



2700 SERIES

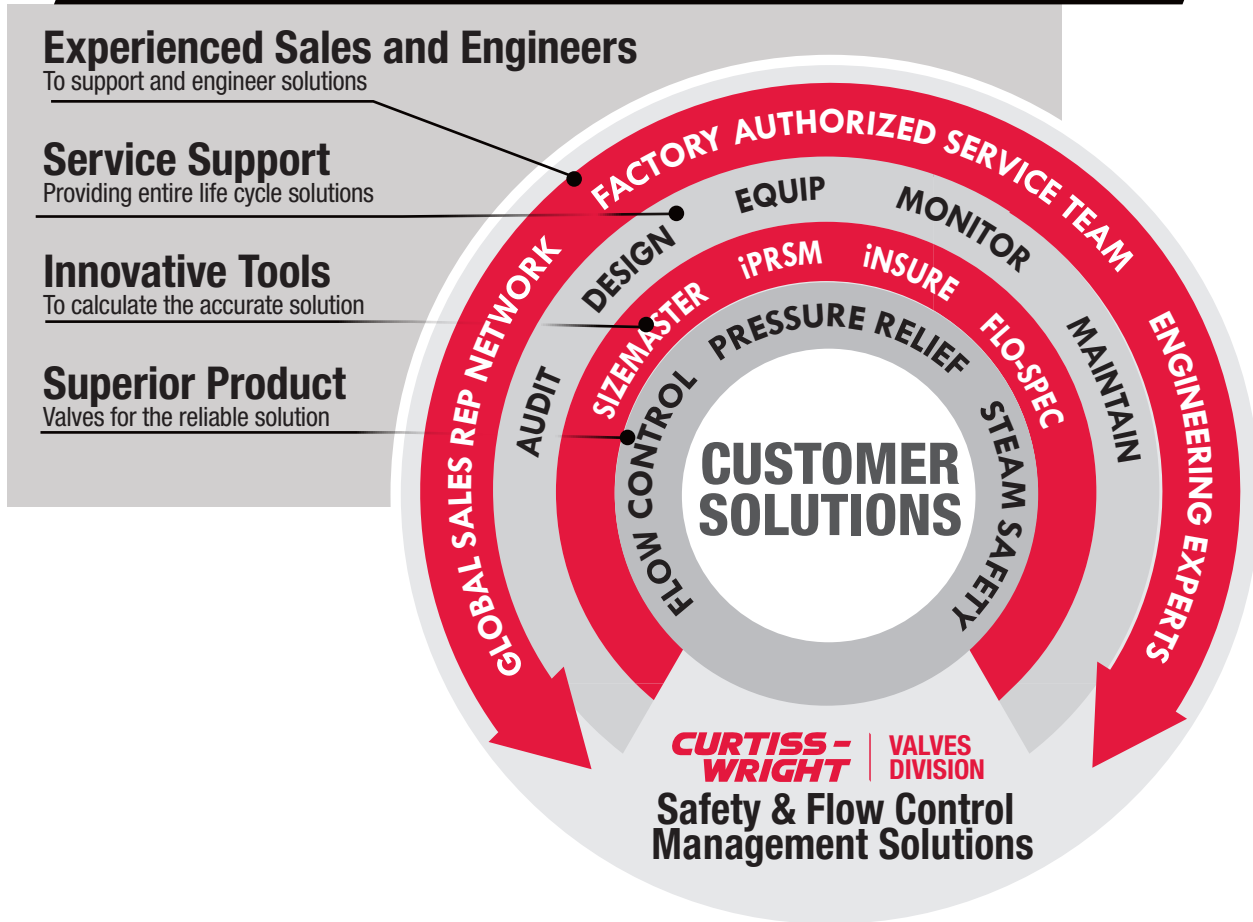
Pressure Relief Valve Catalog

Curtiss-Wright is a worldwide leader in delivering solutions to improve safety, plant flexibility, reliability, and efficiency. Farris Engineering, a division of Curtiss-Wright, has been at the forefront in the design and manufacture of spring-loaded and pilot-operated pressure relief valves since 1943.

Our Commitment; To provide customers with total pressure and flow control management solutions supporting a facility's entire life cycle, transforming and ensuring plant safety.

Focused On Customer Solutions

Experienced Engineers • Solution Management • Superior Products



Factory Authorized Service Team

Sales Representative Network

- Factory trained technicians in OEM specifications
- Local service and in-line testing reducing maintenance cost.
- Capability to track and manage relief valve maintenance and repair history
- Access to sales network, and keeping global inventory local

<https://www.cw-valvegroup.com/en-gb/contact-us>



Solutions Management and Innovative Tools



SOFTWARE MANAGEMENT TOOL FOR PRESSURE RELIEF SYSTEMS

Software Capabilities

- Overpressure analysis with relief load calculations
- Inlet and outlet piping hydraulic calculations
- Header blowdown and knockout drum calculations
- Acoustic induced vibration analysis

VALVE SIZING AND SELECTION SOFTWARE



- Provides sizing for vapor, liquid, steam and two-phase flow
- Capable of multi scenario sizing. Multi-valve algorithm to easily size from multiple valves
- Built-in catalog selector ensures the proper product appropriate based on pressure and temperature
- Compliant with ASME and API



- Capable of multi scenario sizing. Multi-valve algorithm to easily size from multiple valves
- Develop, dimensional drawings
- Maintain project data
- Generate orders to be sent direct to production

Product Training and Seminars



We offer technical training courses learning about valve management and industry scenarios.

SOME AVAILABLE CLASSES

- Pressure relief valve functionality
- Sizing requirements
- Material selection
- Sizing software training
- Maintenance and repair
- Mitigating overpressure scenarios

CONTACT: Your Sales Rep For More Information

Model Numbering System

Selecting and specifying Farris pressure relief valves is simple using the numbering system that follows. Each digit of the type number has a distinct significance. The digits describe the series, orifice size, seat material, valve trim, test fluid, inlet and outlet size and types, materials of construction, and other accessories and options.

27	C	A	A	G	-	1	M	N	-
Series Number	Orifice Letter/Area	Seat Material Construction	Valve Trim Bonnet Design	Test Fluid	-	Inlet Size	Inlet Rating	Inlet Type	-
27	C (0.068 in ²) D (0.125 in ²) E (0.223 in ²) F (0.350 in ²) G (0.573 in ²)	A Metal V FKM (Viton) E EPDM B NBR (Buna-N) N Neoprene S Silicone K Kalrez T PTFE (Teflon) X Other Elastomers 6 Metal Seat + Stellite® 6	A Conventional Bonnet B Balanced Bonnet C Conventional Bolted Bonnet D Balanced Bolted Bonnet H High Pressure Bonnet	G Air/Gas/Vapor L Liquid/Water S Steam	-	1 1/2" (DN15) 2 3/4" (DN20) 3 1" (DN25) 4 1-1/2" (DN40)	M Male F Female 1 150 (PN 16) 2 300 (PN 40) 3 600 4 900 5 1500 6 2500 0 Only for S,U,V,W,Y type	N NPT T ISO 7 Taper P ISO 7 Parallel G ISO 228 (ISO 1179 - 1 or 4) E ISO 228 (ISO 1179 - 2 or 3) 1 Raised Face Flange 9 Ring Joint Flange F Flat Face Flange D DIN Flange S Socket Weld U Sanitary V VCR W Weld Nipple Y Hub Connection	-

Stellite® is a registered trademark of Kennametal Inc.

Ordering Information

Model Number Example:

27CAAG-1MN-3FN-20C1N: 2700 Series, C-orifice, metal seat, conventional bonnet trim design, gas test fluid, 1/2" male NPT inlet, 1" female NPT outlet, plain cap, no gag accessory, standard material construction, NACE/sour service.

Please specify the following so that we may process your order as quickly as possible.

This information is necessary for Customer Service, to verify your selection and sizing.

- Quantity
- Farris Model Number
- Set pressure
- Operating and relieving temperatures
- Fluid and fluid state
- Back pressure, superimposed constant and or variable, and built-up
- Code requirements

3	F	N	-	2	0	C1	N	/	SP
Outlet Size	Outlet Rating	Outlet Type	-	Cap	Accessory	Materials Of Construction	Options	/	SP
3 1" (DN25)	F Female	N NPT	-	2 Plain	0 No Gag	C1 Standard Construction	N NACE/Sour Service	/	SP Special
4 1-1/2" (DN40)	1 150 (PN 16)	T ISO 7 Taper		4 Packed Lever	1 Test Gag	S4 Comp 316 SS	D Heat Transfer Fluid Service		
5 2" (DN50)	2 300 (PN 40)	P ISO 7 Parallel		7 Open Lever		S8 Comp 316L SS			
6 2-1/2" (DN65)	3 600	G ISO 228				M1 Monel Body & Disc			
	0 Use for S,U, W	1 Raised Face Flange				M2 Monel Internals			
		9 Ring Joint Flange				M4 Complete Monel			
		F Flat Face Flange				H1 Hastelloy C Body & Disc			
		D DIN Flange				H2 Hastelloy C Internals			
		S Socket Weld				H4 Complete Hastelloy C			
		U Sanitary				D4 Duplex			
		W Weld Nipple				D8 Super duplex			
						LB LCB Bonnet (low temperature)			
						LC LCC Bonnet (low temperature)			

Monel® is a registered trademark of Inco Alloys International Inc.
Hastelloy C® is registered trademark of Haynes International Inc.

