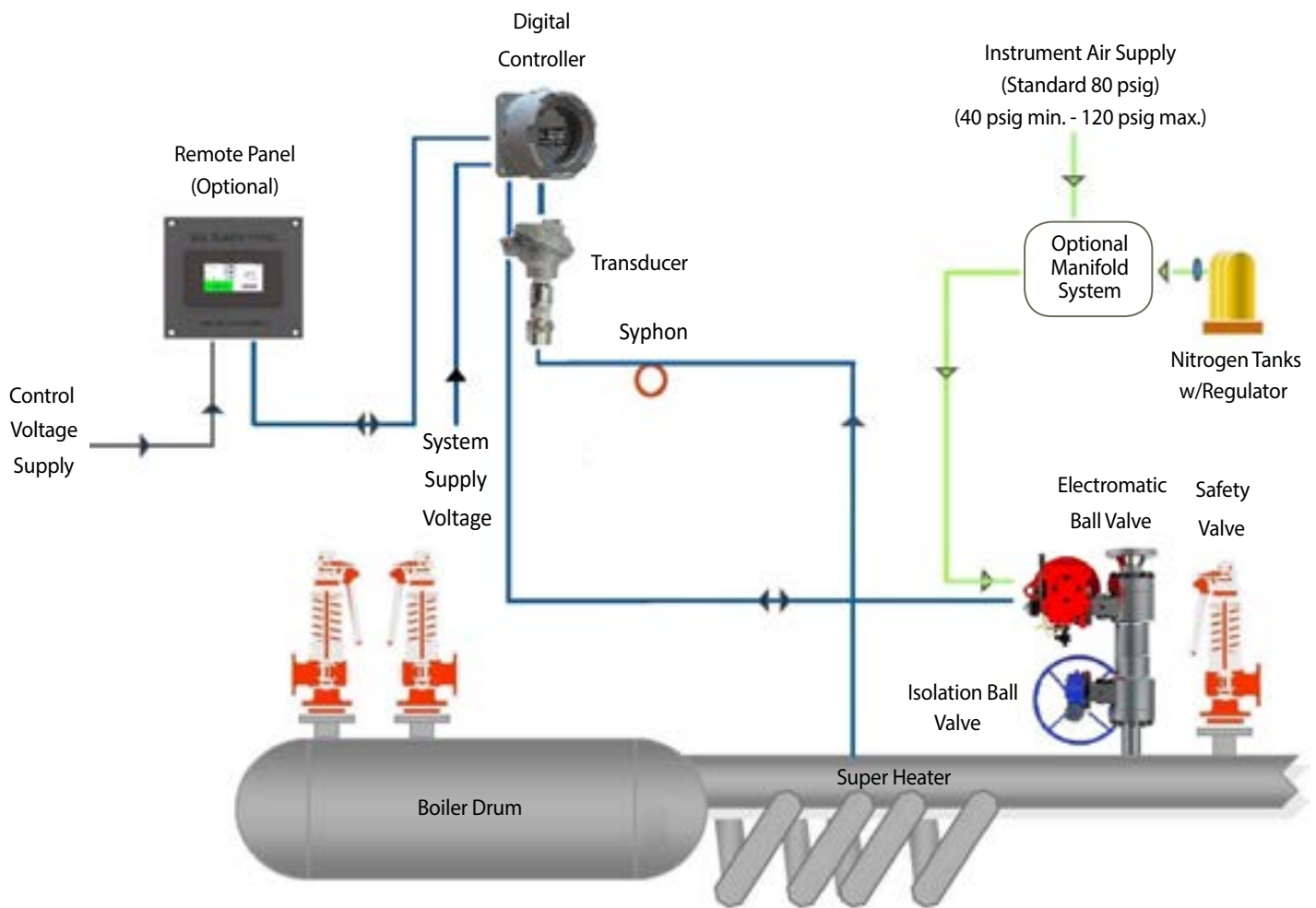
# How the EBV System Works

## Applications:

- Automatic or manual overpressure protection
- Startup and shutdown venting assist

## Operation:

- Set at a lower pressure than spring-loaded safety valve
- Reduces lifts, maintenance
- Increases boiler efficiency





# Specifications

## Inlet Sizes

1½" - 4"

## Bore Size

7/8", 1", 1¾", 2", 2½", 3"

## Outlet Sizes

3" - 6"

## ASME Pressure Class

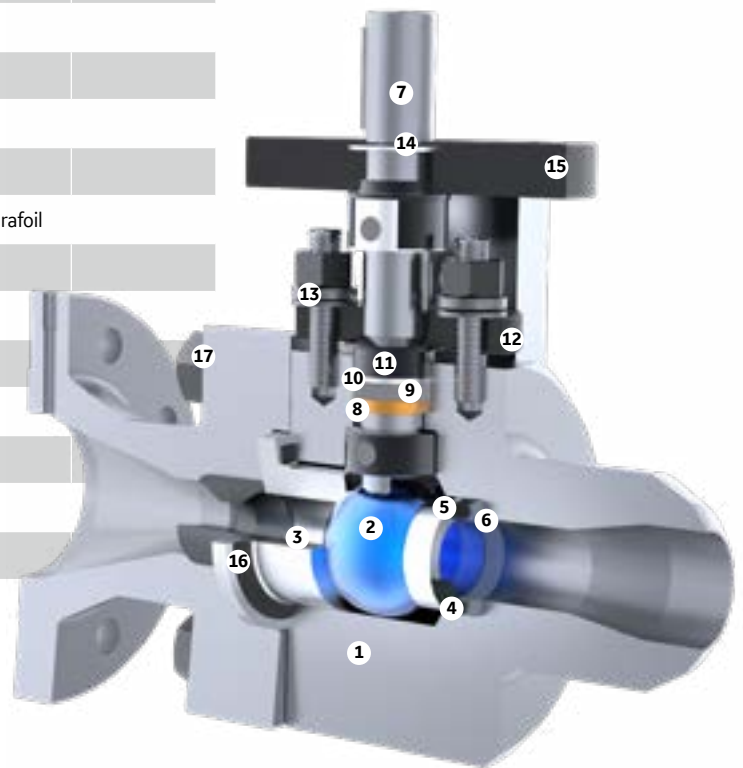
600 - 4500 in standard, special and limited class

## End Connections

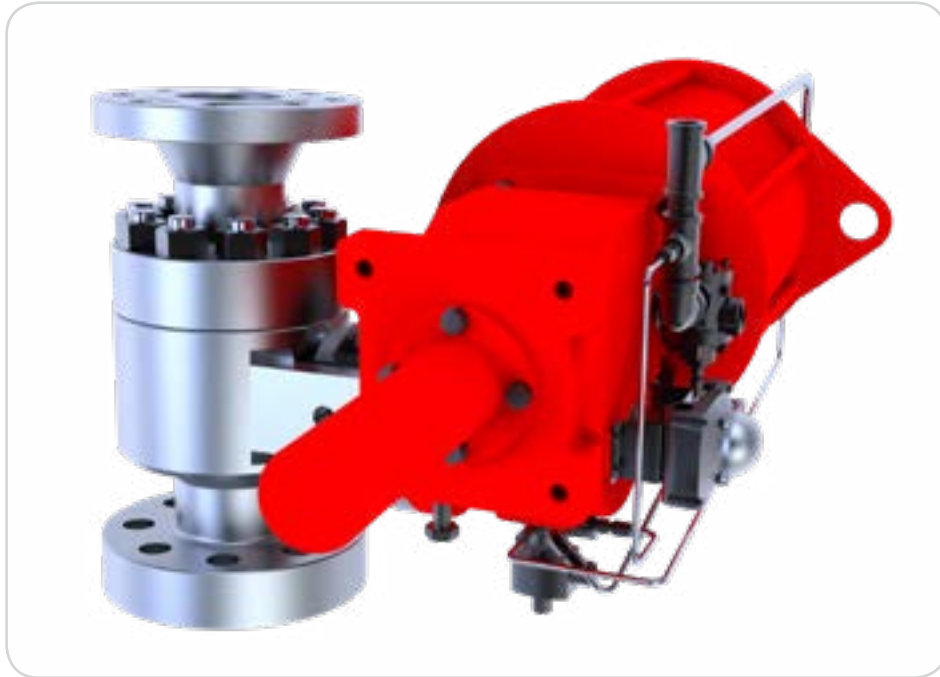
- Butt weld
- Raised face flange, ring joint flange
- Tongue and groove

Standard Materials				
Item	Description		Material	Optional <sup>1</sup>
1	Body	3500 Series - Flanged (F)	SA182 F22 Cl.3	
		3500 Series - Butt weld (W)	SA182 F22 Cl.3	SA182 F91
2	Ball		Inconel 718/Fused Carbide	
3	Seat		Inconel 718/Fused Carbide	
4	Wave Spring		A-286	
5	Load Ring		Incoloy 800/Fused Carbide	
6	Spacer		410 SS	
7	Stem		A-286 Hardfaced	
8	Packing Bushing		316 SS Hardfaced	
9	Packing Rings		Grafoil	
10	Anti-Extrusion Rings		Inconel Wire Reinforced Grafoil	
11	Packing Follower		316 SS Hardfaced	
12	Articulating Gland Flange		17-4 PH SS	
13	Live Loading Belleville Springs		Stainless Steel	
14	Stem Retaining Ring		Stainless Steel	
15	Mounting Flange		Carbon Steel	
16	Body Gasket		Die-Formed Grafoil	
17	Body Bolting		SA193 B16	
18	Discharge Collar		SA182 F22 Cl.3	

Note 1. 3500 Series butt weld (W) types can be supplied with SA182 F92 Code Case 2179 material.



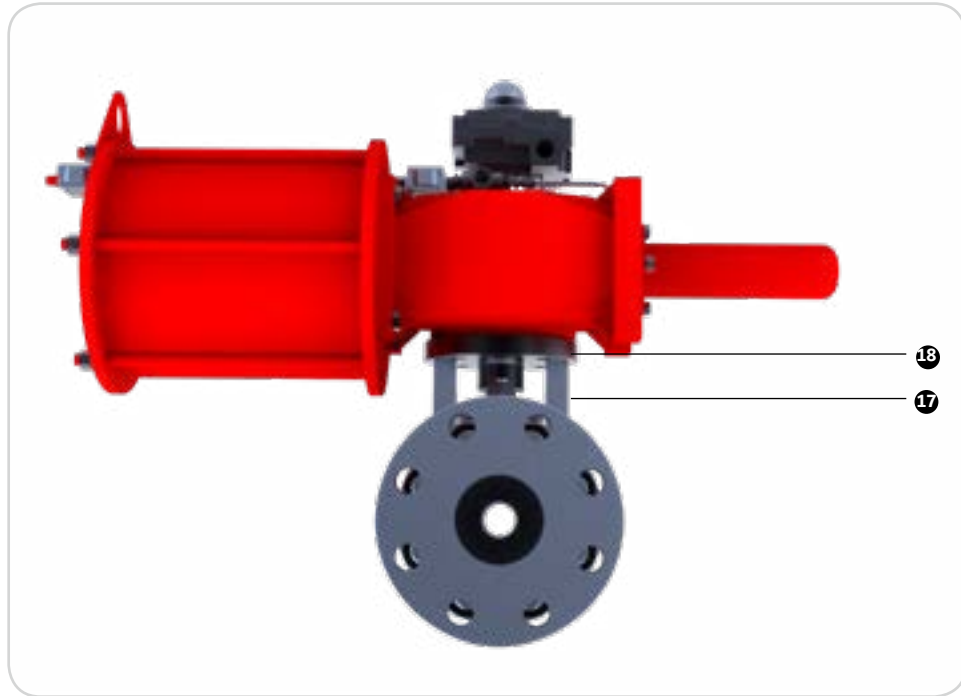
# Scope of Design



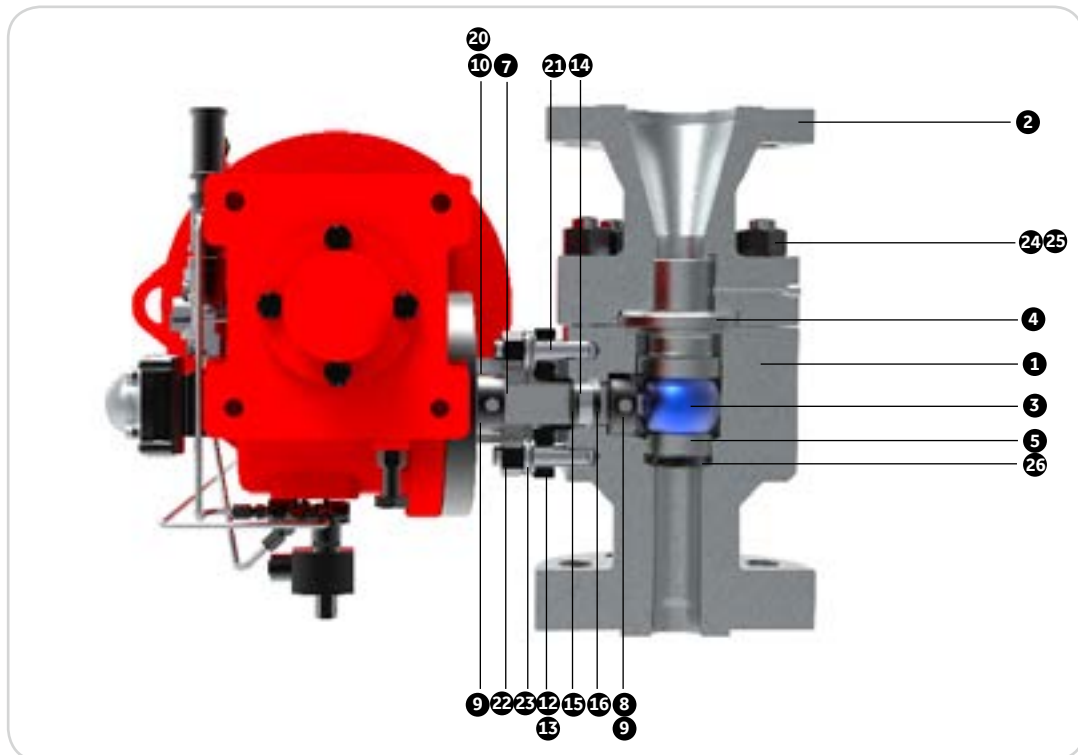
Standard Valve Connections											
No	Valve Type	Bore Size		Orifice Area		Inlet			Outlet		
		in	mm	in <sup>2</sup>	cm <sup>2</sup>	Size		ASME Class	Size		ASME Standard Class
						in	mm		in	mm	
1	3515F	0.88	22.2	0.601	3.879	1.50	38.1	1500 Flanged	3.00	76.2	300 Flanged
2	3525F	0.88	22.2	0.601	3.879	1.50	38.1	2500 Flanged	3.00	76.2	300 Flanged
3	3525W	0.88	22.2	0.601	3.879	1.50	38.1	3100 LTD Butt weld	3.00	76.2	300 Flanged
4	3516F	1.00	25.4	0.785	5.067	2.00	50.8	1500 Flanged	3.00	76.2	300 Flanged
5	3526F	1.00	25.4	0.785	5.067	2.00	50.8	2500 Flanged	3.00	76.2	300 Flanged
6	3526W	1.00	25.4	0.785	5.067	2.00	50.8	3100 LTD Butt weld	3.00	76.2	300 Flanged
7	3517F	1.75	44.5	2.405	15.518	2.50	63.5	1500 Flanged	4.00	101.6	300 Flanged
8	3527F	1.75	44.5	2.405	15.518	2.50	63.5	2500 Flanged	4.00	101.6	300 Flanged
9	3537W	1.75	44.5	2.405	15.518	2.50	63.5	3100 LTD Butt weld	4.00	101.6	300 Flanged
10	3547W	1.75	44.5	2.405	15.518	2.50	63.5	4500 LTD Butt weld	4.00	101.6	900 Flanged
11	3538W	2.00	50.8	3.142	20.268	2.50	63.5	3100 LTD Butt weld	4.00	101.6	900 Flanged
12	3548W	2.00	50.8	3.142	20.268	3.00	76.2	4500 SPL Butt weld	6.00	152.4	900 Flanged
13	3549W	2.50	63.5	4.909	31.669	4.00	101.6	4500 SPL Butt weld	6.00	152.4	900 Flanged
14	3511W	3.00	76.2	7.069	45.604	4.00	101.6	1500 SPL Butt weld	6.00	152.4	300 Flanged

# Materials

## Top View



## Bottom View



# Materials

Materials of Construction		
	Part Name	Material
1	BODY - FLANGED	SA182 F22 Cl. 3
	BODY - BUTT WELD (STANDARD)	SA182 F22 Cl. 3 (STANDARD) , SA182 F91 (OPTIONAL) or SA182 F92 CC 2179 (OPTIONAL)
2	DISCHARGE COLLAR	SA182 F22 Cl. 3
3	BALL	INCONEL 718, COLMONOY 69 <sup>1</sup>
4	SEAT	INCONEL 718, COLMONOY 69 <sup>1</sup>
5	LOADER	INCOLOY 800, COLMONOY 69 <sup>1</sup>
6	GASKET <sup>4</sup>	FLEXIBLE GRAPHOIL
7	STEM	A286
8	INNER COLLAR	410 SS
9	RETAINER PIN	INCONEL 718
10	RETAINING SLEEVE	304 SS
11	GUIDE BEARING <sup>4</sup>	316 SS - NITRIDED
12	PACKING GLAND	4130
13	PACKING FOLLOWER	316 SS - NITRIDED
14	PACKING RING	CHESTERTON 5300, DIE FORMED
15	PACKING RING, ANTI-EXTRUSION	CHESTERTON 1601, SKIVED CUT
16	PACKING BUSHING	316 SS
17	MOUNTING LEG	CARBON STEEL
18	MOUNTING FLANGE	CARBON STEEL
19	THRUST WASHER <sup>4</sup>	Ni-Al-Brz
20	OUTER COLLAR	17-4 PH H1150 - NITRIDED
21	STUD PACKING GLAND	SA193 Gr. B8M Cl. 1
22	NUT PACKING GLAND	SA194 Gr. 8M
23	SPRING, LIVE LOAD	17-7 PH
24	DISCHARGE COLLAR STUDS	SA193 Gr. B16
25	DISCHARGE COLLAR NUTS	SA194 Gr. 4
26	SPIRALWAVE SPRING	A286 Gr. 660
27	RETAINING RING <sup>4</sup>	STAINLESS STEEL
28	KEY STEM <sup>4</sup>	1018 COLD ROLLED
29	DRAIN <sup>4</sup>	STAINLESS STEEL
Actuator : TRIAC		
30	SOLENOIDS	ASCO - NEXT GENERATION
31	POSITION SWITCH	TOPWORX (STANDARD)
32	TUBING & FITTINGS	STAINLESS STEEL
33	PRESSURE REGULATOR	NUMATICS
34	FILTER	NUMATICS
35	CHECK VALVE	GENERANT BRASS
36	CROSS PIPE	BRASS
37	RELIEF VALVE	GENERANT, BRASS
38	NIPPLE	STAINLESS STEEL
39	HEX NIPPLE	STAINLESS STEEL

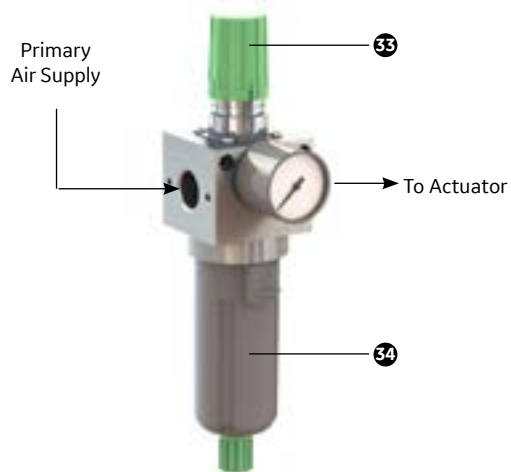
## Notes:

1. Spray and Fused Coated.
2. Solution Annealed & Precip. Hardened per Type 1 (Carbide or Nitride Coated).
3. With Flexible Graphite Filler (Spiral Wound).
4. Not Shown.

# Dimensions & Weights

## Standard

### Pressure Regulator and Filter

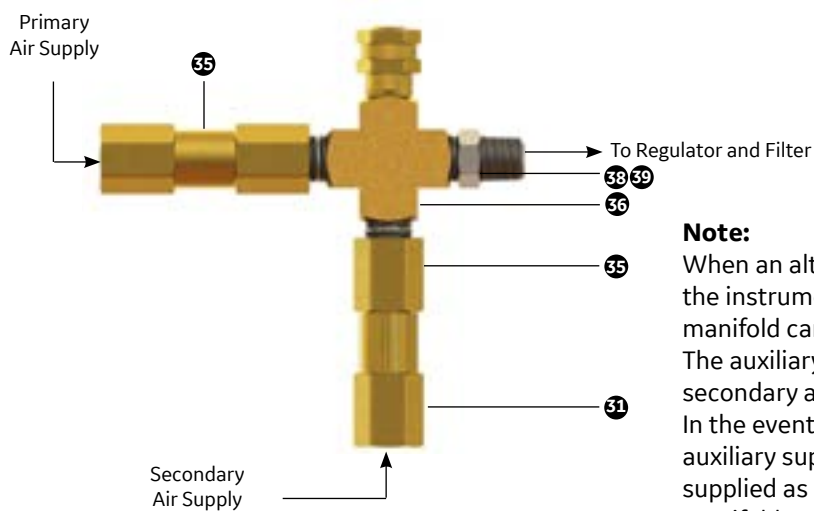


**Note:**

Pressure regulator and filter are standard supply with the 3500 EBV.

## Optional

### Air Supply Manifold



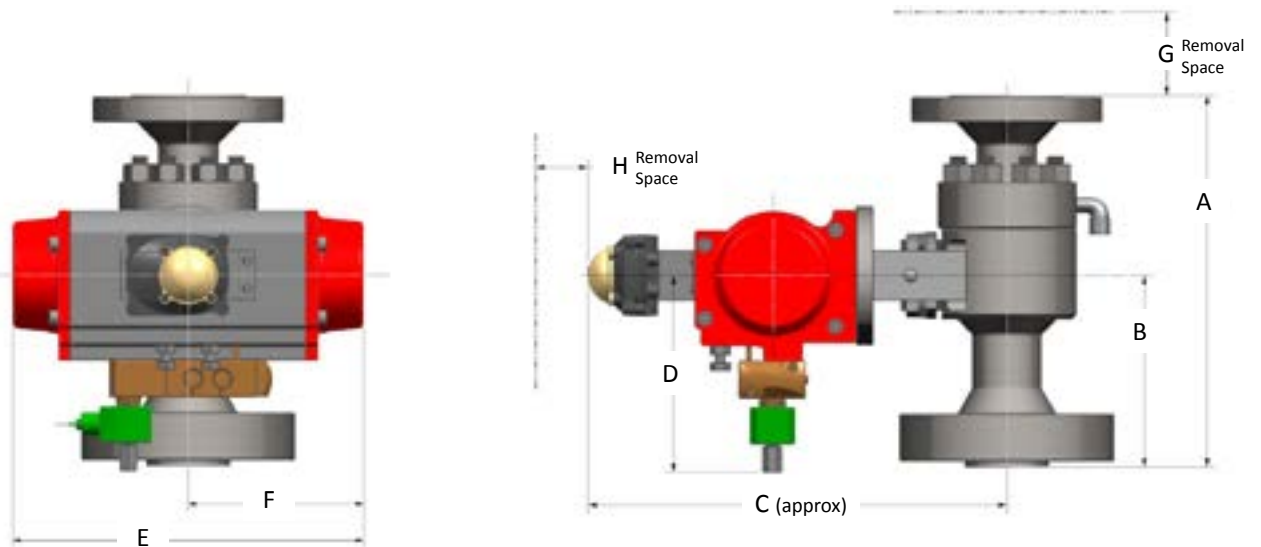
**Note:**

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 relief valve is supplied as standard on the auxiliary supply manifold.

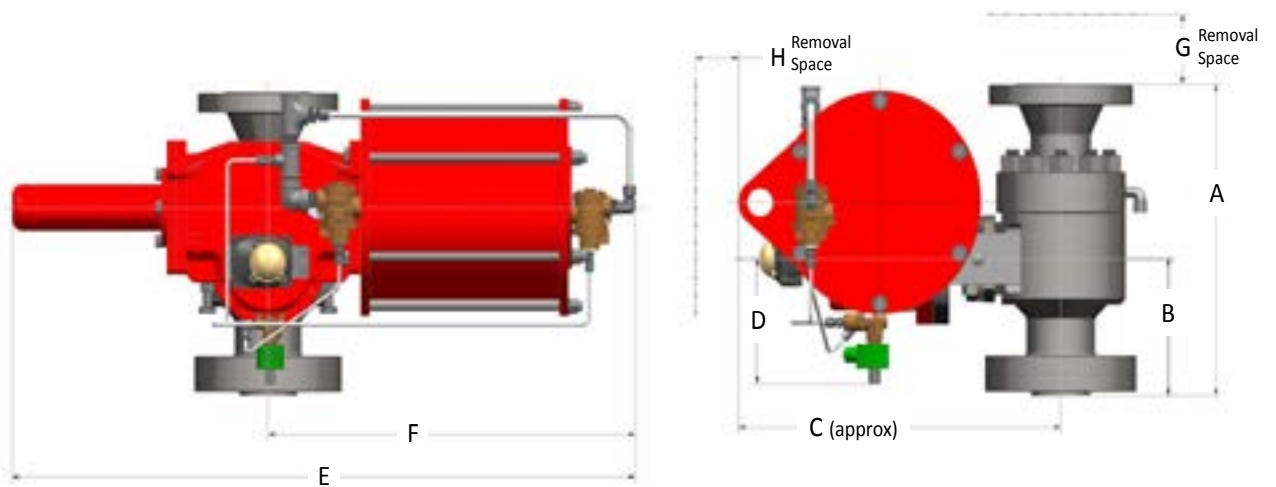
# Dimensions & Weights

## 3500 Flange x Flange

3515, 3516, 3517, 3525, 3526 & 3527 w/ TRIAC 2R850DA, 2R1750DA & 2R3500DA Actuator

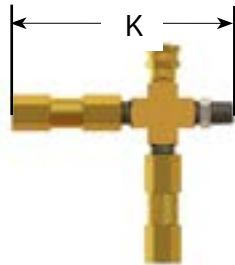


3517 & 3527 w/ TRIAC S09DA280 Actuator

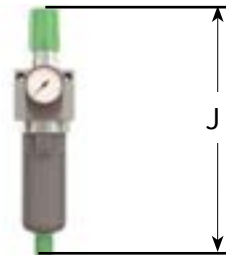


# Dimensions & Weights

## Accessories General Dimensions (Flanged Inlet)



Auxiliary Supply Manifold  
(Optional)



Pressure Regulator and Filter  
(Standard supply)

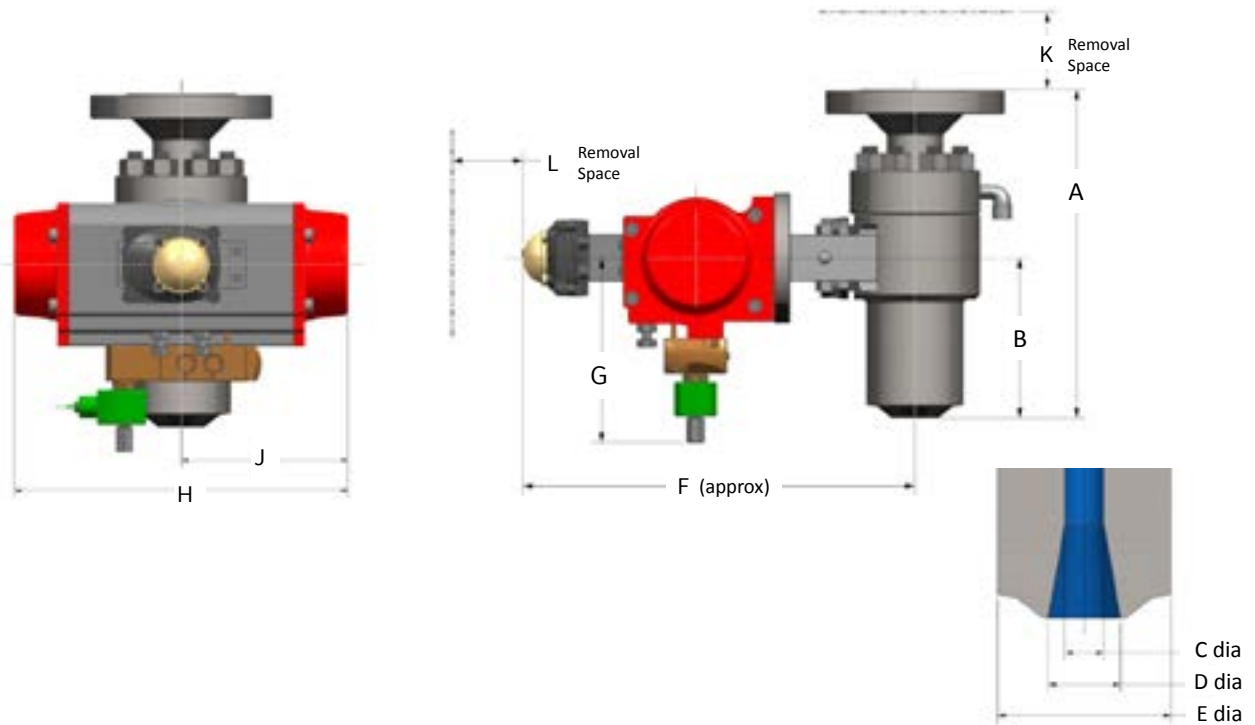
Valve Type	Actuator Model	General Dimensions											
		A		B		C		D		E		F	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
3515F	2R850DA	15.25	387	7.50	190	23.7	602	8.76	222	20.95	532	10.48	266
3525F	2R850DA	15.75	400	8.00	203	23.7	602	8.76	222	20.95	532	10.48	266
3516F	2R850DA	15.50	393	7.75	196	23.7	602	8.76	222	20.95	532	10.48	266
3526F	2R850DA	16.00	406	8.25	209	23.7	602	8.76	222	20.95	532	10.48	266
3517F	2R1750DA	19.00	482	8.00	203	31.4	797	9.50	242	24.37	619	12.18	309
	S09DA280	19.00	482	8.00	203	24.8	630	8.30	211	43.82	1113	25.53	648
3527F	2R1750DA	19.63	498	8.63	219	31.4	797	9.50	242	24.37	619	12.18	309
	S09DA280	19.63	498	8.63	219	24.7	628	8.30	211	43.82	1113	25.53	648

