



TAYLOR VALVE TECHNOLOGY

## SERIES 8200/8300 SAFETY RELIEF VALVES



ASME  
SETTING THE STANDARD

TAYLOR VALVE HAS BEEN  
PROTECTING THE ENVIRONMENT  
WITH WORLD CLASS PRODUCTS  
AND PROVIDING EXCELLENT  
CUSTOMER SERVICE SINCE 1958

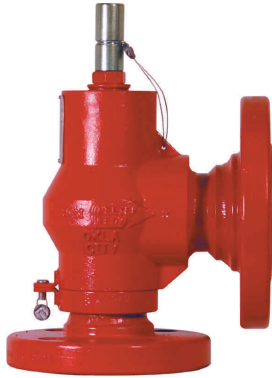
# SERIES 8200/8300 SAFETY RELIEF VALVES

Taylor Valve 8200/8300 Safety Relief Valves are engineered and manufactured to the highest standards and feature a “state-of-the-art” soft seat which gives you a bubble-tight seal for hundreds of “pops”. Our unique patented radius disc design assures a reliable reseal even under the most difficult conditions.

**USES:** Air, Gas, or Liquid relief applications, including compressors, separators, heater treaters, free water knockouts, scrubbers, dehydrators, thermal relief, gas production units, transmission and gathering lines, chemical plants, refineries, meter runs, gas plants, and other industrial applications.



THREADED



FLANGED

## FEATURES

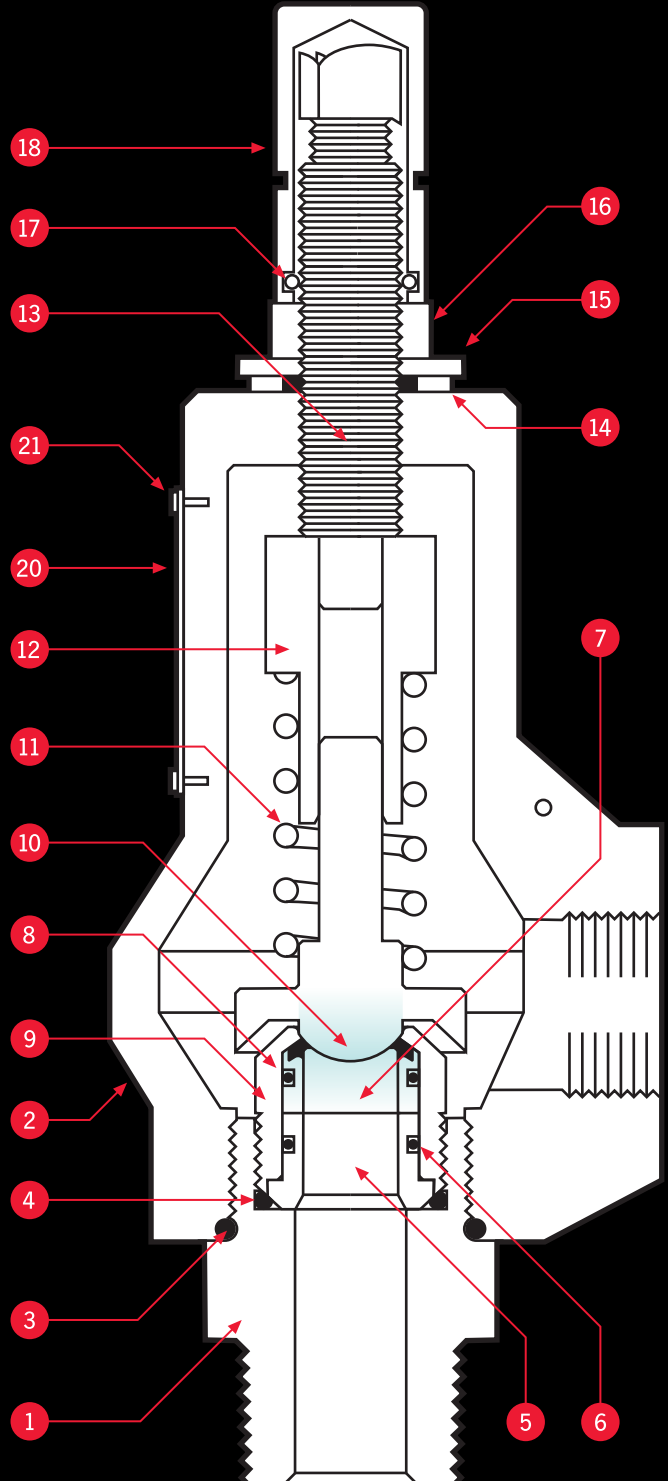
- **ASME Section VIII Div 1 code rated for Air, Liquid and Gas**
- **Zero Leakage** up to 90% of set point (API 527)
- **Extremely Adjustable**
- **Superior Spring Design and Material** enhance the performance of the product and provide consistent opening and closing pressures.