Table of Contents

Solutions Capabilities 1,2
 Ordering Information & Numbering System 3, 4
 Table of Contents - Introduction 5
 Bill of Materials-Conventional 6
 Bill of Materials-Balanced Design 7
 Bill of Materials-Bolted Bonnet 8
 O-Ring Selection 9

Selection Tables – Conventional Design
 Threaded Connections..... 10
 Flanged Connections 11

Selection Tables – Balanced Design
 Threaded Connections..... 11
 Flanged Connections 12

Cap Constructions 12

Capacity Tables
 U.S. Customary Units
 Air 13
 Steam 13
 Water 14
 Metric
 Air 15
 Steam 15
 Water 16

Dimensions & Weights 17-18
Material Options - Corrosive and Low Temperature Service 19
Material Options - Flanged Connection..... 20-21
Farris Engineering Product Selection, Valves 22

Introduction

Designed to provide customers with the widest selection of sizes, orifices and construction materials, Series 2700 meets the exacting demands of the process industry.

Superior Design

- A single design handles air, steam, vapor and liquid services.
- Maximum interchangeability of parts affords easy maintenance and lower costs.
- Fixed blowdown design simplifies testing and repair. Maximum blowdown of 5% to 15% regardless of service¹.
- A built-in lift stop ensures stable performance.
- Balanced design in “C” and “D” orifices nullifies the effects of back pressure on set point.

Certifications

- Manufactured in conformance to Section VIII and XIII of the ASME Boiler Pressure Vessel Code for air, steam, and water service.
- Capacities certified by the National Board of Boiler and Pressure Vessel Inspectors
- Available to be manufactured in conformance to the following:
 - NACE MRO175 / ISO15156
 - Section III Class 1, 2, and 3 of the ASME Boiler and Pressure Vessel Code for air, Steam, and Water Service.
 - ISO 4126-1
 - CSQL

Optional O-Ring Seat Design

- O-ring seat design available for maximum seat tightness.
- PTFE available at higher pressures to provide the same zero bubbles per minute leakage as elastomer O-ring seats.

Comprehensive Product Line

- Set pressures from 15 psig to 6500 psig with orifice areas from 0.068 to 0.573 sq. in.
- Standard valves have MNPT inlet x FNPT outlet. Optional female inlet thread, flanged, socket weld, welding nipple, sanitary, ISO, DIN, and VCR connections available.

Maximum Selection of Materials

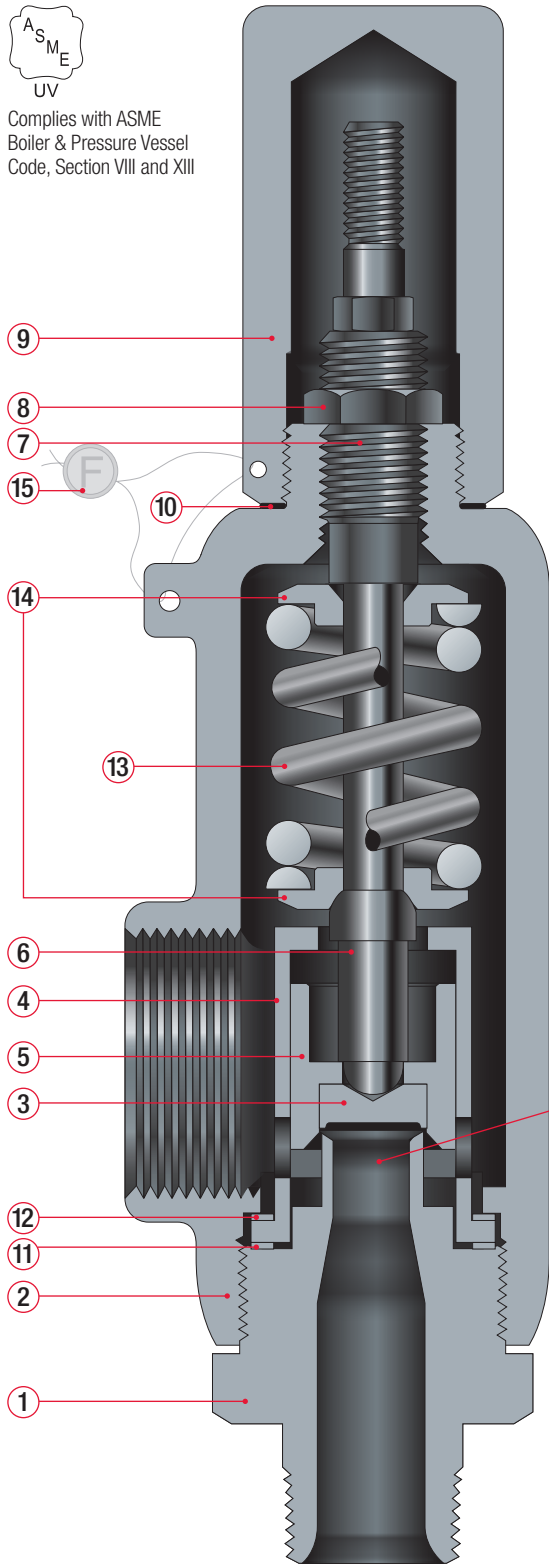
- Standard construction includes 316 stainless steel body, trim and spring, with carbon steel bonnet.
- Optional materials include Monel, Hastelloy C, Duplex, Super Duplex and materials suitable for NACE service. Consult the factory for other materials.

¹Blowdown on liquid service may slightly exceed 15% in certain applications.

2700 Series – Conventional

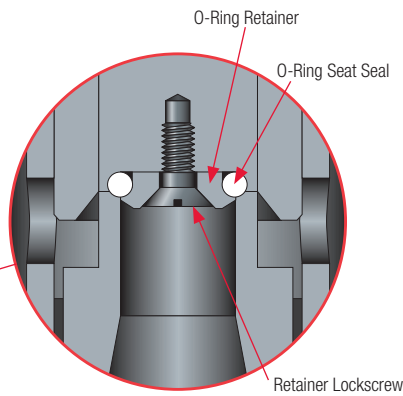


Complies with ASME
Boiler & Pressure Vessel
Code, Section VIII and XIII

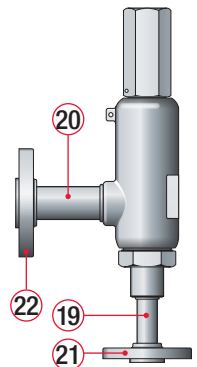


Bill of Materials – Conventional

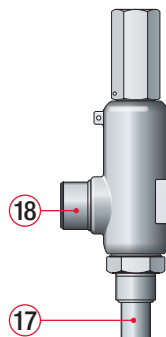
Item	Part Name	Standard Material
1	Body	SA-351 Gr. CF8M SS or SA-479 Type 316 SS
2	Bonnet	SA-216 Gr. WCB, Carbon Steel
3	Disc	316 SS
4	Guide	316 SS
5	Disc Holder	316 SS
6	Stem	316 SS
7	Spring Adj. Screw	316 SS
8	Jam Nut	316 SS
9	Cap, Plain Screwed	Carbon Steel
10	Cap Gasket	316 SS
11	Body Gasket	316 SS
12	Guide Gasket	316 SS
13	Spring	316 SS
14	Spring Buttons	316 SS
15	Wire Seal	SS Wire / Lead Seal
16	Nameplate (Not Shown)	Stainless Steel
17	Welding Nipple (Inlet)	316 SS
18	Welding Nipple (Outlet)	Carbon Steel
19	Lap Joint Stub End (Inlet)	316 SS
20	Lap Joint Stub End (Outlet)	Carbon Steel
21	Lap Joint Flange (Inlet)	Carbon Steel
22	Lap Joint Flange (Outlet)	Carbon Steel



O-Ring Design (Optional)



Flanged Design (Optional)

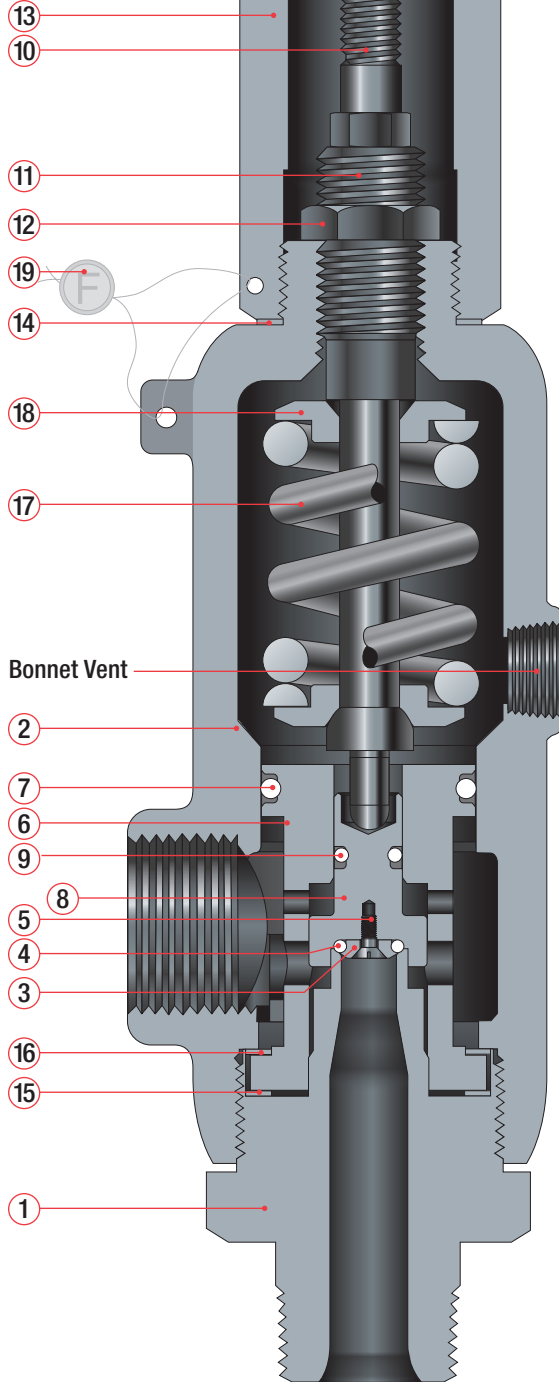


Welded End Design (Optional)