Valve Type	Actuator Model	General Dimensions								Approximate Weight	
		G		H		J		K		lb	kg
		in	mm	in	mm	in	mm	in	mm		
3515F	2R850DA	6.00	152	10.00	254	9.90	252	7.20	184	173	78
3525F	2R850DA	6.00	152	10.00	254	9.90	252	7.20	184	186	84
3516F	2R850DA	6.00	152	10.00	254	9.90	252	7.20	184	186	84
3526F	2R850DA	6.00	152	10.00	254	9.90	252	7.20	184	200	91
3517F	2R1750DA	6.00	152	10.00	254	9.90	252	7.20	184	353	160
	S09DA280	6.00	152	10.00	254	9.90	252	7.20	184	598	271
3527F	2R1750DA	6.00	152	10.00	254	9.90	252	7.20	184	403	183
	S09DA280	6.00	152	10.00	254	9.90	252	7.20	184	652	296

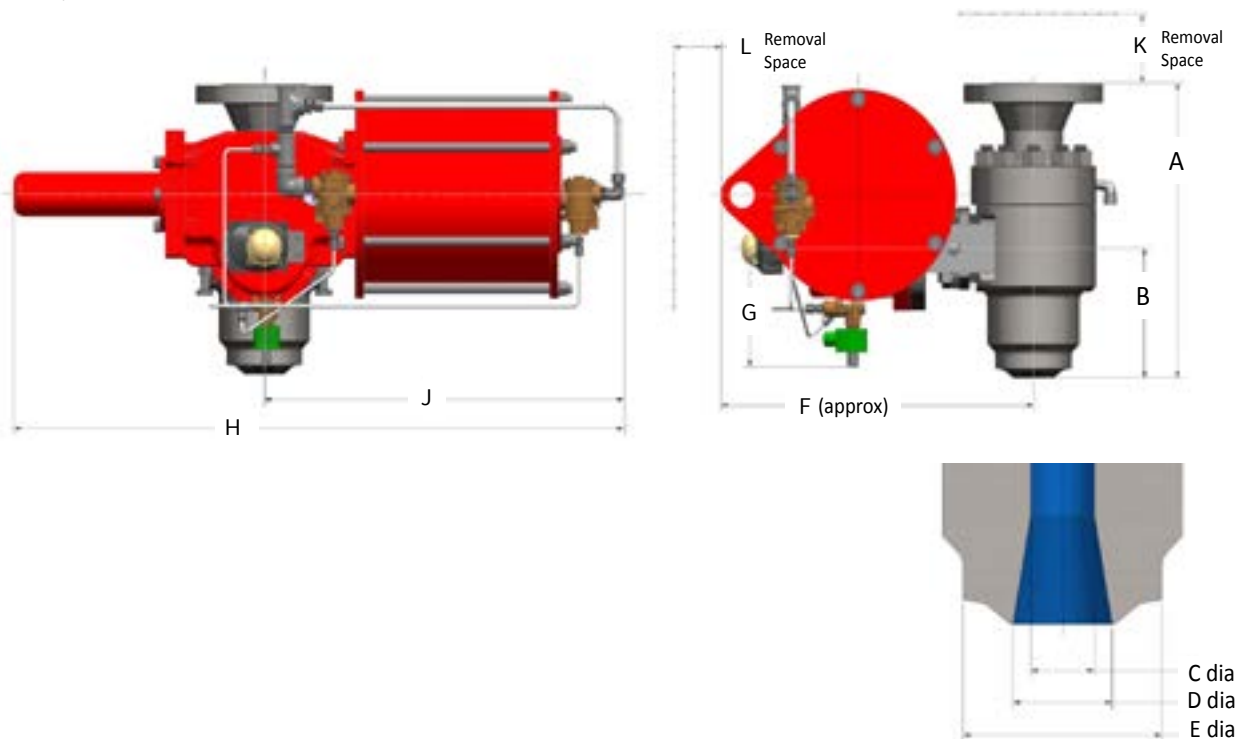
# Dimensions & Weights

## 3500 Butt Weld x Flange

3525, 3526, 3537 & 3538 w/ TRIAC 2R850DA & 2R3500DA Actuator



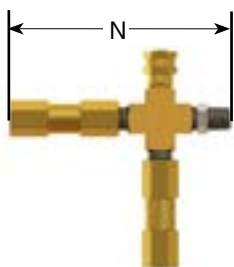
3537, 3547, 3538, 3548, 3549 & 3511 w/  
 TRIAC S09DA280, S09DA335, S09DA385, S11DA385, S13DA435, S11DA335, S13DA485 Actuator



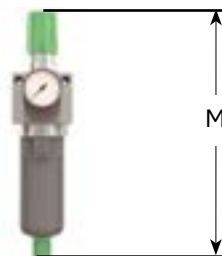


# Dimensions & Weights

## Accessories General Dimensions (Butt Weld)



Auxiliary Supply Manifold  
(Optional)



Pressure Regulator and Filter  
(Standard supply)

## Butt Weld x Flange (Contd.)

Valve Type	Actuator Model	General Dimensions													
		A		B		C		D		E		F		G	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
3525W	2R850DA	14.00	356	6.25	159	1.105	28.0	1.50	38.1	4.50	114	23.70	602	8.80	222.5
3526W	2R850DA	14.00	356	6.25	159	1.50	38.0	2.00	50.8	4.50	114	23.70	602	8.80	222.5
3537W	2R3500DA	20.25	514	9.25	235	2.38	60.3	2.75	69.8	6.63	168.3	29.00	736	9.50	241.8
	S09DA280	20.25	514	9.25	235	2.38	60.3	2.75	69.8	6.63	168.3	24.70	628	8.30	211.0
3547W	S09DA280	24.63	626	9.37	238	2.38	60.3	2.75	69.8	6.63	168.3	26.60	675	8.30	211.0
	S09DA385	24.63	626	9.37	238	2.38	60.3	2.75	69.8	6.63	168.3	26.60	675	8.40	215.0
	S11DA335	24.63	626	9.37	238	2.38	60.3	2.75	69.8	6.63	168.3	26.37	670	8.50	216.0
3538W	2R3500DA	24.63	626	9.37	238	2.38	60.3	2.75	69.8	6.63	168.3	32.90	837	9.30	237.0
	S09DA335	24.63	626	9.37	238	2.38	60.3	2.75	69.8	6.63	168.3	27.00	687	8.40	213.3
3548W	S09DA335	24.63	626	9.37	238	2.88	73.0	3.25	82.5	7.63	193.7	32.9	837	9.30	237.0
	S11DA385	24.63	626	9.37	238	2.88	73.0	3.25	82.5	7.63	193.7	27.40	696	8.40	216.0
	S11DA335	24.63	626	9.37	238	2.88	73.0	3.25	82.5	7.63	193.7	27.20	691	8.50	216.0
3549W	S11DA385	27.50	698	10.37	263	3.88	98.4	4.25	108.0	10.25	260.4	27.60	702	8.50	215.9
	S13DA485	27.50	698	10.37	263	3.88	98.4	4.25	108.0	10.25	260.4	27.40	697	8.50	216.0
	S13DA435	27.50	698	10.37	263	3.88	98.4	4.25	108.0	10.25	260.4	27.40	697	8.50	216.0
3511W	S09DA335	24.63	626	9.37	238	3.88	98.4	4.25	108.0	6.63	168.3	29.70	754	8.40	213.3
	S11DA385	24.63	626	9.37	238	3.88	98.4	4.25	108.0	6.63	168.3	26.30	667	8.50	216.0

Valve Type	Actuator Model	General Dimensions												Approximate Weight	
		H		J		K		L		M		N		lb	kg
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		
3525W	2R850DA	20.95	532	10.48	266	6.00	152	10.00	254	9.90	252	7.20	184	172	78
3526W	2R850DA	20.95	532	10.48	266	6.00	152	10.00	254	9.90	252	7.20	184	173	78
3537W	2R3500DA	27.20	690	13.60	345	6.00	152	10.00	254	9.90	252	7.20	184	390	177
	S09DA280	43.80	1113	25.50	648	6.00	152	10.00	254	9.90	252	7.20	184	635	288
3547W	S09DA280	43.80	1113	25.50	648	6.00	152	10.00	254	9.90	252	7.20	184	785	356
	S09DA385	43.30	1099	25.00	634	6.00	152	10.00	254	12.1	308	7.20	184	874	396
	S11DA335	42.80	1087	32.10	814	6.00	152	10.00	254	12.1	308	7.20	184	1019	462
3538W	2R3500DA	27.16	690	13.58	345	6.00	152	10.00	254	9.90	252	7.20	184	520	236
	S09DA335	43.40	1103	25.10	638	6.00	152	10.00	254	12.1	308	7.20	184	771	350
3548W	S09DA335	43.40	1103	25.10	638	6.00	152	10.00	254	12.1	308	7.20	184	984	446
	S11DA385	43.40	1103	25.10	638	6.00	152	10.00	254	12.1	308	7.20	184	1239	562
	S11DA335	42.80	1087	32.10	814	6.00	152	10.00	254	12.1	308	7.20	184	1191	540
3549W	S11DA385	42.80	1087	32.10	814	6.00	152	10.00	254	12.1	308	7.20	184	1570	712
	S13DA485	48.30	1227	36.20	919	6.00	152	10.00	254	17.4	441	7.20	184	2087	947
	S13DA435	49.50	1257	37.30	947	6.00	152	10.00	254	17.4	441	7.20	184	2066	937
3511W	S09DA335	43.40	1103	25.10	638	6.00	152	10.00	254	12.1	308	7.20	184	805	365
	S11DA385	42.80	1087	32.10	814	6.00	152	10.00	254	12.1	308	7.20	184	1070	485

# Pressure/Temperature

## Flanged End

Pressure / Temperature Limit For Flanged End					
Valve Types: 3515, 3516, 3525, 3526, 3517, and 3527					
Applicable Base Material: ASME SA182 F22 Class 3, Standard Class, B16.34 - 2015					
Temperature		Pressure			
		1500# Pressure Class		2500# Pressure Class	
°F	°C	psig	barg	psig	barg
600	316	2000	137.9	2500	172.4
650	343	2000	137.9	2500	172.4
700	371	2000	137.9	2500	172.4
750	399	2000	137.9	2500	172.4
800	427	2000	137.9	2500	172.4
850	454	2000	137.9	2500	172.4
900	482	2000	137.9	2500	172.4
920	493	2000	137.9	2500	172.4
940	504	1993	137.4	2500	172.4
950	510	1930	133.1	2500	172.4
960	516	1811	124.9	2500	172.4
970	521	1692	116.7	2500	172.4
980	527	1573	108.5	2500	172.4
990	532	1454	100.2	2428	167.4
1000	538	1335	92.0	2230	153.8
1010	543	1243	85.7	2075	143.1
1020	549	1151	79.4	1920	132.4
1030	554	1059	73.0	1765	121.7
1040	560	967	66.7	1610	111.0
1050	566	875	60.3	1455	100.3
1060	571	810	55.8	1347	92.9
1070	577	745	51.4	1239	85.4
1080	582	680	46.9	1131	78.0
1100	593	550	37.9	915	63.1
1150	621	345	23.8	570	39.3

# Pressure/Temperature

## Butt Weld End

Pressure/Temperature Limit For Butt Weld End, NPS 3 and Larger					
Valve Types: 3548, 3549, and 3511					
Applicable Base Material: ASME SA182 F22 Class 3, Special Class, B16.34 - 2015					
Temperature		Pressure			
		1500# Pressure Class		4500# Pressure Class	
°F	°C	psig	barg	psig	barg
600	316	2000	137.9	6000	413.7
650	343	2000	137.9	6000	413.7
700	371	2000	137.9	6000	413.7
750	399	2000	137.9	6000	413.7
800	427	2000	137.9	6000	413.7
850	454	2000	137.9	6000	413.7
900	482	2000	137.9	6000	413.7
920	493	2000	137.9	6000	413.7
940	504	2000	137.9	6000	413.7
950	510	2000	137.9	6000	413.7
960	516	2000	137.9	6000	413.7
970	521	2000	137.9	6000	413.7
980	527	1946	134.2	5837	402.4
990	532	1808	124.7	5426	374.1
1000	538	1670	115.1	5105	352.0
1010	543	1555	107.2	4668	321.8
1020	549	1440	99.3	4321	297.9
1030	554	1325	91.4	3974	274.0
1040	560	1210	83.4	3627	250.1
1050	566	1095	75.5	3280	226.1
1060	571	1013	69.8	3035	209.3
1070	577	931	64.2	2790	192.4
1080	582	849	58.5	2545	175.5
1100	593	685	47.2	2055	141.7
1150	621	430	29.6	1285	88.6

# Pressure/Temperature

## Butt Weld End

Pressure/Temperature Limit For Butt Weld End, NPS 2 ½ and Smaller					
Valve Types: 3525, 3526, 3537, 3547, and 3538					
Applicable Base Material: ASME SA182 F22 Class 3, Limited Class, B16.34 - 2015					
Temperature		Pressure			
		3100# Pressure Class		4500# Pressure Class	
°F	°C	psig	barg	psig	barg
600	316	3000	206.8	6000	413.7
650	343	3000	206.8	6000	413.7
700	371	3000	206.8	6000	413.7
750	399	3000	206.8	6000	413.7
800	427	3000	206.8	6000	413.7
850	454	3000	206.8	6000	413.7
900	482	3000	206.8	6000	413.7
920	493	3000	206.8	6000	413.7
940	504	3000	206.8	6000	413.7
950	510	3000	206.8	6000	413.7
960	516	3000	206.8	6000	413.7
970	521	3000	206.8	6000	413.7
980	527	3000	206.8	6000	413.7
990	532	3000	206.8	6000	413.7
1000	538	3000	206.8	6000	413.7
1010	543	3000	206.8	5783	398.7
1020	549	3000	206.8	5353	369.1
1030	554	3000	206.8	4923	339.4
1040	560	2880	198.6	4494	309.8
1050	566	2604	179.5	4064	280.2
1060	571	2410	166.2	3760	259.2
1070	577	2216	152.8	3457	238.4
1080	582	2023	139.5	3153	217.4
1090	588	1829	126.1	2850	196.5
1100	593	1635	112.7	2546	175.5
1150	621	1022	70.5	1592	109.8

# Pressure/Temperature

## Flanged End

Pressure/Temperature Limit For Flanged End					
Valve Types: 3515, 3516, 3525, 3526, 3517, and 3527					
Applicable Base Material: ASME SA182 F91, Standard Class; B16.34 - 2015					
Temperature		Pressure			
		1500# Pressure Class		2500# Pressure Class	
°F	°C	psig	barg	psig	barg
700	371	2000	137.9	2500	172.4
750	399	2000	137.9	2500	172.4
800	427	2000	137.9	2500	172.4
850	454	2000	137.9	2500	172.4
900	482	2000	137.9	2500	172.4
920	493	2000	137.9	2500	172.4
940	504	1993	137.4	2500	172.4
950	510	1930	133.1	2500	172.4
960	516	1908	131.6	2500	172.4
970	521	1886	130.0	2500	172.4
980	527	1864	128.5	2500	172.4
990	532	1842	127.0	2500	172.4
1000	538	1820	125.5	2500	172.4
1010	543	1816	125.2	2500	172.4
1020	549	1812	124.9	2500	172.4
1030	554	1808	124.7	2500	172.4
1040	560	1804	124.4	2500	172.4
1050	566	1800	124.1	2500	172.4
1060	571	1742	120.1	2500	172.4
1070	577	1684	116.1	2500	172.4
1080	582	1626	112.1	2500	172.4
1090	588	1568	108.1	2500	172.4
1100	593	1510	104.1	2500	172.4
1150	621	1115	76.9	1855	127.9

# Pressure/Temperature

## Butt Weld End

Pressure/Temperature Limit For Butt Weld End, NPS 3 and Larger					
Valve Types: 3548, 3549, and 3511					
Applicable Base Material: ASME SA182 F91, Special Class; B16.34 - 2015					
Temperature		Pressure			
		1500# Pressure Class		4500# Pressure Class	
°F	°C	psig	barg	psig	barg
700	371	2000	137.9	6000	413.7
750	399	2000	137.9	6000	413.7
800	427	2000	137.9	6000	413.7
850	454	2000	137.9	6000	413.7
900	482	2000	137.9	6000	413.7
920	493	2000	137.9	6000	413.7
940	504	2000	137.9	6000	413.7
950	510	2000	137.9	6000	413.7
960	516	2000	137.9	6000	413.7
970	521	2000	137.9	6000	413.7
980	527	2000	137.9	6000	413.7
990	532	2000	137.9	6000	413.7
1000	538	2000	137.9	6000	413.7
1010	543	2000	137.9	6000	413.7
1020	549	2000	137.9	6000	413.7
1030	554	2000	137.9	6000	413.7
1040	560	2000	137.9	6000	413.7
1050	566	2000	137.9	6000	413.7
1060	571	2000	137.9	6000	413.7
1070	577	2000	137.9	6000	413.7
1080	582	1973	136.0	5917	408
1090	588	1929	133.0	5786	398.9
1100	593	1885	130.0	5655	389.9
1110	599	1787	123.2	5360	599
1120	604	1689	116.4	5065	349.2
1130	610	1591	109.7	4770	328.9
1140	615	1493	103.0	4475	308.5
1150	621	1395	96.2	4180	288.2

# Pressure/Temperature

## Butt Weld End

Pressure/Temperature Limit For Butt Weld End, NPS 2 ½ and Smaller					
Valve Types: 3525, 3526, 3537, 3547, and 3538					
Applicable Base Material: ASME SA182 F91, Limited Class; B16.34 - 2015					
Temperature		Pressure			
		3100# Pressure Class		4500# Pressure Class	
°F	°C	psig	barg	psig	barg
600	316	3000	206.8	6000	413.7
650	343	3000	206.8	6000	413.7
700	371	3000	206.8	6000	413.7
750	399	3000	206.8	6000	413.7
800	427	3000	206.8	6000	413.7
850	454	3000	206.8	6000	413.7
900	482	3000	206.8	6000	413.7
920	493	3000	206.8	6000	413.7
940	504	3000	206.8	6000	413.7
950	510	3000	206.8	6000	413.7
960	516	3000	206.8	6000	413.7
970	521	3000	206.8	6000	413.7
980	527	3000	206.8	6000	413.7
990	532	3000	206.8	6000	413.7
1000	538	3000	206.8	6000	413.7
1010	543	3000	206.8	6000	413.7
1020	549	3000	206.8	6000	413.7
1030	554	3000	206.8	6000	413.7
1040	560	3000	206.8	6000	413.7
1050	566	3000	206.8	6000	413.7
1060	571	3000	206.8	6000	413.7
1070	577	3000	206.8	6000	413.7
1080	582	3000	206.8	6000	413.7
1090	588	3000	206.8	6000	413.7
1100	593	3000	206.8	6000	413.7
1150	621	3000	206.8	5178	357

# Orifice Capacities

## Definitions

A = nozzle throat area, in<sup>2</sup> (mm<sup>2</sup>)

P = flowing pressure at inlet of the valve, psia (MPa)

K = coefficient of discharge for the design ( $K_d \times 0.9$ )

W = rated relieving capacity, lb/hr (kg/hr)

S, slope =  $\frac{W}{P} = \frac{\text{measured capacity}}{\text{absolute flow rating pressure}}$

Supercritical correction factor,  $K_{sc}$  for ASME BPVC.I-2015

Superheat correction factor  $K_{sh}$  for Saturated Steam,  $K_{sh} = 1.0$

$K_d = \frac{\text{actual flow}}{\text{theoretic flow}} = \text{individual coefficient of discharge}$

$K_n$  = Napier factor. A dimensionless correction factor to the Napier steam flow equation used only for steam in the range of  $P > 1500$ psig.



# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc \times Kn$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \times Kn \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 1500 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P > 1500 \text{ psig}$$

$$W = S \times P \times Ksh \times Ksc \times Kn$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \times Kn \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 10.3 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P > 10.3 \text{ MPa}$$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1

Slope / K		Slope				K							
		29.70				0.866							
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
500	34.5	14142	6420	18544	8414	56815	25780	74203	33669	141744	64316	166998	75775
510	35.2	14418	6547	18905	8580	57920	26288	75646	34334	144500	65585	170245	77270
520	35.9	14693	6674	19266	8746	59025	26797	77089	34998	147256	66854	173493	78765
530	36.5	14968	6782	19626	8889	60130	27233	78531	35567	150013	67942	176740	80047
540	37.2	15243	6909	19987	9055	61235	27742	79974	36232	152769	69211	179987	81542
550	37.9	15518	7036	20347	9221	62339	28250	81417	36896	155525	70479	183235	83037
560	38.6	15793	7162	20708	9387	63444	28759	82860	37560	158281	71748	186482	84532
570	39.3	16068	7289	21069	9553	64549	29267	84303	38224	161038	73017	189729	86027
580	40.0	16343	7416	21429	9719	65654	29776	85746	38889	163794	74286	192976	87522
590	40.7	16618	7542	21790	9885	66758	30285	87189	39553	166550	75555	196224	89017
600	41.4	16893	7669	22150	10041	67863	30764	88632	40179	138492	62783	199471	90426
610	42.1	17168	7785	22511	10205	68968	31266	90074	40834	140747	63806	202718	91900
620	42.7	17443	7909	22872	10369	70073	31767	91517	41489	143002	64829	205966	93374
630	43.4	17718	8034	23232	10532	71178	32268	92960	42144	145256	65852	209213	94847
640	44.1	17993	8159	23593	10696	72282	32770	94403	42798	147511	66876	212460	96321
650	44.8	18268	8284	23953	10859	73387	33271	95846	43453	149765	67899	215707	97794
660	45.5	18543	8409	24314	11023	74492	33772	97289	44108	152020	68922	218955	99268
670	46.2	18818	8534	24675	11187	75597	34274	98732	44763	154275	69945	222202	100742
680	46.9	19093	8658	25035	11350	76702	34775	100175	45418	156529	70968	225449	102215
690	47.6	19368	8783	25396	11514	77806	35276	101617	46072	158784	71991	228697	103689
700	48.3	19643	8908	25757	11678	78911	35778	103060	46727	161038	73014	231944	105163
710	49.0	19918	9033	26117	11841	80016	36279	104503	47382	163293	74038	235191	106636
720	49.6	20193	9158	26478	12005	81121	36781	105946	48037	165547	75061	238438	108110
730	50.3	20468	9283	26838	12169	82225	37282	107389	48691	167802	76084	241686	109584
740	51.0	20743	9407	27199	12332	83330	37783	108832	49346	170057	77107	244933	111057
750	51.7	21018	9532	27560	12496	84435	38285	110275	50001	172311	78130	248180	112531
760	52.4	21293	9657	27920	12660	85540	38786	111718	50656	174566	79153	251428	114004
770	53.1	21568	9780	28281	12821	86645	39280	113161	51301	176820	80162	254675	115457
780	53.8	21843	9905	28641	12984	87749	39781	114603	51956	179075	81185	257922	116930
790	54.5	22118	10030	29002	13148	88854	40283	116046	52611	181330	82208	261169	118404
800	55.2	22393	10155	29363	13312	89959	40784	117489	53265	183584	83231	264417	119878
810	55.8	22668	10279	29723	13475	91064	41285	118932	53920	185839	84254	267664	121351
820	56.5	22943	10404	30084	13639	92169	41787	120375	54575	188093	85277	270911	122825
830	57.2	23218	10529	30444	13803	93273	42288	121818	55230	190348	86300	274159	124298
840	57.9	23493	10654	30805	13966	94378	42790	123261	55885	192602	87324	277406	125772
850	58.6	23768	10779	31166	14130	95483	43291	124704	56539	194857	88347	280653	127246
860	59.3	24043	10904	31526	14294	96588	43792	126146	57194	197112	89370	283900	128719
870	60.0	24318	11028	31887	14457	97692	44294	127589	57849	199366	90393	287148	130193
880	60.7	24593	11153	32247	14621	98797	44795	129032	58504	201621	91416	290395	131667
890	61.4	24868	11278	32608	14785	99902	45296	130475	59159	203875	92439	293642	133140
900	62.1	25143	11403	32969	14948	101007	45798	131918	59813	206130	93463	296890	134614
910	62.7	25418	11528	33329	15112	102112	46299	133361	60468	208385	94486	300137	136088
920	63.4	25693	11653	33690	15275	103216	46800	134804	61123	210639	95509	303384	137561
930	64.1	25968	11777	34050	15439	104321	47302	136247	61778	212894	96532	306631	139035
940	64.8	26243	11902	34411	15603	105426	47803	137689	62432	215148	97555	309879	140508

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (lb/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 1500 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P > 1500 \text{ psig}$

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (kg/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 10.3 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P > 10.3 \text{ MPa}$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1

Slope / K		Slope		K									
		29.70		0.866									
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
950	65.5	26518	12027	34772	15766	106531	48304	139132	63087	217403	98578	313126	141982
960	66.2	26793	12150	35132	15928	107636	48799	140575	63733	219658	99587	316373	143434
970	66.9	27068	12275	35493	16091	108740	49300	142018	64387	221912	100610	319621	144908
980	67.6	27343	12400	35853	16255	109845	49801	143461	65042	224167	101633	322868	146382
990	68.3	27618	12525	36214	16419	110950	50303	144904	65697	226421	102656	326115	147855
1000	68.9	27893	12649	36575	16582	112055	50804	146347	66352	228676	103679	329362	149329
1010	69.6	28168	12774	36935	16746	113159	51305	147790	67006	230930	104702	332610	150803
1020	70.3	28443	12899	37296	16910	114264	51807	149233	67661	233185	105725	335857	152276
1030	71.0	28718	13024	37656	17073	115369	52308	150675	68316	235440	106749	339104	153750
1040	71.7	28993	13149	38017	17237	116474	52809	152118	68971	237694	107772	342352	155223
1050	72.4	29268	13274	38378	17400	117579	53311	153561	69626	239949	108795	345599	156697
1060	73.1	29543	13399	38738	17564	118683	53812	155004	70280	242203	109818	348846	158171
1070	73.8	29818	13523	39099	17728	119788	54313	156447	70935	244458	110841	352093	159644
1080	74.5	30093	13648	39460	17891	120893	54815	157890	71590	246713	111864	355341	161118
1090	75.2	30368	13773	39820	18055	121998	55316	159333	72245	248967	112887	358588	162592
1100	75.8	30643	13898	40181	18219	123102	55818	160776	72900	251222	113911	361835	164065
1110	76.5	30918	14023	40541	18382	124207	56319	162218	73554	253476	114934	365083	165539
1120	77.2	31193	14148	40902	18546	125312	56820	163661	74209	255731	115957	368330	167012
1130	77.9	31468	14272	41263	18710	126417	57322	165104	74864	257985	116980	371577	168486
1140	78.6	31743	14397	41623	18873	127522	57823	166547	75519	260240	118003	374824	169960
1150	79.3	32018	14520	41984	19035	128626	58317	167990	76164	262495	119011	378072	171412
1160	80.0	32293	14645	42344	19198	129731	58818	169433	76819	264749	120035	381319	172886
1170	80.7	32568	14770	42705	19362	130836	59320	170876	77474	267004	121058	384566	174359
1180	81.4	32843	14895	43066	19525	131941	59821	172319	78128	269258	122081	387814	175833
1190	82.0	33118	15020	43426	19689	133046	60322	173762	78783	271513	123104	391061	177307
1200	82.7	33393	15144	43787	19853	134150	60824	175204	79438	273768	124127	394308	178780
1210	83.4	33668	15269	44147	20016	135255	61325	176647	80093	276022	125150	397555	180254
1220	84.1	33943	15394	44508	20180	136360	61827	178090	80748	278277	126174	400803	181727
1230	84.8	34218	15519	44869	20344	137465	62328	179533	81402	280531	127197	404050	183201
1240	85.5	34493	15644	45229	20507	138569	62829	180976	82057	282786	128220	407297	184675
1250	86.2	34768	15769	45590	20671	139674	63331	182419	82712	285041	129243	410545	186148
1260	86.9	35043	15893	45950	20835	140779	63832	183862	83367	287295	130266	413792	187622
1270	87.6	35318	16018	46311	20998	141884	64333	185305	84021	289550	131289	417039	189096
1280	88.3	35593	16143	46672	21162	142989	64835	186747	84676	291804	132312	420286	190569
1290	88.9	35868	16268	47032	21326	144093	65336	188190	85331	294059	133336	423534	192043
1300	89.6	36143	16393	47393	21489	145198	65837	189633	85986	296313	134359	426781	193517
1310	90.3	36418	16518	47753	21653	146303	66339	191076	86641	298568	135382	430028	194990
1320	91.0	36693	16642	48114	21816	147408	66840	192519	87295	300823	136405	433276	196464
1330	91.7	36968	16767	48475	21980	148513	67341	193962	87950	303077	137428	436523	197937
1340	92.4	37243	16890	48835	22141	149617	67836	195405	88595	305332	138436	439770	199390
1350	93.1	37518	17015	49196	22305	150722	68337	196848	89250	307586	139460	443017	200863
1360	93.8	37793	17140	49556	22469	151827	68838	198290	89905	309841	140483	446265	202337
1370	94.5	38068	17265	49917	22632	152932	69340	199733	90560	312096	141506	449512	203811
1380	95.1	38343	17390	50278	22796	154036	69841	201176	91215	314350	142529	452759	205284
1390	95.8	38618	17514	50638	22960	155141	70342	202619	91869	316605	143552	456007	206758
1400	96.5	38893	17639	50999	23123	156246	70844	204062	92524	318859	144575	459254	208231
1410	97.2	39168	17764	51359	23287	157351	71345	205505	93179	321114	145598	462501	209705
1420	97.9	39443	17889	51720	23451	158456	71846	206948	93834	323368	146622	465748	211179

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \times Kn \left(\frac{lb}{hr}\right)$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 1500 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P > 1500 \text{ psig}$

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \times Kn \left(\frac{kg}{hr}\right)$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 10.3 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P > 10.3 \text{ MPa}$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1