## BENEFITS

- **Our Patented Radius Disc** reduces the amount of interference required to seal and assures a reliable reseal even under the most difficult conditions - up to hundreds of “pops”.
- **High Endurance Soft Seat** supports repeated operation and a bubble-tight shutoff everytime
- **Radius Disc and Seat Design** supports the spring alignment and promotes proper seating
- **Low Simmer Rate**
- **Consistent Blowdown**

## GENERAL OPERATION

Taylor’s 8200/8300 Series Safety Relief Valve actuates when the pressure under the valve overcomes the spring force on the disc causing the valve to open, releasing overpressure from the system before re-closing.





8200/8300 Series Valves meet the requirements of the ASME Boiler and Pressure Vessel Code Sec VIII, Div. 1. Capacity ratings were established by testing performed at the National Board of Boiler and Pressure Vessel Inspectors, Columbus, Ohio.

## BILL OF MATERIALS

ITEM NO	PART	STANDARD APPLICATION		NACE APPLICATION	
		CARBON STEEL	STAINLESS STEEL	CARBON STEEL	STAINLESS STEEL
1	Seat Frame	1018/1020 CS A108*/A105	316 SS SA479/SA 182	1018/1020 CS A108*/A105	316 SS SA479/SA 182
2	Body	SA216 GR WCB	SA351 CF8M	SA216 GR WCB	SA351 CF8M
3	O-Ring	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart
4	O-Ring	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart
5	Insert Holder	304 SS SA479	304 SS SA479	316 SS SA479	316 SS SA479
6	O-Ring	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart
7	Seat Insert	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart
8	O-Ring	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart	see Elastomers Chart
9	Seat Body	17-4 SS H900 SA564	17-4 SS H900 SA564	316SS SA479 / 17-4 SS SA564 H1150M	316SS SA479 / 17-4 SA564 H1150M
10 <sup>1</sup>	Disc	17-4 SS H900 SA564	17-4 SS H900 SA564	316SS SA479 / 17-4 SS H1150M SA564	316SS SA479 / 17-4 SS H1150M SA564
11	Spring	17-7 SS	17-7 SS	see Elastomers Chart	see Elastomers Chart
12	Spring Keeper	303 SS SA479	303 SS SA479	303 SS SA479	303 SS SA479
13 <sup>1</sup>	Adjustment Screw	12L14 CS	304SS SA240	12L 14 CS	304SS SA240
14	Thread Seal	BUNA STEEL	BUNA STEEL	BUNA/STEEL	BUNA/STEEL
15	Flat Washer	CS ANSI B18.22.1	CS ANSI B18.22.1	CS ANSI B18.22.1	CS ANSI B18.22.1
16	Jam Nut	CS ANSI B18.22.2	CS ANSI B18.22.2	CS ANSI B18.22.2	CS ANSI B18.22.2
17 <sup>1</sup>	O-Ring	PC BUNA	PC BUNA	PC BUNA	PC BUNA
18 <sup>1</sup>	CAP	ZINC PLATED CS	ZINC PLATED CS	ZINC PLATED CS	ZINC PLATED CS
19 <sup>2</sup>	Lead Seal Wire	SS	SS	SS	SS
20	Data Label	18-8 SS	18-8 SS	18-8 SS	18-8 SS
21	Drive Screws	18-8 SS	18-8 SS	18-8 SS	18-8 SS

\*Alternate CS to SA105 used for pressure above 1440 PSIG <sup>1</sup> These parts are replaced with Lift Lever option <sup>2</sup> These parts are not shown