2700 Series – Balanced Design



Complies with ASME Boiler & Pressure Vessel Code, Section VIII and XIII



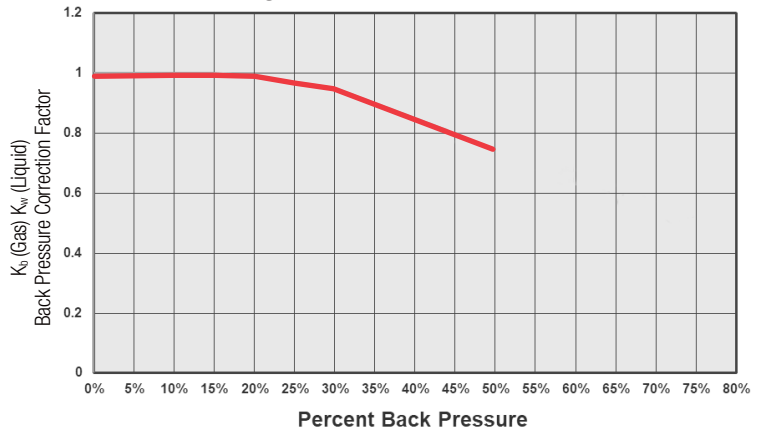
Do you have variable back pressure? Can't use a balanced bellows design? Farris has the solution with the Series 2700 Balanced Design pressure relief valve. The balanced effect is achieved by isolating the upper valve chamber and eliminating any back pressure build-up in the bonnet affecting valve set pressure.

These valves are available in 1/2", 3/4" and 1" inlet sizes with a 1" outlet and two orifice areas. Pressure ranges from 15 to 1480 psig, standard soft seat design. PTFE seats available for higher pressures. Flanged and welded inlet and outlet connections are available with the same material options as the standard design.

Bill of Materials – Balanced Design

Item	Part Name	Standard Material
1	Body	SA-351 Gr. CF8M SS or SA-479 Type 316 SS
2	Bonnet	SA-216 Gr. WCB, Carb. St.
3	O-ring Retainer	316 SS
4	O-ring Seat Seal	FKM
5	Retainer Lock Screw	304 SS
6	Guide	316 SS
7	Guide Seal	FKM
8	Disc Holder	316 SS
9	Disc Holder Seal	FKM
10	Stem	316 SS
11	Spring Adj. Screw	316 SS
12	Jam Nut	316 SS
13	Cap, Plain Screwed	Carbon Steel
14	Cap Gasket	316 SS
15	Body Gasket	316 SS
16	Guide Gasket	316 SS
17	Spring	Stainless Steel
18	Spring Buttons	316 SS
19	Wire Seal	SS Wire / Lead Seal
20	Nameplate (Not Shown)	Stainless Steel

Series 2700 Back Pressure Correction Factor, Balanced Design



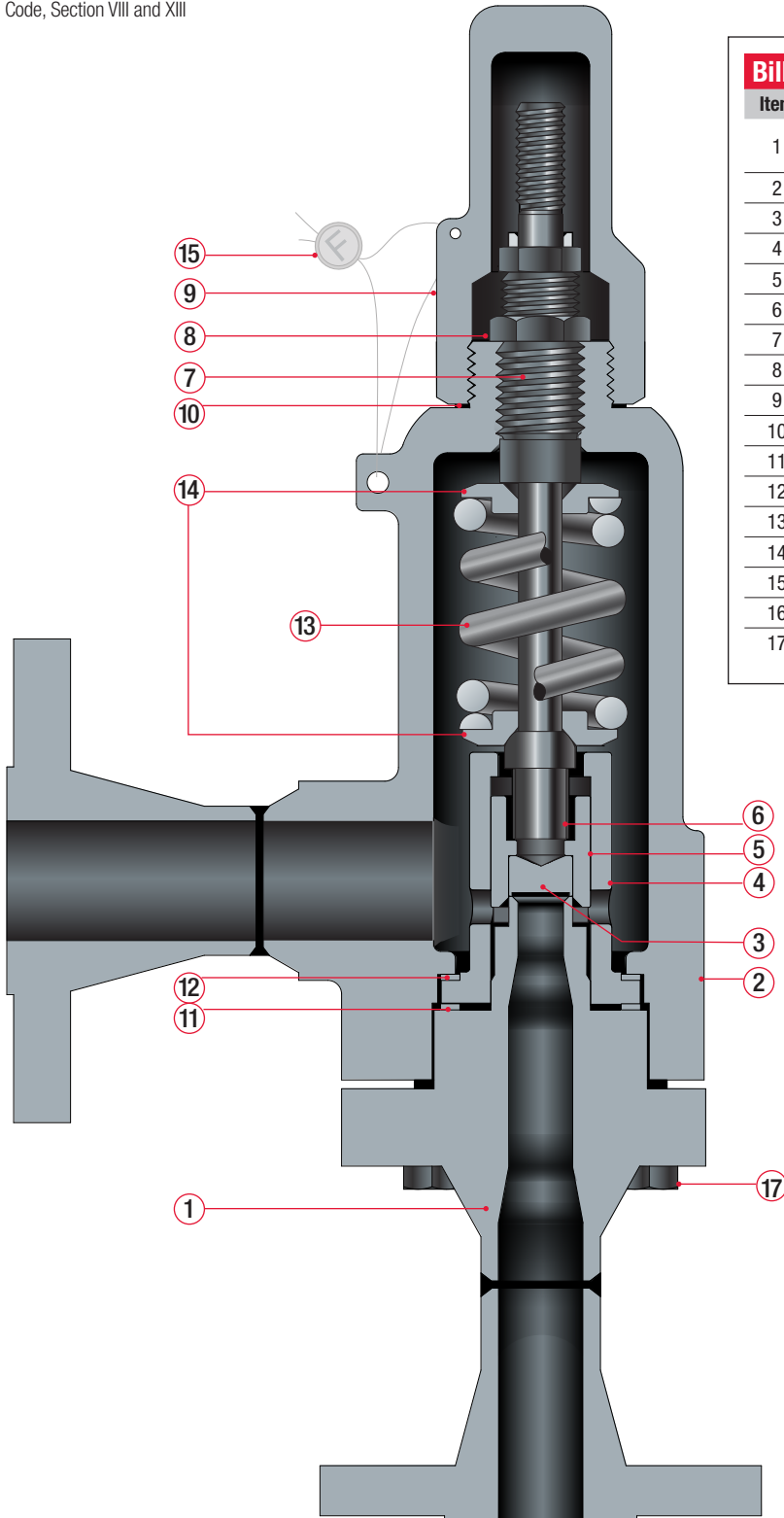
2700 Series – Bolted Bonnet



Complies with ASME
Boiler & Pressure Vessel
Code, Section VIII and XIII

Do you need a fixed flange connection? The Farris 2700 Series valve with bolted bonnet design ensures proper assembly alignment, making it easier to install in your system.

This option is available in 1/2" to 1" inlet and 1" outlet sizes with the 0.068" and 0.125" orifice sizes. The bolted bonnet is available in both Conventional or Balanced design up to 600# fixed weld neck flanges.



Bill of Materials – Conventional		
Item	Part Name	Standard Material
1	Body	SA-351 Gr. CF8M SS or SA-479 Type 316 SS
2	Bonnet	SA-216 Gr. WCB, Carb. St.
3	Disc	316 SS
4	Guide	316 SS
5	Disc Holder	316 SS
6	Stem	316 SS
7	Spring Adj. Screw	316 SS
8	Jam Nut	316 SS
9	Cap, Plain Screwed	Carbon Steel
10	Cap Gasket	316 SS
11	Body Gasket	316 SS
12	Guide Gasket	316 SS
13	Spring	Stainless Steel
14	Spring Buttons	316 SS
15	Wire Seal	SS Wire / Lead Seal
16	Nameplate (Not Shown)	Stainless Steel
17	Cap Screw	316 SS

O-Ring Selection

The 2700 Series is available with an optional O-ring seat which minimizes fugitive emissions and costly product loss. This optional seat construction provides zero bubbles per minute leakage at 90% of set pressure per API Standard 527. The tables below list the set pressure and temperature range for both the elastomer and PTFE seat options.

Because of the wide variety of fluids and process conditions used, it is the customer's responsibility to select the proper soft goods material for each specific application. If a specific soft good compound or material is required, please contact your local sales representative.

Material Availability		
Material	Temperature Range ²	
	°F	°C
FKM (Viton™)	-15° to +400°	-26° to +204°
NBR (Buna N)	-30° to +250°	-34° to +121°
EPDM	-70° to +300°	-57° to +149°
Silicone	-65° to +450°	-54° to +232°
Neoprene	-35° to +250°	-37° to +121°
Kalrez®	-20° to +500°	-29° to +260°
PTFE	-320° to +500°	-195° to +260°

Kalrez® is a registered trademark of DuPont Elastomers.
 Viton™ is a registered trademark of Chemours.

O-Ring Seat Valve Pressure & Temperature Limits				
Orifice	Pressure Range, psig ¹		Pressure Range, barg ¹	
	Elastomer Seat	PTFE Seat	Elastomer Seat	PTFE Seat
C High Pressure	15 to 1480 —	800 to 2500 2501 to 5000	1.0 to 102 —	55.1 to 172 172.1 to 345
D High Pressure	15 to 1480 —	800 to 1600 1601 to 5000	1.0 to 102 —	55.1 to 110 110.1 to 345
E	15 to 1480	600 to 2500	1.0 to 102	41.3 to 172
F	15 to 1480	600 to 1600	1.0 to 102	41.3 to 110
G	15 to 1000	200 to 1000	1.0 to 69	14 to 69

Temperature range may vary depending on service fluid.