Slope / K		Slope				K							
		29.70				0.866							
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
1430	98.6	39718	18014	52081	23614	159560	72348	208391	94489	325623	147645	468996	212652
1440	99.3	39993	18139	52441	23778	160665	72849	209834	95143	327878	148668	472243	214126
1450	100.0	40268	18263	52802	23941	161770	73350	211276	95798	330132	149691	475490	215600
1460	100.7	40543	18388	53163	24105	162875	73852	212719	96453	332387	150714	478737	217073
1470	101.4	40818	18513	53523	24269	163979	74353	214162	97108	334641	151737	481985	218547
1480	102.0	41093	18638	53884	24432	165084	74855	215605	97762	336896	152760	485232	220021
1490	102.7	41368	18763	54244	24596	166189	75356	217048	98417	339151	153784	488479	221494
1500	103.4	41596	18867	54543	24732	167105	75773	218244	98962	341019	154635	491171	222720
1510	104.1	41895	19002	54934	24910	168303	76317	219809	99672	343465	155745	494693	224319
1520	104.8	42193	19138	55326	25087	169503	76862	221376	100384	345914	156856	498221	225920
1530	105.5	42493	19272	55719	25263	170705	77399	222946	101086	348367	157953	501754	227500
1540	106.2	42792	19408	56112	25441	171910	77946	224519	101799	350825	159069	505294	229106
1550	106.9	43093	19544	56505	25620	173116	78493	226094	102514	353286	160185	508839	230715
1560	107.6	43393	19680	56899	25799	174324	79041	227672	103230	355751	161304	512389	232326
1570	108.2	43695	19817	57294	25978	175534	79590	229252	103947	358221	162425	515946	233940
1580	108.9	43996	19954	57690	26158	176746	80140	230835	104666	360694	163547	519508	235557
1590	109.6	44299	20091	58086	26337	177960	80691	232421	105385	363172	164671	523077	237176
1600	110.3	44601	20229	58483	26518	179176	81243	234009	106106	365653	165798	526651	238798
1610	111.0	44904	20366	58881	26698	180394	81796	235600	106828	368139	166926	530232	240423
1620	111.7	45208	20504	59279	26879	181614	82349	237194	107551	370630	168056	533819	242050
1630	112.4	45513	20642	59678	27060	182837	82904	238790	108276	373124	169188	537412	243681
1640	113.1	45817	20781	60078	27241	184061	83460	240389	109001	375623	170322	541011	245314
1650	113.8	46123	20919	60478	27423	185288	84016	241992	109728	378127	171458	544616	246950
1660	114.5	46429	21058	60879	27605	186517	84574	243596	110457	380634	172596	548228	248589
1670	115.1	46735	21197	61281	27787	187748	85133	245204	111186	383147	173736	551847	250231
1680	115.8	47042	21337	61684	27970	188981	85692	246815	111917	385664	174878	555472	251876
1690	116.5	47350	21476	62087	28153	190217	86253	248429	112649	388185	176022	559104	253524
1700	117.2	47658	21616	62491	28336	191455	86815	250045	113383	390711	177169	562742	255175
1710	117.9	47966	21756	62896	28520	192695	87378	251665	114118	393242	178317	566387	256830
1720	118.6	48276	21894	63301	28701	193937	87933	253288	114844	395778	179451	570039	258463
1730	119.3	48586	22035	63708	28886	195182	88498	254914	115581	398318	180604	573698	260123
1740	120.0	48896	22176	64115	29070	196429	89064	256542	116321	400863	181759	577364	261786
1750	120.7	49207	22317	64523	29256	197679	89631	258174	117061	403413	182916	581037	263453
1760	121.3	49519	22459	64931	29441	198931	90199	259810	117803	405968	184075	584717	265123
1770	122.0	49831	22600	65341	29627	200185	90768	261448	118547	408529	185237	588404	266796
1780	122.7	50144	22742	65751	29813	201442	91339	263090	119291	411094	186401	592099	268473
1790	123.4	50457	22885	66162	29999	202702	91910	264735	120038	413664	187567	595801	270153
1800	124.1	50772	23027	66574	30186	203964	92483	266383	120786	416240	188736	599511	271836
1810	124.8	51086	23170	66987	30374	205229	93057	268035	121535	418820	189907	603228	273523
1820	125.5	51402	23313	67401	30561	206496	93632	269690	122286	421406	191081	606953	275213
1830	126.2	51718	23457	67815	30749	207766	94208	271348	123039	423998	192257	610685	276907
1840	126.9	52035	23601	68230	30938	209038	94786	273010	123793	426595	193435	614425	278604
1850	127.6	52352	23745	68647	31127	210313	95364	274676	124549	429197	194616	618174	280305
1860	128.2	52670	23889	69064	31316	211591	95944	276345	125306	431805	195799	621930	282009
1870	128.9	52989	24034	69482	31506	212872	96525	278017	126065	434419	196985	625694	283717
1880	129.6	53309	24179	69901	31696	214155	97108	279693	126826	437038	198174	629467	285429
1890	130.3	53629	24324	70321	31886	215442	97691	281373	127588	439663	199365	633247	287144
1900	131.0	53950	24470	70741	32077	216731	98276	283057	128352	442294	200558	637036	288864

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (lb/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 1500 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P > 1500 \text{ psig}$

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (kg/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 10.3 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P > 10.3 \text{ MPa}$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1

Slope / K		Slope				K							
		29.70				0.866							
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
		0.601	387.74	0.785	506.45	2.405	1581.61	3.141	2026.45	4.908	3166.46	7.069	4560.64
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
1910	131.7	54271	24614	71163	32266	218023	98854	284744	129106	444930	201737	640834	290562
1920	132.4	54594	24760	71586	32458	219318	99442	286436	129874	447573	202937	644640	292289
1930	133.1	54917	24907	72009	32650	220616	100030	288131	130643	450222	204138	648455	294020
1940	133.8	55241	25054	72434	32843	221917	100621	289830	131414	452876	205343	652279	295755
1950	134.4	55565	25201	72860	33036	223220	101212	291533	132186	455537	206550	656111	297494
1960	135.1	55890	25349	73286	33229	224527	101805	293239	132961	458204	207760	659953	299237
1970	135.8	56217	25497	73714	33423	225837	102400	294950	133737	460878	208974	663803	300984
1980	136.5	56543	25645	74142	33618	227151	102996	296665	134515	463558	210189	667663	302735
1990	137.2	56871	25794	74572	33813	228467	103593	298385	135296	466244	211408	671532	304491
2000	137.9	57200	25943	75003	34008	229786	104192	300108	136077	468937	212630	675411	306251
2010	138.6	57529	26092	75434	34204	231109	104792	301836	136861	471636	213855	---	---
2020	139.3	57859	26242	75867	34400	232435	105393	303567	137647	474342	215083	---	---
2030	140.0	58190	26392	76301	34597	233765	105997	305304	138435	477055	216314	---	---
2040	140.7	58522	26543	76736	34795	235097	106601	307044	139225	479775	217548	---	---
2050	141.3	58854	26694	77172	34993	236434	107208	308789	140016	482502	218785	---	---
2060	142.0	59188	26845	77610	35191	237773	107815	310539	140810	485236	220025	---	---
2070	142.7	59522	26997	78048	35390	239116	108425	312293	141606	487977	221269	---	---
2080	143.4	59857	27149	78488	35589	240463	109036	314052	142404	490725	222516	---	---
2090	144.1	60193	27301	78928	35789	241813	109648	315815	143204	493481	223766	---	---
2100	144.8	60530	27452	79370	35987	243167	110254	317583	143995	496243	225002	---	---
2110	145.5	60868	27605	79813	36188	244525	110870	319356	144799	499014	226259	---	---
2120	146.2	61207	27759	80258	36389	245886	111487	321134	145606	501792	227519	---	---
2130	146.9	61547	27913	80703	36592	247251	112106	322917	146415	504577	228783	---	---
2140	147.5	61888	28068	81150	36794	248620	112728	324705	147226	507371	230050	---	---
2150	148.2	62229	28223	81598	36998	249992	113350	326497	148039	510172	231321	---	---
2160	148.9	62572	28379	82047	37201	251369	113975	328295	148855	512981	232596	---	---
2170	149.6	62916	28535	82498	37406	252750	114601	330098	149673	515799	233874	---	---
2180	150.3	63260	28691	82950	37611	254134	115229	331907	150493	518624	235156	---	---
2190	151.0	63606	28848	83403	37816	255523	115859	333720	151316	521458	236441	---	---
2200	151.7	63953	29005	83858	38023	256916	116491	335539	152141	524301	237731	---	---
2210	152.4	64300	29163	84314	38230	258313	117125	337364	152969	527151	239024	---	---
2220	153.1	64649	29321	84771	38437	259714	117761	339194	153799	530011	240321	---	---
2230	153.8	64999	29480	85230	38645	261119	118398	341029	154632	532879	241623	---	---
2240	154.4	65350	29639	85690	38854	262529	119038	342871	155467	535756	242928	---	---
2250	155.1	65702	29799	86152	39063	263943	119679	344718	156305	538642	244237	---	---
2260	155.8	66055	29959	86615	39273	265362	120323	346571	157146	541537	245551	---	---
2270	156.5	66409	30120	87079	39484	266785	120969	348429	157989	544442	246868	---	---
2280	157.2	66765	30281	87545	39696	268213	121616	350294	158835	547356	248190	---	---
2290	157.9	67121	30441	88013	39905	269645	122257	352165	159671	550279	249497	---	---
2300	158.6	67479	30603	88482	40117	271083	122909	354042	160523	553212	250827	---	---
2310	159.3	67838	30766	88953	40331	272524	123563	355925	161377	556154	252162	---	---
2320	160.0	68198	30929	89425	40545	273971	124219	357815	162234	559107	253502	---	---
2330	160.6	68560	31093	89899	40760	275423	124878	359711	163094	562069	254846	---	---
2340	161.3	68922	31258	90374	40976	276880	125538	361613	163957	565042	256194	---	---
2350	162.0	69286	31423	90851	41192	278341	126201	363522	164823	568025	257547	---	---
2360	162.7	69651	31589	91330	41409	279808	126867	365438	165692	571019	258905	---	---
2370	163.4	70018	31755	91810	41627	281280	127535	367360	166564	574023	260268	---	---
2380	164.1	70385	31922	92293	41846	282758	128205	369290	167439	577037	261635	---	---

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (lb/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 1500 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P > 1500 \text{ psig}$

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (kg/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 10.3 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P > 10.3 \text{ MPa}$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1

Slope / K		Slope				K							
		29.70				0.866							
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
2390	164.8	70755	32089	92777	42066	284240	128877	371226	168318	580063	263008	---	---
2400	165.5	71125	32257	93262	42286	285728	129552	373170	169199	583100	264385	---	---
2410	166.2	71497	32426	93750	42507	287222	130230	375120	170084	586148	265768	---	---
2420	166.9	71870	32595	94239	42729	288721	130910	377078	170972	589207	267155	---	---
2430	167.5	72245	32765	94730	42952	290226	131592	379044	171864	592278	268548	---	---
2440	168.2	72621	32936	95223	43175	291736	132277	381016	172758	595361	269947	---	---
2450	168.9	72998	33107	95718	43400	293253	132965	382997	173657	598456	271350	---	---
2460	169.6	73377	33279	96215	43625	294775	133656	384985	174559	601562	272759	---	---
2470	170.3	73757	33452	96714	43852	296303	134349	386981	175464	604681	274174	---	---
2480	171.0	74139	33622	97215	44075	297838	135035	388985	176360	607813	275574	---	---
2490	171.7	74523	33796	97718	44303	299378	135733	390997	177272	610957	276999	---	---
2500	172.4	74908	33971	98223	44532	300925	136435	393017	178188	614113	278431	---	---
2510	173.1	75295	34146	98730	44762	302479	137139	395046	179108	617283	279869	---	---
2520	173.7	75683	34323	99239	44993	304038	137847	397083	180032	620466	281312	---	---
2530	174.4	76073	34499	99750	45225	305605	138557	399129	180960	623663	282762	---	---
2540	175.1	76464	34677	100263	45458	307178	139270	401183	181892	626873	284218	---	---
2550	175.8	76858	34855	100779	45692	308757	139987	403246	182827	630097	285680	---	---
2560	176.5	77252	35035	101297	45927	310344	140706	405319	183767	633335	287148	---	---
2570	177.2	77649	35215	101817	46163	311938	141429	407400	184711	636587	288623	---	---
2580	177.9	78048	35395	102340	46399	313539	142155	409491	185659	639854	290104	---	---
2590	178.6	78448	35577	102865	46637	315146	142884	411591	186611	643135	291593	---	---
2600	179.3	78850	35759	103392	46877	316762	143617	413700	187568	646432	293087	---	---
2610	180.0	79254	35943	103921	47117	318385	144353	415820	188529	649743	294589	---	---
2620	180.6	79660	36127	104454	47358	320015	145092	417949	189495	653070	296098	---	---
2630	181.3	80068	36312	104988	47600	321653	145835	420088	190465	656413	297614	---	---
2640	182.0	80477	36497	105525	47844	323299	146581	422238	191439	659772	299137	---	---
2650	182.7	80889	36684	106065	48089	324952	147331	424398	192419	663147	300667	---	---
2660	183.4	81303	36872	106608	48335	326614	148084	426568	193403	666538	302205	---	---
2670	184.1	81718	37060	107153	48582	328284	148842	428749	194392	669946	303750	---	---
2680	184.8	82136	37247	107701	48827	329963	149592	430941	195371	673372	305281	---	---
2690	185.5	82556	37437	108251	49076	331650	150356	433144	196370	676814	306841	---	---
2700	186.2	82978	37629	108805	49327	333345	151125	435359	197374	680274	308410	---	---
2710	186.8	83402	37821	109361	49580	335050	151898	437585	198383	683752	309987	---	---
2720	187.5	83829	38015	109920	49833	336763	152674	439822	199398	687249	311572	---	---
2730	188.2	84258	38209	110482	50088	338485	153455	442072	200417	690764	313165	---	---
2740	188.9	84689	38404	111048	50344	340217	154240	444333	201443	694297	314767	---	---
2750	189.6	85122	38601	111616	50602	341958	155029	446607	202473	697850	316378	---	---
2760	190.3	85558	38799	112187	50861	343708	155823	448893	203510	701422	317997	---	---
2770	191.0	85996	38997	112762	51121	345468	156621	451192	204552	705015	319626	---	---
2780	191.7	86436	39197	113339	51383	347239	157423	453504	205600	708627	321263	---	---
2790	192.4	86880	39398	113921	51646	349019	158230	455829	206654	712260	322910	---	---
2800	193.1	87325	39600	114505	51911	350809	159042	458167	207714	715914	324566	---	---
2810	193.7	87774	39803	115093	52178	352610	159858	460519	208780	719589	326232	---	---
2820	194.4	88225	40008	115684	52446	354422	160679	462885	209852	723286	327908	---	---
2830	195.1	88678	40213	116279	52715	356244	161505	465265	210931	727005	329594	---	---
2840	195.8	89135	40420	116877	52987	358077	162336	467660	212016	730747	331289	---	---
2850	196.5	89594	40628	117479	53260	359922	163172	470069	213108	734511	332996	---	---
2860	197.2	90056	40838	118085	53534	361778	164013	472493	214207	738299	334712	---	---

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (lb/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 1500 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P > 1500 \text{ psig}$

$W = S \times P \times Ksh \times Ksc \times Kn$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \times Kn \text{ (kg/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $Ksh = 1 \quad Ksc = 1 \quad Kn = 1 \text{ for } P \leq 10.3 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P > 10.3 \text{ MPa}$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1

Slope / K		Slope		K									
		29.70		0.866									
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
2870	197.9	90521	41046	118695	53806	363646	164848	474932	215296	742110	336415	---	---
2880	198.6	90989	41258	119308	54084	365525	165699	477387	216409	745946	338153	---	---
2890	199.3	91459	41471	119926	54364	367417	166557	479857	217528	749806	339902	---	---
2900	199.9	91933	41686	120547	54646	369321	167419	482344	218655	753692	341663	---	---
2910	200.6	92410	41902	121173	54929	371237	168288	484847	219789	757603	343435	---	---
2920	201.3	92891	42120	121803	55215	373167	169162	487367	220931	761540	345219	---	---
2930	202.0	93374	42339	122436	55502	375109	170042	489903	222080	765504	347015	---	---
2940	202.7	93861	42560	123075	55791	377065	170928	492458	223237	769495	348823	---	---
2950	203.4	94351	42782	123718	56082	379034	171820	495029	224403	773513	350644	---	---
2960	204.1	94845	43005	124365	56376	381017	172719	497619	225576	777560	352477	---	---
2970	204.8	95342	43231	125017	56671	383014	173623	500227	226758	781636	354324	---	---
2980	205.5	95843	43458	125673	56968	385025	174535	502854	227948	785740	356183	---	---
2990	206.2	96347	43686	126335	57268	387051	175453	505501	229147	789875	358057	---	---
3000	206.8	96855	43916	127001	57570	389093	176377	508166	230354	794041	359944	---	---
3010	207.5	---	---	---	57874	391149	177309	510852	231571	798237	361845	---	---
3020	208.2	---	---	---	58180	393221	178247	513558	232796	802465	363760	---	---
3030	208.9	---	---	---	58489	395309	179193	516285	234032	806726	365690	---	---
3040	209.6	---	---	---	58800	397413	180146	519033	235276	811020	367635	---	---
3050	210.3	---	---	---	59113	399534	181106	521803	236531	815348	369595	---	---
3060	211.0	---	---	---	59425	401671	182061	524594	237777	819710	371542	---	---
3070	211.7	---	---	---	59743	403826	183036	527409	239051	824108	373533	---	---
3080	212.4	---	---	---	60064	405999	184020	530246	240336	828541	375541	---	---
3090	213.0	---	---	---	60388	408189	185012	533107	241632	833012	377565	---	---
3100	213.7	---	---	---	60715	410398	186012	535992	242938	837520	379607	---	---
3100.5	213.8	410509	164784	410509	162443	410509	159790	410509	156981	410509	154173	410509	151676
3150	217.2	421734	168344	421734	166124	421734	163271	421734	160259	421734	157564	421734	154870
3200	220.6	380320	171972	373928	169718	367536	166658	361144	163760	354752	160861	348360	158124
3250	224.1	388760	175786	382269	173333	375417	170390	368926	167283	362074	164176	355582	161396
3300	227.5	397278	179643	390687	177153	383730	173998	376774	170843	369817	167689	362860	164866
3350	231.0	406245	183704	399183	181176	392121	177805	385059	174603	377997	171401	370564	168367
3400	234.4	416055	187804	408511	185239	400967	181818	393423	178397	385879	174976	378712	171897
3450	237.9	425592	192284	417555	189508	409900	185863	402246	182219	394209	178748	386554	175451
3500	241.3	435617	196822	427464	193829	418923	190132	410769	186435	402616	182738	394463	179217
3550	244.8	446540	201589	437484	198554	428821	194625	420158	190518	411494	186590	402438	183019
3600	248.2	457596	206592	448412	203333	438829	199168	429645	194823	420461	190658	411277	186856
3650	251.7	469594	212014	459474	208526	449758	203937	439637	199348	429517	194942	419801	190904
3700	255.1	482978	218072	471898	214165	461229	209141	450150	204117	439481	199279	428402	194814
3750	258.6	497381	224404	485321	220256	473260	214787	461200	209318	449556	203850	437496	198947
3800	262.0	512837	231400	499774	226623	486289	220509	473226	214585	459741	208661	446678	203120
3850	265.4	529806	239073	514863	233653	500348	226877	485406	220102	470891	213520	455949	207519
3900	268.9	548337	247267	531904	241385	515471	233737	498606	226286	482173	218834	465740	212167
3950	272.3	568918	256386	550085	249634	531691	241094	512858	232555	494026	224214	475193	216866
4000	275.8	590729	266058	569885	258617	548597	248964	527753	239110	506466	229658	485621	221413

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

3500 Orifice Capacities SubCritical ASME - For non-code applications multiply capacity by 1.1													
Slope / K		Slope				K							
		29.70				0.866							
Flow Area		in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>	in <sup>2</sup>	mm <sup>2</sup>
Designation		35X5		35X6		35X7		35X8		35X9		35X1	
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4050	279.2	619639	278934	594943	269975	570248	258574	545103	247172	520407	235974	495711	226608
4100	282.7	650444	292468	621808	282162	592717	268765	564081	255574	534991	242589	505901	231665
4150	286.1	680891	305830	648227	294147	615103	279127	582438	264106	549314	249295	516649	236986
4200	289.6	711881	---	675099	---	637852	---	601071	---	564290	---	527509	241937
4250	293.0	---	---	---	---	---	---	---	---	---	---	538949	233061
4300	296.5	---	---	---	---	---	---	---	---	---	---	550512	234067
4350	299.9	---	---	---	---	---	---	---	---	---	---	562678	239186
4400	303.4	---	---	---	---	---	---	---	---	---	---	575464	244353
4450	306.8	---	---	---	---	---	---	---	---	---	---	588394	249807
4500	310.3	---	---	---	---	---	---	---	---	---	---	601467	255547

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_US \text{ table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_SI \text{ table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		750	400	760	404.4	770	410	780	415.6	790	421.1	800	426.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	---	---	---	---	---	---	---	---	---	---	615189	261124
4600	317.2	---	---	---	---	---	---	---	---	---	---	629065	266752
4650	320.6	---	---	---	---	---	---	---	---	---	---	643611	272916
4700	324.1	---	---	---	---	---	---	---	---	---	---	658323	279150
4750	327.5	---	---	---	---	---	---	---	---	---	---	673726	285693
4800	330.9	---	---	---	---	---	---	---	---	---	---	689307	292062
4850	334.4	---	---	---	---	---	---	---	---	---	---	705602	298753
4900	337.8	---	---	---	---	---	---	---	---	---	---	721541	305519
4950	341.3	---	---	---	---	---	---	---	---	---	---	738755	312609
5000	344.7	---	---	---	---	---	---	---	---	---	---	755613	319770
5050	348.2	---	---	---	---	---	---	---	---	---	---	773218	327020
5100	351.6	---	---	---	---	---	---	---	---	---	---	790458	334351
5150	355.1	---	---	---	---	---	---	---	---	---	---	808455	341761
5200	358.5	---	---	---	---	---	---	---	---	---	---	825500	348982
5250	362.0	---	---	---	---	---	---	---	---	---	---	843303	356286
5300	365.4	---	---	---	---	---	---	---	---	---	---	861293	363666
5350	368.9	---	---	---	---	---	---	---	---	---	---	878879	371380
5400	372.3	---	---	---	---	---	---	---	---	---	---	896642	378642
5450	375.8	---	---	---	---	---	---	---	---	---	---	914581	385974
5500	379.2	---	---	---	---	---	---	---	---	---	---	932088	393652
5550	382.7	---	---	---	---	---	---	---	---	---	---	949760	401116
5600	386.1	---	---	---	---	---	---	---	---	---	---	967599	408380
5650	389.6	---	---	---	---	---	---	---	---	---	---	984351	415709
5700	393.0	---	---	---	---	---	---	---	---	---	---	1001878	422816
5750	396.4	---	---	---	---	---	---	---	---	---	---	1018287	429973
5800	399.5	---	---	---	---	---	---	---	---	---	---	1035470	436194



# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		810	432.2	820	437.8	830	443.3	840	448.9	850	454.4	860	460
Set Pressure		Orifice Capacity											
		psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	410509	149803	410509	147931	410509	146058	410509	144186	410509	142781	410509	141377
3150	217.2	421734	152967	421734	150907	421734	149005	421734	147102	421734	145517	421734	144091
3200	220.6	343744	156031	339482	154098	335221	152005	330605	150073	326343	148463	323147	146852
3250	224.1	350894	159270	346206	157144	341878	155019	337190	152893	332502	151258	329256	149786
3300	227.5	358100	162708	353340	160384	348580	158225	343820	155901	339059	154241	335764	152580
3350	231.0	365732	166007	360529	163648	355697	161288	350493	158929	345290	157075	341945	155390
3400	234.4	373054	169503	367773	166937	362492	164543	357211	161977	351930	160095	348158	158385
3450	237.9	380813	172848	375072	170244	369331	167641	363973	165038	358232	163129	354405	161394
3500	241.3	388639	176401	382815	173584	376603	170943	370779	168126	364956	166190	361073	164253
3550	244.8	396531	180162	390231	177127	383930	174270	378024	171234	371723	169270	367785	167306
3600	248.2	404489	183778	398101	180700	391313	177622	384924	174544	378136	172371	374143	170198
3650	251.7	412919	187600	406037	184296	399155	181175	392273	177871	384986	175485	380938	173466
3700	255.1	421015	191464	414039	187929	406653	184580	399267	181231	392291	178626	387777	176393
3750	258.6	429594	195364	422108	191781	414623	188198	406721	184426	399235	181786	394661	179523
3800	262.0	438671	199490	430665	195477	422237	191846	414230	188025	406224	185158	401167	182674
3850	265.4	447410	203454	438872	199389	430333	195324	421795	191258	413257	188355	408134	185838
3900	268.9	456659	207854	447578	203540	438496	199226	429415	194716	420334	191774	415144	189225
3950	272.3	465996	212298	456361	207532	446725	202964	437090	198396	427455	195219	422199	192439
4000	275.8	475421	216587	465221	211760	455021	206934	445264	201906	435064	198689	429298	195873
4050	279.2	484935	221315	474608	216021	463831	210931	453055	205637	442279	202176	436441	199122
4100	282.7	494992	226101	483628	220536	472265	214971	461356	209200	449992	205696	444083	202398
4150	286.1	504688	231145	493186	225095	481225	219046	469723	212996	457761	209241	451781	205903
4200	289.6	514938	235815	502832	229481	490262	223148	478156	216814	466051	213014	459067	209425
4250	293.0	525758	229856	513038	226652	499847	223448	486656	220243	473936	216825	466869	213194
4300	296.5	536689	231473	522867	228879	509521	226502	495699	223909	481876	220450	474727	216560
4350	299.9	548213	236563	533748	233720	519283	230878	504337	228036	489872	224319	482639	220384
4400	303.4	559858	241479	544252	238383	529134	235287	513528	232191	497923	228210	490120	224230
4450	306.8	572118	246452	555349	243098	539073	239743	522798	236389	506029	232139	498137	227890
4500	310.3	584511	251702	567055	248084	549600	244240	532144	240621	514688	236324	506709	231801

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		810	432.2	820	437.8	830	443.3	840	448.9	850	454.4	860	460
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	596531	257008	578378	253121	560225	249005	541568	244889	523415	240545	514842	235743
4600	317.2	609693	262591	590322	257968	570950	253807	551579	249415	532207	244561	523031	239707
4650	320.6	622999	268243	602387	263336	582290	258663	561678	253756	541066	248849	531790	243708
4700	324.1	636969	273954	615094	268759	593219	263563	571866	258367	549991	253172	540616	247740
4750	327.5	650567	279965	627934	274237	604775	268747	582142	263019	559509	257530	548982	252040
4800	330.9	665373	286032	641438	280003	616972	273974	593038	267944	569104	262156	558466	256127
4850	334.4	679807	292417	654549	285838	629291	279502	603496	272922	578239	266587	567491	260495
4900	337.8	694938	298625	668335	291732	641732	284593	614586	277699	587983	271299	576582	264652
4950	341.3	710236	305148	682265	297687	653746	290226	625775	282765	597256	275802	585739	269336
5000	344.7	726253	311732	696338	303693	666978	295906	637064	287868	607703	280835	594962	273801
5050	348.2	741887	318648	711115	310022	679783	301650	648452	293024	617679	285667	604811	278310
5100	351.6	757687	325383	725481	316160	692710	307449	660504	298225	627733	290539	614738	282853
5150	355.1	774223	332189	739991	322617	706329	313303	672096	303730	637864	295452	624171	287690
5200	358.5	790360	339055	754644	328868	719504	319203	683788	309016	648648	300396	634246	292298
5250	362.0	806663	346001	770023	335452	732801	325167	696161	314618	659521	305652	644399	297213
5300	365.4	823131	353017	784969	341836	746806	331187	708644	320005	670482	310953	655217	301902
5350	368.9	839172	359825	800058	348539	760352	336983	720645	325697	681531	316023	665530	306886
5400	372.3	855967	366979	815292	355045	774019	343382	733344	331447	692669	321412	675920	311919
5450	375.8	872323	373929	830669	361611	788411	349566	746153	337248	704499	326846	686992	316991
5500	379.2	888834	380945	845580	368237	802326	355530	759073	342823	715819	332325	698152	322104
5550	382.7	905500	388015	860624	374914	816363	361813	772103	348712	727227	337841	708785	327248
5600	386.1	921700	395161	875801	381380	830522	368161	784623	354379	739344	343129	720117	332160
5650	389.6	938043	402088	891110	388184	844802	374280	797869	360375	751561	349025	731536	337675
5700	393.0	953899	408789	906552	394476	858573	380449	811225	366422	763246	354398	742413	342662
5750	396.4	969888	415824	921489	401097	873090	386947	824054	372509	775656	360092	754640	348252
5800	399.5	986009	421644	936548	406804	887087	392254	837626	377414	788165	364901	765683	352680

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		870	465.6	880	471.1	890	476.7	900	482.2	910	487.8	920	493.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	410509	139972	410509	138724	410509	137320	410509	136227	410509	135135	410509	134043
3150	217.2	421734	142664	421734	141396	421734	139969	421734	138860	421734	137591	421734	136482
3200	220.6	320307	145403	317111	143954	314270	142505	311074	141378	308588	140250	306102	138962
3250	224.1	326371	148151	323125	146679	319880	145207	316634	143899	314110	142755	311946	141610
3300	227.5	332469	150920	329173	149426	325878	147765	322582	146603	320019	145275	317456	144113
3350	231.0	338599	153704	335254	152187	331538	150502	328192	149322	325591	147974	322989	146626
3400	234.4	344763	156675	340991	154964	337596	153254	334202	151885	331184	150517	328544	149149
3450	237.9	350960	159485	347133	157749	343689	156014	339861	154626	337182	153237	334120	151849
3500	241.3	357191	162317	353308	160556	349814	158796	345931	157211	342825	155803	340108	154394
3550	244.8	363848	165342	359910	163378	355578	161414	351641	159985	348884	158557	345734	156950
3600	248.2	370150	168207	365757	166215	361764	164223	357771	162775	354577	161145	351383	159697
3650	251.7	376485	171263	372437	169060	367984	167041	363530	165389	360697	163920	357458	162268
3700	255.1	383263	174160	378750	171927	374236	169880	369722	168206	366439	166531	363156	164856
3750	258.6	389670	177072	385096	174809	380521	172735	375947	171038	372620	169340	369293	167643
3800	262.0	396532	180190	391897	177897	386840	175604	382204	173884	378412	171974	375041	170254
3850	265.4	403011	183322	398315	180805	393192	178482	388069	176740	384653	174804	380811	173062
3900	268.9	409955	186480	404766	183735	399576	181382	394387	179421	390928	177656	387036	175695
3950	272.3	416944	189658	411250	186878	405994	184296	400739	182509	396797	180523	392855	178537
4000	275.8	423976	192857	418211	190041	412446	187226	407124	185416	403132	183405	399141	181394
4050	279.2	431053	196068	425216	193014	419379	190367	413542	188331	409501	186092	405010	184055
4100	282.7	438174	199306	431811	196215	425902	193329	419993	191268	415447	189001	411357	186940
4150	286.1	445340	202774	438899	199436	432918	196515	426477	194220	421876	192134	417736	189839
4200	289.6	452549	206048	446031	202670	439513	199503	432995	197181	428339	194858	424148	192536
4250	293.0	460274	209562	453207	205931	446612	202513	439545	200163	434834	197813	430123	195463
4300	296.5	467577	212886	460428	209212	453278	205754	446129	203376	441362	200783	436596	198405
4350	299.9	474925	216448	467693	212513	460460	209015	452746	206391	447924	203986	443103	201362
4400	303.4	482804	220029	475002	216048	467199	212289	459396	209635	454519	206982	449642	204328
4450	306.8	490246	223641	482355	219392	474463	215366	466572	212683	461640	209999	456215	207315
4500	310.3	498230	227278	490251	222756	481772	218685	473294	215971	468307	213031	462821	210317