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## ELASTOMERS CHART

MATERIAL	DUROMETER	TEMP.		PRESSURE		APPLICATIONS
		MIN	MAX	MIN	MAX	
Viton (FKM)		-15	400	50		Hydrocarbons, H2S, Mineral Oil/Grease, Silicone Oil/Grease, Chlorinated Hydrocarbons, Fuels
HNBR		-25	325	15		Hydrocarbons, CO2, Dilute Acids, Water and Steam Less than 300°F
EPDM		-70	250	15		Glycols, Organic Acids, Inorganic Acids, Hydraulic Fluids, Solvents
TEFLON		-420	450	250		Cryogenics, Strong Acids, Amines
PC BUNA		-30	250	15		Hydrocarbons, CO2, Dilute Acids, Water,

## CONTACT INFO

Toll-Free (800) 654-4196 Website [www.taylorvalve.com](http://www.taylorvalve.com)  
 Phone (405) 787-0145 Email [info@taylorvalve.com](mailto:info@taylorvalve.com)  
 Fax (405) 789-8198  
 Address 8300 S.W. 8th, Oklahoma City, OK 73128

# 1" 8200 VALVE FLANGED & THREADED

The Taylor 1" 8200 Safety Relief Valve is an excellent choice for Air, Gas or Liquid relief applications, including Compressors, Separators, Heater Treaters, Free Water Knockouts, Scrubbers, Dehydrators, Thermal Relief, Gas Production Units, Transmission and Gathering Lines, Chemical Plants, Refineries, Meter Runs, Gas Plants and other Industrial Applications.

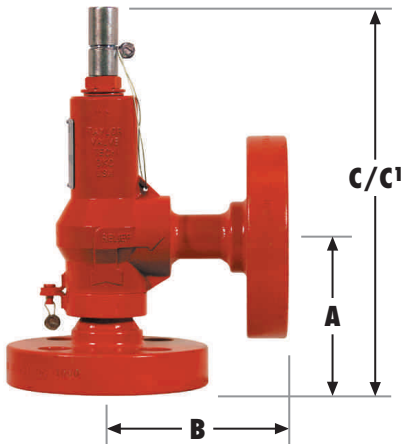
CONTACT TAYLOR VALVE TO ORDER TODAY!

NOTE: Most flange dimensions are as per API 526  
Other flange combinations are available upon request.

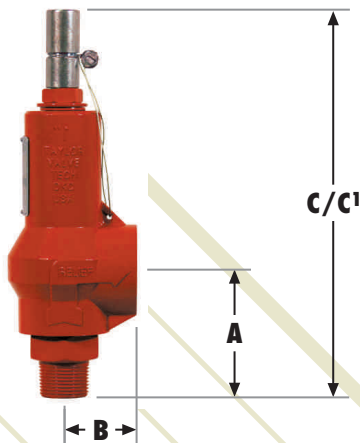
## 1" FLANGED CONNECTIONS

1" FLANGED VALVE

Flanges are Locked in place



1" THREADED VALVE



ORIFICE	INLET x OUTLET (inches)	AVAILABLE FLANGE CLASSES INLET x OUTLET	DIMENSIONS (in)			C <sup>1</sup> (EXT. BODY)
			A	B	C	
D & E	1/2 x 1	150 x 150	4.13	4.50	10.70	12.23
		300 x 150	4.13	4.50	10.70	12.23
		600 x 150	4.13	4.50	10.70	12.23
		900 / 1500 x 300	4.13	4.50	10.70	12.23
	3/4 x 1	150 x 150	4.13	4.50	10.70	12.23
		300 x 150	4.13	4.50	10.70	12.23
		600 x 150	4.13	4.50	10.70	12.23
		900 / 1500 x 300	4.13	4.50	10.70	12.23
	1 x 1	150 x 150	4.13	4.50	10.70	12.23
		300 x 150	4.13	4.50	10.70	12.23
		600 x 150	4.13	4.50	10.70	12.23
		900 / 1500 x 300	4.50	4.50	11.07	12.60
1 x 1-1/2	150 x 150	4.13	4.75	10.70	12.23	
	300 x 150	4.13	4.75	10.70	12.23	
	600 x 150	4.13	4.75	10.70	12.23	
	900 / 1500 x 300	4.50	4.75	11.07	12.60	
1 x 2	150 x 150	4.13	4.50	10.70	12.23	
	300 x 150	4.13	4.50	10.70	12.23	
	600 x 150	4.13	4.50	10.70	12.23	
	900 / 1500 x 300	4.50	4.50	11.07	12.60	
1-1/2 x 2	150 x 150	4.88	4.75	11.45	12.98	
	300 x 150	4.88	4.75	11.45	12.98	
	600 x 150	4.88	5.50	11.45	12.98	
	900 / 1500 x 300	4.13	5.5	11.45	12.98	
F	1 x 1-1/2	150 x 150	4.13	4.75	11.32	12.85
		300 x 150	4.13	4.75	10.70	12.23
		600 x 150	4.13	4.75	10.70	12.23
		900 / 1500 x 300	4.50	4.75	11.07	12.60
	1 x 2	150 x 150	4.13	4.50	10.70	12.23
		300 x 150	4.13	4.50	10.70	12.23
		600 x 150	4.13	4.50	10.70	12.23
		900 / 1500 x 300	4.50	4.50	11.07	12.60
	1-1/2 x 2	150 x 150	4.88	4.75	11.45	12.98
		300 x 150	4.88	4.75	11.45	12.98
		600 x 150	4.88	6.0	11.45	12.98
		900 x 300	4.88	6.00	11.45	12.98