EPDM is suitable for steam service up to 300°F, PTFE up to 500°F.

We reserve the right to substitute comparable fluorocarbon materials from other manufacturers.

Selection of proper soft good material is customer's responsibility.

Consult the Farris factory for other materials.

¹Maximum O-ring set pressure limit cannot exceed the pressure limit for a given type number and size as indicated in the metal seat selection tables.

Selection Table – Conventional Design

Threaded Connections								
Orifice Area Sq. In. (Sq. mm.)	Valve Size Inlet x Outlet	Inlet Connection Type	Inlet Type Designator	Maximum Set Pressure, psig (barg)	Max. Back Pressure psig at 100°F (barg at 37.8°C)	Materials		
				-20°F to 750°F (-45.6°C at 37.8°C)		Body / Bonnet	Spring	
C 0.068 (43.87)	1/2 x 1	Male	N, T, P, G, E	1600 (110)	400 (28)	316 SS / Carbon Steel	316 SS	
		Female		2500 (345)				
	3/4 x 1	Male and Female		1600 (110)				
	1 x 1	Male and Female		2500 (172)				
D 0.125 (80.65)	1/2 x 1	Male and Female		1600 (110)	400 (28)	316 SS / Carbon Steel	316 SS	
		Male and Female		2500 (345)				
	3/4 x 1	Male and Female		1600 (110)				
E 0.223 (143.87)	1 x 1 1/2	Male and Female		2500 (172)	400 (28)	316 SS / Carbon Steel	316 SS	
		Male and Female		1600 (110)				
F 0.350 (225.81)	1 1/2 x 2	Male and Female		1600 (110)	400 (28)	316 SS / Carbon Steel	316 SS	
G¹ 0.573 (369.68)	1 1/2 x 2 1/2	Male and Female	1000 (69)	400 (28)	316 SS / Carbon Steel	316 SS		
High Pressure Trim								
C 0.068 (43.87)	1/2 x 1	Female	N, T, P, G	5000 (345)	400 (28)	316 SS / Carbon Steel	316 SS	
		Male and Female	N, T, P, G, E					
	1 x 1	Male and Female	N, T, P, G					6500 (448)
		Male ISO 228	G					3600 (248)
			E					5800 (400)
D 0.125 (80.65)	1/2 x 1	Female	N, T, P, G	5000 (345)	400 (28)	316 SS / Carbon Steel	316 SS	
		Male and Female	N, T, P, G, E					
	1 x 1	Male and Female	N, T, P, G, E					3600 (248)
		Male ISO 228	G					3600 (248)

¹ISO 228 end connections are not available.

ISO Thread Selection				
Part	Type Designator	Thread Type		Description
Body (inlet)	T	ISO 7 - R ¹	Male	ISO/BSP tapered thread
	T	ISO 7 - Rc	Female	ISO/BSP tapered thread
	P	ISO 7 - Rp	Female	ISO/BSP parallel thread
	E	ISO 228 G (1179-2/3 ¹)	Male	ISO/BSP parallel threads with metal-to-metal gasket seal (sold separately)
	G	ISO 228 G (1179 - 4 ¹)	Male	ISO/BSP parallel threads with metal-to-metal gasket seal (sold separately)
Bonnet (outlet)	T	ISO 7 - Rc	Female	ISO/BSP tapered thread
	P	ISO 7 - Rp	Female	ISO/BSP parallel thread
	G	ISO 228 G (1179 - 1)	Female	ISO/BSP parallel thread

¹Not available in 1/2" x 1" for high pressure (H) bonnet model

Selection Table – Conventional Design

Flanged Connection													
Orifice Area Sq. In. (Sq. mm.)	Valve Size Inlet x Outlet	ASME Flange Class		Maximum Set Pressure, psig (barg)			Max. Back Pressure psig at 100°F (37.8°C)	Materials					
		Inlet	Outlet	-20°F to 100°F (-45.6°C to 37.8°C)	400°F (204°C)	750°F (399°C)		Body / Flanges & Bonnet	Spring				
C 0.068 (43.87)	1/2 x 1	150	150	285 (20)	200 (14)	95 (6)	285 (20)	316 SS/ Carbon Steel.	Stainless Steel				
		300	150	740 (51)	635 (44)	505 (35)	285 (20)						
		600	150	1480 (102)	1265 (88)	1010 (69)	285 (20)						
	3/4 x 1	900	300	2220 (153)	1900 (131)	1510 (104)	400 (28)						
		1500 ¹	300	3705 (255)	3170 (218)	2520 (174)	400 (28)						
		2500 ¹	300	5000 (345)	5000 (345)	4200 (290)	400 (28)						
	1 x 1	150	150	285 (20)	200 (14)	95 (6)	285 (20)	316 SS/ Carbon Steel	Stainless Steel				
		300	150	740 (51)	635 (44)	505 (35)	285 (20)						
		600	150	1480 (102)	1265 (88)	1010 (69)	285 (20)						
		900	300	2220 (153)	1900 (131)	1510 (104)	400 (28)						
		1500 ¹	300	3705 (255)	3170 (218)	2520 (174)	400 (28)						
		2500 ¹	300	6170 (425)	5280 (364)	4200 (290)	400 (28)						
D 0.125 (80.65)	1/2 x 1	150	150	285 (20)	200 (14)	95 (6)	285 (20)	316 SS/ Carbon Steel	Stainless Steel				
		300	150	740 (51)	635 (44)	505 (35)	285 (20)						
		600	150	1480 (102)	1265 (88)	1010 (69)	285 (20)						
		900 ¹	300	2220 (153)	1900 (131)	1510 (104)	400 (28)						
	3/4 x 1	150	150	285 (20)	200 (14)	95 (6)	285 (20)	316 SS/ Carbon Steel	Stainless Steel				
		300	150	740 (51)	635 (44)	505 (35)	285 (20)						
		600	150	1480 (102)	1265 (88)	1010 (69)	285 (20)						
		900 ¹	300	2220 (153)	1900 (131)	1510 (104)	400 (28)						
	1 x 1	1500 ¹	300	3705 (255)	3170 (218)	2520 (174)	400 (28)	316 SS/ Carbon Steel	Stainless Steel				
		2500 ¹	300	5000 (345)	5000 (345)	4200 (290)	400 (28)						
		E 0.223 (143.87)	1 x 1 1/2	150	150	285 (20)	200 (14)			95 (6)	285 (20)	316 SS/ Carbon Steel	Stainless Steel
				300	150	740 (51)	635 (44)			505 (35)	285 (20)		
600	150			1480 (102)	1265 (88)	1010 (69)	285 (20)						
900	300			2220 (153)	1900 (131)	1510 (104)	400 (28)						
F 0.350 (225.81)	1 1/2 x 2	150	150	285 (20)	200 (14)	95 (6)	285 (20)	316 SS/ Carbon Steel	Stainless Steel				
		300	150	740 (51)	635 (44)	505 (35)	285 (20)						
		600	150	1480 (102)	1265 (88)	1010 (69)	285 (20)						
G 0.573 (369.68)	1 1/2 x 2 1/2	150	150	285 (20)	200 (14)	95 (6)	285 (20)	316 SS/ Carbon Steel	Stainless Steel				
		300	150	740 (51)	635 (44)	505 (35)	285 (20)						
		600	150	1000 (69)	1000 (69)	1000 (69)	285 (20)						

¹High pressure Models

Selection Table – Balanced Design

Threaded Connections							
Orifice Area Sq. In. (Sq. mm.)	Valve Size Inlet x Outlet	Inlet Connection Type	Maximum Set Pressure, psig		Max. Back Pressure psig at 100°F (barg at 37.8°C)	Materials	
			-20°F to 450°F (-45.6°C to 37.8 °C)			Body / Bonnet	Spring
C 0.068 (43.87)	1/2 x 1 1 x 1 3/4 x 1	Male	1480 (102)		400 (28)	316 SS / Carbon Steel	316 SS
		Female					
D 0.125 (80.65)	1/2 x 1 1 x 1 3/4 x 1	Male	1480 (102)		400 (28)	316 SS / Carbon Steel	316 SS
		Female					

Selection Table – Balanced Design

Flanged Connectors								
Orifice Area Sq. In.	Valve Size Inlet x Outlet	ASME Flange Class		Maximum Set Pressure, psig (barg)		Max. Back Pressure psig at 100°F (barg at 37.8°C)	Materials	
		Inlet	Outlet	-20°F to 100°F (-45.6°C to 37.8°C)	400°F (204°C)		Body / Flanges & Bonnet	Spring
C 0.068 (43.87)	1/2 x 1 1 x 1 3/4 x 1	150	150	285 (20)	200 (14)	285 (20)	316 SS / Carbon Steel	316 SS
		300	150	740 (51)	635 (44)	285 (20)		
		600	150	1480 (102)	1265 (88)	285 (20)		
		900	300	1480 (102)	1265 (88)	400 (28)		
D 0.125 (80.65)	1/2 x 1 1 x 1 3/4 x 1	150	150	285 (20)	200 (14)	285 (20)	316 SS / Carbon Steel	316 SS
		300	150	740 (51)	635 (44)	285 (20)		
		600	150	1480 (102)	1265 (88)	285 (20)		