# Orifice Capacities

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 51.5 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_US} \text{ table}$$

$$K_n = 1 \text{ for } P > 3200 \text{ psig}$$

$$K_n = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 5.25 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_SI} \text{ table}$$

$$K_n = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$K_n = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		870	465.6	880	471.1	890	476.7	900	482.2	910	487.8	920	493.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	506270	230941	497698	226368	489125	222252	480553	219280	475006	216307	469460	213335
4600	317.2	514365	234621	505699	229998	496523	225606	487857	222601	481739	219365	476132	216360
4650	320.6	522515	238568	513240	233427	503964	228988	494689	225950	488505	222679	482837	219641
4700	324.1	530720	242308	520825	236876	511450	232153	501554	229083	495304	225776	489575	222706
4750	327.5	538981	246312	528980	240822	518980	235810	508979	232469	502663	229127	496347	225786
4800	330.9	547829	250339	537191	244550	526554	239244	515916	235868	509534	232492	503151	228874
4850	334.4	556205	254403	545457	248311	534710	242950	523424	239294	516975	235639	509989	232228
4900	337.8	565180	258251	553779	252096	542378	246434	530976	242741	524461	239048	517403	235355
4950	341.3	573673	262621	562155	255906	550090	250186	538572	246207	531443	242477	524313	238498
5000	344.7	582775	266768	570587	259734	558400	253706	546213	249938	539011	245919	531256	241900
5050	348.2	591943	270952	579074	263849	566766	257506	553897	253447	546064	249388	538791	245328
5100	351.6	601177	275167	588182	267737	574621	261075	561626	256976	553716	252620	545806	248521
5150	355.1	610478	279670	596785	271909	583092	264923	569399	260525	561411	256386	553424	251987
5200	358.5	619845	283939	605443	275842	591618	268789	577216	264348	569151	259646	560510	255206
5250	362.0	629860	288510	614738	280071	599617	272687	585077	268204	576354	263457	568211	258710
5300	365.4	639365	293116	624100	284331	608835	276610	592983	271818	584763	267026	575957	262234
5350	368.9	649529	297749	633528	288612	617526	280551	601525	275714	592043	270608	583154	265771
5400	372.3	659172	302154	642424	292932	625675	284524	609525	279370	599954	274217	590982	269335
5450	375.8	669485	306863	651978	297282	635075	288522	617568	283321	607909	278120	598250	272645
5500	379.2	679876	311607	662209	301662	643932	292822	625656	287297	615909	281772	606161	276247
5550	382.7	690343	316656	671901	306064	652845	296865	634403	291290	624567	285715	614117	279861
5600	386.1	700268	321473	681040	310504	661812	301222	642585	295316	632660	289410	622116	283785
5650	389.6	711511	326324	691486	315257	671461	305610	651436	299367	640798	293408	630160	287449
5700	393.0	722211	331211	701378	319760	680545	309741	659712	303443	648980	297145	638248	291133
5750	396.4	732988	336124	711336	324285	690321	314178	668668	307825	657842	301183	646380	294830
5800	399.5	743843	340458	722003	328528	700163	318052	677680	311359	666118	304666	654556	298265

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		930	498.9	940	504.4	950	510	960	515.6	970	521.1	980	526.7
Set Pressure		Orifice Capacity											
		psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	410509	132950	410509	132014	410509	131078	410509	130142	410509	129205	410509	128269
3150	217.2	421734	135372	421734	134421	421734	133470	421734	132519	421734	131568	421734	130617
3200	220.6	303972	137835	301486	136869	299000	135903	296869	134776	295094	133809	292963	132843
3250	224.1	309421	140302	306897	139321	304373	138339	302209	137195	300045	136214	298242	135232
3300	227.5	314893	142785	312330	141788	309767	140626	307570	139630	305373	138634	303176	137638
3350	231.0	320387	145277	317785	144266	315184	143086	312954	142075	310723	141064	308493	139884
3400	234.4	325903	147780	322886	146583	320245	145557	317982	144360	315719	143333	313455	142307
3450	237.9	331441	150461	328762	149246	325700	148031	323404	146816	321108	145775	318811	144560
3500	241.3	337002	152986	334284	151754	331178	150521	328848	149289	326519	148057	324189	147000
3550	244.8	342978	155522	339827	154272	336677	153022	334315	151772	331952	150522	329195	149451
3600	248.2	348588	158067	345393	156800	342199	155532	339803	154265	337407	152997	334612	151730
3650	251.7	354220	160616	350981	159331	347742	158046	345313	156761	342480	155477	340051	154192
3700	255.1	359874	163182	356591	161879	353308	160577	350846	159274	347974	157972	345512	156669
3750	258.6	365550	165946	362223	164626	358896	163117	355985	161797	353490	160477	350579	159157
3800	262.0	371248	168534	367877	167006	364506	165668	361556	164139	358606	162802	356078	161464
3850	265.4	377396	171126	373553	169577	370138	168222	367150	166867	364161	165318	361600	163963
3900	268.9	383144	173930	379252	172361	375792	170793	372765	169420	369738	167851	366711	166479
3950	272.3	388914	176551	385410	174962	381468	173373	378403	171983	375337	170394	372271	169004
4000	275.8	395149	179383	391158	177573	387167	176165	384062	174556	380958	172947	377853	171540
4050	279.2	400969	182019	396928	180391	392887	178762	389744	176929	386601	175504	383458	173875
4100	282.7	407266	184673	402720	183024	398630	181375	395448	179726	392266	178077	388630	176428
4150	286.1	413595	187545	408995	185876	404854	183998	401174	182329	397953	180660	394733	178991
4200	289.6	419493	190214	415302	188525	410646	186625	407387	184936	403663	183247	399938	181558
4250	293.0	425883	193113	421172	191191	416461	189482	413163	187559	409394	185850	405625	184141
4300	296.5	431830	196028	427063	194083	422297	192138	418484	190192	415148	188463	411335	186518
4350	299.9	438281	198958	432977	196771	428156	194803	424781	193054	420923	191087	417066	189119
4400	303.4	444765	201674	439888	199684	434524	197694	430622	195704	426721	193713	422820	191944
4450	306.8	451283	204631	445857	202395	440432	200382	436487	198369	432541	196357	428595	194344
4500	310.3	457335	207377	451849	205342	446362	203081	442373	201045	438383	199010	434393	196975

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		930	498.9	940	504.4	950	510	960	515.6	970	521.1	980	526.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	463913	210362	458366	208076	452819	206018	448281	203960	444247	201673	440213	199615
4600	317.2	470014	213355	464407	211044	458799	208732	454211	206652	450133	204340	445545	202260
4650	320.6	477169	216370	470985	214033	465317	211697	460679	209360	456041	207023	451919	204920
4700	324.1	483325	219400	477075	216802	471346	214440	466659	212078	462492	209717	457805	207591
4750	327.5	490031	222444	484241	219819	477925	217432	473187	215046	468450	212659	463713	210272
4800	330.9	496769	225498	490387	222845	484004	220433	479217	217780	474430	215368	469643	213198
4850	334.4	503541	228572	497092	225892	490106	223211	485269	220775	480432	218094	475596	215657
4900	337.8	510345	231662	503830	228708	496772	226246	491886	223538	487000	221076	481570	218614
4950	341.3	517183	234767	510053	231783	502923	229047	497987	226560	493051	223825	487567	221338
5000	344.7	524054	237880	516852	235117	509651	232103	504111	229340	499125	226577	493586	224065
5050	348.2	530958	241015	523685	237971	515852	235180	510816	232390	505221	229599	499626	227062
5100	351.6	538460	244166	530550	241091	522640	238273	516990	235198	511905	232380	506254	229562
5150	355.1	545436	247589	537449	244226	529461	241380	523756	238276	518050	235171	512345	232325
5200	358.5	552445	250765	544380	247369	536316	244496	530555	241361	524794	238227	518458	235353
5250	362.0	559488	253963	551345	250534	542621	247370	536806	244205	530990	241040	525174	238139
5300	365.4	567150	257442	558343	253981	549537	250520	543666	247325	537207	244130	531336	241202
5350	368.9	574264	260665	565374	256903	556485	253678	549966	250184	544040	246960	537521	243735
5400	372.3	581411	264181	572439	260384	563466	256858	556887	253332	550307	250077	543727	246822
5450	375.8	589195	267444	579536	263612	569877	260053	563237	256495	556596	252936	549956	249651
5500	379.2	596414	270722	586667	266855	576919	263263	570218	259672	563517	256081	556816	252766
5550	382.7	604281	274287	594445	270105	583995	266482	577233	262858	570471	259234	563094	255611
5600	386.1	612192	277878	601648	273659	591103	269722	584281	265784	576837	262128	570015	258472
5650	389.6	619521	281206	608883	276950	598245	272977	590736	269288	583852	265316	576343	261627
5700	393.0	626884	284836	616152	280255	605420	276247	597844	272240	590268	268518	582693	264797
5750	396.4	634917	288189	623454	283857	612628	279526	604986	275483	597344	271440	589702	267686
5800	399.5	642993	291572	631431	286916	619869	282551	612161	278477	604452	274403	596744	270329

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		990	532.2	1000	537.8	1010	543.3	1020	548.9	1030	554.4	1040	560
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	410509	127489	410509	126709	410509	125928	410509	125148	410509	124368	410509	123744
3150	217.2	421734	129824	421734	129032	421734	128239	421734	127288	421734	126654	421734	125861
3200	220.6	290833	132038	289057	131233	287282	130267	285506	129462	283731	128657	282310	128013
3250	224.1	296078	134415	293914	133434	292111	132616	290308	131635	288505	130981	287062	130163
3300	227.5	301345	136641	299149	135811	297318	134815	295487	133985	293656	133155	291825	132325
3350	231.0	306263	139042	304033	138030	302175	137188	300316	136177	298458	135334	296600	134491
3400	234.4	311192	141281	308929	140426	307043	139399	305157	138544	303271	137689	301385	136834
3450	237.9	316515	143692	314219	142651	312305	141783	310009	140742	308095	139875	306181	139007
3500	241.3	321471	145944	319142	145064	317201	144008	315259	142951	312930	142071	310989	141191
3550	244.8	326833	148379	324470	147308	322501	146415	320139	145344	318170	144451	316201	143558
3600	248.2	332216	150825	329421	149738	327425	148652	325428	147565	323432	146660	321036	145755
3650	251.7	337217	153090	334788	151989	332764	151071	330335	149970	328311	148868	325882	147951
3700	255.1	342639	155553	340177	154437	337715	153320	335663	152204	333201	151273	331149	150157
3750	258.6	348083	158026	345172	156894	342677	155763	340598	154632	338102	153500	336023	152557
3800	262.0	353128	160318	350600	159171	348072	158025	345543	156878	343436	155732	340908	154776
3850	265.4	358611	162802	355623	161447	353061	160285	350927	159124	348365	157962	345804	156994
3900	268.9	364116	165106	361089	163930	358494	162753	355900	161380	353737	160400	351143	159224
3950	272.3	369205	167614	366139	166422	363512	165231	361322	163841	358694	162848	356066	161656
4000	275.8	374749	170132	371644	168925	368983	167518	366323	166311	363662	165104	361001	164099
4050	279.2	379866	172654	376723	171229	374028	170007	371334	168582	368640	167360	365946	166342
4100	282.7	385448	175192	382266	173749	379539	172306	376812	171070	374084	169833	371357	168596
4150	286.1	391052	177531	387832	176071	385072	174819	382311	173359	379551	172107	376330	170855
4200	289.6	396679	180080	392954	178603	390161	177125	387367	175858	384574	174591	381780	173325
4250	293.0	402327	182646	398559	181151	395732	179655	392434	178160	389607	176878	386781	175596
4300	296.5	407521	185222	403708	183493	400849	182196	397989	180467	395129	179170	391793	177873
4350	299.9	413209	187588	409351	186058	406459	184528	403566	182997	400190	181685	397298	180374
4400	303.4	418918	190175	415017	188627	412091	187079	408677	185310	405751	183984	402337	182657
4450	306.8	424650	192778	420211	190989	417251	189424	413799	187858	410840	186516	407387	185175
4500	310.3	430403	195392	425915	193582	422922	191999	419431	190190	416439	188833	412948	187476

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_US \text{ table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_SI \text{ table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		990	532.2	1000	537.8	1010	543.3	1020	548.9	1030	554.4	1040	560
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	436179	198015	432145	196186	428615	194585	425085	192756	421555	191384	418026	189783
4600	317.2	441467	200642	437389	198792	433820	197174	430252	195325	426683	193707	423115	192320
4650	320.6	447281	203285	443159	201416	439552	199546	435944	197911	432337	196275	428730	194639
4700	324.1	453117	205702	448951	203813	445305	202159	441659	200270	438014	198617	434368	197200
4750	327.5	458976	208363	454239	206453	450554	204544	446870	202634	443186	201202	439501	199532
4800	330.9	464857	211027	460070	209098	456347	207168	452624	205239	448900	203551	445177	201862
4850	334.4	470759	213708	465923	211758	462161	209809	457862	207860	454100	206154	450338	204448
4900	337.8	476684	216399	471798	214429	467997	212460	463654	210490	459854	208767	455510	207044
4950	341.3	482631	219348	477695	217110	473307	215120	469468	212882	465629	211141	461242	209400
5000	344.7	488600	221804	483060	219794	479183	217785	474751	215524	470873	213766	466441	212007
5050	348.2	494591	224779	488996	222495	485080	220466	480604	218182	476687	216406	472211	214631
5100	351.6	500604	227512	494954	225206	490999	222900	486479	220851	481959	218801	478004	217007
5150	355.1	506640	230255	500934	227927	496370	225599	492376	223270	487812	221459	483247	219389
5200	358.5	512697	233002	506936	230652	502328	228301	498295	225950	493687	224121	489078	222031
5250	362.0	519358	235766	512960	233392	508308	231019	503655	228645	499002	226536	494350	224690
5300	365.4	525465	238539	519007	236143	514310	233747	509613	231085	504916	229221	500219	227092
5350	368.9	531594	241316	525075	238898	520334	236479	515593	233792	510259	231642	505518	229492
5400	372.3	537147	244381	531166	241669	525782	239228	520997	236515	516212	234346	511426	232176
5450	375.8	543919	246914	537278	244450	531845	241713	527016	239249	522186	237059	516753	234869
5500	379.2	550114	250003	543413	247241	537930	244755	533057	241992	527574	239782	522700	237572
5550	382.7	556332	253102	549570	250314	544037	247527	539119	244739	533587	242231	528669	240001
5600	386.1	562572	255659	555749	252847	550166	250315	545204	247222	539622	244972	534040	242722
5650	389.6	568833	258789	561950	255952	556318	253114	550686	249993	545679	247722	540047	245452
5700	393.0	575748	261648	568173	258785	562491	255636	556809	252774	551759	250197	546077	247907
5750	396.4	582060	264510	574418	261622	568687	258735	562955	255558	557224	252959	551492	250649
5800	399.5	589036	267420	581328	264219	575546	261018	569765	258108	563342	255489	557561	252870



# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_US \text{ table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_SI \text{ table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1050	565.6	1060	571.1	1070	576.7	1080	582.2	1090	587.8	1100	593.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	410509	122963	410509	122339	410509	121559	410509	120935	410509	120311	410509	119686
3150	217.2	421734	125069	421734	124435	421734	123642	421734	123008	421734	122374	421734	121740
3200	220.6	280535	127208	278759	126563	277339	125758	275918	125114	274143	124470	272722	123826
3250	224.1	285259	129346	283456	128528	282013	127874	280571	127220	278768	126402	277325	125748
3300	227.5	289995	131495	288164	130830	286699	130000	285235	129336	283404	128672	281939	128008
3350	231.0	294741	133648	292883	132806	291396	132132	289909	131458	288051	130615	286564	129941
3400	234.4	299499	135978	297613	135123	296104	134268	294595	133584	292709	132900	291200	132216
3450	237.9	304268	138139	302354	137271	300823	136577	299292	135710	297379	135015	295848	134148
3500	241.3	309047	140311	307106	139430	305553	138550	304000	137846	302059	136966	300506	136261
3550	244.8	313838	142487	312263	141594	310294	140701	308719	139987	306750	139273	305175	138380
3600	248.2	319039	144850	317043	143944	315046	143039	313449	142134	311453	141409	309456	140504
3650	251.7	323858	147033	321834	145931	319810	145014	318190	144279	316166	143361	314142	142627
3700	255.1	328687	149227	326636	148296	324584	147366	322942	146436	320891	145691	318839	144761
3750	258.6	333528	151426	331449	150483	329369	149540	327706	148597	325626	147843	323547	146900
3800	262.0	338379	153821	336272	152674	334165	151719	332480	150764	330373	149999	328266	149044
3850	265.4	343669	155833	341534	154865	339400	153897	337265	152929	335131	152155	332996	151187
3900	268.9	348548	158243	346386	157067	344224	156086	342062	155302	339899	154321	337737	153341
3950	272.3	353438	160663	351249	159472	349059	158479	346869	157486	344679	156493	342489	155500
4000	275.8	358340	162892	356122	161686	353905	160680	351687	159675	349470	158669	347252	157664
4050	279.2	363252	165121	361007	163899	358762	162677	356517	161863	354272	160845	352027	159827
4100	282.7	368630	167360	366357	166123	364085	165092	361812	164062	359085	163031	356812	162001
4150	286.1	373570	169812	371270	168561	368969	167309	366669	166266	363909	165223	361608	164180
4200	289.6	378521	172058	376193	170791	373865	169736	371537	168680	369209	167414	366416	166358
4250	293.0	383483	174315	381127	173033	378772	171751	376416	170683	374061	169615	371234	168547
4300	296.5	388933	176576	386550	175280	383690	173983	381307	172902	378923	171822	376064	170741
4350	299.9	393922	179062	391512	177750	389101	176438	386208	175345	383797	174252	380904	173159
4400	303.4	398923	181330	396485	180003	394046	178676	391120	177571	388682	176465	385756	175138
4450	306.8	403935	183609	401469	182491	399003	181149	396044	179807	393578	178689	390618	177571
4500	310.3	409456	185893	406963	184536	403970	183180	401477	182049	398484	180692	395492	179561

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_US \text{ table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 2.405 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from } Ksc\_SI \text{ table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 1551.61 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1050	565.6	1060	571.1	1070	576.7	1080	582.2	1090	587.8	1100	593.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	415000	188411	411975	187039	408949	185667	406428	184295	403402	183152	400881	182009
4600	317.2	420056	190702	416997	189315	413939	187928	411390	186772	408331	185385	405782	184230
4650	320.6	425638	193237	422547	191835	419455	190200	416363	189031	413271	187630	410695	186461
4700	324.1	430722	195547	427597	194130	424472	192713	421347	191296	418222	190115	415618	188698
4750	327.5	435817	198100	432659	196429	429500	194997	426342	193565	423184	192371	420553	190939
4800	330.9	441454	200415	438263	198727	435072	197280	431880	195833	428689	194627	425498	193180
4850	334.4	446576	202742	443352	201280	440128	199574	436903	198112	433679	196894	430455	195432
4900	337.8	451710	205320	448452	203597	445195	201874	441937	200643	439223	199166	435965	197688
4950	341.3	457403	207660	454112	205919	450821	204427	447531	202934	444240	201442	440949	199950
5000	344.7	462563	210249	459240	208491	455916	206732	452592	205225	449268	203718	445944	202462
5050	348.2	468295	212601	464938	210825	461021	209303	457665	207781	454308	206258	450951	204736
5100	351.6	473483	215214	470093	213421	466138	211627	462748	210090	459358	208553	455968	207015
5150	355.1	478683	217578	475260	215767	471837	213956	467843	212404	464420	210852	460996	209300
5200	358.5	484470	220203	481013	218374	476981	216546	473525	214979	469492	213150	466036	211583
5250	362.0	489697	222580	486207	220734	482136	218888	478647	217305	474576	215723	471086	214141
5300	365.4	495522	225228	491413	223364	487890	221235	483780	219637	480257	218040	476148	216176
5350	368.9	500777	227611	496629	225462	493073	223580	488924	221968	485369	220356	481220	218475
5400	372.3	506641	230006	502454	228107	498267	225937	494678	224310	490491	222683	486902	221055
5450	375.8	511924	232679	507698	230489	504076	228573	499850	226931	496228	225014	492002	223372
5500	379.2	517826	235362	513562	233152	509297	230942	505642	229285	501378	227351	497113	225694
5550	382.7	523136	237771	518833	235541	515145	233589	510842	231638	506539	229966	502235	228015
5600	386.1	529078	240471	524736	238221	520394	235971	516052	234003	511711	232315	507369	230346
5650	389.6	534415	242899	530035	240628	525655	238358	521274	236656	516894	234669	512513	232683
5700	393.0	540395	245617	535976	243327	531557	241037	526507	239033	522088	237029	517669	235311
5750	396.4	545761	248050	541303	245740	536845	243430	532387	241697	527930	239676	523472	237655
5800	399.5	551779	250542	547283	247923	542787	245595	538290	243849	533151	241812	528655	239775

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $K = 0.866$   
 $Ksh = 1 \text{ } Ksc = \text{from } Ksc\_US \text{ table}$   
 $Kn = 1 \text{ for } P > 3200 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$   
 $A = 2.405 \text{ in}^2$   
 For Non-code applications multiply capacity by 1.1

$W = S \times P \times Ksh \times Ksc$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $K = 0.866$   
 $Ksh = 1 \text{ } Ksc = \text{from } Ksc\_SI \text{ table}$   
 $Kn = 1 \text{ for } P > 22.1 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$   
 $A = 1551.61 \text{ mm}^2$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547											
Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1110	598.9	1120	604.4	1130	610	1140	615.6	1150	621.1
Set Pressure		Orifice Capacity									
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	410509	118906	410509	118438	410509	117814	410509	117190	410509	116566
3150	217.2	421734	120947	421734	120472	421734	119838	421734	119204	421734	118570
3200	220.6	271302	123021	269881	122538	268461	121894	267396	121250	265975	120606
3250	224.1	275883	125094	274440	124440	272998	123786	271555	123295	270473	122641
3300	227.5	280475	127178	279010	126514	277545	125850	276081	125185	274616	124521
3350	231.0	285078	129267	283591	128592	282104	127918	280617	127244	279131	126570
3400	234.4	289692	131360	288183	130676	286674	129992	285165	129308	283656	128624
3450	237.9	294317	133453	292786	132759	291255	132065	289724	131371	288193	130677
3500	241.3	298953	135381	297400	134677	295847	134149	294294	133445	292741	132740
3550	244.8	303206	137666	301631	136952	300056	136238	298481	135523	296906	134809
3600	248.2	307859	139599	306262	138874	304665	138150	303067	137426	301470	136702
3650	251.7	312523	141709	310904	140975	309284	140241	307665	139507	306046	138772
3700	255.1	317198	143831	315556	143086	313915	142342	312273	141598	310632	140854
3750	258.6	321883	145957	320220	145203	318141	144448	316477	143694	314814	142751
3800	262.0	326580	148088	324895	147324	322788	146560	321102	145795	319417	144840
3850	265.4	331288	150219	329581	149445	327873	148670	325738	147702	324031	146928
3900	268.9	336007	152360	333845	151576	332115	150792	330386	150007	328656	149027
3950	272.3	340737	154507	338548	153712	336796	152918	335044	151925	332854	151131
4000	275.8	345479	156658	343261	155854	341487	155049	339713	154044	337496	153239
4050	279.2	350231	158809	347986	157994	346190	156976	344393	156162	342148	155348
4100	282.7	354994	160970	352721	160146	350903	159115	349085	158291	346812	157260
4150	286.1	359768	163137	357468	162094	355628	161259	353787	160425	351487	159590
4200	289.6	364553	165302	362225	164458	360363	163402	358035	162558	356173	161502
4250	293.0	369350	167479	366994	166624	365110	165556	362754	164488	360399	163634
4300	296.5	374157	169660	371774	168580	369867	167715	367484	166634	365101	165770
4350	299.9	378976	171847	376565	170972	374636	169879	372225	168786	369815	167911
4400	303.4	383805	174032	381367	172927	378928	172042	376490	170937	374539	170052
4450	306.8	388646	176229	386180	175334	383714	174216	381247	173098	378781	172203
4500	310.3	393497	178430	391003	177700	388510	176169	386016	175264	383523	174134

# Orifice Capacities

$W = S \times P \times Ksh \times Ksc$   
 $W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$   
 $K = 0.866$   
 $Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$   
 $Kn = 1 \text{ for } P > 3200 \text{ psig}$   
 $Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$   
 $A = 2.405 \text{ in}^2$   
 For Non-code applications multiply capacity by 1.1

$W = S \times P \times Ksh \times Ksc$   
 $W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$   
 $P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$   
 $K = 0.866$   
 $Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$   
 $Kn = 1 \text{ for } P > 22.1 \text{ MPa}$   
 $Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$   
 $A = 1551.61 \text{ mm}^2$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3547											
Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1110	598.9	1120	604.4	1130	610	1140	615.6	1150	621.1
Set Pressure		Orifice Capacity									
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	398360	180637	395839	179494	393317	178579	390796	177436	388779	176293
4600	317.2	403233	183074	400685	181918	398136	180762	395587	179607	393548	178451
4650	320.6	408118	185059	405542	183891	402965	182723	400389	181788	398327	180620
4700	324.1	413014	187517	410410	186336	407806	185155	405202	183974	403118	182794
4750	327.5	417921	189507	415289	188314	412657	187121	410026	186166	407394	184973
4800	330.9	422839	191733	420179	190527	417520	189321	414861	188357	412201	187151
4850	334.4	427768	194213	425081	192751	422394	191533	419707	190314	417020	189096
4900	337.8	433250	196211	429993	194980	427278	193749	424564	192518	421849	191534
4950	341.3	438207	198707	434916	197214	432174	195971	429432	194727	426690	193484
5000	344.7	443175	200955	439851	199448	437081	198192	434311	196936	431541	195680
5050	348.2	448153	203214	444796	201692	441999	200423	439201	199155	436404	197886
5100	351.6	452578	205478	449753	204197	446928	202660	443538	201379	440712	200098
5150	355.1	457573	207747	454720	206195	451868	204901	448444	203608	445592	202314
5200	358.5	463155	210016	459699	208448	456819	207142	453362	205836	---	---
5250	362.0	468178	212295	464689	210976	461781	209394	458291	208075	---	---
5300	365.4	473212	214579	469689	212982	466754	211650	463231	210319	---	---
5350	368.9	478257	216862	474701	215519	471738	213906	468182	212563	---	---
5400	372.3	483313	219428	480322	217800	476733	216173	473742	214817	---	---
5450	375.8	488380	221729	485362	220087	481739	218718	478721	217076	---	---
5500	379.2	493458	223760	490412	222379	486757	220721	483101	219340	---	---
5550	382.7	498547	226342	495473	224670	491785	223276	488097	221603	---	---
5600	386.1	503647	228659	500546	226971	496824	225284	493103	223878	---	---
5650	389.6	508758	230981	505630	229278	501875	227575	498120	226157	---	---
5700	393.0	513881	233307	510724	231590	506936	229872	503149	228441	---	---
5750	396.4	519651	235922	515830	234189	512009	232457	508188	230724	---	---
5800	399.5	524801	237739	520947	235993	517092	234247	513238	232501	---	---

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		750	400	760	404.4	770	410	780	415.6	790	421.1	800	426.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	215213	536137	212156	536137	208691	536137	205023	536137	201354	536137	198093
3150	217.2	550797	219862	550797	216964	550797	213237	550797	209304	550797	205784	550797	202265
3200	220.6	496709	224601	488361	221656	480013	217661	471665	213875	463317	210090	454969	206515
3250	224.1	507732	229582	499255	226379	490306	222534	481828	218477	472879	214419	464401	210788
3300	227.5	518857	234619	510249	231367	501163	227247	492077	223127	482991	219007	473905	215321
3350	231.0	530568	239923	521345	236621	512122	232219	502899	228037	493676	223854	483967	219892
3400	234.4	543380	245278	533527	241928	523674	237460	513821	232992	503969	228524	494609	224503
3450	237.9	555836	251129	545339	247503	535342	242743	525345	237983	514848	233450	504851	229144
3500	241.3	568929	257056	558281	253147	547125	248319	536477	243490	525828	238662	515180	234064
3550	244.8	583195	263281	571367	259317	560052	254187	548738	248823	537424	243693	525595	239029
3600	248.2	597634	269815	585640	265559	573124	260120	561129	254445	549135	249006	537141	244040
3650	251.7	613304	276896	600086	272341	587397	266348	574179	260355	560961	254601	548272	249327
3700	255.1	630783	284809	616313	279706	602379	273145	587909	266583	573975	260265	559505	254433
3750	258.6	649594	293079	633843	287661	618092	280519	602341	273376	587133	266234	571382	259831
3800	262.0	669780	302216	652719	295977	635108	287991	618047	280255	600435	272518	583374	265281
3850	265.4	691942	312237	672427	305158	653469	296309	633954	287460	614997	278864	595482	271027
3900	268.9	716144	322939	694682	315256	673220	305268	651194	295536	629732	285805	608270	277097
3950	272.3	743024	334848	718428	326030	694404	314877	669808	303724	645212	292830	620616	283233
4000	275.8	771509	347480	744286	337762	716484	325155	689261	312285	661459	299941	634236	289172
4050	279.2	809267	364296	777014	352596	744760	337705	711920	322814	679667	308189	647414	295957
4100	282.7	849499	381972	812099	368512	774106	351015	736707	333788	698714	316829	660721	302562
4150	286.1	889264	399423	846604	384165	803342	364548	760681	344931	717420	325587	674759	309512
4200	289.6	929737	---	881699	---	833054	---	785017	---	736979	---	688942	315977
4250	293.0	---	---	---	---	---	---	---	---	---	---	703884	304385
4300	296.5	---	---	---	---	---	---	---	---	---	---	718984	305698
4350	299.9	---	---	---	---	---	---	---	---	---	---	734874	312385
4400	303.4	---	---	---	---	---	---	---	---	---	---	751573	319133
4450	306.8	---	---	---	---	---	---	---	---	---	---	768460	326256
4500	310.3	---	---	---	---	---	---	---	---	---	---	785534	333752