\*1/2 x 1 Flanged Connection is for D Orifice and the reduced capacity E Orifice  
\*C<sup>1</sup> (Extended Body) used on D orifice w/set pressure of 4001 and over & F orifice w/set pressure of 446 and over.

## 1" THREADED CONNECTIONS

ORIFICE	ORIFICE AREA (sq. in)	PRESSURE RANGES (psig)	Kd		CONNECTIONS (inches)		DIMENSIONS (inches)			C <sup>1</sup> (EXTENDED BODY)	WEIGHT (lbs)
			GAS	LIQUID	INLET (MALE)	OUTLET (FEMALE)	A	B	C		
D	0.128	15 - 5500	0.838	0.62	1/2	1	3.53	1.87	10.10	11.63	6
					3/4, 1	1, 1-1/2	3.25	1.87	9.82	11.35	
E	0.212	15 - 2500	0.832	0.656	1/2	1	3.53	1.87	10.10	11.63	6
					3/4, 1	1, 1-1/2	3.25	1.87	9.82	11.35	
F	0.357	15 - 1500	0.836	0.62	1	1-1/2	3.25	1.87	9.82	11.35	6

NOTE: Female Inlet Connections Available Upon Request \*C<sup>1</sup> (Extended Body) used on D orifice w/set pressure of 4001 and over & F orifice w/set pressure of 446 and over.



## 2" 8200 VALVE FLANGED & THREADED

The Taylor 2" 8200 Safety Relief Valve is an excellent choice for Air, Gas or Liquid relief applications, including Compressors, Separators, Heater Treaters, Free Water Knockouts, Scrubbers, Dehydrators, Thermal Relief, Gas Production Units, Transmission and Gathering Lines, Chemical Plants, Refineries, Meter Runs, Gas Plants and other Industrial Applications.

CONTACT TAYLOR VALVE TO ORDER TODAY!

### 2" FLANGED CONNECTIONS

ORIFICE	INLET x OUTLET (inches)	AVAILABLE FLANGE CLASSES INLET x OUTLET	DIMENSIONS (in)			C <sup>2</sup> (EXT. BODY)
			A	B	C	
G & H	1-1/2 x 2	150 x 150	4.88	4.88	11.13	12.32
		300 x 150	4.88	4.88	11.13	12.32
		600 x 150	4.88	4.88	11.13	12.32
		900 / 1500 x 300	6.12	6.38	12.63	13.82
	1-1/2 x 2-1/2	150 x 150	4.88	4.88	11.13	12.32
		300 x 150	4.88	4.88	11.13	12.32
		600 x 150	4.88	4.88	11.13	12.32
	900 / 1500 x 300	150 x 150	5.75	6.00	12.25	13.44
		300 x 150	4.88	4.75	11.00	12.19
		600 x 150	4.88	4.88	11.13	12.32
	1-1/2 x 3	600 x 150	4.88	6.00	12.25	13.44
		900 / 1500 x 300	5.75	6.50	12.75	13.94
		150 x 150	5.13	4.88	11.13	12.32
	2 x 2	300 x 150	5.13	4.88	11.13	12.32
		600 x 150	5.13	6.00	12.25	13.44
		900 / 1500 x 300	6.06	6.38	12.63	13.82
	2 x 2-1/2	150 x 150	5.13	4.88	11.13	12.32
		300 x 150	5.13	6.00	12.25	13.44
		600 x 150	6.06	6.00	12.25	13.44
	900 / 1500 x 300	150 x 150	6.06	6.38	12.63	13.82
		300 x 150	6.06	4.75	11.00	12.19
		600 x 150	6.06	6.38	12.63	13.82
	2 x 3	900 / 1500 x 300			13.00	14.19