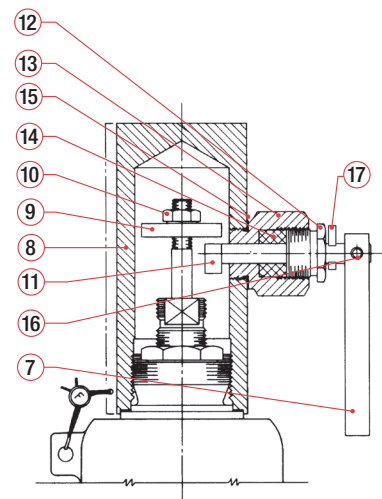
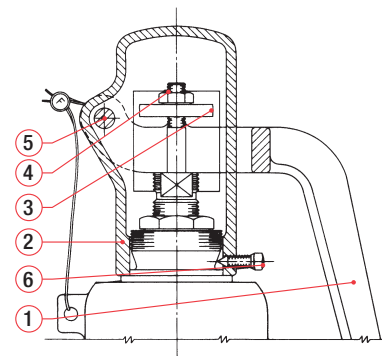
Cap Constructions

Cap Constructions							
Cap Constructions	Item No.	Part Name	Standard	316 SS	Monel	Hastelloy C	Duplex
			C1	S4 ¹	M4	H4	D4/D8
Open Lever	1	Test Lever	Iron				
	2	Cap, O.L.	Iron				
	3	Stem Test Washer	316 SS		Monel	Hast. C	Duplex
	4	Stem Jam Nut	316 SS		Monel	Hast. C	Duplex
	5	Button Head Rivet	Steel				
	6	Set Screw	Steel				
	7	Test Lever	Steel				
Packed Lever	8	Cap, Packed	Steel	316 SS	Monel	Hast. C	Duplex
	9	Stem Test Washer	316 SS		Monel	Hast. C	Duplex
	10	Stem Jam Nut	316 SS		Monel	Hast. C	Duplex
	11	Cam	316 SS		Monel	Hast. C	Duplex
	12	Gland	316 SS		Monel	Hast. C	Duplex
	13	Gland Nut	316 SS		Monel	Hast. C	Duplex
	14	Packing Ring	Graphite				
	15	Gland Nut Gasket ²	Flexible Graphite	PTFE Filled	PTFE Filled	PTFE Filled	PTFE Filled
	16	Groove Pin	Steel Plt'd				
	17	Retaining Ring	Stainless Steel				

Any part where material field is blank is standard material.

¹"S4" trim suitable for cryogenic service

²For "C1N" trim, material is PTFE Filled



Capacity Tables - U.S. Customary Units

ASME Pressure Vessel Code, Section VIII and XIII, (UV) Stamp

AIR – 10% Overpressure Capacities in Standard Cubic Feet Per Minute at 60°F					
Set Pressure (psig)	Orifice Area, Sq. In.				
	C	D	E	F	G
	0.068	0.125	0.223	0.350	0.573
15	35	65	117	184	301
20	41	75	135	212	347
30	52	95	171	268	439
40	64	118	210	330	541
50	76	140	250	392	642
60	88	162	289	454	744
70	100	184	329	516	845
80	112	206	368	578	947
90	124	228	408	640	1048
100	136	250	447	702	1150
150	196	361	644	1012	1657
200	256	472	842	1322	2164
250	317	582	1039	1631	2671
300	377	693	1237	1941	3178
350	437	804	1434	2251	3686
400	497	914	1631	2561	4193
450	557	1025	1829	2871	4700
500	618	1136	2026	3181	5207
550	678	1246	2224	3490	5715
600	738	1357	2421	3800	6222
650	798	1468	2618	4110	6729
700	858	1578	2816	4420	7236
750	918	1689	3013	4730	7743
800	979	1799	3211	5039	8251
850	1039	1910	3408	5349	8758
900	1099	2021	3605	5659	9265
950	1159	2131	3803	5969	9772
1000	1219	2242	4000	6279	10280
1050	1280	2353	4198	6589	
1100	1340	2463	4395	6898	
1150	1400	2574	4592	7208	
1200	1460	2685	4790	7518	
1250	1520	2795	4987	7828	
1300	1581	2906	5185	8138	
1350	1641	3017	5382	8447	
1400	1701	3127	5579	8757	
1450	1761	3238	5777	9067	
1500	1821	3349	5974	9377	
1550	1882	3459	6172	9687	
1600	1942	3570	6369	9997	
1650	2002	3681	6566		
1700	2062	3791	6764		
1750	2122	3902	6961		
1800	2183	4012	7159		
1850	2243	4123	7356		
1900	2303	4234	7553		
2000	2423	4455	7948		
2100	2544	4676	8343		
2200	2664	4898	8738		
2300	2785	5119	9133		
2400	2905	5340	9527		
2500	3025	5562	9922		
2600	3146	5783			
2700	3266	6004			
2800	3386	6226			
2900	3507	6447			
3000	3627	6668			
3500	4229	7775			
4000	4831	8881			
4500	5433	9988			
5000	6035	11094			
5500	6637				
6000	7239				
6500	7841				

STEAM – 10% Overpressure Capacities in Pounds Per Hour at Saturation Temperature					
Set Pressure (psig)	Orifice Area, Sq. In.				
	C	D	E	F	G
	0.068	0.125	0.223	0.350	0.573
15	100	184	329	517	847
20	115	213	380	596	976
30	146	269	480	754	1235
40	180	331	591	928	1520
50	214	393	702	1103	1805
60	248	456	813	1277	2090
70	281	518	924	1451	2375
80	315	580	1035	1625	2660
90	349	642	1146	1799	2945
100	383	704	1257	1973	3230
150	552	1015	1811	2843	4655
200	721	1326	2366	3714	6080
250	890	1637	2921	4584	7505
300	1059	1948	3475	5455	8930
350	1228	2259	4030	6325	10355
400	1398	2570	4584	7196	11780
450	1567	2880	5139	8066	13205
500	1736	3191	5694	8936	14631
550	1905	3502	6248	9807	16056
600	2074	3813	6803	10677	17481
650	2243	4124	7357	11548	18906
700	2412	4435	7912	12418	20331
750	2581	4746	8467	13289	21756
800	2750	5056	9021	14159	23181
850	2920	5367	9576	15029	24606
900	3089	5678	10130	15900	26031
950	3258	5989	10685	16770	27456
1000	3427	6300	11239	17641	28881
1050	3596	6611	11794	18511	
1100	3765	6922	12349	19382	
1150	3934	7233	12903	20252	
1200	4103	7543	13458	21122	
1250	4272	7854	14012	21993	
1300	4442	8165	14567	22863	
1350	4611	8476	15122	23734	
1400	4780	8787	15676	24604	
1450	4959	9116	16263	25525	
1500	5144	9456	16869	26477	
1550	5329	9797	17479	27433	
1600	5516	10141	18091	28395	
1650	5710	10496	18726		
1700	5905	10854	19365		
1750	6101	11215	20008		
1800	6292	11567	20636		
1850	6497	11944	21308		
1900	6697	12312	21965		
2000	7109	13068	23314		
2100	7533	13849	24706		
2200	7980	14669	26170		
2300	8434	15504	27660		
2400	8913	16385	29231		
2500	9410	17298	30860		
2600	9935	18262			
2700	10498	19299			
2800	11095	20395			
2900	11745	21591			

Capacities at 30 psig and below are based on 3 psi overpressure.

For sizing purposes, the coefficients of discharge K are 0.878 for air, gas & steam; 0.676 for water.

Capacity Tables - U.S. Customary Units

ASME Pressure Vessel Code, Section VIII and XIII, (UV) Stamp

WATER – 10% Overpressure Capacities¹ in U.S. Gallons Per Minute at 70°F					
Set Pressure (psig)	Orifice Area, Sq. In.				
	C	D	E	F	G
	0.068	0.125	0.223	0.350	0.573
15	7.4	13.6	24.3	38.1	62.4
20	8.3	15.3	27.4	43.1	70.5
30	10.0	18.4	32.9	51.6	84.5
40	11.5	21.2	37.9	59.6	97.6
50	12.9	23.8	42.4	66.6	109
60	14.1	26.0	46.5	73.0	119
70	15.3	28.1	50.2	78.8	129
80	16.3	30.1	53.7	84.3	138
90	17.3	31.9	56.9	89.4	146
100	18.3	33.6	60.0	94.2	154
150	22.4	41.2	73.5	115	189
200	25.9	47.6	84.9	133	218
250	28.9	53.2	94.9	149	244
300	31.7	58.3	104	163	267
350	34.2	63.0	112	176	288
400	36.6	67.3	120	188	308
450	38.8	71.4	127	200	327
500	40.9	75.3	134	210	345
550	42.9	78.9	140	221	362
600	44.8	82.4	147	230	378
650	46.7	85.8	153	240	393
700	48.4	89.0	158	249	408
750	50.1	92.2	164	258	422
800	51.8	95.2	169	266	436
850	53.4	98.1	175	274	450
900	54.9	101	180	282	463
950	56.4	103	185	290	475
1000	57.9	106	189	298	488
1050	59.3	109	194	305	
1100	60.7	111	199	312	
1150	62.1	114	203	319	
1200	63.4	116	208	326	
1250	64.7	119	212	333	
1300	66.0	121	216	339	
1350	67.3	123	220	346	
1400	68.5	126	224	352	
1450	69.7	128	228	359	
1500	70.9	130	232	365	
1550	72.1	132	236	371	
1600	73.2	134	240	377	
1650	74.4	136	244		
1700	75.5	138	247		
1750	76.6	140	251		
1800	77.7	142	254		
1850	78.7	144	258		
1900	79.8	146	261		
2000	81.9	150	268		
2100	83.9	154	275		
2200	85.9	157	281		
2300	87.8	161	288		
2400	89.7	164	294		
2500	91.5	168	300		
2600	93.4	171			
2700	95.1	174			
2800	96.9	178			
2900	98.6	181			
3000	100	184			
3500	108	199			
4000	115	212			
4500	122	225			
5000	129	238			
5500	135				
6000	141				
6500	147				

Capacities at 30 psig and below are based on 3 psi overpressure.