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		750	400	760	404.4	770	410	780	415.6	790	421.1	800	426.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	---	---	---	---	---	---	---	---	---	---	803455	341035
4600	317.2	---	---	---	---	---	---	---	---	---	---	821577	348386
4650	320.6	---	---	---	---	---	---	---	---	---	---	840575	356437
4700	324.1	---	---	---	---	---	---	---	---	---	---	859789	364579
4750	327.5	---	---	---	---	---	---	---	---	---	---	879907	373124
4800	330.9	---	---	---	---	---	---	---	---	---	---	900255	381442
4850	334.4	---	---	---	---	---	---	---	---	---	---	921537	390180
4900	337.8	---	---	---	---	---	---	---	---	---	---	942354	399017
4950	341.3	---	---	---	---	---	---	---	---	---	---	964835	408277
5000	344.7	---	---	---	---	---	---	---	---	---	---	986853	417629
5050	348.2	---	---	---	---	---	---	---	---	---	---	1009846	427098
5100	351.6	---	---	---	---	---	---	---	---	---	---	1032361	436672
5150	355.1	---	---	---	---	---	---	---	---	---	---	1055867	446351
5200	358.5	---	---	---	---	---	---	---	---	---	---	1078127	455781
5250	362.0	---	---	---	---	---	---	---	---	---	---	1101378	465321
5300	365.4	---	---	---	---	---	---	---	---	---	---	1124874	474960
5350	368.9	---	---	---	---	---	---	---	---	---	---	1147842	485034
5400	372.3	---	---	---	---	---	---	---	---	---	---	1171040	494518
5450	375.8	---	---	---	---	---	---	---	---	---	---	1194469	504094
5500	379.2	---	---	---	---	---	---	---	---	---	---	1217334	514122
5550	382.7	---	---	---	---	---	---	---	---	---	---	1240415	523870
5600	386.1	---	---	---	---	---	---	---	---	---	---	1263712	533357
5650	389.6	---	---	---	---	---	---	---	---	---	---	1285591	542928
5700	393.0	---	---	---	---	---	---	---	---	---	---	1308483	552211
5750	396.4	---	---	---	---	---	---	---	---	---	---	1329912	561558
5800	399.5	---	---	---	---	---	---	---	---	---	---	1352354	569683

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		810	432.2	820	437.8	830	443.3	840	448.9	850	454.4	860	460
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	195648	536137	193202	536137	190757	536137	188311	536137	186477	536137	184643
3150	217.2	550797	199780	550797	197089	550797	194605	550797	192120	550797	190050	550797	188187
3200	220.6	448939	203781	443374	201257	437809	198523	431780	196000	426214	193897	422040	191794
3250	224.1	458278	208012	452155	205236	446503	202459	440380	199683	434257	197547	430018	195625
3300	227.5	467689	212502	461472	209466	455255	206647	449038	203611	442822	201443	438518	199275
3350	231.0	477657	216811	470861	213729	464550	210648	457754	207566	450959	205145	446590	202944
3400	234.4	487219	221376	480322	218025	473425	214898	466528	211547	459631	209090	454705	206856
3450	237.9	497353	225744	489855	222345	482358	218945	475360	215545	467862	213052	462863	210785
3500	241.3	507574	230385	499968	226706	491855	223257	484249	219578	476643	217049	471572	214520
3550	244.8	517881	235298	509653	231333	501424	227602	493710	223638	485481	221072	480339	218507
3600	248.2	528275	240020	519931	236000	511066	231980	502722	227960	493856	225122	488641	222284
3650	251.7	539284	245011	530296	240696	521308	236621	512320	232305	502803	229189	497516	226552
3700	255.1	549858	250058	540748	245441	531101	241067	521454	236693	512344	233291	506449	230374
3750	258.6	561062	255151	551286	250472	541509	245792	531190	240867	521413	237419	515439	234463
3800	262.0	572918	260540	562461	255299	551454	250557	540997	245566	530541	241823	523936	238578
3850	265.4	584331	265717	573180	260408	562028	255099	550877	249789	539725	245997	533035	242710
3900	268.9	596410	271463	584549	265829	572689	260195	560829	254305	548968	250463	542191	247134
3950	272.3	608604	277268	596020	271043	583436	265077	570852	259112	558269	254962	551405	251331
4000	275.8	620914	282869	607592	276565	594270	270262	581528	263696	568206	259493	560676	255816
4050	279.2	633339	289044	619852	282130	605777	275482	591703	268569	577629	264048	570005	260060
4100	282.7	646474	295294	631633	288026	616792	280758	602544	273221	587703	268645	579986	264338
4150	286.1	659137	301883	644116	293982	628493	286080	613472	278179	597850	273275	590039	268916
4200	289.6	672524	307981	656714	299710	640296	291438	624486	283166	608677	278203	599555	273516
4250	293.0	686656	300200	670043	296015	652815	291830	635587	287645	618975	283181	609745	278438
4300	296.5	700932	302311	682880	298924	665450	295819	647397	292431	629345	287915	620007	282834
4350	299.9	715982	308958	697091	305246	678199	301534	658678	297822	639787	292968	630341	287828
4400	303.4	731191	315379	710810	311335	691065	307292	670683	303249	650302	298050	640111	292851
4450	306.8	747203	321874	725302	317493	704046	313112	682789	308731	660888	303181	650582	297632
4500	310.3	763388	328731	740591	324006	717793	318985	694996	314259	672198	308647	661777	302740

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		810	432.2	820	437.8	830	443.3	840	448.9	850	454.4	860	460
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	779088	335660	755379	330583	731671	325208	707303	319833	683595	314159	672399	307887
4600	317.2	796277	342952	770978	336914	745678	331480	720378	325744	695078	319404	683094	313064
4650	320.6	813655	350333	786735	343925	760488	337821	733568	331413	706648	325004	694534	318291
4700	324.1	831900	357793	803331	351007	774762	344222	746873	337436	718304	330650	706061	323556
4750	327.5	849660	365643	820100	358162	789854	350992	760294	343511	730735	336342	716986	329172
4800	330.9	868996	373567	837737	365693	805784	357818	774525	349944	743266	342384	729373	334509
4850	334.4	887848	381906	854860	373313	821873	365038	788184	356445	755197	348171	741160	340214
4900	337.8	907610	390014	872865	381011	838121	371687	802667	362684	767923	354324	753032	345643
4950	341.3	927589	398533	891058	388789	853811	379044	817281	369300	780034	360206	764992	351761
5000	344.7	948507	407131	909438	396633	871093	386463	832024	375965	793678	366779	777038	357593
5050	348.2	968926	416164	928737	404899	887817	393964	846897	382699	806708	373090	789901	363481
5100	351.6	989561	424961	947499	412915	904699	401538	862638	389492	819838	379453	802865	369415
5150	355.1	1011158	433849	966449	421347	922486	409183	877777	396681	833069	385869	815185	375732
5200	358.5	1032233	442817	985587	429512	939693	416889	893047	403584	847153	392326	828345	381750
5250	362.0	1053525	451888	1005672	438111	957059	424679	909206	410901	861353	399191	841605	388169
5300	365.4	1075033	461052	1025192	446448	975351	432540	925510	417937	875669	406115	855732	394293
5350	368.9	1095984	469943	1044900	455202	993042	440111	941184	425370	890100	412735	869202	400803
5400	372.3	1117918	479286	1064795	463699	1010891	448467	957769	432881	904646	419774	882772	407375
5450	375.8	1139279	488363	1084878	472275	1029688	456545	974498	440456	920096	426871	897232	414000
5500	379.2	1160843	497526	1104353	480929	1047862	464333	991371	447737	934880	434027	911807	420678
5550	382.7	1182609	506760	1124000	489650	1066195	472539	1008389	455429	949780	441231	925695	427397
5600	386.1	1203767	516093	1143821	498094	1084686	480829	1024741	462830	965606	448137	940493	433812
5650	389.6	1225112	525140	1163816	506980	1103336	488821	1042040	470661	981561	455837	955408	441013
5700	393.0	1245820	533891	1183983	515198	1121321	496878	1059483	478558	996821	462855	969613	447527
5750	396.4	1266702	543079	1203492	523845	1140281	505365	1076239	486508	1013029	470291	985582	454828
5800	399.5	1287757	550681	1223159	531298	1158562	512296	1093964	492914	1029366	476572	1000004	460611



# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		870	465.6	880	471.1	890	476.7	900	482.2	910	487.8	920	493.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	182808	536137	181178	536137	179344	536137	177917	536137	176491	536137	175064
3150	217.2	550797	186324	550797	184667	550797	182804	550797	181355	550797	179699	550797	178250
3200	220.6	418330	189901	414156	188008	410446	186116	406272	184644	403025	183171	399779	181489
3250	224.1	426250	193490	422011	191567	417772	189645	413533	187937	410236	186442	407410	184947
3300	227.5	434214	197106	429910	195155	425606	192986	421302	191468	417955	189734	414607	188216
3350	231.0	442221	200743	437852	198762	432998	196560	428629	195020	425231	193259	421833	191498
3400	234.4	450271	204622	445345	202388	440911	200154	436477	198367	432536	196580	429088	194793
3450	237.9	458365	208292	453366	206026	448867	203759	443869	201946	440370	200133	436371	198319
3500	241.3	466501	211991	461431	209691	456867	207392	451796	205323	447740	203483	444190	201644
3550	244.8	475196	215942	470053	213377	464396	210812	459253	208946	455653	207080	451539	204982
3600	248.2	483426	219683	477690	217082	472475	214481	467260	212589	463088	210461	458916	208569
3650	251.7	491700	223675	486413	220798	480597	218161	474782	216003	471081	214085	466851	211928
3700	255.1	500553	227458	494658	224542	488763	221869	482868	219682	478580	217495	474293	215308
3750	258.6	508921	231262	502947	228306	496972	225597	490997	223380	486652	221164	482307	218947
3800	262.0	517882	235334	511828	232339	505224	229345	499170	227099	494217	224603	489814	222357
3850	265.4	526344	239424	520211	236137	513520	233103	506829	230828	502368	228299	497350	226024
3900	268.9	535413	243549	528636	239963	521859	236890	515081	234329	510563	232024	505480	229463
3950	272.3	544541	247700	537105	244068	530241	240696	523377	238362	518229	235768	513081	233175
4000	275.8	553726	251877	546196	248200	538666	244523	531716	242159	526503	239532	521290	236906
4050	279.2	562968	256071	555345	252082	547721	248625	540098	245966	534820	243041	528956	240382
4100	282.7	572269	260300	563958	256263	556240	252494	548523	249802	542587	246841	537244	244149
4150	286.1	581627	264829	573215	260469	565404	256655	556992	253658	550983	250933	545575	247936
4200	289.6	591043	269105	582530	264693	574017	260557	565504	257524	559423	254491	553950	251458
4250	293.0	601131	273695	591902	268952	583288	264488	574059	261419	567906	258350	561753	255281
4300	296.5	610670	278036	601332	273237	591995	268721	582657	265616	576432	262229	570207	259124
4350	299.9	620266	282688	610820	277548	601375	272980	591299	269553	585002	266412	578705	262986
4400	303.4	630557	287364	620366	282166	610175	277256	599984	273790	593615	270324	587246	266859
4450	306.8	640276	292082	629969	286533	619663	281275	609357	277770	602915	274265	595830	270760
4500	310.3	650704	296833	640282	290926	629209	285609	618136	282065	611622	278225	604457	274681

# Orifice Capacities

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 51.5 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{\text{lb}}{\text{hr}}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_US} \text{ table}$$

$$K_n = 1 \text{ for } P > 3200 \text{ psig}$$

$$K_n = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 5.25 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{\text{kg}}{\text{hr}}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_SI} \text{ table}$$

$$K_n = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$K_n = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		870	465.6	880	471.1	890	476.7	900	482.2	910	487.8	920	493.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	661204	301616	650008	295644	638812	290268	627616	286386	620372	282504	613128	278622
4600	317.2	671776	306423	660457	300385	648473	294649	637155	290724	629166	286498	621842	282573
4650	320.6	682420	311577	670306	304863	658192	299065	646078	295098	638002	290825	630599	286858
4700	324.1	693137	316462	680212	309368	667969	303199	655045	299189	646882	294871	639400	290861
4750	327.5	703925	321691	690864	314522	677803	307976	664742	303612	656493	299247	648244	294883
4800	330.9	715481	326950	701588	319390	687695	312461	673802	308051	665466	303641	657131	298917
4850	334.4	726421	332258	712384	324301	698346	317300	683607	312526	675185	307752	666061	303297
4900	337.8	738142	337283	723251	329245	708361	321850	693471	317027	684962	312204	675744	307381
4950	341.3	749234	342991	734192	334222	718433	326751	703391	321554	694080	316682	684768	311485
5000	344.7	761121	348407	745204	339221	729287	331348	713370	326426	703964	321177	693835	315928
5050	348.2	773095	353872	756288	344594	740213	336311	723406	331009	713176	325708	703677	320407
5100	351.6	785155	359376	768183	349672	750472	340972	733500	335619	723169	329930	712838	324576
5150	355.1	797302	365258	779419	355121	761535	345998	743652	340254	733220	334848	722788	329104
5200	358.5	809536	370833	790727	360258	772670	351047	753861	345247	743328	339106	732043	333307
5250	362.0	822615	376803	802866	365781	783118	356138	764128	350282	752735	344083	742101	337883
5300	365.4	835029	382819	815093	371345	795156	361261	774453	355003	763718	348744	752216	342485
5350	368.9	848304	388870	827406	376937	806508	366408	785610	360090	773226	353422	761616	347105
5400	372.3	860898	394623	839024	382578	817150	371597	796057	364866	783558	358136	771840	351760
5450	375.8	874367	400772	851503	388259	829427	376819	806562	370026	793947	363233	781333	356083
5500	379.2	887938	406968	864864	393980	840995	382434	817125	375219	804395	368003	791665	360787
5550	382.7	901609	413563	877523	399729	852634	387715	828549	380434	815703	373153	802054	365508
5600	386.1	914571	419853	889459	405527	864347	393406	839234	385692	826273	377978	812502	370631
5650	389.6	929254	426189	903101	411736	876948	399136	850795	390982	836901	383200	823007	375417
5700	393.0	943229	432572	916020	417617	888812	404531	861603	396306	847587	388081	833570	380229
5750	396.4	957304	438989	929026	423526	901579	410326	873301	402029	859161	393355	844191	385058
5800	399.5	971480	444649	942957	429067	914433	415386	885070	406645	869970	397904	854869	389543

# Orifice Capacities

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 51.5 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{\text{lb}}{\text{hr}}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_US} \text{ table}$$

$$K_n = 1 \text{ for } P > 3200 \text{ psig}$$

$$K_n = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 5.25 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{\text{kg}}{\text{hr}}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_SI} \text{ table}$$

$$K_n = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$K_n = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		930	498.9	940	504.4	950	510	960	515.6	970	521.1	980	526.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	173637	536137	172415	536137	171192	536137	169969	536137	168746	536137	167523
3150	217.2	550797	176800	550797	175558	550797	174316	550797	173074	550797	171832	550797	170590
3200	220.6	396996	180017	393750	178755	390503	177493	387720	176021	385401	174759	382619	173498
3250	224.1	404113	183238	400817	181957	397520	180676	394694	179181	391868	177899	389513	176618
3300	227.5	411260	186481	407912	185180	404565	183662	401696	182361	398826	181060	395957	179759
3350	231.0	418435	189737	415037	188416	411639	186875	408727	185555	405814	184234	402902	182693
3400	234.4	425639	193006	421698	191442	418250	190102	415294	188538	412338	187198	409382	185857
3450	237.9	432872	196506	429373	194920	425374	193333	422375	191747	419376	190387	416377	188800
3500	241.3	440134	199805	436584	198195	432528	196586	429486	194976	426443	193367	423401	191987
3550	244.8	447939	203116	443825	201484	439710	199851	436625	198219	433539	196586	429939	195187
3600	248.2	455266	206441	451094	204785	446922	203130	443793	201475	440664	199819	437013	198164
3650	251.7	462621	209770	458392	208092	454162	206414	450990	204735	447289	203057	444116	201379
3700	255.1	470006	213121	465718	211420	461431	209718	458215	208017	454464	206316	451248	204615
3750	258.6	477419	216731	473074	215007	468729	213036	464927	211312	461668	209588	457866	207864
3800	262.0	484861	220111	480458	218114	476055	216368	472203	214371	468351	212624	465048	210877
3850	265.4	492890	223496	487872	221473	483411	219703	479508	217934	475605	215911	472260	214141
3900	268.9	500397	227158	495314	225109	490796	223061	486842	221268	482889	219219	478935	217427
3950	272.3	507933	230581	503357	228506	498209	226431	494205	224615	490201	222540	486197	220725
4000	275.8	516077	234279	510864	231916	505651	230077	501597	227976	497542	225875	493488	224036
4050	279.2	523678	237723	518400	235596	513122	233469	509017	231075	504912	229214	500807	227087
4100	282.7	531901	241188	525965	239035	520622	236881	516466	234728	512311	232575	507562	230421
4150	286.1	540168	244939	534159	242760	528752	240307	523945	238128	519739	235948	515533	233768
4200	289.6	547870	248425	542397	246220	536316	243738	532060	241532	527195	239327	522331	237121
4250	293.0	556216	252212	550063	249701	543910	247469	539603	244958	534681	242726	529758	240494
4300	296.5	563982	256019	557757	253478	551533	250938	546553	248397	542195	246139	537215	243599
4350	299.9	572408	259845	565481	256989	559184	254419	554776	252135	549738	249565	544701	246995
4400	303.4	580877	263393	574507	260794	567501	258194	562406	255595	557310	252996	552215	250685
4450	306.8	589388	267255	582303	264334	575217	261705	570064	259077	564911	256448	559758	253819
4500	310.3	597292	270841	590127	268183	582963	265230	577752	262571	572541	259913	567330	257255

# Orifice Capacities

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 51.5 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{\text{lb}}{\text{hr}}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_US} \text{ table}$$

$$K_n = 1 \text{ for } P > 3200 \text{ psig}$$

$$K_n = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 5.25 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{\text{kg}}{\text{hr}}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_SI} \text{ table}$$

$$K_n = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$K_n = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		930	498.9	940	504.4	950	510	960	515.6	970	521.1	980	526.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	605884	274739	598639	271753	591395	269066	585468	266378	580199	263392	574931	260704
4600	317.2	613852	278648	606529	275630	599205	272611	593213	269894	587887	266875	581895	264158
4650	320.6	623196	282586	615120	279534	607717	276482	601660	273431	595603	270379	590219	267633
4700	324.1	631237	286543	623075	283150	615592	280065	609470	276981	604029	273897	597907	271121
4750	327.5	639994	290519	632433	287091	624184	283973	617997	280856	611810	277739	605623	274622
4800	330.9	648795	294507	640459	291042	632124	287892	625872	284427	619620	281278	613368	278443
4850	334.4	657639	298523	649216	295022	640092	291521	633776	288339	627459	284838	621142	281655
4900	337.8	666526	302558	658017	298700	648799	295485	642417	291948	636036	288733	628945	285517
4950	341.3	675456	306613	666145	302716	656833	299143	650386	295895	643940	292322	636777	289074
5000	344.7	684430	310679	675024	307071	665619	303134	658384	299525	651872	295916	644637	292636
5050	348.2	693447	314774	683948	310798	673718	307153	667141	303508	659834	299863	652527	296550
5100	351.6	703245	318888	692914	314872	682583	311192	675204	307176	668562	303495	661183	299815
5150	355.1	712356	323359	701924	318967	691492	315250	684040	311195	676589	307141	669138	303424
5200	358.5	721510	327507	710977	323072	700444	319319	692920	315225	685397	311132	677121	307379
5250	362.0	730707	331683	720073	327206	708680	323072	701084	318939	693488	314806	685892	311018
5300	365.4	740715	336227	729213	331707	717711	327187	710043	323014	701608	318842	693941	315017
5350	368.9	750006	340436	738396	335523	726786	331311	718272	326749	710532	322537	702018	318326
5400	372.3	759340	345029	747622	340070	735904	335465	727310	330859	718717	326609	710124	322358
5450	375.8	769506	349290	756891	344285	744276	339638	735604	334990	726931	330342	718258	326052
5500	379.2	778934	353571	766204	348520	753474	343830	744722	339140	735970	334450	727218	330120
5550	382.7	789209	358227	776363	352766	762714	348033	753883	343301	745052	338568	735417	333835
5600	386.1	799541	362918	785770	357408	771998	352265	763087	347123	753367	342347	744456	337572
5650	389.6	809113	367264	795219	361705	781325	356517	771518	351699	762528	346510	752720	341693
5700	393.0	818729	372004	804712	366022	790696	360788	780802	355554	770908	350693	761014	345833
5750	396.4	829220	376384	814249	370726	800110	365069	790129	359789	780149	354510	770168	349607
5800	399.5	839768	380802	824667	374721	809567	369020	799500	363700	789432	358379	779365	353059

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		990	532.2	1000	537.8	1010	543.3	1020	548.9	1030	554.4	1040	560
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	166504	536137	165485	536137	164466	536137	163447	536137	162428	536137	161613
3150	217.2	550797	169554	550797	168519	550797	167484	550797	166242	550797	165414	550797	164379
3200	220.6	379836	172446	377517	171395	375198	170133	372879	169081	370560	168030	368705	167189
3250	224.1	386687	175550	383861	174269	381506	173201	379151	171919	376796	171065	374912	169997
3300	227.5	393566	178458	390697	177374	388306	176073	385915	174989	383524	173904	381133	172820
3350	231.0	399989	181593	397076	180272	394649	179172	392222	177851	389795	176750	387368	175650
3400	234.4	406426	184517	403470	183400	401007	182060	398544	180943	396081	179826	393618	178709
3450	237.9	413378	187667	410379	186307	407879	185174	404880	183814	402381	182681	399882	181547
3500	241.3	419851	190608	416809	189458	414274	188078	411738	186699	408696	185549	406160	184400
3550	244.8	426853	193788	423768	192389	421196	191223	418111	189824	415539	188658	412968	187492
3600	248.2	433884	196982	430234	195563	427626	194144	425019	192725	422411	191543	419282	190360
3650	251.7	440415	199941	437243	198502	434600	197304	431427	195865	428784	194427	425611	193228
3700	255.1	447497	203157	444281	201699	441066	200241	438386	198783	435171	197568	432491	196110
3750	258.6	454607	206387	450805	204909	447546	203431	444831	201954	441572	200476	438856	199244
3800	262.0	461196	209380	457894	207883	454592	206385	451290	204888	448538	203390	445236	202143
3850	265.4	468357	212624	464454	210855	461108	209338	458321	207821	454975	206304	451630	205040
3900	268.9	475546	215634	471593	214097	468204	212561	464816	210768	461992	209488	458603	207951
3950	272.3	482193	218909	478189	217353	474757	215797	471897	213981	468465	212684	465033	211128
4000	275.8	489433	222198	485379	220622	481903	218783	478428	217207	474953	215632	471478	214318
4050	279.2	496116	225491	492011	223630	488492	222034	484974	220173	481455	218578	477936	217248
4100	282.7	503406	228806	499251	226922	495689	225037	492127	223422	488565	221807	485004	220192
4150	286.1	510726	231861	506520	229954	502915	228319	499310	226412	495705	224777	491499	223143
4200	289.6	518074	235191	513210	233261	509561	231331	505913	229676	502264	228022	498616	226368
4250	293.0	525451	238541	520529	236588	516838	234635	512531	232682	508839	231008	505147	229334
4300	296.5	532235	241905	527255	239647	523520	237953	519785	235695	516050	234002	511693	232308
4350	299.9	539663	244996	534625	242998	530847	240999	527069	239000	522661	237287	518882	235573
4400	303.4	547119	248375	542024	246353	538202	244332	533744	242021	529922	240288	525464	238555
4450	306.8	554605	251775	548808	249438	544943	247393	540434	245349	536569	243596	532060	241844
4500	310.3	562119	255188	556257	252825	552349	250757	547789	248394	543881	246622	539322	244850

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		990	532.2	1000	537.8	1010	543.3	1020	548.9	1030	554.4	1040	560
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	569662	258613	564394	256224	559784	254134	555174	251745	550564	249953	545954	247863
4600	317.2	576569	262044	571242	259629	566582	257516	561921	255101	557261	252987	552600	251176
4650	320.6	584162	265496	578778	263055	574067	260614	569356	258477	564645	256341	559934	254205
4700	324.1	591785	268653	586343	266186	581582	264026	576820	261559	572059	259400	567297	257549
4750	327.5	599436	272128	593249	269634	588437	267141	583625	264647	578813	262777	574001	260595
4800	330.9	607116	275608	600865	273088	596002	270568	591140	268048	586277	265844	581415	263639
4850	334.4	614826	279109	608509	276563	603596	274017	597981	271471	593068	269243	588155	267015
4900	337.8	622563	282623	616182	280051	611218	277479	605546	274907	600582	272656	594910	270405
4950	341.3	630330	286476	623884	283552	618153	280954	613139	278031	608125	275757	602395	273484
5000	344.7	638126	289683	630891	287058	625826	284434	620038	281481	614974	279185	609186	276888
5050	348.2	645950	293568	638643	290586	633528	287935	627683	284953	622568	282634	616722	280314
5100	351.6	653804	297138	646425	294126	641259	291115	635356	288438	629452	285761	624287	283419
5150	355.1	661686	300721	654235	297680	648274	294639	643058	291598	637096	289233	631135	286529
5200	358.5	669597	304308	662074	301238	656055	298168	650788	295097	644769	292709	638751	289980
5250	362.0	678297	307918	669941	304818	663865	301718	657788	298618	651712	295863	645635	293452
5300	365.4	686273	311540	677838	308411	671704	305281	665570	301804	659435	299370	653301	296589
5350	368.9	694278	315167	685764	312008	679572	308849	673380	305340	666414	302532	660222	299724
5400	372.3	701530	319170	693718	315627	686687	312439	680437	308897	674188	306063	667938	303229
5450	375.8	710374	322477	701701	319259	694605	315684	688298	312466	681991	309606	674895	306746
5500	379.2	718465	326512	709713	322904	702553	319657	696187	316049	689027	313163	682662	310277
5550	382.7	726586	330559	717754	326918	710529	323278	704106	319637	696880	316361	690457	313448
5600	386.1	734735	333899	725824	330226	718534	326920	712053	322879	704762	319940	697472	317002
5650	389.6	742913	337987	733923	334281	726567	330575	719212	326498	712673	323533	705318	320568
5700	393.0	751944	341720	742050	337981	734630	333869	727209	330130	720613	326765	713193	323774
5750	396.4	760187	345458	750207	341687	742721	337915	735236	333767	727750	330373	720265	327356
5800	399.5	769298	349258	759231	345078	751681	340897	744130	337097	735741	333677	728191	330256

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1050	565.6	1060	571.1	1070	576.7	1080	582.2	1090	587.8	1100	593.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	160594	536137	159779	536137	158760	536137	157945	536137	157130	536137	156314
3150	217.2	550797	163344	550797	162516	550797	161480	550797	160652	550797	159824	550797	158996
3200	220.6	366386	166137	364068	165296	362212	164244	360357	163403	358038	162562	356183	161721
3250	224.1	372557	168930	370202	167862	368318	167007	366434	166153	364079	165085	362195	164231
3300	227.5	378742	171736	376351	170869	374438	169785	372525	168917	370134	168050	368221	167182
3350	231.0	384941	174549	382514	173449	380572	172568	378630	171688	376203	170587	374262	169707
3400	234.4	391154	177592	388691	176475	386721	175358	384750	174465	382287	173571	380316	172678
3450	237.9	397383	180414	394883	179281	392884	178374	390884	177241	388385	176334	386386	175201
3500	241.3	403625	183250	401090	182100	399061	180951	397033	180031	394498	178881	392470	177962
3550	244.8	409882	186093	407825	184927	405254	183761	403196	182828	400625	181895	398568	180729
3600	248.2	416675	189178	414067	187996	411460	186813	409374	185631	406766	184685	404159	183503
3650	251.7	422968	192029	420324	190591	417681	189392	415566	188433	412922	187235	410279	186276
3700	255.1	429275	194895	426596	193680	423916	192465	421772	191250	419093	190278	416413	189063
3750	258.6	435597	197767	432882	196535	430166	195304	427993	194072	425278	193087	422562	191856
3800	262.0	441934	200895	439182	199397	436430	198150	434229	196902	431477	195904	428725	194656
3850	265.4	448842	203523	446054	202259	443266	200994	440478	199730	437690	198719	434903	197455
3900	268.9	455214	206670	452390	205134	449566	203853	446742	202829	443919	201548	441095	200268
3950	272.3	461601	209831	458741	208275	455881	206978	453021	205681	450161	204384	447301	203088
4000	275.8	468002	212742	465106	211167	462210	209853	459314	208540	456418	207227	453522	205914
4050	279.2	474418	215653	471486	214057	468554	212462	465622	211398	462689	210068	459757	208739
4100	282.7	481442	218577	478473	216962	475505	215616	472537	214270	468975	212924	466007	211578
4150	286.1	487893	221780	484889	220146	481885	218511	478881	217149	475275	215786	472271	214424
4200	289.6	494360	224713	491319	223059	488279	221680	485239	220302	482198	218647	478550	217269
4250	293.0	500840	227661	497764	225987	494687	224313	491611	222918	488534	221523	484843	220128
4300	296.5	507958	230614	504845	228921	501110	227227	497998	225816	494885	224404	491150	222993
4350	299.9	514474	233860	511326	232147	508177	230434	504399	229006	501250	227578	497472	226151
4400	303.4	521005	236823	517821	235090	514636	233357	510815	231913	507630	230469	503808	228736
4450	306.8	527551	239799	524330	238339	521110	236586	517245	234834	514024	233373	510159	231913
4500	310.3	534762	242783	531505	241010	527597	239238	524341	237761	520432	235989	516524	234513