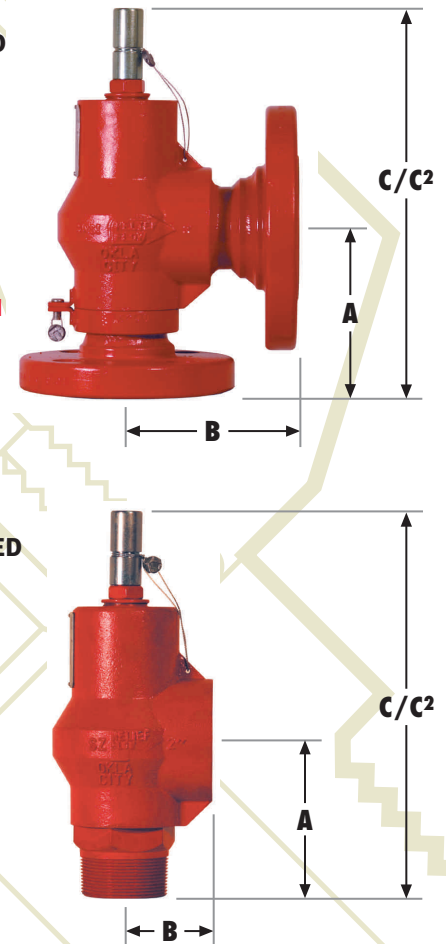
\*C<sup>2</sup> (Extended Body) used on H orifice w/set pressure of 76 and over.

NOTE: Most flange dimensions are as per API 526  
 Other flange combinations are available upon request.

2" FLANGED VALVE

Flanges are Locked in place

2" THREADED VALVE



### 2" THREADED CONNECTIONS

ORIFICE	ORIFICE AREA (sq. in)	PRESSURE RANGES (psig)	Kd		CONNECTIONS (inches)		DIMENSIONS (inches)			C <sup>2</sup> (EXTENDED BODY)	WEIGHT (lbs)
			GAS	LIQUID	INLET (MALE)	OUTLET (FEMALE)	A	B	C		
G	0.472	15 - 2000	0.786	0.588	1-1/2, 2,	2, 2-1/2	4.31	2.19	10.54	-	11
H	0.913	15 - 1500	0.837	0.62	1-1/2, 2,	2, 2-1/2	4.31	2.19	10.54	12.0	11

NOTE: Female Inlet Connections Available Upon Request \*C<sup>2</sup> (Extended Body) used on H orifice w/set pressure of 76 and over.

# 3" 8300 VALVE FLANGED & THREADED

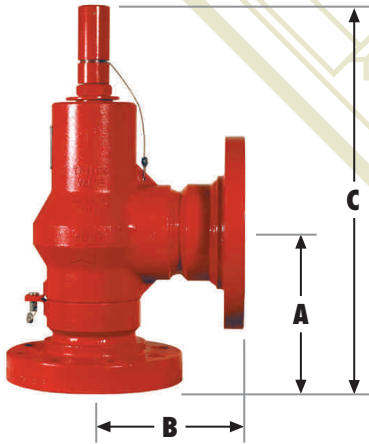
The Taylor 3" 8300 Safety Relief Valve is an excellent choice for Air, Gas or Liquid relief applications, including Compressors, Separators, Heater Treaters, Free Water Knockouts, Scrubbers, Dehydrators, Thermal Relief, Gas Production Units, Transmission and Gathering Lines, Chemical Plants, Refineries, Meter Runs, Gas Plants and other Industrial Applications.

CONTACT TAYLOR VALVE TO ORDER TODAY!

NOTE: Most flange dimensions are as per API 526  
Other flange combinations are available upon request.