For sizing purposes, the coefficients of discharge K are 0.878 for air, gas & steam; 0.676 for water.

¹ To determine capacity at 25% overpressure, multiply the capacity at 10% by 1.066.

Capacity Tables – Metric Units

ASME Pressure Vessel Code, Section VIII and XIII, (UV) Stamp

AIR – 10% Overpressure Capacities in Standard Cubic Meters Per Minute at 15.6°C					
Set Pressure (barg)	Orifice Area mm ²				
	C	D	E	F	G
	43.87	80.65	143.87	225.81	369.68
1	0.9	1.8	3.2	5.1	8.4
2	1.4	2.6	4.7	7.4	12.1
3	1.9	3.5	6.3	9.9	16.3
4	2.4	4.4	7.9	12.5	20.5
5	2.9	5.3	9.6	15.0	24.6
6	3.4	6.2	11.2	17.6	28.8
7	3.9	7.2	12.8	20.1	33.0
8	4.4	8.1	14.4	22.7	37.1
9	4.9	9.0	16.0	25.2	41.3
10	5.4	9.9	17.7	27.7	45.5
12	6.3	11.7	20.9	32.8	53.8
14	7.3	13.5	24.1	37.9	62.1
16	8.3	15.3	27.4	43.0	70.5
18	9.3	17.1	30.6	48.1	78.8
20	10.3	19.0	33.9	53.2	87.1
25	12.8	23.5	42.0	65.9	108
30	15.2	28.1	50.1	78.7	128
35	17.7	32.6	58.2	91.4	149
40	20.2	37.1	66.3	104	170
45	22.7	41.7	74.4	116	191
50	25.1	46.2	82.5	129	212
55	27.6	50.8	90.6	142	233
60	30.1	55.3	98.7	155	253
65	32.5	59.9	106	167	274
70	35.0	64.4	115	180	295
75	37.5	69.0	123	193	
80	40.0	73.5	131	205	
85	42.4	78.1	139	218	
90	44.9	82.6	147	231	
95	47.4	87.1	155	244	
100	49.9	91.7	163	256	
105	52.3	96.2	171	269	
110	54.8	100	179	282	
115	57.3	105	187		
120	59.7	109	196		
125	62.2	114	204		
130	64.7	119	212		
135	67.2	123	220		
140	69.6	128	228		
145	72.1	132	236		
150	74.6	137	244		
155	77.1	141	252		
160	79.5	146	260		
165	82.0	150	269		
170	84.5	155	277		
175	86.9	159			
180	89.4	164			
185	91.9	169			
190	94.4	173			
195	96.8	178			
200	99.3	182			
220	109	200			
240	119	218			
260	129	237			
280	138	255			
300	148	273			
320	158	291			
340	168	309			
360	178				
380	188				
400	198				
420	208				
440	218				
448	221				

STEAM – 10% Overpressure Capacities in Kilograms Per Hour at Saturation Temperature					
Set Pressure (barg)	Orifice Area mm ²				
	C	D	E	F	G
	0.068	0.125	0.223	0.350	0.573
1	44.9	82.5	147	231	378
2	65.1	119	213	335	548
3	87.2	160	286	449	735
4	109	201	359	563	922
5	131	242	432	678	1110
6	154	283	505	792	1297
7	176	324	578	907	1485
8	198	364	651	1021	1672
9	220	405	723	1136	1860
10	243	446	796	1250	2047
12	287	528	942	1479	2422
14	332	610	1088	1708	2797
16	376	692	1234	1938	3172
18	421	773	1380	2167	3547
20	465	855	1526	2396	3922
25	576	1060	1891	2968	4860
30	688	1264	2256	3541	5797
35	799	1469	2621	4114	6735
40	910	1673	2986	4686	7672
45	1021	1878	3351	5259	8610
50	1133	2082	3715	5832	9547
55	1244	2287	4080	6404	10485
60	1355	2491	4445	6977	11422
65	1466	2696	4810	7550	12360
70	1578	2900	5175	8122	13298
75	1689	3105	5540	8695	14235
80	1800	3310	5905	9268	
85	1911	3514	6269	9840	
90	2023	3719	6634	10413	
95	2134	3923	6999	10985	
100	2250	4136	7379	11581	
105	2371	4358	7775	12204	
110	2495	4587	8183	12843	
115	2620	4817	8594	13489	
120	2749	5054	9018	14153	
125	2880	5294	9446	14825	
130	3012	5537	9878		
135	3145	5782	10315		
140	3283	6035	10766		
145	3425	6297	11233		
150	3569	6562	11706		
155	3715	6830	12185		
160	3870	7115	12694		
165	4028	7404	13209		
170	4191	7704	13744		
175	4356	8009			
180	4533	8332			
185	4716	8669			
190	4911	9027			
195	5113	9400			
200	5329	9796			

Capacities at 2.0 barg set pressure and below are based on 0.2 bar overpressure. For sizing purposes the coefficients of discharge K are 0.878 for air, gas, & steam, 0.676 for liquids.

Capacity Tables – Metric Units

ASME Pressure Vessel Code, Section VIII and XIII (UV) Stamp

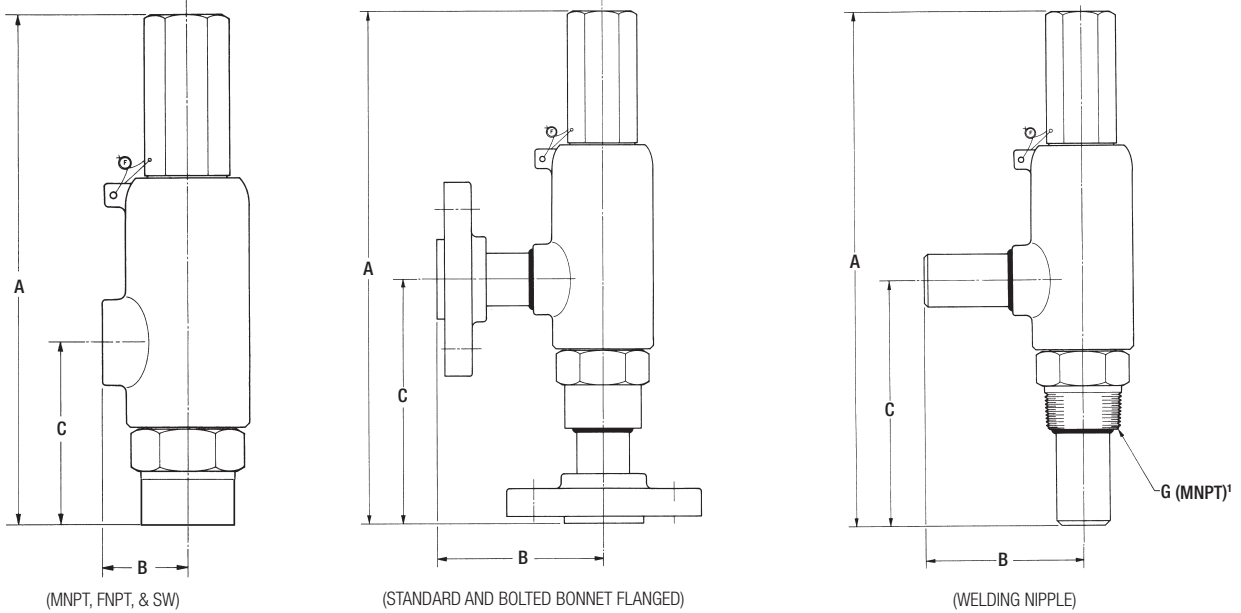
WATER – 10% Overpressure Capacities¹ in Liters Per Minute at 21°C					
Set Pressure (barg)	Orifice Area mm ²				
	C	D	E	F	G
	43.87	80.65	143.87	225.81	369.68
1	27.6	50.8	90.7	142	233
2	37.4	68.7	122	192	315
3	45.7	84.0	150	235	385
4	52.8	97.0	173	271	445
5	59.0	108	193	303	497
6	64.6	118	212	332	545
7	69.8	128	229	359	588
8	74.6	137	244	384	629
9	79.2	145	259	407	667
10	83.5	153	273	429	703
12	91.4	168	300	470	770
14	98.8	181	324	508	832
16	105	194	346	543	890
18	112	205	367	576	944
20	118	217	387	607	995
25	132	242	433	679	1112
30	144	265	474	744	1218
35	156	287	512	804	1316
40	167	307	547	859	1407
45	177	325	580	911	1492
50	186	343	612	961	1573
55	195	360	642	1008	1650
60	204	376	670	1052	1723
65	212	391	698	1095	1794
70	220	406	724	1137	1861
75	228	420	750	1177	
80	236	434	774	1215	
85	243	447	798	1253	
90	250	460	821	1289	
95	257	473	844	1324	
100	264	485	866	1359	
105	270	497	887	1392	
110	276	509	908	1425	
115	283	520	928		
120	289	531	948		
125	295	542	968		
130	301	553	987		
135	306	564	1006		
140	312	574	1024		
145	318	584	1042		
150	323	594	1060		
155	328	604	1078		
160	334	614	1095		
165	339	623	1112		
170	344	632	1129		
175	349	642			
180	354	651			
185	359	660			
190	364	669			
195	368	677			
200	373	686			
220	391	720			
240	409	752			
260	425	782			
280	441	812			
300	457	840			
320	472	868			
340	486	895			
360	501				
380	514				
400	528				
420	541				
440	553				
448	558				

Capacities at 2.0 barg set pressure and below are based on 0.2 bar overpressure.

For sizing purposes the coefficients of discharge K are 0.878 for air, gas, and steam, 0.676 for liquid.

¹ To determine capacity at 25% overpressure multiply the capacity at 10% by 1.066.