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1050	565.6	1060	571.1	1070	576.7	1080	582.2	1090	587.8	1100	593.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	542002	246071	538051	244279	534100	242487	530807	240696	526855	239202	523562	237709
4600	317.2	548606	249063	544611	247251	540616	245440	537287	243931	533293	242119	529964	240610
4650	320.6	555896	252374	551858	250543	547820	248407	543782	246881	539744	245050	536379	243524
4700	324.1	562536	255390	558454	253539	554373	251689	550292	249838	546211	248296	542809	246445
4750	327.5	569189	258724	565065	256542	560940	254672	556816	252802	552691	251243	549254	249373
4800	330.9	576552	261749	572384	259544	568216	257654	564049	255764	559881	254189	555713	252299
4850	334.4	583242	264788	579031	262878	574820	260650	570609	258741	566397	257150	562186	255240
4900	337.8	589946	268155	585692	265904	581437	263653	577183	262046	573638	260116	569383	258187
4950	341.3	597381	271210	593083	268936	588786	266987	584488	265039	580190	263090	575893	261141
5000	344.7	604121	274592	599780	272295	595439	269999	591098	268031	586757	266062	582416	264422
5050	348.2	611607	277663	607223	275344	602108	273356	597723	271368	593339	269380	588955	267392
5100	351.6	618383	281076	613956	278734	608790	276392	604363	274384	599935	272376	595508	270369
5150	355.1	625174	284164	620703	281799	616232	279434	611016	277406	606546	275379	602075	273352
5200	358.5	632732	287592	628218	285204	622951	282816	618437	280769	613170	278381	608656	276334
5250	362.0	639559	290696	635001	288285	629684	285874	625127	283808	619810	281741	615252	279675
5300	365.4	647167	294155	641799	291721	637198	288939	631831	286853	627230	284767	621863	282333
5350	368.9	654030	297268	648612	294460	643968	292003	638550	289897	633906	287792	628488	285335
5400	372.3	661688	300395	656220	297915	650751	295081	646064	292956	640595	290830	635908	288705
5450	375.8	668587	303886	663068	301026	658338	298523	652819	296378	648088	293876	642569	291731
5500	379.2	676296	307391	670727	304504	665157	301618	660384	299453	654814	296928	649244	294763
5550	382.7	683231	310536	677611	307624	672794	305075	667174	302527	661554	300342	655934	297794
5600	386.1	690991	314063	685321	311125	679650	308186	673980	305615	668309	303411	662639	300840
5650	389.6	697962	317233	692241	314268	686520	311303	680799	309080	675078	306486	669357	303891
5700	393.0	705772	320783	700001	317792	694229	314801	687633	312184	681862	309567	---	---
5750	396.4	712780	323961	706958	320944	701136	317927	695314	315664	689492	313024	---	---
5800	399.5	720640	327216	714768	323795	708895	320755	703023	318475	---	---	---	---



# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548											
Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1110	598.9	1120	604.4	1130	610	1140	615.6	1150	621.1
Set Pressure		Orifice Capacity									
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	536137	155295	536137	154684	536137	153869	536137	153054	536137	152238
3150	217.2	550797	157961	550797	157340	550797	156512	550797	155684	550797	154856
3200	220.6	354328	160669	352473	160038	350618	159197	349227	158356	347371	157515
3250	224.1	360311	163377	358427	162523	356543	161668	354659	161028	353246	160173
3300	227.5	366308	166098	364395	165231	362482	164364	360570	163496	358657	162629
3350	231.0	372320	168826	370378	167946	368436	167065	366495	166185	364553	165304
3400	234.4	378346	171561	376375	170667	374405	169774	372434	168880	370464	167987
3450	237.9	384386	174294	382387	173388	380388	172481	378388	171575	376389	170668
3500	241.3	390441	176812	388413	175892	386385	175203	384357	174283	382328	173363
3550	244.8	395996	179796	393939	178863	391882	177931	389825	176998	387768	176065
3600	248.2	402073	182320	399987	181374	397901	180429	395815	179483	393729	178537
3650	251.7	408164	185077	406049	184118	403934	183159	401820	182200	399705	181241
3700	255.1	414269	187847	412126	186875	409982	185903	407838	184931	405695	183959
3750	258.6	420389	190624	418217	189639	415501	188654	413329	187669	411156	186438
3800	262.0	426524	193408	424322	192410	421570	191412	419369	190413	417168	189166
3850	265.4	432672	196191	430442	195180	428212	194168	425424	192904	423194	191893
3900	268.9	438836	198987	436012	197963	433752	196939	431493	195914	429234	194634
3950	272.3	445013	201791	442153	200753	439865	199716	437577	198419	434717	197381
4000	275.8	451205	204600	448309	203550	445992	202499	443675	201186	440779	200135
4050	279.2	457412	207409	454479	206346	452134	205016	449788	203953	446856	202889
4100	282.7	463632	210232	460664	209155	458290	207810	455915	206733	452947	205387
4150	286.1	469868	213062	466863	211699	464460	210610	462057	209520	459052	208430
4200	289.6	476117	215890	473077	214787	470645	213409	467605	212306	---	---
4250	293.0	482382	218733	479305	217617	476844	216222	473768	214827	---	---
4300	296.5	488660	221582	485548	220170	483058	219041	479945	217630	---	---
4350	299.9	494953	224437	491805	223295	489286	221867	486137	220440	---	---
4400	303.4	501261	227292	498076	225848	494891	224693	491707	223249	---	---
4450	306.8	507583	230161	504362	228992	501141	227532	497920	226071	---	---
4500	310.3	513919	233036	510662	231559	507405	230082	---	---	---	---

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 3.141 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 2026.45 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3548											
Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1110	598.9	1120	604.4	1130	610	1140	615.6	1150	621.1
Set Pressure		Orifice Capacity									
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	520270	235918	516977	234424	513684	233230	---	---	---	---
4600	317.2	526635	239100	523306	237591	519977	236081	---	---	---	---
4650	320.6	533014	241693	529649	240167	526284	238642	---	---	---	---
4700	324.1	539408	244903	536007	243361	532606	241819	---	---	---	---
4750	327.5	545817	247503	542380	245944	538943	244385	---	---	---	---
4800	330.9	552240	250409	548766	248835	---	---	---	---	---	---
4850	334.4	558677	253649	555168	251739	---	---	---	---	---	---
4900	337.8	565838	256258	561583	254650	---	---	---	---	---	---
4950	341.3	572311	259517	568013	257568	---	---	---	---	---	---
5000	344.7	578799	262453	574458	260485	---	---	---	---	---	---
5050	348.2	585301	265404	580917	263416	---	---	---	---	---	---
5100	351.6	591808	268361	---	---	---	---	---	---	---	---
5150	355.1	597604	271324	---	---	---	---	---	---	---	---
5200	358.5	604895	274287	---	---	---	---	---	---	---	---
5250	362.0	611454	277264	---	---	---	---	---	---	---	---
5300	365.4	618029	280247	---	---	---	---	---	---	---	---
5350	368.9	624618	283229	---	---	---	---	---	---	---	---
5400	372.3	---	---	---	---	---	---	---	---	---	---
5450	375.8	---	---	---	---	---	---	---	---	---	---
5500	379.2	---	---	---	---	---	---	---	---	---	---
5550	382.7	---	---	---	---	---	---	---	---	---	---
5600	386.1	---	---	---	---	---	---	---	---	---	---
5650	389.6	---	---	---	---	---	---	---	---	---	---
5700	393.0	---	---	---	---	---	---	---	---	---	---
5750	396.4	---	---	---	---	---	---	---	---	---	---
5800	399.5	---	---	---	---	---	---	---	---	---	---

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		750	400	760	404.4	770	410	780	415.6	790	421.1	800	426.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	336284	837746	331507	837746	326094	837746	320361	837746	314629	837746	309534
3150	217.2	860654	343549	860654	339020	860654	333197	860654	327051	860654	321551	860654	316052
3200	220.6	776138	350953	763093	346353	750049	340109	737005	334194	723960	328279	710916	322693
3250	224.1	793363	358737	780115	353732	766132	347725	752885	341384	738902	335044	725654	329371
3300	227.5	810745	366608	797295	361526	783098	355088	768900	348651	754703	342213	740506	336453
3350	231.0	829045	374895	814633	369736	800221	362857	785810	356322	771398	349787	756228	343597
3400	234.4	849064	383264	833668	378028	818273	371047	802877	364066	787481	357084	772856	350801
3450	237.9	868527	392406	852125	386740	836504	379302	820883	371865	804481	364782	788860	358053
3500	241.3	888986	401667	872347	395559	854916	388015	838277	380470	821638	372925	805000	365740
3550	244.8	911277	411395	892795	405200	875115	397184	857436	388803	839757	380786	821275	373498
3600	248.2	933839	421604	915097	414953	895540	406455	876798	397587	858056	389088	839314	381328
3650	251.7	958324	432669	937670	425552	917843	416186	897189	406821	876536	397831	856709	389589
3700	255.1	985637	445033	963026	437059	941254	426806	918643	416554	896871	406681	874260	397568
3750	258.6	1015030	457956	990418	449489	965806	438329	941194	427169	917431	416008	892819	406003
3800	262.0	1046572	472232	1019913	462484	992394	450005	965735	437917	938216	425828	911558	414519
3850	265.4	1081200	487891	1050707	476829	1021085	463003	990592	449176	960970	435744	930477	423497
3900	268.9	1119018	504613	1085482	492608	1051947	477002	1017529	461795	983994	446589	950459	432983
3950	272.3	1161019	523223	1122586	509443	1085048	492016	1046615	474588	1008183	457567	969750	442571
4000	275.8	1205529	542960	1162992	527775	1119549	508076	1077012	487966	1033569	468677	991032	451851
4050	279.2	1264528	569237	1214130	550955	1163733	527687	1112418	504419	1062020	481566	1011623	462453
4100	282.7	1327392	596856	1268954	575825	1209588	548485	1151149	521565	1091783	495066	1032416	472774
4150	286.1	1389529	624125	1322869	600283	1255270	569631	1188610	538978	1121012	508751	1054352	483633
4200	289.6	1452770	---	1377708	---	1301697	---	1226635	---	1151574	---	1076513	493736
4250	293.0	---	---	---	---	---	---	---	---	---	---	1099861	475621
4300	296.5	---	---	---	---	---	---	---	---	---	---	1123456	477674
4350	299.9	---	---	---	---	---	---	---	---	---	---	1148284	488122
4400	303.4	---	---	---	---	---	---	---	---	---	---	1174378	498666
4450	306.8	---	---	---	---	---	---	---	---	---	---	1200764	509796
4500	310.3	---	---	---	---	---	---	---	---	---	---	1227444	521510

# Orifice Capacities

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 51.5 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_US} \text{ table}$$

$$K_n = 1 \text{ for } P > 3200 \text{ psig}$$

$$K_n = \frac{[(0.1906 \times P) - 1000]}{[(0.2292 \times P) - 1061]} \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times K_{sh} \times K_{sc}$$

$$W = 5.25 \times K \times A \times P \times K_{sh} \times K_{sc} \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$K_{sh} = 1 \quad K_{sc} = \text{from } K_{sc\_SI} \text{ table}$$

$$K_n = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$K_n = \frac{[(27.6 \times P) - 1000]}{[(33.2 \times P) - 1061]} \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		750	400	760	404.4	770	410	780	415.6	790	421.1	800	426.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	---	---	---	---	---	---	---	---	---	---	1255446	532890
4600	317.2	---	---	---	---	---	---	---	---	---	---	1283764	544376
4650	320.6	---	---	---	---	---	---	---	---	---	---	1313448	556956
4700	324.1	---	---	---	---	---	---	---	---	---	---	1343471	569678
4750	327.5	---	---	---	---	---	---	---	---	---	---	1374907	583031
4800	330.9	---	---	---	---	---	---	---	---	---	---	1406703	596028
4850	334.4	---	---	---	---	---	---	---	---	---	---	1439956	609682
4900	337.8	---	---	---	---	---	---	---	---	---	---	1472485	623490
4950	341.3	---	---	---	---	---	---	---	---	---	---	1507613	637959
5000	344.7	---	---	---	---	---	---	---	---	---	---	1542016	652573
5050	348.2	---	---	---	---	---	---	---	---	---	---	1577945	667369
5100	351.6	---	---	---	---	---	---	---	---	---	---	1613126	682329
5150	355.1	---	---	---	---	---	---	---	---	---	---	1649855	697453
5200	358.5	---	---	---	---	---	---	---	---	---	---	1684638	712187
5250	362.0	---	---	---	---	---	---	---	---	---	---	1720969	727095
5300	365.4	---	---	---	---	---	---	---	---	---	---	1757683	742156
5350	368.9	---	---	---	---	---	---	---	---	---	---	1793572	757898
5400	372.3	---	---	---	---	---	---	---	---	---	---	1829820	772717
5450	375.8	---	---	---	---	---	---	---	---	---	---	1866430	787680
5500	379.2	---	---	---	---	---	---	---	---	---	---	1902157	803349
5550	382.7	---	---	---	---	---	---	---	---	---	---	1938222	818582
5600	386.1	---	---	---	---	---	---	---	---	---	---	1974626	833405
5650	389.6	---	---	---	---	---	---	---	---	---	---	2008813	848361
5700	393.0	---	---	---	---	---	---	---	---	---	---	2044582	862866
5750	396.4	---	---	---	---	---	---	---	---	---	---	2078068	877472
5800	399.5	---	---	---	---	---	---	---	---	---	---	2113135	890167

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		810	432.2	820	437.8	830	443.3	840	448.9	850	454.4	860	460
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	305713	837746	301891	837746	298070	837746	294248	837746	291382	837746	288516
3150	217.2	860654	312170	860654	307965	860654	304083	860654	300201	860654	296966	860654	294055
3200	220.6	701495	318421	692799	314478	684103	310206	674682	306263	665985	302977	659463	299691
3250	224.1	716087	325033	706519	320694	697688	316356	688121	312018	678553	308681	671929	305677
3300	227.5	730792	332048	721078	327305	711364	322900	701650	318156	691936	314768	685211	311380
3350	231.0	746368	338781	735749	333966	725888	329151	715269	324336	704650	320552	697823	317113
3400	234.4	761309	345915	750532	340679	739755	335792	728978	330556	718202	326717	710504	323226
3450	237.9	777144	352740	765429	347428	753713	342116	742778	336803	731062	332908	723252	329366
3500	241.3	793115	359991	781230	354243	768553	348854	756668	343106	744783	339154	736860	335202
3550	244.8	809221	367668	796363	361473	783506	355643	771452	349449	758594	345440	750558	341432
3600	248.2	825462	375047	812424	368765	798571	362484	785533	356202	771680	351768	763532	347334
3650	251.7	842664	382846	828620	376104	814575	369735	800531	362992	785660	358123	777399	354002
3700	255.1	859187	390733	844951	383518	829877	376683	814804	369848	800568	364532	791356	359975
3750	258.6	876694	398691	861417	391379	846141	384067	830016	376370	814740	370982	805404	366364
3800	262.0	895218	407110	878879	398921	861680	391512	845341	383713	829001	377864	818682	372794
3850	265.4	913052	415201	895628	406905	878203	398609	860778	390313	843354	384387	832899	379251
3900	268.9	931926	424179	913394	415375	894861	406572	876328	397368	857796	391365	847206	386163
3950	272.3	950981	433249	931318	423523	911654	414201	891991	404879	872328	398395	861603	392721
4000	275.8	970216	442001	949399	432152	928583	422302	908672	412042	887856	405476	876090	399730
4050	279.2	989631	451650	968555	440847	946563	430459	924572	419656	902580	412593	890668	406360
4100	282.7	1010154	461417	986964	450060	963774	438704	941512	426926	918322	419776	906263	413046
4150	286.1	1029941	471712	1006469	459366	982059	447019	958587	434673	934176	427010	921971	420198
4200	289.6	1050859	481241	1026155	468316	1000501	455391	975797	442466	951094	434711	936842	427387
4250	293.0	1072941	469082	1046983	462542	1020063	456003	993143	449464	967185	442489	952764	435078
4300	296.5	1095248	472381	1067040	467088	1039805	462236	1011597	456944	983389	449886	968799	441947
4350	299.9	1118765	482768	1089246	476967	1059727	471167	1029225	465367	999706	457782	984946	449750
4400	303.4	1142530	492800	1110683	486482	1079830	480164	1047983	473846	1016135	465723	1000211	457600
4450	306.8	1167550	502950	1133328	496104	1100114	489258	1066899	482412	1032677	473741	1016573	465069
4500	310.3	1192840	513664	1157217	506280	1121595	498434	1085972	491050	1050350	482281	1034066	473051

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		810	432.2	820	437.8	830	443.3	840	448.9	850	454.4	860	460
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	1217371	524491	1180325	516558	1143279	508159	1105204	499760	1068158	490894	1050664	481094
4600	317.2	1244231	535885	1204699	526451	1165166	517959	1125634	508997	1086101	499090	1067376	489184
4650	320.6	1271384	547419	1229320	537405	1188308	527868	1146244	517854	1104180	507841	1085251	497350
4700	324.1	1299894	559075	1255253	548472	1210612	537869	1167034	527266	1122394	516663	1103262	505577
4750	327.5	1327644	571341	1281456	559652	1234194	548449	1188005	536759	1141817	525556	1120334	514353
4800	330.9	1357859	583723	1309015	571419	1259086	559114	1210242	546810	1161398	534997	1139690	522693
4850	334.4	1387315	596753	1335771	583326	1284226	570396	1231585	556969	1180040	544039	1158106	531607
4900	337.8	1418195	609423	1363905	595355	1309614	580785	1254216	566718	1199926	553655	1176658	540090
4950	341.3	1449413	622733	1392332	607508	1334131	592282	1277050	577056	1218850	562845	1195346	549650
5000	344.7	1482099	636169	1421052	619765	1361135	603874	1300087	587470	1240170	573116	1214168	558762
5050	348.2	1514005	650284	1451207	632681	1387267	615595	1323327	597992	1260529	582977	1234268	567963
5100	351.6	1546249	664029	1480524	645206	1413647	627429	1347923	608606	1281046	592920	1254525	577235
5150	355.1	1579995	677918	1510135	658383	1441440	639376	1371580	619841	1301720	602946	1273776	587106
5200	358.5	1612926	691930	1540039	671140	1468327	651417	1395440	630627	1323728	613035	1294338	596510
5250	362.0	1646196	706105	1571423	684578	1495463	663588	1420690	642061	1345916	623762	1315058	606540
5300	365.4	1679804	720423	1601924	697605	1524044	675872	1446165	653053	1368285	634581	1337133	616109
5350	368.9	1712540	734316	1632719	711283	1551687	687702	1470656	664669	1390834	644926	1358180	626280
5400	372.3	1746813	748916	1663806	724561	1579578	700759	1496571	676404	1413564	655924	1379384	636551
5450	375.8	1780192	763100	1695187	737961	1608949	713381	1522711	688242	1437705	667014	1401978	646903
5500	379.2	1813887	777417	1725617	751484	1637347	725551	1549077	699618	1460807	678196	1424753	657337
5550	382.7	1847897	791846	1756318	765110	1665993	738373	1575668	711637	1484089	689452	1446453	667835
5600	386.1	1880958	806428	1787290	778304	1694887	751327	1601219	723203	1508817	700244	1469577	677859
5650	389.6	1914311	820565	1818532	792190	1724029	763815	1628250	735439	1533747	712276	1492882	689112
5700	393.0	1946669	834240	1850044	805030	1752131	776404	1655506	747778	1557593	723242	1515078	699290
5750	396.4	1979298	848596	1880528	818542	1781758	789666	1681688	760201	1582918	734861	1540031	710699
5800	399.5	2012197	860475	1911259	830189	1810322	800497	1709384	770211	1608447	744676	1562566	719734

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		870	465.6	880	471.1	890	476.7	900	482.2	910	487.8	920	493.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	285650	837746	283103	837746	280237	837746	278007	837746	275778	837746	273549
3150	217.2	860654	291143	860654	288555	860654	285644	860654	283379	860654	280791	860654	278527
3200	220.6	653666	296733	647144	293776	641346	290818	634824	288518	629751	286218	624678	283589
3250	224.1	666042	302340	659418	299337	652795	296334	646171	293664	641019	291328	636603	288992
3300	227.5	678485	307992	671760	304942	665035	301554	658310	299182	653080	296472	647849	294100
3350	231.0	690997	313674	684170	310578	676585	307139	669759	304731	664449	301980	659140	299228
3400	234.4	703576	319735	695878	316245	688950	312754	682022	309962	675864	307169	670475	304377
3450	237.9	716222	325470	708412	321929	701382	318387	693572	315554	688105	312721	681856	309887
3500	241.3	728937	331249	721013	327657	713883	324064	705959	320831	699621	317956	694074	315082
3550	244.8	742522	337424	734486	333415	725647	329407	717611	326492	711985	323577	705557	320297
3600	248.2	755383	343269	746419	339205	738271	335140	730122	332184	723603	328859	717084	325903
3650	251.7	768311	349507	760050	345011	750962	340891	741875	337519	736092	334522	729483	331151
3700	255.1	782145	355419	772933	350862	763722	346685	754510	343268	747811	339850	741112	336433
3750	258.6	795220	361362	785884	356744	776549	352510	767213	349047	760424	345583	753634	342120
3800	262.0	809222	367725	799763	363046	789443	358366	779984	354857	772244	350957	765364	347447
3850	265.4	822444	374115	812860	368980	802406	364239	791951	360684	784981	356733	777140	353178
3900	268.9	836616	380561	826026	374958	815435	370156	804845	366155	797785	362553	789843	358551
3950	272.3	850877	387047	839258	381373	828533	376104	817808	372457	809764	368404	801720	364351
4000	275.8	865230	393574	853464	387828	841698	382083	830838	378389	822692	374285	814547	370181
4050	279.2	879672	400128	867760	393895	855847	388494	843935	384339	835688	379768	826525	375613
4100	282.7	894204	406737	881218	400427	869159	394539	857100	390333	847824	385706	839476	381500
4150	286.1	908827	413812	895683	407001	883477	401040	870333	396357	860944	392100	852494	387417
4200	289.6	923540	420494	910237	413600	896935	407138	883633	402399	874132	397659	865581	392920
4250	293.0	939304	427666	924883	420255	911423	413280	897002	408485	887387	403689	877773	398894
4300	296.5	954208	434449	939618	426951	925028	419894	910437	415042	900710	409750	890983	404898
4350	299.9	969203	441719	954443	433688	939684	426549	923941	421195	914101	416287	904261	410933
4400	303.4	985283	449025	969359	440902	953435	433231	937512	427815	927559	422400	917607	416984
4450	306.8	1000469	456398	984365	447726	968261	439511	952157	434034	942092	428557	931020	423080
4500	310.3	1016763	463821	1000479	454591	983177	446283	965874	440745	955696	434745	944501	429207

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		870	465.6	880	471.1	890	476.7	900	482.2	910	487.8	920	493.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	1033170	471295	1015676	461963	998182	453563	980688	447497	969369	441431	958049	435365
4600	317.2	1049690	478806	1032004	469371	1013278	460408	995593	454276	983109	447672	971665	441539
4650	320.6	1066322	486859	1047394	476369	1028465	467309	1009536	461110	996917	454434	985349	448235
4700	324.1	1083067	494492	1062873	483407	1043741	473768	1023547	467502	1010792	460755	999100	454490
4750	327.5	1099925	502664	1079517	491461	1059108	481232	1038699	474413	1025809	467594	1012919	460775
4800	330.9	1117981	510881	1096273	499068	1074565	488241	1052856	481350	1039831	474460	1026806	467077
4850	334.4	1135076	519175	1113142	506742	1091208	495802	1068178	488342	1055017	480883	1040760	473921
4900	337.8	1153391	527028	1130124	514467	1106857	502912	1083589	495376	1070294	487840	1055890	480303
4950	341.3	1170722	535947	1147218	522243	1122595	510570	1099091	502450	1084541	494837	1069991	486717
5000	344.7	1189297	544409	1164426	530055	1139555	517752	1114683	510063	1099987	501861	1084160	493659
5050	348.2	1208007	552948	1181746	538451	1156627	525508	1130366	517224	1114381	508940	1099537	500656
5100	351.6	1226852	561549	1200332	546386	1172658	532792	1146138	524426	1129995	515538	1113852	507172
5150	355.1	1245832	570739	1217888	554900	1189945	540645	1162001	531669	1145700	523221	1129399	514246
5200	358.5	1264948	579452	1235558	562926	1207343	548533	1177953	539471	1161495	529876	1143861	520813
5250	362.0	1285386	588780	1254527	571558	1223668	556488	1193996	547339	1176193	537652	1159577	527964
5300	365.4	1304783	598180	1273631	580250	1242480	564495	1210130	554715	1193355	544936	1175383	535156
5350	368.9	1325525	607634	1292871	588989	1260217	572536	1227562	562665	1208212	552245	1190070	542374
5400	372.3	1345205	616624	1311025	597804	1276846	580645	1243887	570128	1224356	559611	1206046	549648
5450	375.8	1366251	626233	1330524	606681	1296029	588804	1260302	578190	1240591	567576	1220879	556403
5500	379.2	1387456	635914	1351402	615619	1314104	597579	1276807	586304	1256915	575029	1237024	563754
5550	382.7	1408818	646219	1371182	624602	1332293	605830	1294657	594453	1274585	583076	1253258	571130
5600	386.1	1429072	656048	1389833	633663	1350593	614722	1311354	602669	1291101	590615	1269583	579136
5650	389.6	1452016	665949	1411150	643365	1370284	623676	1329418	610936	1307708	598775	1285998	586614
5700	393.0	1473851	675922	1431336	652553	1388821	632106	1346306	619254	1324405	606401	1302503	594133
5750	396.4	1495845	685948	1451658	661787	1408771	641161	1364585	628197	1342491	614643	1319099	601678
5800	399.5	1517996	694793	1473426	670446	1428856	649067	1382976	635409	1359380	621751	1335784	608686



# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		930	498.9	940	504.4	950	510	960	515.6	970	521.1	980	526.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	271320	837746	269409	837746	267499	837746	265588	837746	263677	837746	261766
3150	217.2	860654	276262	860654	274321	860654	272380	860654	270440	860654	268499	860654	266558
3200	220.6	620330	281288	615257	279317	610185	277345	605836	275045	602213	273073	597865	271102
3250	224.1	631452	286322	626300	284320	621148	282318	616733	279982	612317	277980	608637	275977
3300	227.5	642618	291389	637388	289356	632157	286984	627674	284952	623190	282919	618707	280886
3350	231.0	653830	296477	648521	294413	643211	292005	638660	289942	634109	287878	629558	285470
3400	234.4	665087	301584	658929	299141	653540	297047	648922	294603	644303	292509	639684	290415
3450	237.9	676389	307054	670921	304575	664673	302096	659987	299617	655300	297492	650614	295013
3500	241.3	687736	312208	682190	309693	675851	307178	671097	304663	666343	302148	661589	299993
3550	244.8	699932	317382	693503	314832	687074	312281	682252	309730	677431	307179	671806	304993
3600	248.2	711380	322577	704861	319991	698342	317404	693453	314818	688564	312231	682860	309644
3650	251.7	722874	327779	716264	325157	709655	322535	704698	319913	698915	317291	693959	314668
3700	255.1	734412	333015	727713	330357	721014	327699	715989	325041	710127	322383	705103	319725
3750	258.6	745996	338656	739206	335962	732417	332884	726476	330190	721384	327496	715443	324802
3800	262.0	757625	343938	750745	340818	743865	338089	737846	334969	731826	332239	726666	329510
3850	265.4	770170	349227	762329	346067	755359	343301	749260	340536	743162	337375	737934	334610
3900	268.9	781900	354950	773958	351748	766898	348547	760720	345746	754543	342545	748365	339743
3950	272.3	793676	360298	786525	357056	778481	353813	772225	350976	765968	347734	759712	344897
4000	275.8	806401	366077	798256	362384	790110	359511	783775	356228	777439	352944	771104	350072
4050	279.2	818278	371458	810031	368134	801784	364810	795370	361071	788956	358162	782541	354838
4100	282.7	831127	376873	821851	373508	813503	370143	807010	366778	800517	363413	793096	360048
4150	286.1	844045	382734	834656	379328	826206	375496	818695	372090	812123	368685	805551	365279
4200	289.6	856079	388181	847528	384734	838027	380857	831376	377410	823774	373964	816173	370517
4250	293.0	869120	394098	859506	390175	849892	386687	843162	382764	835471	379276	827780	375788
4300	296.5	881257	400046	871530	396076	861803	392107	854021	388137	847212	384609	839431	380639
4350	299.9	894422	406025	883598	401563	873758	397547	866871	393978	858999	389962	851127	385946
4400	303.4	907655	411569	897702	407507	886755	403446	878793	399384	870831	395323	862869	391713
4450	306.8	920955	417604	909883	413040	898812	408932	890760	404825	882708	400717	874656	396609
4500	310.3	933305	423208	922110	419054	910914	414439	902772	410285	894630	406132	886487	401978