## 3" FLANGED VALVE

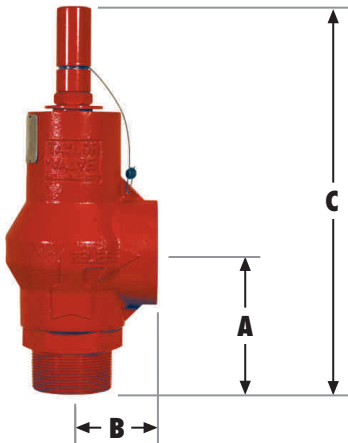
Flanges are Locked in place



## T 3" FLANGED CONNECTIONS

ORIFICE	INLET x OUTLET (inches)	AVAILABLE FLANGE CLASSES INLET x OUTLET	A (in)	B (in)	C (in)
J	2 x 3	150 x 150	5.38		15.34
		300 x 150	5.38		15.34
		600 x 150	6.00	5.90	15.96
J & K	2-1/2 x 3	150 x 150	6.06	5.90	16.02
		300 x 150	6.06	5.90	16.02
		600 x 150	6.38	6.38	16.34
J & K	2-1/2 x 4	150 x 150	6.06	7.13	16.02
		300 x 150	6.06	7.13	16.02
		600 x 150	6.38	7.13	16.34
	3 x 3	150 x 150	6.13	6.38	16.09
		300 x 150	6.13	6.38	16.09
		600 x 150	7.13	6.38	17.09
3 x 4	150 x 150			17.21	
	300 x 150			17.21	
	600 x 150	7.25	7.13	17.21	

## 3" THREADED VALVE



## T 3" THREADED CONNECTIONS

ORIFICE	ORIFICE AREA (sq. in)	PRESSURE RANGES (psig)	Kd		CONNECTIONS (inches)		DIMENSIONS (inches)			WEIGHT (lbs)
			GAS	LIQUID	INLET (MALE)	OUTLET (FEMALE)	A	B	C	
J	1.431	15 - 1000	0.808	0.637	2, 2-1/2, 3	3	5.93	3.63	15.89	35
K	2.138	15 - 500	0.741	0.62	2-1/2, 3	3	5.93	3.63	15.89	35

## 1" 8200 VALVE REPAIR PARTS

ORIFICE	PARTS	PART NUMBER	QUANTITY
D	O-RING	00-111414	1
	O-RING	00-301431	1
	O-RING	00-311931	1
	O-RING	00-321631	1
	THREAD SEAL	04-1301002000	1
	INSERT HOLDER	95-007105	1
	SEAT HOLDER	95-007210	1
	DISC	95-007410	1
E	SEAT INSERT	95-017332	1
	O-RING	00-111414	1
	O-RING	00-301731	2
	O-RING	00-321231	1
	O-RING	00-321631	1
	THREAD SEAL	04-1301002000	1
	INSERT HOLDER	95-001104-1	1
	SEAT HOLDER	95-004510	1
F	DISC	95-000610	1
	SEAT INSERT	95-000317	1
	O-RING	00-111414	1
	O-RING	00-301831	1
	O-RING	00-321431	1
	O-RING	00-322031	1
	THREAD SEAL	04-1301002000	1
	INSERT HOLDER	95-006205	1
	SEAT HOLDER	95-006110	1
	DISC	95-005310	1
	SEAT INSERT	95-026032	1

## 2" 8200 VALVE REPAIR PARTS

ORIFICE	PARTS	PART NUMBER	QUANTITY
G	O-RING	00-111414	1
	O-RING	00-312531	2
	O-RING	00-322331	1
	O-RING	00-322631	1
	THREAD SEAL	04-1301002000	1
	INSERT HOLDER	95-00704-1	1
	SEAT HOLDER	95-004910	1
	DISC	95-001510	1
H	SEAT INSERT	95-002717	1
	O-RING	00-111414	1
	O-RING	00-312531	1
	O-RING	00-322431	1
	O-RING	00-322631	1
	THREAD SEAL	04-1301002000	1
	INSERT HOLDER	95-004205	1
	SEAT HOLDER	95-004110	1
	DISC	95-005410	1
	SEAT INSERT	95-025032	1