Dimensions & Weights



Male x Female Threaded Connections								
Valve Size	US Customary Units (Inches)			Metric Units (Millimeters)			Approx. Weight	
Inlet x Outlet	A (Max.) All Cap Const.	B	C	A (Max.) All Cap Const.	B	C	lb	kg
C and D Orifice								
1/2 x 1	11 1/4	1 3/4	3 9/16	282	45	91	8	3.6
3/4 x 1	11 1/4	1 3/4	3 9/16	286	45	91	8	3.6
3/4 x 1 (HP)	13 5/8	2 1/2	3 3/4	346	64	95	14	6.3
1 x 1	11 1/2	1 3/4	3 3/4	292	45	95	8	3.6
1 x 1 (HP)	13 5/8	2 1/2	3 3/4	346	64	95	14	6.3
E Orifice								
1 x 1 1/2	13 5/8	2 1/2	3 1/2	346	64	89	16	7.2
F Orifice								
1 1/2 x 2	14 9/16	3	3 7/8	370	76	98	17	7.7
G Orifice								
1 1/2 x 2 1/2	14 9/16	3	4 1/8	370	76	105	18	8.1

Socket Weld & Female x Female Threaded Connections								
Valve Size	US Customary Units (Inches)			Metric Units (Millimeters)			Approx. Weight	
Inlet x Outlet	A (Max.) All Cap Const.	B	C	A (Max.) All Cap Const.	B	C	lb	kg
C and D Orifice								
1/2 x 1	11 7/16	1 3/4	3 11/16	291	45	94	8	3.6
1/2 x 1 (HP)	13 5/8	2 1/2	3 3/4	346	64	95	14	6.3
3/4 x 1	11 7/16	1 3/4	3 11/16	291	45	94	8	3.6
3/4 x 1 (HP)	13 5/8	2 1/2	3 3/4	346	64	95	14	6.3
1 x 1	11 7/16	1 3/4	3 11/16	291	45	94	8	3.6
1 x 1 (HP)	13 5/8	2 1/2	3 3/4	346	64	95	14	6.3
E Orifice								
1 x 1 1/2	13 3/8	2 1/2	3 1/2	340	64	89	16	7.2
F Orifice								
1 1/2 x 2	14 9/16	3	3 7/8	370	76	98	17	7.7
G Orifice								
1 1/2 x 2 1/2	14 9/16	3	4 1/8	370	76	105	18	8.1

Tolerance for "B" and "C" dimensions is $\pm 1/8$ ".

ISO 7 threaded valves have the same dimensions as the NPT valves.

ISO 228 females threaded valves are the same as FNPT. For male ISO 228 dimensions contact the factory.

¹ Same pipe thread connections also used on socket weld models with corresponding inlet sizes for testing purpose only

Dimensions & Weights

Flanged Connections								
Valve Size	US Customary Units (Inches)			Metric Units (Millimeters)			Approx. Weight	
Inlet x Outlet	A (Max.) All Cap Const.	B	C	A (Max.) All Cap Const.	B	C	lb	kg
C and D Orifice								
1/2 x 1	14	5 3/16	6 1/4	356	132	159	15	6.8
1/2 x 1 (HP)	16 1/8	5 15/16	6 1/4	410	151	159	22	9.9
3/4 x 1	13 15/16	5 3/16	6 3/16	354	132	157	15	6.8
3/4 x 1 (HP)	16 1/8	5 15/16	6 1/4	410	151	159	22	9.9
1 x 1	14 7/8	5 3/16	7 1/8	378	132	181	15	6.8
1 x 1 (HP)	17 1/16	5 15/16	7 3/16	433	151	183	22	9.9
E Orifice								
1 x 1 1/2	16 13/16	5 13/16	6 15/16	427	148	176	26	11.7
F Orifice								
1 1/2 x 2	17 14/16	8 3/16	7 3/16	454	208	183	30	13.6
G Orifice								
1 1/2 x 2 1/2	17 14/16	8 3/16	7 7/16	454	208	189	32	14.5

Welding Nipple Connections									
Valve Size	US Customary Units (Inches)				Metric Units (Millimeters)			Approx. Weight	
Inlet x Outlet	A (Max.) All Cap Const.	B	C	G ¹ (MNPT)	A (Max.) All Cap Const.	B	C	lb	kg
C and D Orifice									
1/2 x 1	13	3 3/16	5 1/4	1	330	81	133	9	4
1/2 x 1 (HP)	15 3/16	3 15/16	5 5/16	1	386	100	135	15	6.8
3/4 x 1	12 15/16	3 3/16	5 3/16	1 1/4	329	81	132	9	4
3/4 x 1 (HP)	15 1/8	3 15/16	5 1/4	1 1/4	384	100	133	15	6.8
1 x 1	12 7/8	3 3/16	5 1/8	1 1/2	327	81	130	9	4
1 x 1 (HP)	15 1/16	3 15/16	5 3/16	2	383	100	132	15	6.8
E Orifice									
1 x 1 1/2	14 13/16	3 13/16	4 15/16	1 1/2	376	97	125	17	7.7
F Orifice									
1 1/2 x 2	15 7/8	5 3/16	5 3/16	2	403	132	132	18	8.1
G Orifice									
1 1/2 x 2 1/2	15 7/8	5 3/16	5 7/16	2	403	132	128	19	8.6

Tolerance for "B" and "C" dimensions is $\pm 1/8$ ".

Valves with ring joint inlets have the same center to face dimension as the standard raised face flange models, except for "C" & "D" orifice valves with 2500 class inlet. Consult the factory for those dimensions.

¹ Same pipe thread connections also used on socket weld models with corresponding inlet sizes for testing purpose only.

Material Options - Corrosive and Low Temperature Service

Bill of Materials										
Part Name	316 SS		MONEL			HASTELLOY C			DUPLEX	
	C1N (NACE)	S4' /S4N (NACE)	M1	M2	M4	H1	H2	H4	D4	D8
	-20°F to 750°F	-450°F to 750°F	-20°F to 600°F		-325°F to 600°F	-20°F to 750°F		-325°F to 750°F	-50°F to 500°F	-50°F to 600°F
Body			Monel	Monel	Monel	Hastelloy C	Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Bonnet		SA-351 GR. CF8M SS			Monel			Hastelloy C	Duplex 4A	Duplex 6A
Disc			Monel	Monel	Monel	Hastelloy C	Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Guide				Monel	Monel		Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Disc Holder				Monel	Monel		Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Stem					Monel			Hastelloy C	Duplex 4A	Duplex 6A
Spring Adj. Screw					Monel			Hastelloy C	Duplex 4A	Duplex 6A
Jam Nut					Monel			Hastelloy C	Duplex 4A	Duplex 6A
Cap, Plain Screwed		316 SS			Monel			Hastelloy C	Duplex 4A	Duplex 6A
Cap Gasket					Monel			Hastelloy C	Duplex 4A	Duplex 6A
Body Gasket				Monel	Monel		Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Guide Gasket				Monel	Monel		Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Spring ³	Inconel [®] X-750	316 SS / Inconel X-750		Inconel X-750	Inconel X-750		Inconel X-750	Hastelloy C	Inconel X-750	Inconel X-750
Spring Buttons					Monel			Hastelloy C	Duplex 4A	Duplex 6A
O-Ring Retainer ²		316 SS	Monel	Monel	Monel	Hastelloy C	Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Retainer Lock Screw ²		316 SS	Monel	Monel	Monel	Hastelloy C	Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
O-Ring Seat Seal ²										
Guide Seal ³										
Disc Holder Seal ²										
Wire Seal										
Nameplate (Not Shown)										
Welding Nipple (Inlet)			Monel	Monel	Monel	Hastelloy C	Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Welding Nipple (Outlet)		316 SS			Monel			Hastelloy C	Duplex 4A	Duplex 6A
Lap Joint Stub End (Inlet)			Monel	Monel	Monel	Hastelloy C	Hastelloy C	Hastelloy C	Duplex 4A	Duplex 6A
Lap Joint Stub End (Outlet)		316 SS			Monel			Hastelloy C	Duplex 4A	Duplex 6A
Lap Joint Flange (Inlet)		316 SS			Monel			Hastelloy C	Duplex 4A	Duplex 6A
Lap Joint Flange (Outlet)		316 SS			Monel			Hastelloy C	Duplex 4A	Duplex 6A

For open and packed lever materials, see page 12

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¹For S4 trim, a 17-4 Ph. or 17-7 Ph. spring may be necessary for some pressures and temperatures.

²Temperature for balanced or O-ring seat design is limited by the elastomer selected. Consult chart on page 9.

³ Balanced design uses the same spring selection as the standard design.