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		930	498.9	940	504.4	950	510	960	515.6	970	521.1	980	526.7
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	946730	429299	935410	424632	924090	420433	914829	416233	906597	411567	898364	407367
4600	317.2	959181	435407	947738	430689	936294	425972	926931	421726	918609	417009	909246	412764
4650	320.6	973781	441559	961162	436791	949595	432022	940130	427254	930666	422485	922253	418194
4700	324.1	986346	447742	973591	442440	961900	437621	952334	432801	943831	427982	934265	423644
4750	327.5	1000030	453956	988214	448598	975324	443727	965657	438856	955990	433986	946322	429115
4800	330.9	1013781	460186	1000756	454772	987731	449851	977962	444437	968193	439515	958425	435085
4850	334.4	1027600	466461	1014440	460991	1000183	455521	990313	450548	980442	445078	970572	440105
4900	337.8	1041487	472767	1028191	466738	1013788	461714	1003816	456188	993844	451164	982765	446140
4950	341.3	1055441	479104	1040891	473013	1026341	467431	1016268	462355	1006194	456773	995002	451697
5000	344.7	1069463	485457	1054766	479818	1040070	473666	1028764	468028	1018590	462389	1007285	457262
5050	348.2	1083552	491855	1068709	485642	1052724	479947	1042448	474251	1031030	468556	1019613	463379
5100	351.6	1098863	498283	1082720	492009	1066577	486257	1055046	479983	1044669	474232	1033138	468480
5150	355.1	1113099	505270	1096798	498407	1080498	492599	1068854	486263	1057211	479928	1045568	474120
5200	358.5	1127402	511751	1110944	504821	1094486	498957	1082730	492560	1070974	486164	1058042	480300
5250	362.0	1141774	518277	1125158	511280	1107354	504822	1095486	498364	1083617	491905	1071748	485985
5300	365.4	1157411	525376	1139439	518314	1121467	511251	1109485	504731	1096305	498211	1084324	492235
5350	368.9	1171929	531954	1153788	524277	1135646	517696	1122343	510566	1110248	503986	1096945	497405
5400	372.3	1186514	539131	1168204	531381	1149894	524186	1136466	516990	1123038	510347	1109611	503705
5450	375.8	1202400	545789	1182688	537968	1162977	530706	1149425	523444	1135873	516181	1122322	509478
5500	379.2	1217132	552479	1197240	544586	1177348	537257	1163672	529928	1149997	522600	1136321	515835
5550	382.7	1233186	559753	1213114	551220	1191787	543825	1177987	536430	1164188	529035	1149134	521640
5600	386.1	1249330	567083	1227812	558473	1206294	550438	1192370	542402	1177181	534940	1163257	527479
5650	389.6	1264288	573874	1242578	565188	1220868	557081	1205543	549553	1191496	541445	1176171	533917
5700	393.0	1279313	581281	1257412	571934	1235510	563755	1220050	555576	1204590	547981	1189130	540387
5750	396.4	1295706	588124	1272313	579285	1250219	570445	1234624	562195	1219029	553944	1203434	546284
5800	399.5	1312188	595028	1288592	585526	1264997	576619	1249266	568305	1233536	559991	1217805	551677

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		990	532.2	1000	537.8	1010	543.3	1020	548.9	1030	554.4	1040	560
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	260174	837746	258582	837746	256990	837746	255397	837746	253805	837746	252531
3150	217.2	860654	264940	860654	263323	860654	261705	860654	259764	860654	258470	860654	256853
3200	220.6	593517	269459	589893	267816	586270	265844	582647	264201	579023	262558	576124	261243
3250	224.1	604221	274309	599806	272306	596126	270638	592446	268636	588766	267301	585822	265632
3300	227.5	614971	278853	610487	277159	606751	275126	603015	273431	599279	271737	595543	270043
3350	231.0	625007	283751	620456	281687	616663	279967	612871	277904	609078	276184	605286	274464
3400	234.4	635066	288320	630447	286575	626598	284481	622749	282735	618900	280990	615051	279245
3450	237.9	645928	293242	641242	291117	637336	289346	632650	287221	628745	285451	624840	283680
3500	241.3	656043	297837	651289	296041	647327	293885	643366	291729	638612	289933	634650	288137
3550	244.8	666984	302807	662163	300620	658145	298799	653323	296612	649305	294790	645287	292968
3600	248.2	677970	307797	672266	305580	668192	303363	664118	301146	660043	299298	655154	297451
3650	251.7	688176	312421	683219	310173	679088	308300	674131	306052	670000	303805	665044	301932
3700	255.1	699241	317447	694216	315168	689192	312890	685005	310612	679980	308713	675793	306435
3750	258.6	710351	322493	704410	320184	699318	317875	695075	315566	689983	313257	685739	311333
3800	262.0	720646	327170	715487	324830	710327	322491	705167	320151	700867	317811	695708	315861
3850	265.4	731836	332240	725737	329474	720510	327104	716153	324734	710926	322363	705699	320388
3900	268.9	743070	336942	736892	334541	731597	332140	726302	329339	721890	327338	716595	324937
3950	272.3	753456	342060	747199	339629	741836	337197	737367	334360	732005	332333	726642	329902
4000	275.8	764769	347199	758433	344736	753003	341863	747573	339401	742142	336939	736712	334887
4050	279.2	775211	352345	768796	349437	763298	346944	757800	344035	752303	341542	746805	339465
4100	282.7	786603	357524	780110	354580	774544	351636	768978	349112	763413	346588	757847	344065
4150	286.1	798040	362299	791468	359318	785835	356764	780201	353784	774568	351229	767996	348675
4200	289.6	809522	367501	801921	364485	796220	361469	790519	358884	784818	356299	779118	353714
4250	293.0	821050	372737	813358	369685	807590	366633	800860	363582	795091	360966	789323	358350
4300	296.5	831649	377993	823868	374464	818032	371818	812196	368289	806359	365643	799551	362997
4350	299.9	843256	382823	835384	379700	829480	376577	823576	373453	816689	370776	810785	368099
4400	303.4	854907	388102	846945	384943	840974	381784	834007	378174	828036	375466	821069	372759
4450	306.8	866603	393415	857545	389763	851506	386569	844460	383374	838421	380635	831376	377897
4500	310.3	878345	398747	869185	395055	863078	391825	855954	388133	849847	385363	842723	382594

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ } Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		990	532.2	1000	537.8	1010	543.3	1020	548.9	1030	554.4	1040	560
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	890132	404101	881899	400368	874696	397101	867492	393368	860289	390568	853086	387302
4600	317.2	900923	409461	892600	405688	885318	402386	878036	398612	870754	395310	863471	392479
4650	320.6	912789	414856	904376	411041	897015	407226	889653	403888	882292	400550	874931	397212
4700	324.1	924699	419788	916196	415933	908756	412559	901316	408703	893876	405329	886436	402438
4750	327.5	936655	425218	926988	421322	919469	417425	911950	413528	904431	410606	896912	407196
4800	330.9	948656	430656	938887	426718	931289	422781	923691	418843	916093	415398	908495	411953
4850	334.4	960702	436127	950832	432148	943155	428170	934381	424191	926704	420710	919028	417229
4900	337.8	972793	441618	962821	437599	955065	433579	946202	429560	938446	426043	929582	422526
4950	341.3	984929	447637	974856	443069	965902	439009	958067	434441	950233	430889	941279	427336
5000	344.7	997110	452649	985805	448548	977891	444447	968847	439833	960934	436245	951890	432656
5050	348.2	1009336	458719	997919	454059	989926	449918	980792	445258	972799	441634	963665	438009
5100	351.6	1021608	464297	1010077	459592	1002006	454886	992781	450703	983557	446520	975486	442860
5150	355.1	1033924	469896	1022281	465144	1012966	460393	1004816	455641	995501	451945	986187	447721
5200	358.5	1046286	475502	1034530	470704	1025125	465907	1016896	461109	1007491	457378	998086	453113
5250	362.0	1059879	481142	1046824	476298	1037329	471454	1027834	466611	1018339	462305	1008844	458538
5300	365.4	1072342	486802	1059163	481912	1049578	477022	1039992	471589	1030407	467786	1020822	463440
5350	368.9	1084851	492469	1071547	487533	1061872	482598	1052196	477114	1041311	472726	1031636	468339
5400	372.3	1096183	498723	1083976	493188	1072990	488207	1063224	482671	1053459	478243	1043693	473815
5450	375.8	1110002	503891	1096450	498864	1085363	493277	1075507	488250	1065651	483780	1054564	479311
5500	379.2	1122645	510197	1108970	504559	1097781	499486	1087835	493848	1076646	489338	1066700	484828
5550	382.7	1135334	516520	1121534	510831	1110244	505143	1100208	499454	1088917	494335	1078881	489784
5600	386.1	1148068	521739	1134144	515999	1122752	510834	1112626	504520	1101233	499928	1089841	495336
5650	389.6	1160846	528126	1146799	522336	1135305	516545	1123811	510175	1113595	505542	1102101	500909
5700	393.0	1174958	533960	1159498	528118	1147903	521692	1136308	515850	1126002	510592	1114407	505919
5750	396.4	1187838	539801	1172243	533908	1160547	528015	1148850	521533	1137154	516229	1125457	511515
5800	399.5	1202075	545739	1186344	539207	1174546	532675	1162748	526736	1149639	521392	1137841	516047

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1050	565.6	1060	571.1	1070	576.7	1080	582.2	1090	587.8	1100	593.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	250939	837746	249665	837746	248073	837746	246799	837746	245525	837746	244252
3150	217.2	860654	252335	860654	253941	860654	252324	860654	251030	860654	249736	860654	248442
3200	220.6	572501	259600	568878	258286	565979	256643	563080	255328	559457	254014	556558	252700
3250	224.1	582143	263964	578463	262295	575519	260960	572575	259625	568895	257957	565951	256622
3300	227.5	591807	268349	588070	266994	585082	265300	582093	263944	578356	262589	575368	261234
3350	231.0	601493	272745	597701	271025	594667	269649	591633	268273	587840	266554	584806	265178
3400	234.4	611203	277500	607354	275754	604275	274009	601195	272613	597347	271217	594267	269820
3450	237.9	620934	281909	617029	280138	613905	278722	610781	276951	606875	275534	603751	273763
3500	241.3	630689	286340	626727	284544	623558	282748	620388	281311	616427	279514	613257	278077
3550	244.8	640465	290782	637251	288960	632333	287138	630019	285681	626001	284223	622786	282401
3600	248.2	651080	295603	647005	293756	642931	291908	639672	290061	635597	288583	631523	286735
3650	251.7	660913	300059	656782	297811	652652	295938	649347	294440	645216	292567	641086	291068
3700	255.1	670769	304536	666582	302637	662395	300739	659045	298840	654858	297321	650671	295423
3750	258.6	680647	309024	676404	307100	672160	305175	668765	303251	664522	301712	660278	299788
3800	262.0	690548	313912	686248	311572	681948	309622	678508	307672	674209	306112	669909	304163
3850	265.4	701342	318018	696986	316043	692630	314067	688274	312092	683918	310512	679562	308536
3900	268.9	711300	322936	706887	320535	702475	318534	698062	316934	693650	314933	689237	312932
3950	272.3	721279	327875	716811	325444	712342	323417	707873	321391	703404	319364	698935	317338
4000	275.8	731282	332424	726757	329962	722231	327910	717706	325858	713181	323806	708655	321754
4050	279.2	741307	336971	736725	334478	732143	331985	727562	330323	722980	328246	718398	326168
4100	282.7	752282	341541	746644	339017	743006	336914	738368	334811	732802	332708	728164	330605
4150	286.1	762363	346546	756668	343992	752974	341438	748280	339309	742647	337180	737952	335052
4200	289.6	772467	351129	767716	348544	762965	346390	758214	344236	753464	341651	747763	339497
4250	293.0	782593	355735	777786	353119	772979	350503	768172	348323	763365	346144	757596	343964
4300	296.5	793714	360350	788851	357704	783015	355057	778151	352852	773288	350647	767452	348441
4350	299.9	803897	365422	798977	362745	794058	360068	788154	357837	783234	355606	777330	353375
4400	303.4	814102	370051	809126	367343	804150	364636	798179	362379	793202	360123	787231	357415
4450	306.8	824330	374702	819298	372420	814265	369682	808226	366944	803193	364662	797154	362380
4500	310.3	835598	379364	830509	376595	824403	373826	819314	371518	813207	368749	807100	366441

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \text{ (lb/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \text{ (kg/hr)}$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \text{ Ksc} = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

## Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549

Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1050	565.6	1060	571.1	1070	576.7	1080	582.2	1090	587.8	1100	593.3
Set Pressure		Orifice Capacity											
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	846911	384502	840737	381702	834563	378903	829417	376103	823243	373770	818098	371437
4600	317.2	857229	389177	850987	386347	844745	383516	839544	381158	833302	378327	828100	375969
4650	320.6	868621	394351	862312	391490	856002	388152	849693	385768	843383	382907	838125	380523
4700	324.1	878996	399064	872619	396172	866241	393280	859864	390389	853487	387979	848172	385087
4750	327.5	889393	404274	882948	400864	876503	397942	870058	395019	863613	392584	858242	389662
4800	330.9	900897	409000	894385	405555	887872	402601	881360	399648	874847	397188	868335	394234
4850	334.4	911351	413748	904771	410765	898190	407283	891610	404300	885030	401813	878450	398829
4900	337.8	921826	419009	915179	415493	908531	411976	901883	409464	896343	406449	889695	403435
4950	341.3	933444	423783	926729	420231	920013	417186	913298	414140	906582	411095	899867	408050
5000	344.7	943976	429068	937193	425480	930410	421891	923627	418815	916844	415740	910061	413177
5050	348.2	955673	433868	948822	430243	940829	427137	933979	424030	927128	420924	920277	417818
5100	351.6	966261	439200	959343	435540	951271	431880	944353	428743	937435	425606	930516	422469
5150	355.1	976872	444025	969886	440330	962900	436634	954750	433466	947764	430298	940778	427130
5200	358.5	988681	449381	981628	445650	973399	441918	966345	438720	958116	434988	951062	431790
5250	362.0	999349	454232	992228	450465	983919	446698	976798	443468	968490	440239	961369	437010
5300	365.4	1011237	459636	1002850	455833	995661	451487	987274	448227	980085	444967	971698	441164
5350	368.9	1021961	464500	1013495	460113	1006238	456274	997772	452984	990516	449693	982050	445854
5400	372.3	1033928	469387	1025383	465512	1016838	461084	1009514	457763	1000969	454442	993645	451121
5450	375.8	1044708	474842	1036084	470373	1028692	466463	1020068	463111	1012677	459200	1004053	455848
5500	379.2	1056754	480318	1048051	475808	1039348	471298	1031889	467915	1023186	463969	1014484	460587
5550	382.7	1067590	485233	1058809	480682	1051282	476700	1042500	472718	1033718	469305	1024937	465323
5600	386.1	1079715	490745	1070855	486153	1061994	481561	1053134	477543	1044273	474099	1035413	470082
5650	389.6	1090608	495698	1081669	491065	1072729	486432	1063790	482958	1054850	478904	1045911	474850
5700	393.0	1102812	501245	1093793	496571	1084775	491898	1074468	487808	1065450	483719	---	---
5750	396.4	1113761	506211	1104664	501497	1095566	496782	1086469	493246	1077372	489121	---	---
5800	399.5	1126044	511296	1116867	505952	1107691	501201	1098515	497638	---	---	---	---

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549											
Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1110	598.9	1120	604.4	1130	610	1140	615.6	1150	621.1
Set Pressure		Orifice Capacity									
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
3100.5	213.8	837746	242659	837746	241704	837746	240430	837746	239156	837746	237883
3150	217.2	860654	246825	860654	245854	860654	244560	860654	243266	860654	241972
3200	220.6	553659	251056	550760	250071	547862	248756	545688	247442	542789	246127
3250	224.1	563008	255287	560064	253952	557120	252618	554176	251616	551968	250282
3300	227.5	572379	259540	569390	258184	566401	256829	563412	255474	560423	254118
3350	231.0	581772	263802	578738	262426	575704	261051	572670	259675	569636	258299
3400	234.4	591188	268075	588109	266679	585030	265283	581951	263886	578872	262490
3450	237.9	600627	272347	597503	270930	594379	269513	591254	268097	588130	266680
3500	241.3	610088	276281	606919	274844	603750	273766	600580	272329	597411	270892
3550	244.8	618768	280943	615554	279486	612340	278028	609125	276571	605911	275113
3600	248.2	628263	284888	625004	283410	621744	281932	618485	280454	615225	278976
3650	251.7	637781	289195	634476	287697	631172	286198	627867	284700	624563	283201
3700	255.1	647321	293524	643971	292005	640622	290486	637272	288967	633922	287449
3750	258.6	656884	297863	653489	296324	649246	294785	645851	293245	642456	291321
3800	262.0	666469	302213	663029	300653	658729	299093	655289	297534	651850	295584
3850	265.4	676077	306561	672592	304981	669107	303401	664751	301426	661266	299845
3900	268.9	685707	310931	681294	309331	677764	307730	674234	306129	670704	304128
3950	272.3	695360	315311	690891	313690	687316	312069	683741	310043	679272	308422
4000	275.8	705035	319702	700510	318060	696890	316419	693270	314367	688744	312725
4050	279.2	714733	324091	710152	322429	706486	320351	702821	318689	698239	317027
4100	282.7	724454	328502	719816	326819	716105	324716	712395	323034	707757	320931
4150	286.1	734197	332923	729502	330794	725747	329091	721991	327388	717297	325685
4200	289.6	743962	337343	739212	335619	735411	333465	730660	331742	---	---
4250	293.0	753750	341784	748943	340040	745098	337861	740291	335681	---	---
4300	296.5	763561	346236	758698	344031	754807	342266	749943	340061	---	---
4350	299.9	773394	350698	768474	348913	764539	346682	759619	344452	---	---
4400	303.4	783250	355159	778274	352902	773298	351097	768322	348841	---	---
4450	306.8	793128	359641	788096	357816	783063	355534	778031	353252	---	---
4500	310.3	803029	364134	797940	361826	792851	359519	---	---	---	---

# Orifice Capacities

$$W = S \times P \times Ksh \times Ksc$$

$$W = 51.5 \times K \times A \times P \times Ksh \times Ksc \left(\frac{lb}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 14.7 \text{ psia}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_US table}$$

$$Kn = 1 \text{ for } P > 3200 \text{ psig}$$

$$Kn = [(0.1906 \times P) - 1000] / [(0.2292 \times P) - 1061] \text{ for } P \leq 3200 \text{ psig}$$

$$A = 4.908 \text{ in}^2$$

For Non-code applications multiply capacity by 1.1

$$W = S \times P \times Ksh \times Ksc$$

$$W = 5.25 \times K \times A \times P \times Ksh \times Ksc \left(\frac{kg}{hr}\right)$$

$$P = (1.03 \times \text{set pressure}) + 0.101 \text{ MPa}$$

$$K = 0.866$$

$$Ksh = 1 \quad Ksc = \text{from Ksc\_SI table}$$

$$Kn = 1 \text{ for } P > 22.1 \text{ MPa}$$

$$Kn = [(27.6 \times P) - 1000] / [(33.2 \times P) - 1061] \text{ for } P \leq 22.1 \text{ MPa}$$

$$A = 3166.46 \text{ mm}^2$$

Valve Capacity, ASME B&PV Code Section I, for Supercritical Steam Applies to Valve 3549											
Temperature		°F	°C	°F	°C	°F	°C	°F	°C	°F	°C
		1110	598.9	1120	604.4	1130	610	1140	615.6	1150	621.1
Set Pressure		Orifice Capacity									
psig	barg	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr	lb/hr	kg/hr
4550	313.7	812953	368637	807807	366304	802662	364437	---	---	---	---
4600	317.2	822899	373610	817697	371251	812495	368893	---	---	---	---
4650	320.6	832867	377662	827609	375277	822351	372893	---	---	---	---
4700	324.1	842858	382677	837544	380267	832229	377858	---	---	---	---
4750	327.5	852872	386739	847501	384304	842130	381868	---	---	---	---
4800	330.9	862908	391281	857481	388820	---	---	---	---	---	---
4850	334.4	872966	396343	867483	393359	---	---	---	---	---	---
4900	337.8	884156	400420	877508	397908	---	---	---	---	---	---
4950	341.3	894271	405512	887555	402467	---	---	---	---	---	---
5000	344.7	904408	410101	897625	407025	---	---	---	---	---	---
5050	348.2	914568	414711	907718	411605	---	---	---	---	---	---
5100	351.6	923598	419332	---	---	---	---	---	---	---	---
5150	355.1	933792	423962	---	---	---	---	---	---	---	---
5200	358.5	945184	428592	---	---	---	---	---	---	---	---
5250	362.0	955434	433243	---	---	---	---	---	---	---	---
5300	365.4	965707	437904	---	---	---	---	---	---	---	---
5350	368.9	976003	442564	---	---	---	---	---	---	---	---
5400	372.3	---	---	---	---	---	---	---	---	---	---
5450	375.8	---	---	---	---	---	---	---	---	---	---
5500	379.2	---	---	---	---	---	---	---	---	---	---
5550	382.7	---	---	---	---	---	---	---	---	---	---
5600	386.1	---	---	---	---	---	---	---	---	---	---
5650	389.6	---	---	---	---	---	---	---	---	---	---
5700	393.0	---	---	---	---	---	---	---	---	---	---
5750	396.4	---	---	---	---	---	---	---	---	---	---
5800	399.5	---	---	---	---	---	---	---	---	---	---



# Orifice Capacities

## Reduced Bore Selection and Capacity Factor

Reduced bores may be offered in the EBV.  
Refer to the appropriate tables for reduced bores available and their percentage of full bore capacities.

Use of reduced bore tables:

- Divide required capacity by the full capacity.
- Compare the quotient to the values in applicable table.
- Select the next higher percentile.

Reduced Bore Selection							
Inlet Size		Valve Types	Bore Size		Orifice Area		Relative to Full Bore (%)
in.	mm		in.	mm	in <sup>2</sup>	cm <sup>2</sup>	
1.50	38.1	3515 3525	0.875 <sup>1</sup>	22.2	0.601	3.88	100.0
			0.844	21.4	0.559	3.61	92.9
			0.813	20.7	0.519	3.35	86.2
			0.781	19.8	0.479	3.09	79.7
			0.750	19.1	0.442	2.85	73.4
			0.719	18.3	0.406	2.62	67.4
			0.688	17.5	0.372	2.40	61.7
			0.656	16.7	0.338	2.18	56.2
			0.625	15.9	0.307	1.98	51.0
			0.594	15.1	0.277	1.79	46.0
			0.563	14.3	0.249	1.61	41.3
2.00	50.8	3516 3526	1.000 <sup>1</sup>	25.4	0.785	5.07	100.0
			0.969	24.6	0.737	4.76	93.8
			0.938	23.8	0.691	4.46	87.8
			0.906	23.0	0.645	4.16	82.1
			0.875	22.2	0.601	3.88	76.5
			0.844	21.4	0.559	3.61	71.1
			0.813	20.7	0.519	3.35	66.0
			0.781	19.8	0.479	3.09	61.0
			0.750	19.1	0.442	2.85	56.2
			0.717	18.2	0.404	2.60	51.6
			0.688	17.5	0.372	2.40	47.2
			0.625	15.9	0.307	1.98	39.0
2.50	63.5	3517 3527 3537 3547	1.750 <sup>1</sup>	44.5	2.405	14.44	100.0
			1.719	43.7	2.321	13.90	96.4
			1.688	42.9	2.238	13.38	92.9
			1.656	42.1	2.154	12.87	89.5
			1.625	41.3	2.074	12.38	86.2
			1.594	40.5	1.996	11.88	82.9
			1.563	39.7	1.919	11.40	79.3
			1.531	38.9	1.841	10.93	76.5
			1.500	38.1	1.767	10.48	73.4
			1.469	37.3	1.695	10.02	70.4
			1.438	36.5	1.624	9.58	67.4
			1.406	35.7	1.553	9.15	64.5
			1.375	34.9	1.485	8.74	61.7
			1.344	34.1	1.419	8.31	58.9
			1.313	33.4	1.354	7.15	56.2
			1.281	32.5	1.289	6.77	53.6
			1.188	30.2	1.108	6.41	46.0
			1.156	29.4	1.050	6.06	43.6
			1.125	28.6	0.994	5.73	41.3
			1.094	27.8	0.940	5.39	39.0
1.063	27.0	0.887	5.07	36.8			
1.031	26.2	0.835	0.00	34.8			
			1.000	25.4	0.785	0.00	32.6

Notes: If a valve is code stamped, it can only be offered in full bore because the reduced bore slope is not certified with the national board.

# Orifice Capacities

## Reduced Bore Selection and Capacity Factor

Reduced bores may be offered in the EBV.  
Refer to the appropriate tables for reduced bores available and their percentage of full bore capacities.

Use of reduced bore tables:

- Divide required capacity by the full capacity.
- Compare the quotient to the values in applicable table.
- Select the next higher percentile.

Reduced Bore Selection							
Inlet Size		Valve Types	Bore Size		Orifice Area		Relative to Full Bore (%)
in.	mm		in.	mm	in <sup>2</sup>	cm <sup>2</sup>	
3.00	76.2	3548	2.000 <sup>1</sup>	50.8	3.142	19.03	100.0
			1.969	50.0	3.045	18.41	96.9
			1.938	49.2	2.950	17.81	93.8
			1.906	48.4	2.853	17.23	90.8
			1.875	47.6	2.761	16.66	87.9
			1.844	46.8	2.671	16.07	85.0
			1.813	46.1	2.582	15.52	82.1
			1.781	45.2	2.491	14.94	79.3
			1.750	44.5	2.405	14.44	76.6
			1.717	43.6	2.315	13.90	73.9
			1.688	42.9	2.238	13.38	71.2
			1.656	42.1	2.154	12.87	68.6
			1.625	41.3	2.074	12.38	66.0
			1.594	40.5	1.996	11.88	63.5
			1.563	39.7	1.919	11.40	61.0
			1.531	38.9	1.841	10.93	58.6
			1.500	38.1	1.767	10.48	56.3
			1.469	37.3	1.695	10.02	53.9
			1.438	36.5	1.624	9.58	51.7
			1.406	35.7	1.553	9.15	49.4
1.375	34.9	1.485	8.74	47.3			
1.344	34.1	1.419	8.31	45.1			
1.313	33.4	1.354	0.00	43.1			
1.281	32.5	1.289	0.00	41.0			
4.00	101.6	3549	2.500 <sup>1</sup>	63.5	4.909	30.12	100.0
			2.469	62.7	4.788	29.33	97.5
			2.438	61.9	4.668	28.58	95.1
			2.406	61.1	4.547	27.84	92.6
			2.375	60.3	4.430	27.11	90.3
			2.344	59.5	4.315	26.36	87.9
			2.313	58.8	4.202	25.65	85.6
			2.281	57.9	4.086	24.95	83.3
			2.250	57.2	3.976	24.26	81.0
			2.219	56.4	3.867	23.55	78.8
			2.188	55.6	3.760	22.88	76.6
			2.156	54.8	3.651	22.22	74.4
			2.125	54.0	3.547	21.57	72.3
			2.094	53.2	3.444	20.90	70.1
			2.063	52.4	3.343	20.27	68.1
			2.031	51.6	3.240	19.64	66.0
			2.000	50.8	3.142	19.03	64.0
			1.969	50.0	3.045	18.41	62.0
			1.938	49.2	2.950	17.81	60.1
			1.906	48.4	2.853	17.23	58.1
1.875	47.6	2.761	16.66	56.3			

Notes: If a valve is code stamped, it can only be offered in full bore because the reduced bore slope is not certified with the national board.

# Orifice Capacities

## Reduced Bore Selection and Capacity Factor

Reduced bores may be offered in the EBV. Refer to the appropriate tables for reduced bores available and their percentage of full bore capacities.

Use of reduced bore tables:

- Divide required capacity by the full capacity.
- Compare the quotient to the values in Table 4 through Table 9.
- Select the next higher percentile.

Reduced Bore Selection							
Inlet Size		Valve Types	Bore Size		Orifice Area		Relative to Full Bore (%)
in.	mm		in.	mm	in <sup>2</sup>	cm <sup>2</sup>	
4.00 (contd.)	101.6	3549	1.844	46.8	2.671	16.07	54.4
			1.813	46.1	2.582	15.52	52.6
			1.781	45.2	2.491	14.97	50.8
			1.750	44.5	2.405	14.44	49.0
			1.719	43.7	2.321	13.90	47.3
			1.688	42.9	2.238	13.38	45.6
			1.656	42.1	2.154	12.87	43.9
			1.625	41.3	2.074	12.38	42.3
			1.594	40.5	1.996	11.88	40.6
			1.563	39.7	1.919	11.40	39.1
			1.531	38.9	1.841	0.00	37.5
			1.500	38.1	1.767	0.00	36.0
			4.00	101.6	3511	3.000 <sup>1</sup>	76.2
2.969	75.4	6.923				42.79	97.9
2.938	74.6	6.779				41.88	95.9
2.906	73.8	6.633				40.98	93.8
2.875	73.0	6.492				40.10	91.8
2.844	72.2	6.353				39.19	89.9
2.813	71.5	6.215				38.32	87.9
2.781	70.6	6.074				37.46	85.9
2.750	69.9	5.940				36.61	84.0
2.719	69.1	5.806				35.74	82.1
2.688	68.3	5.675				34.92	80.3
2.656	67.5	5.540				34.10	78.4
2.625	66.7	5.412				33.29	76.6
2.594	65.9	5.285				32.46	74.8
2.563	65.1	5.159				31.67	73.0
2.531	64.3	5.031				30.89	71.2
2.500	63.5	4.909				30.12	69.4
2.469	62.7	4.788				29.33	67.7
2.438	61.9	4.668				28.58	66.0
2.406	61.1	4.547				27.84	64.3
2.375	60.3	4.430				27.11	62.7
2.344	59.5	4.315				26.36	61.0
2.313	58.8	4.202				25.65	59.4
2.281	57.9	4.086				24.95	57.8
2.250	57.2	3.976				24.26	56.3
2.219	56.4	3.867				23.55	54.7
2.188	55.6	3.760				22.88	53.2
2.156	54.8	3.651				22.22	51.7
2.125	54.0	3.547				21.57	50.2
2.094	53.2	3.444				20.90	48.7
2.063	52.4	3.343	20.27	47.3			
2.031	51.6	3.240	0.00	45.8			
2.000	50.8	3.142	0.00	44.4			

Notes: If a valve is code stamped, it can only be offered in full bore because the reduced bore slope is not certified with the national board.