## LIFT LEVER OPTION BILL OF MATERIALS

ITEM NO	PART	STANDARD APPLICATION		NACE APPLICATION	
		CARBON STEEL	STAINLESS STEEL	CARBON STEEL	STAINLESS STEEL
22	Lift Level Cap	304 SS SA479	304 SS SA479	304 SS SA479	304 SS SA479
23	Lock Nut	STEEL	STEEL	STEEL	STEEL
24	Clevis Pin	316 SS SA479	316 SS SA479	316 SS SA479	316 SS SA479
25	Lift Handle	ALUMINUM BRONZE	ALUMINUM BRONZE	ALUMINUM BRONZE	ALUMINUM BRONZE
26	Adjustment Screw	17-4 PH SS SA564	17-4 PH SS SA564	17-4 PH SS SA564	17-4 PH SS SA564
27	O-Ring	SPECIFY	SPECIFY	SPECIFY	SPECIFY
28	O-Ring Follower	304 SS SA479	304 SS SA479	304 SS SA479	304 SS SA479
29	Stem	304 SS SA479	304 SS SA479	304 SS SA479	304 SS SA479
30	Disc	17-4 H900 SS SA564	17-4 H900 SS SA564	316 SS SA479	316 SS SA479

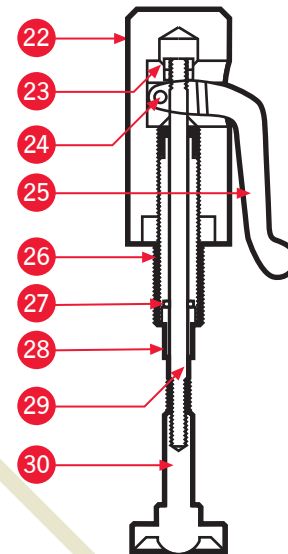
## REPAIR PARTS & OPTIONS

### 3" 8300 VALVE REPAIR PARTS

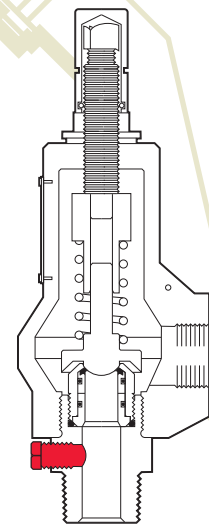
ORIFICE	PARTS	PART NUMBER	QUANTITY
J	O-RING	00-322332	1
	O-RING	00-323632	1
	O-RING	00-333232	1
	O-RING	83-001610	1
	THREAD SEAL	83-005305	1
	INSERT HOLDER	83-005505	1
	SEAT HOLDER	83-026532	1
	O-RING	00-121414	1
K	O-RING	00-322532	1
	O-RING	00-323632	1
	O-RING	00-333232	1
	SEAT HOLDER	83-005605	1
	DISC - 17-4 H1150	83-001511	1
	DISC - 17-4 H900	83-001510	1
	SEAT INSERT 316SS	83-006305	1
	SEAT INSERT VITON 90 DURO	83-006632	1

### RELIEF VALVE OPTIONS

LIFT LEVER OPTION



1/4" FNPT TAP ON SEAT FRAME OPTION



# FLOW CAPACITY CHARTS & FORMULAS

To determine the relieving capacity which should appear on a valve for a given pressure, use either the Coefficient Method or Slope Method.

## COEFFICIENT METHOD

For Air:  $W = 18.331APK_d$  scfm

For Vapor:  $W = CK_dAP\sqrt{\frac{M}{T}}$  lbs/hr

For Liquid (Water):  $W = 4.814AK\sqrt{w(P - P_d)}$  gpm

### WHERE:

$W$  = rated capacity: SCFM for Air and Gas; Lbs/hr for Vapor; GPM for Water

$C$  = constant for Gas or Vapor based on ratio of specific heats  $C/C$  (see chart at right)

$A$  = orifice throat area, square inches

$K$  = average coefficient for Liquid (including 0.90 constant)

$K_d$  = average coefficient for Air or Gas (including 0.90 constant)

$M$  = molecular weight (see chart at right)

$P$  = (stamped set pressure + 3 psi or 10%, whichever is greater) + 14.7 psia

$P_d$  = pressure at the discharge of the valve, psia

$T$  = absolute temperature at inlet, °R (degrees Fahrenheit + 460)

$w$  = 62.3058 lbs/ft<sup>3</sup>, specific weight @ 70° F

## SLOPE METHOD

For Air:  $W$  (slope)  $P$

For Liquid (Water):  $F\sqrt{(P - P_d)}$

### WHERE:

$slope$  = value for a valve and trim combination determined by ASME National Board testing and certification for Air, Gas and Vapor service.