Material Options - Selection Table

Flanged Connections													
Orifice Area Sq. In. (Sq. mm.)	Valve Size Inlet x Outlet	ASME Flange Class		S4 & S8				M4			Max. Back Pressure psig at 100°F (barg 37.8°C)		
		Inlet	Outlet	Maximum Set Pressure, psig (barg)			Max. Back Pressure psig at 100°F (barg 37.8°C)	Maximum Set Pressure, psig (barg)					
				-450°F to 100°F (-267°C to 37.8°C)	400°F (204°C)	750°F (399°C)		-325°F to 100°F (-198°C to 37.8°C)	400°F (204°C)	600°F (315°C)			
C 0.068 (43.87)	1/2 x 1	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)		
		300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)		
		600	150	1440 (99)	1025 (71)	855 (59)	275 (20)	1200 (83)	945 (65)	930 (64)	230 (16)		
		900	300	2160 (149)	1540 (106)	1280 (88)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
		1500 ¹	300	3600 (248)	2570 (177)	2135 (147)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
		2500 ¹	300	5000 (345)	4280 (295)	3560 (245)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
	1 x 1	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)		
		300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)		
		600	150	1440 (99)	1025 (71)	855 (59)	275 (20)	1200 (83)	945 (65)	930 (64)	230 (16)		
		900	300	2160 (149)	1540 (106)	1280 (88)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
		1500 ¹	300	3600 (248)	2570 (177)	2135 (147)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
		2500 ¹	300	6000 (414)	4280 (295)	3560 (245)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
D 0.125 (80.65)	1/2 x 1	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)		
		300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)		
		600	150	1440 (99)	1025 (71)	855 (59)	275 (20)	1200 (83)	945 (65)	930 (64)	230 (16)		
		900	300	2160 (149)	1540 (106)	1280 (88)	400 (28)	1800 (124)	1420 (98)	1395 (6)	400 (28)		
	3/4 x 1	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)		
		300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)		
		600	150	1440 (99)	1025 (71)	855 (59)	275 (20)	1200 (83)	945 (65)	930 (64)	230 (16)		
		900 ¹	300	2160 (149)	1540 (106)	1280 (88)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
	1 x 1	1500 ¹	300	3600 (248)	2570 (177)	2135 (147)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
		2500 ¹	300	6000 (414)	4280 (295)	3560 (245)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
		E 0.223 (143.87)	1 x 1 1/2	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)
				300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)
600	150			1440 (99)	1025 (71)	855 (59)	275 (20)	1200 (83)	945 (65)	930 (64)	230 (16)		
900	300			2160 (149)	1540 (106)	1280 (88)	400 (28)	1800 (124)	1420 (98)	1420 (98)	400 (28)		
F 0.350 (225.81)	1 1/2 x 2	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)		
		300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)		
		600	150	1440 (99)	1025 (71)	855 (59)	275 (20)	1200 (83)	945 (65)	930 (64)	230 (16)		
G 0.573 (369.68)	1 1/2 x 2 1/2	150	150	275 (20)	195 (14)	95 (6)	275 (20)	230 (16)	180 (12)	95 (6)	230 (16)		
		300	150	720 (51)	515 (35)	425 (29)	275 (20)	600 (41)	475 (33)	475 (32)	230 (16)		
		600	150	1000 (69)	1000 (69)	855 (59)	275 (20)	1000 (69)	945 (65)	930 (64)	230 (16)		

For set pressures below 15 psig, consult the Farris factory

Maximum set pressure for steam service valves is 2900 psig or the lower limit as shown in the appropriate selection table.

¹These flange classes are only available in the high pressure version.

Material Options - Selection Table

Flanged Connections													
Orifice Area Sq. In. (Sq. mm.)	Valve Size Inlet x Outlet	ASME Flange Class		H4				D4 ¹ & D8					
		Inlet	Outlet	Maximum Set Pressure, psig (barg)			Max. Back Pressure psig 100°F (barg at 37.8°C)	Maximum Set Pressure, psig (barg)			Max. Back Pressure psig at 100°F (barg at 37.8°C)		
				-20°F to 100°F (-198°C to 37.8 °C)	400°F (204°C)	750°F (399 °C)		-20°F to 100°F (-198°C to 37.8°C)	400°F (204 °C)	600°F (315°C)			
C 0.068 (43.87)	1/2 x 1	150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)		
		300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)		
		600	150	1200 (83)	980 (68)	820 (57)	230 (16)	1480 (102)	1265 (88)	1115 (77)	285 (20)		
		900	300	1800 (124)	1470 (101)	1230 (16)	400 (28)	2220 (153)	1900 (131)	1670 (115)	400 (28)		
		1500 ²	300	3000 (207)	2450 (169)	2050 (141)	400 (28)	3705 (255)	3170 (218)	2785 (192)	400 (28)		
		2500 ²	300	5000 (345)	4080 (281)	3420 (236)	400 (28)	5000 (345)	5000 (345)	4640 (320)	400 (28)		
	1 x 1	150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)		
		300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)		
		600	150	1200 (83)	980 (68)	820 (57)	230 (16)	1480 (102)	1265 (88)	1115 (77)	285 (20)		
		900	300	1800 (124)	1470 (101)	1230 (16)	400 (28)	2220 (153)	1900 (131)	1670 (115)	400 (28)		
		1500 ²	300	3000 (207)	2450 (169)	2050 (141)	400 (28)	3705 (255)	3170 (218)	2785 (192)	400 (28)		
		2500 ²	300	5000 (345)	4080 (281)	3420 (236)	400 (28)	5000 (345)	5280 (364)	4640 (320)	400 (28)		
	D 0.125 (80.65)	1/2 x 1	150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)	
			300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)	
			600	150	1200 (83)	980 (68)	820 (57)	230 (16)	1480 (102)	1265 (88)	1115 (77)	285 (20)	
			900	300	1800 (124)	1470 (101)	1230 (16)	400 (28)	2220 (153)	1900 (131)	1670 (115)	400 (28)	
		3/4 x 1	150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)	
			300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)	
600			150	1200 (83)	980 (68)	820 (57)	230 (16)	1480 (102)	1265 (88)	1115 (77)	285 (20)		
900 ²			300	1800 (124)	1470 (101)	1230 (16)	400 (28)	2220 (153)	1900 (131)	1670 (115)	400 (28)		
1 x 1		1500 ²	300	3000 (207)	2450 (169)	2050 (141)	400 (28)	3705 (255)	3170 (218)	2785 (192)	400 (28)		
		2500 ²	300	5000 (345)	4080 (281)	3420 (236)	400 (28)	5000 (345)	5000 (345)	4640 (320)	400 (28)		
		E 0.223 (143.87)	1 x 1 1/2	150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)
				300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)
600	150			1200 (83)	980 (68)	820 (57)	230 (16)	1480 (102)	1265 (88)	1115 (77)	285 (20)		
900	300			1800 (124)	1470 (101)	1230 (16)	400 (28)	2220 (153)	1900 (131)	1670 (115)	400 (28)		
F 0.350 (225.81)	1 1/2 x 2		150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)	
			300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)	
G 0.573 (369.68)	1 1/2 x 2 1/2	600	150	1200 (83)	980 (68)	820 (57)	230 (16)	1480 (102)	1265 (88)	1115 (77)	285 (20)		
		150	150	230 (16)	190 (13)	95 (6)	230 (16)	285 (20)	200 (14)	140 (10)	285 (20)		
		300	150	600 (41)	490 (34)	410 (28)	230 (16)	740 (51)	635 (44)	555 (38)	285 (20)		
		600	150	1000 (69)	980 (68)	820 (57)	230 (16)	1000 (69)	1000 (69)	1115 (77)	285 (20)		

For set pressures below 1 barg, consult the Farris factory.

Maximum set pressure for steam service valves is 200 barg or the lower limit as shown in the appropriate selection table.

¹ Maximum temperature for D4 is 500°F

² These flange classes are only available in the high pressure version.

Farris Engineering Product Selection



2400 Series | High Performance Direct Spring Loaded Pressure Relief Valve

Product Description		
Pressure Range:	20 PSIG to 2,000 psig	1.37 to 137.8 barg
Temperature Range:	-450°F to +550°F	-267.8°C to 287.8°C
Size Range:	1/2" x 3/4" to 1" x 1"	13 x 19 mm to 25 x 25 mm
Materials:	Carbon Steel, Stainless Steel, and Brass/Bronze	
ASME Certification:	UV	
Service:	Air	



2600/2600L Series | Versatile and Customizable Spring Loaded Pressure Relief Valve

Product Description		
Pressure Range:	15 PSIG to 10,000 psig	1.03 to 689 barg
Temperature Range:	-450°F to +1500°F	-267.8°C to 815.6°C
Size Range:	1" x 2" to 20" x 24"	25 x 51 mm to 508 x 610 mm
Materials:	Carbon Steel, Stainless Steel, Monel, Hastelloy C, Duplex	
ASME Certification:	UV and V	
Service:	Steam/Water/Air	



3800/3800L Series | Pilot Operated Relief Valve with Snap Acting or Modulating Control

Product Description		
Pressure Range:	15 PSIG to 10,000 psig	1.03 to 689 barg
Temperature Range:	-450°F to +500°F	-267.8°C to 260°C
Size Range:	1" x 2" to 12" x 16"	25 x 51mm to 305 x 406 mm
Materials:	Carbon Steel, Stainless Steel, Monel, ¹ Hastelloy C, Duplex	
ASME Certification:	UV	
Service:	Steam/Water/Air	



4200 Series | Spring Loaded Pressure Relief Valve for Section I Steam Applications

Product Description		
Pressure Range:	15 PSIG to 1,480 psig	1.03 to 102 barg
Temperature Range:	-20°F to +1000°F	-28.9°C to 537.8°C
Size Range:	1-1/4" x 1-1/2" to 6" x 8"	32 x 38 mm to 152 x 203 mm
Materials:	Carbon Steel, Stainless Steel, and Chrome-Moly	
ASME Certification:	UV and V	
Service:	Steam/Air	



WARRANTY

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Certifications, Compliances, and Approvals

- ASME V, UV, NV and NPT
- National Board Approval, NB
- NACE MRO175 / ISO15156
- ISO 9001:2015
- ISO 4126
- PED 2014/68/EU (European Pressure Equipment Directive)
- ATEX 2014/34/EU (European Potentially Explosive Atmospheres)
- CRN B51, N285.0 (Canadian Registration)
- CSQL (China Safety Quality License)
- Customs Union Certificates TR CU 010/2001 and TR CU 023/2013
- US Coast Guard
- API 526
- Nuclear Quality - 10 CFR 50 Appendix B, NCA-4000, NQA-1, N285.0 CSA N299.2/.3/.4"
- First Point Assessment Limited
- KGS (Korea Gas Safety)
- UKCA (United Kingdom) Conformity Assessed)



CURTISS - WRIGHT | **VALVES DIVISION**

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197C
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