# Orifice Capacities

Superheat Correction Factor, Ksh																	
Flowing Pressure (psia)*	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	0.779	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	0.789	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	-	-	-	-	-	-	-	0.899	0.815	0.767	0.733	0.705	0.682	0.662	0.644	0.628	0.614

**Notes:**

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

# Orifice Capacities

Superheat Correction Factor, Ksh																		
Flowing Pressure, MPa	Total Temperature, °C, of Superheated Steam																	
	205	225	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600	625
0.50	0.991	0.968	0.942	0.919	0.896	0.876	0.857	0.839	0.823	0.807	0.792	0.778	0.765	0.752	0.740	0.728	0.717	0.706
0.75	0.995	0.972	0.946	0.922	0.899	0.878	0.859	0.841	0.824	0.808	0.793	0.779	0.766	0.753	0.740	0.729	0.717	0.707
1.00	0.985	0.973	0.950	0.925	0.902	0.880	0.861	0.843	0.825	0.809	0.794	0.780	0.766	0.753	0.741	0.729	0.718	0.707
1.25	0.981	0.976	0.954	0.928	0.905	0.883	0.863	0.844	0.827	0.810	0.795	0.781	0.767	0.754	0.741	0.729	0.718	0.707
1.50	-	-	0.957	0.932	0.907	0.885	0.865	0.846	0.828	0.812	0.796	0.782	0.768	0.755	0.742	0.730	0.718	0.708
1.75	-	-	0.959	0.935	0.910	0.887	0.866	0.847	0.829	0.813	0.797	0.782	0.769	0.756	0.743	0.731	0.719	0.708
2.00	-	-	0.960	0.939	0.913	0.889	0.868	0.849	0.831	0.814	0.798	0.784	0.769	0.756	0.744	0.731	0.720	0.708
2.25	-	-	0.963	0.943	0.916	0.892	0.870	0.850	0.832	0.815	0.799	0.785	0.770	0.757	0.744	0.732	0.720	0.709
2.50	-	-	-	0.946	0.919	0.894	0.872	0.852	0.834	0.816	0.800	0.785	0.771	0.757	0.744	0.732	0.720	0.710
2.75	-	-	-	0.948	0.922	0.897	0.874"	0.854	0.835	0.817	0.801	0.786	0.772	0.758	0.745	0.733	0.721	0.710
3.00	-	-	-	0.949	0.925	0.899	0.876	0.855	0.837	0.819	0.802	0.787	0.772	0.759	0.746	0.733	0.722	0.710
3.25	-	-	-	0.951	0.929	0.902	0.879	0.857	0.838	0.820	0.803	0.788	0.773	0.759	0.746	0.734	0.722	0.711
3.50	-	-	-	0.953	0.933	0.905	0.881	0.859	0.840	0.822	0.804	0.789	0.774	0.760	0.747	0.734	0.722	0.711
3.75	-	-	-	0.956	0.936	0.908	0.883	0.861	0.841	0.823	0.806	0.790	0.775	0.761	0.748	0.735	0.723	0.711
4.00	-	-	-	0.959	0.940	0.910	0.885	0.863	0.842	0.824	0.807	0.791	0.776	0.762	0.748	0.735	0.723	0.712
4.25	-	-	-	0.961	0.943	0.913	0.887	0.864	0.844	0.825	0.808	0.792	0.776	0.762	0.749	0.736	0.724	0.713
4.50	-	-	-	-	0.944	0.917	0.890	0.866	0.845	0.826	0.809	0.793	0.777	0.763	0.749	0.737	0.725	0.713
4.75	-	-	-	-	0.946	0.919	0.892	0.868	0.847	0.828	0.810	0.793	0.778	0.764	0.750	0.737	0.725	0.713
5.00	-	-	-	-	0.947	0.922	0.894	0.870	0.848	0.829	0.811	0.794	0.779	0.765	0.751	0.738	0.725	0.714
5.25	-	-	-	-	0.949	0.926	0.897	0.872	0.850	0.830	0.812	0.795	0.780	0.765	0.752	0.738	0.726	0.714
5.50	-	-	-	-	0.952	0.930	0.899	0.874	0.851	0.831	0.813	0.797	0.780	0.766	0.752	0.739	0.727	0.714
5.75	-	-	-	-	0.954	0.933	0.902	0.876	0.853	0.833	0.815	0.798	0.782	0.767	0.753	0.739	0.727	0.715
6.00	-	-	-	-	0.957	0.937	0.904	0.878	0.855	0.834	0.816	0.798	0.783	0.768	0.753	0.74	0.727	0.716
6.25	-	-	-	-	0.960	0.940	0.907	0.880	0.856	0.836	0.817	0.799	0.783	0.768	0.754	0.74	0.728	0.716
6.50	-	-	-	-	0.964	0.944	0.910	0.882	0.859	0.837	0.818	0.801	0.784	0.769	0.754	0.741	0.729	0.716
6.75	-	-	-	-	0.966	0.946	0.913	0.885	0.860	0.839	0.819	0.802	0.785	0.769	0.755	0.742	0.729	0.717
7.00	-	-	-	-	-	0.947	0.916	0.887	0.862	0.840	0.820	0.802	0.786	0.770	0.756	0.742	0.729	0.717
7.25	-	-	-	-	-	0.949	0.919	0.889	0.863	0.842	0.822	0.803	0.787	0.771	0.756	0.743	0.730	0.717
7.50	-	-	-	-	-	0.951	0.922	0.891	0.865	0.843	0.823	0.805	0.788	0.772	0.757	0.744	0.730	0.718
7.75	-	-	-	-	-	0.953	0.925	0.893	0.867	0.844	0.824	0.806	0.788	0.772	0.758	0.744	0.731	0.719
8.00	-	-	-	-	-	0.955	0.928	0.896	0.869	0.846	0.825	0.806	0.789	0.773	0.758	0.744	0.732	0.719
8.25	-	-	-	-	-	0.957	0.932	0.898	0.871	0.847	0.827	0.807	0.790	0.774	0.759	0.745	0.732	0.719
8.50	-	-	-	-	-	0.960	0.935	0.901	0.873	0.849	0.828	0.809	0.791	0.775	0.760	0.746	0.732	0.720
8.75	-	-	-	-	-	0.963	0.939	0.903	0.875	0.85	0.829	0.810	0.792	0.776	0.760	0.746	0.733	0.721
9.00	-	-	-	-	-	0.966	0.943	0.906	0.877	0.852	0.830	0.811	0.793	0.776	0.761	0.747	0.734	0.721
9.25	-	-	-	-	-	0.970	0.947	0.909	0.879	0.853	0.832	0.812	0.794	0.777	0.762	0.747	0.734	0.721
9.50	-	-	-	-	-	0.973	0.950	0.911	0.881	0.855	0.833	0.813	0.795	0.778	0.763	0.748	0.734	0.722
9.75	-	-	-	-	-	0.977	0.954	0.914	0.883	0.857	0.834	0.814	0.796	0.779	0.763	0.749	0.735	0.722
10.00	-	-	-	-	-	0.981	0.957	0.917	0.885	0.859	0.836	0.815	0.797	0.780	0.764	0.749	0.735	0.722
10.25	-	-	-	-	-	0.984	0.959	0.920	0.887	0.860	0.837	0.816	0.798	0.780	0.764	0.750	0.736	0.723
10.50	-	-	-	-	-	-	0.961	0.923	0.889	0.862	0.838	0.817	0.799	0.781	0.765	0.750	0.737	0.723
10.75	-	-	-	-	-	-	0.962	0.925	0.891	0.863	0.839	0.818	0.799	0.782	0.766	0.751	0.737	0.724
11.00	-	-	-	-	-	-	0.963	0.928	0.893	0.865	0.840	0.819	0.800	0.782	0.766	0.751	0.737	0.724
11.25	-	-	-	-	-	-	0.964	0.930	0.893	0.865	0.840	0.819	0.799	0.781	0.765	0.750	0.736	0.723
11.50	-	-	-	-	-	-	0.964	0.931	0.894	0.865	0.840	0.819	0.798	0.780	0.764	0.749	0.735	0.722
11.75	-	-	-	-	-	-	0.965	0.932	0.894	0.865	0.839	0.817	0.797	0.780	0.763	0.748	0.734	0.721
12.00	-	-	-	-	-	-	0.966	0.933	0.894	0.864	0.839	0.817	0.797	0.779	0.762	0.747	0.733	0.719
12.25	-	-	-	-	-	-	0.967	0.935	0.895	0.864	0.839	0.816	0.796	0.778	0.761	0.746	0.732	0.718
12.50	-	-	-	-	-	-	0.967	0.936	0.896	0.864	0.838	0.816	0.796	0.777	0.760	0.745	0.731	0.717
12.75	-	-	-	-	-	-	0.968	0.937	0.896	0.864	0.838	0.815	0.795	0.776	0.759	0.744	0.729	0.716
13.00	-	-	-	-	-	-	0.969	0.939	0.896	0.864	0.837	0.814	0.794	0.775	0.758	0.743	0.728	0.715
13.25	-	-	-	-	-	-	0.971	0.940	0.897	0.864	0.837	0.813	0.792	0.774	0.757	0.741	0.727	0.713
13.50	-	-	-	-	-	-	0.972	0.942	0.897	0.863	0.837	0.813	0.792	0.773	0.756	0.740	0.725	0.712
14.00	-	-	-	-	-	-	0.976	0.946	0.897	0.863	0.835	0.811	0.790	0.771	0.753	0.737	0.723	0.709
14.25	-	-	-	-	-	-	0.978	0.947	0.898	0.862	0.834	0.810	0.789	0.770	0.752	0.736	0.721	0.707
14.50	-	-	-	-	-	-	-	0.948	0.898	0.862	0.833	0.809	0.787	0.768	0.751	0.734	0.720	0.706
14.75	-	-	-	-	-	-	-	0.948	0.898	0.862	0.832	0.808	0.786	0.767	0.749	0.733	0.719	0.704
15.00	-	-	-	-	-	-	-	0.948	0.899	0.861	0.832	0.807	0.785	0.766	0.748	0.732	0.717	0.703
15.25	-	-	-	-	-	-	-	0.947	0.899	0.861	0.831	0.806	0.784	0.764	0.746	0.730	0.716	0.702
15.50	-	-	-	-	-	-	-	0.947	0.899	0.861	0.830	0.804	0.782	0.763	0.745	0.728	0.714	0.700
15.75	-	-	-	-	-	-	-	0.946	0.899	0.860	0.829	0.803	0.781	0.761	0.743	0.727	0.712	0.698
16.00	-	-	-	-	-	-	-	0.945	0.900	0.859	0.828	0.802	0.779	0.759	0.741	0.725	0.710	0.696
16.25	-	-	-	-	-	-	-	0.945	0.900	0.859	0.827	0.801	0.778	0.757	0.739	0.723	0.708	0.694
16.50	-	-	-	-	-	-	-	0.945	0.900	0.858	0.826	0.799	0.776	0.756	0.738	0.721	0.706	0.692
16.75	-	-	-	-	-	-	-	0.944	0.900	0.857	0.825	0.797	0.774	0.754	0.736	0.719	0.704	0.690
17.00	-	-	-	-	-	-	-	0.944	0.900	0.856	0.823	0.796	0.773	0.752	0.734	0.717	0.702	0.688
17.25	-	-	-	-	-	-	-	0.944	0.900	0.855	0.822	0.794	0.771	0.750	0.732	0.715	0.700	0.686
17.50	-	-	-	-	-	-	-	0.944	0.900	0.854	0.820	0.792	0.769	0.748	0.730	0.713	0.698	0.684
17.75	-	-	-	-	-	-	-	0.944	0.900	0.853	0.819	0.791	0.767	0.746	0.728	0.711	0.696	0.681
18.00	-	-	-	-	-	-	-	0.944	0.901	0.852	0.817	0.789	0.765	0.744	0.725	0.709	0.694	0.679
18.25	-	-	-	-	-	-	-	0.945	0.901	0.851	0.815	0.787	0.763	0.742	0.723	0.706</		

# Orifice Capacities

Supercritical Correction Factor, Ksc - US Customary Units										
Flowing Pressure, psia	Total Temperature, °F, of Supercritical Steam									
	750	800	850	900	950	1000	1050	1100	1150	1200
3208	1.059	0.971	0.913	0.872	0.839	0.811	0.788	0.767	0.748	0.731
3250	1.064	0.975	0.916	0.874	0.841	0.813	0.788	0.767	0.748	0.731
3300	1.070	0.98	0.919	0.876	0.842	0.814	0.790	0.768	0.749	0.732
3350	1.077	0.985	0.922	0.878	0.844	0.815	0.791	0.769	0.750	0.732
3400	1.084	0.990	0.925	0.881	0.846	0.817	0.792	0.770	0.750	0.733
3450	1.091	0.996	0.929	0.883	0.848	0.818	0.793	0.771	0.751	0.734
3500	1.100	1.002	0.932	0.885	0.849	0.819	0.794	0.772	0.752	0.734
3550	1.109	1.008	0.935	0.888	0.851	0.821	0.795	0.773	0.753	0.735
3600	1.118	1.014	0.939	0.890	0.853	0.822	0.796	0.774	0.754	0.735
3650	1.129	1.020	0.943	0.893	0.855	0.824	0.797	0.775	0.754	0.736
3700	1.141	1.027	0.946	0.895	0.857	0.825	0.799	0.775	0.755	0.737
3750	1.153	1.034	0.950	0.898	0.859	0.827	0.800	0.776	0.756	0.737
3800	1.168	1.041	0.954	0.900	0.861	0.828	0.801	0.777	0.757	0.738
3850	1.186	1.048	0.958	0.903	0.862	0.830	0.802	0.778	0.757	0.739
3900	1.205	1.056	0.962	0.906	0.864	0.831	0.803	0.779	0.758	0.739
3950	1.227	1.064	0.966	0.908	0.866	0.833	0.804	0.780	0.759	0.740
4000	1.251	1.072	0.970	0.911	0.868	0.834	0.806	0.781	0.760	0.741
4050	1.279	1.080	0.974	0.914	0.870	0.836	0.807	0.782	0.760	0.741
4100	1.310	1.089	0.978	0.916	0.872	0.837	0.808	0.783	0.761	0.742
4150	1.343	1.098	0.983	0.919	0.874	0.839	0.809	0.784	0.762	0.743
4200	1.395	1.107	0.987	0.922	0.876	0.840	0.810	0.785	0.763	0.743
4250	1.444	1.116	0.992	0.925	0.878	0.842	0.812	0.786	0.764	0.744
4300	1.491	1.125	0.997	0.928	0.881	0.844	0.813	0.787	0.765	0.745
4350	1.538	1.135	1.002	0.931	0.883	0.845	0.814	0.788	0.765	0.745
4400	-	1.146	1.007	0.934	0.885	0.847	0.815	0.789	0.766	0.746
4450	-	1.157	1.012	0.937	0.887	0.848	0.817	0.790	0.767	0.746
4500	-	1.169	1.017	0.940	0.889	0.850	0.818	0.791	0.768	0.747
4550	-	1.181	1.022	0.943	0.892	0.852	0.819	0.792	0.768	0.748
4600	-	1.194	1.027	0.947	0.894	0.853	0.82	0.793	0.769	0.749
4650	-	1.207	1.033	0.950	0.896	0.855	0.822	0.794	0.770	0.749
4700	-	1.220	1.038	0.953	0.898	0.857	0.823	0.795	0.771	0.750
4750	-	1.234	1.044	0.957	0.900	0.858	0.824	0.796	0.772	0.751
4800	-	1.248	1.050	0.960	0.903	0.860	0.826	0.797	0.773	0.751
4850	-	1.263	1.056	0.963	0.905	0.862	0.827	0.798	0.774	0.752
4900	-	1.278	1.062	0.967	0.908	0.863	0.828	0.799	0.774	0.753
4950	-	1.294	1.069	0.970	0.910	0.865	0.830	0.800	0.775	0.753
5000	-	1.310	1.075	0.974	0.912	0.867	0.831	0.801	0.776	0.754
5050	-	1.326	1.082	0.978	0.915	0.869	0.832	0.803	0.777	0.755
5100	-	1.343	1.088	0.981	0.917	0.871	0.834	0.804	0.778	0.755
5150	-	1.360	1.095	0.985	0.920	0.872	0.835	0.805	0.779	0.756
5200	-	1.377	1.102	0.989	0.922	0.874	0.837	0.806	0.780	0.757
5250	-	1.393	1.109	0.993	0.925	0.876	0.838	0.807	0.780	0.758
5300	-	1.411	1.116	0.997	0.927	0.878	0.839	0.808	0.781	0.758
5350	-	1.427	1.123	1.001	0.930	0.880	0.841	0.809	0.782	0.759
5400	-	1.443	1.131	1.004	0.933	0.882	0.842	0.810	0.783	0.760
5450	-	1.460	1.139	1.009	0.935	0.884	0.844	0.811	0.784	0.760
5500	-	1.476	1.146	1.013	0.938	0.886	0.845	0.812	0.785	0.761
5550	-	1.491	1.154	1.017	0.941	0.887	0.846	0.813	0.786	0.762
5600	-	1.507	1.162	1.021	0.943	0.889	0.848	0.815	0.787	0.763
5650	-	1.522	1.171	1.025	0.946	0.891	0.849	0.816	0.788	0.763
5700	-	1.536	1.179	1.030	0.949	0.893	0.851	0.817	0.788	0.764
5750	-	1.551	1.187	1.034	0.952	0.895	0.852	0.818	0.789	0.765
5800	-	1.565	1.195	1.038	0.955	0.897	0.854	0.819	0.790	0.765
5850	-	1.578	1.204	1.043	0.957	0.899	0.855	0.82	0.791	0.766
5900	-	1.591	1.212	1.047	0.96	0.901	0.857	0.821	0.792	0.767
5950	-	1.603	1.221	1.052	0.963	0.903	0.858	0.823	0.793	0.768
6000	-	1.615	1.229	1.057	0.966	0.906	0.860	0.824	0.794	0.768

# Orifice Capacities

Supercritical Correction Factor, Ksc - Metric Units											
Flowing Pressure, MPa	Total Temperature, °C, of Supercritical Steam										
	400	425	450	475	500	525	550	575	600	625	650
22.12	1.056	0.976	0.922	0.883	0.851	0.824	0.801	0.781	0.762	0.745	0.730
22.25	1.058	0.978	0.924	0.884	0.852	0.825	0.802	0.781	0.763	0.746	0.730
22.50	1.063	0.982	0.926	0.886	0.853	0.826	0.803	0.782	0.763	0.746	0.731
22.75	1.067	0.985	0.929	0.887	0.855	0.827	0.803	0.783	0.764	0.747	0.731
23.00	1.072	0.989	0.931	0.889	0.856	0.828	0.804	0.783	0.764	0.747	0.732
23.25	1.077	0.993	0.934	0.891	0.858	0.830	0.805	0.784	0.765	0.748	0.732
23.50	1.082	0.997	0.937	0.893	0.859	0.831	0.806	0.785	0.766	0.748	0.732
23.75	1.087	1.001	0.939	0.895	0.860	0.832	0.807	0.785	0.766	0.749	0.733
24.00	1.093	1.006	0.942	0.897	0.862	0.833	0.808	0.786	0.767	0.749	0.733
24.25	1.099	1.010	0.945	0.899	0.863	0.834	0.809	0.787	0.768	0.750	0.734
24.50	1.106	1.014	0.948	0.901	0.865	0.835	0.810	0.788	0.768	0.751	0.734
24.75	1.112	1.019	0.950	0.903	0.866	0.836	0.811	0.789	0.769	0.751	0.735
25.00	1.120	1.024	0.953	0.905	0.868	0.837	0.812	0.789	0.769	0.752	0.735
25.25	1.128	1.029	0.956	0.907	0.869	0.839	0.813	0.790	0.77	0.752	0.736
25.50	1.136	1.034	0.959	0.909	0.871	0.840	0.814	0.791	0.771	0.753	0.736
25.75	1.145	1.039	0.962	0.911	0.872	0.841	0.815	0.792	0.771	0.753	0.737
26.00	1.155	1.045	0.966	0.913	0.874	0.842	0.816	0.792	0.772	0.754	0.737
26.25	1.166	1.050	0.969	0.915	0.875	0.843	0.817	0.793	0.773	0.754	0.737
26.50	1.178	1.056	0.972	0.917	0.877	0.845	0.818	0.794	0.773	0.755	0.738
26.75	1.192	1.062	0.975	0.919	0.879	0.846	0.819	0.795	0.774	0.755	0.738
27.00	1.206	1.068	0.979	0.921	0.880	0.847	0.820	0.796	0.775	0.756	0.739
27.25	1.222	1.074	0.982	0.924	0.882	0.848	0.820	0.796	0.775	0.756	0.739
27.50	1.239	1.081	0.985	0.926	0.883	0.850	0.821	0.797	0.776	0.757	0.740
27.75	1.258	1.088	0.989	0.928	0.885	0.851	0.822	0.798	0.777	0.758	0.740
28.00	1.278	1.095	0.992	0.930	0.887	0.852	0.824	0.799	0.777	0.758	0.741
28.25	1.300	1.102	0.996	0.933	0.888	0.854	0.825	0.800	0.778	0.759	0.741
28.50	1.323	1.109	1.000	0.935	0.890	0.855	0.826	0.801	0.779	0.759	0.742
28.75	1.354	1.117	1.004	0.937	0.892	0.856	0.827	0.801	0.779	0.760	0.742
29.00	1.390	1.126	1.007	0.940	0.893	0.857	0.828	0.802	0.780	0.760	0.743
29.25	1.424	1.134	1.011	0.942	0.895	0.859	0.829	0.803	0.781	0.761	0.743
29.50	1.457	1.143	1.015	0.945	0.897	0.860	0.830	0.804	0.781	0.762	0.744
29.75	1.490	1.151	1.019	0.947	0.899	0.861	0.831	0.805	0.782	0.762	0.744
30.00		1.158	1.023	0.950	0.900	0.863	0.832	0.806	0.783	0.763	0.745
30.25		1.098	1.028	0.952	0.902	0.864	0.833	0.806	0.784	0.763	0.745
30.50		1.083	1.032	0.955	0.904	0.865	0.834	0.807	0.784	0.764	0.746
30.75		1.090	1.036	0.957	0.906	0.867	0.835	0.808	0.785	0.764	0.746
31.00		1.099	1.041	0.960	0.908	0.868	0.836	0.809	0.786	0.765	0.746
31.25		1.107	1.046	0.963	0.910	0.870	0.837	0.810	0.786	0.766	0.747
31.50		1.115	1.050	0.966	0.911	0.871	0.838	0.811	0.787	0.766	0.748
31.75		1.124	1.055	0.968	0.913	0.872	0.839	0.812	0.788	0.767	0.748

# Orifice Capacities

Supercritical Correction Factor, Ksc - Metric Units											
Flowing Pressure, MPa	Total Temperature, °C, of Supercritical Steam										
	400	425	450	475	500	525	550	575	600	625	650
32.00		1.133	1.060	0.971	0.915	0.874	0.840	0.812	0.788	0.767	0.748
32.25		1.142	1.065	0.974	0.917	0.875	0.841	0.813	0.789	0.768	0.749
32.50		1.151	1.070	0.977	0.919	0.877	0.843	0.814	0.790	0.769	0.750
32.75		1.160	1.075	0.980	0.921	0.878	0.844	0.815	0.791	0.769	0.750
33.00		1.170	1.080	0.983	0.923	0.879	0.845	0.816	0.791	0.770	0.750
33.25		1.180	1.085	0.986	0.925	0.881	0.846	0.817	0.792	0.770	0.751
33.50		1.190	1.091	0.988	0.927	0.882	0.847	0.818	0.793	0.771	0.751
33.75		1.201	1.096	0.992	0.929	0.884	0.848	0.819	0.793	0.772	0.752
34.00		1.211	1.102	0.995	0.931	0.885	0.849	0.820	0.794	0.772	0.752
34.25		1.222	1.108	0.998	0.933	0.887	0.850	0.820	0.795	0.773	0.753
34.50		1.233	1.114	1.001	0.935	0.888	0.852	0.821	0.796	0.773	0.753
34.75		1.244	1.119	1.004	0.937	0.890	0.853	0.822	0.796	0.774	0.754
35.00		1.255	1.125	1.007	0.939	0.891	0.854	0.823	0.797	0.775	0.754
35.25		1.267	1.131	1.011	0.941	0.893	0.855	0.824	0.798	0.775	0.755
35.50		1.278	1.137	1.014	0.944	0.894	0.856	0.825	0.799	0.776	0.755
35.75		1.290	1.144	1.017	0.946	0.896	0.858	0.826	0.799	0.776	0.756
36.00		1.301	1.150	1.021	0.948	0.898	0.859	0.827	0.800	0.777	0.757
36.25		1.313	1.156	1.024	0.950	0.899	0.860	0.828	0.801	0.778	0.757
36.50		1.324	1.162	1.027	0.952	0.901	0.861	0.829	0.802	0.778	0.758
36.75		1.336	1.169	1.031	0.955	0.902	0.862	0.830	0.802	0.779	0.758
37.00		1.347	1.175	1.034	0.957	0.904	0.864	0.831	0.803	0.779	0.759
37.25		1.358	1.182	1.038	0.959	0.906	0.865	0.832	0.804	0.780	0.759
37.50		1.369	1.188	1.042	0.961	0.907	0.866	0.833	0.805	0.781	0.760
37.75		1.380	1.195	1.045	0.964	0.909	0.867	0.834	0.805	0.781	0.760
38.00		1.391	1.201	1.049	0.966	0.910	0.868	0.834	0.806	0.782	0.761
38.25		1.402	1.208	1.053	0.968	0.912	0.870	0.835	0.807	0.783	0.761
38.50		1.412	1.215	1.056	0.971	0.914	0.871	0.836	0.808	0.783	0.762
38.75		1.422	1.222	1.060	0.973	0.915	0.872	0.837	0.809	0.784	0.762
39.00		1.433	1.228	1.064	0.975	0.917	0.873	0.838	0.809	0.784	0.763
39.25		1.443	1.235	1.068	0.978	0.919	0.875	0.839	0.810	0.785	0.763
39.50		1.453	1.242	1.072	0.980	0.921	0.876	0.840	0.811	0.786	0.764
39.75		1.463	1.248	1.076	0.983	0.922	0.877	0.841	0.812	0.786	0.764
40.00		1.472	1.255	1.080	0.985	0.924	0.879	0.842	0.812	0.787	0.765
40.25		1.481	1.262	1.084	0.988	0.926	0.880	0.843	0.813	0.788	0.765
40.50		1.490	1.268	1.088	0.990	0.928	0.881	0.844	0.814	0.788	0.766
40.75		1.499	1.275	1.092	0.993	0.929	0.882	0.845	0.815	0.789	0.766
41.00		1.507	1.282	1.096	0.995	0.931	0.884	0.846	0.816	0.790	0.767
41.25		1.515	1.288	1.100	0.998	0.933	0.885	0.847	0.816	0.790	0.767



# Ordering Information

Ordering a 3500-5 Safety Valve	
Specify:	
Type of Application	Valve Supplemental Data
a) Superheater _____	a) Special Cleaning _____
b) Other _____ (identify)	b) Special Boxing _____
Applicable ASME Code	c) Export Boxing _____
a) Section I - Power Boiler	d) Special Painting _____
C) Non Code	Available Air [(40-120 psig) (2.76-8.27 barg)]
System Parameters	Max. _____ psig _____ barg
a) Design Pressure _____ psig _____ barg	Min. _____ psig _____ barg
b) Design Temperature _____ °F _____ °C	Electrical Requirements
c) Operating Pressure _____ psig _____ barg	AC : 85 - 264 V
d) Operating Temperature _____ °F _____ °C	Hz : 44 - 470 Hz
Valve Specifications	DC : 120 - 370 V
a) Valve Set Pressure _____ psig _____ barg	Control Preference
b) Allowable Overpressure on Valve _____ percent	Digital Controller _____
c) Required Relieving Capacity _____ lb/hr _____ kg/hr	Digital Controller Push Button Remote Panel _____
d) Butt weld Valves	Digital Controller Modbus Touchscreen Remote Panel _____
Inlet Size _____	Safety Valve Information
Inlet Specifications _____	a) Total Generating Capacity of the Boiler
Outlet Size and Flange Rating _____	b) Drum Safety Valve Capacities
e) Flanged Valves	c) Superheater Safety Valve Capacities
Inlet Size and Flange Rating _____	d) Drum Operating Pressure
Outlet Size and Flange Rating _____	e) Superheater Operating Pressure
f) Other Type Connections Other Than	f) Set Pressure of Low Set Drum Safety Valve
Butt weld or Flange _____	g) Set Pressure of Low Set Superheater Safety Valve
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 Configuration Code

SAFETY VALVE	PRESSURE CLASS & BORE SIZE	INLET TYPE	MATERIAL CLASS	INTER-CHANGEABILITY NUMBER	DESIGN CODE	BORE TYPE	ORIFICE SIZE	DEVIATION FROM STANDARD	ACTUATOR TYPE	AUXILIARY MANIFOLD	PRESSURE REGULATOR WITH FILTER	
A	B	C	D	E	F	G	H	I	J	K	L	M
35	15	F	F	5	(V)	X1	FB	0875	*	2R850DA	AM	PR

A Safety Valve	
35 = 3500	
B Pressure Class & Bore Size	
1	5
1 = 1500 CLASS 2 = 2500 CLASS 3 = 3100 CLASS 4 = 4500 CLASS	5 = 0.875" 6 = 1" 7 = 1.75" 8 = 2" 9 = 2.5" 1 = 3.0"
C Inlet Type	
F = FLANGED W = BUTTWELD END	
D Material Class	
F = SA182 GRADE F22 H = SA182 GRADE F91	
E Interchangeability Number	
5	
F Design Code	
(V) = ASME SECTION I	
G	
INLET FLANGED FACING	BUTT WELD END DETAIL IDENTIFICATION
X1 = RF SPIRAL SERRATED X2 = RF SMOOTH FINISH X3 = RING JOINT X4 = LARGE TONGUE X5 = LARGE GROOVE X6 = SMALL TONGUE X7 = SMALL GROOVE X8 = LARGE FEMALE X9 = LARGE MALE	100 – STANDARD DESIGN ??? – TO BE DETERMINED OR APPROVED BY THE CUSTOMER

H Bore Type	
FB = FULL BORE RB = REDUCED BORE	
I Orifice Size	
0.875	2.000
1.000	2.500
1.750	3.000
J Deviation from Standard	
*	
K Actuator Type	
TRIAC Models: 2R850DA 2R1750DA 2R3500DA S09DA280 S09DA335 S09DA385 S11DA385 S13DA485 S11DA335 S13DA435	
L Auxiliary Manifold	
M Pressure Regulator with Filter	

# Product Quality

## Valves manufactured to ASME B16.34

### Certifications

- ISO 9001: 2008
- PED/CE
- CRN
- ASME B & PVC Section I V Stamp
- IBR
- China-Special Equipment Type Approval

### Actuation

- ISO 5211 mounting patterns

### Product Test Procedures

- Standard valve testing to meet or exceed MSS SP-61 and FCI 70-2 Class VI requirements
- Exclusive vacuum testing of ball and seat to verify seal prior to valve assembly

## Conversion Table

All United States Customary System (USCS) values are converted to metric values using the following conversion factors:		
USCS Unit	Conversion Factor	Metric Unit
in.	25.4	mm
lb.	0.4535924	kg
in <sup>2</sup>	6.4516	cm <sup>2</sup>
ft <sup>3</sup> / min	0.02831685	m <sup>3</sup> / min
gal / min	3.785412	L / min
lb / hr	0.4535924	kg / hr
psig	0.06894757	barg
ft lb	1.3558181	Nm
°F	5/9 (°F-32)	°C

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GEA32632E 03/2018

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