$F$  = (the flow factor) is a set value for a valve and trim combination determined by ASME National Board testing and certification for Liquid service.

### MOLECULAR WEIGHT AND VALUES OF C FOR GASES

GAS	M	C	GAS	M	C
AIR	28.97	356	HYDROGEN	2.02	356
ACETYLENE	26.04	345	HYDROGEN SULFIDE	34.08	348
AMMONIA	17.03	351	METHANE	16.04	346
BUTANE	58.12	324	METHYL CHLORIDE	50.48	337
CARBON DIOXIDE	44.01	345	NATURAL GAS (0.6)	17.40	344
CHLORINE	70.91	352	NITROGEN	28.02	356
ETHANE	30.07	339	OXYGEN	32.00	356
ETHYLENE	28.05	337	PROPANE	44.09	331
FREON 22	86.48	355	SULFUR DIOXIDE	64.06	342

## AIR FLOW CAPACITY VS. PRESSURE (FOR CONDITIONS SHOWN BELOW)

ORIFICE	D	E - 1/2" MNPT	E	F	G	H	J	K
<b>BODY SIZE (IN.)</b>	1	1	1	1	2	2	3	3
<b>ORIFICE DIA. (IN.)</b>	0.404	0.52	0.52	0.674	0.775	1.078	1.35	1.65
<b>ORIFICE AREA (SQ.IN.)</b>	0.128	0.212	0.212	0.357	0.472	0.913	1.431	2.138
<b>SLOPE</b>	1.97	3.08	3.24	5.465	6.8	14	21.2	29.03
<b>Kd FACTOR</b>	0.838	0.791	0.832	0.836	0.786	0.837	0.808	0.741
<b>ASME CODE</b>	YES	YES	YES	YES	YES	YES	YES	YES
<b>SET PRESSURE (PSIG)</b>	<b>CAPACITY IN SCFM. OVERPRESSURE = 110% OR 3 PSI, WHICHEVER IS GREATER</b>							
15	64	101	106	179	222	458	693	950
20	74	116	122	206	256	528	799	1095
25	84	131	138	234	290	598	905	1240
30	94	147	154	261	324	668	1011	1385
50	137	214	225	381	474	977	1478	2024
100	245	383	403	682	848	1747	2643	3622
150	353	552	581	983	1222	2518	3809	5219
200	462	722	759	1284	1596	3288	4975	6817
250	570	891	937	1585	1970	4059	6141	8414
300	678	1060	1115	1886	2345	4829	7307	10012
400	894	1398	1470	2488	3093	6371	9639	13207
500	1111	1736	1826	3090	3841	7912	11971	16402
600	1327	2074	2182	3692	4589	9453	14303	
700	1543	2413	2538	4294	5337	10994	16634	
900	1976	3089	3249	5497	6834	14076	21298	
1000	2192	3427	3605	6099	7582	15617	23630	
1500	3274	5118	5383	9109	11323	23323		
1750	3815	5963	6273		13193			
2000	4355	6809	7162		15064			
2500	5437	8500	8940					
3000	6519							
4000	8682							
4500	9763							
5000	10845							
5500	11927							

CONDITIONS							
Temp. (°F)	Baro. Press.	SG	Cp/Cv	Comp. Factor	MW	Density	Gas Constant
60	14.7	1	1.4	1	28.98	0.0764	356





**GAS FLOW CAPACITY VS. PRESSURE (FOR CONDITIONS SHOWN BELOW)**

ORIFICE	D	E - 1/2" MNPT	E	F	G	H	J	K
<b>BODY SIZE (IN.)</b>	1	1	1	1	2	2	3	3
<b>ORIFICE DIA. (IN.)</b>	0.404	0.52	0.52	0.674	0.775	1.078	1.35	1.65
<b>ORIFICE AREA (SQ.IN.)</b>	0.128	0.212	0.212	0.357	0.472	0.913	1.431	2.138
<b>SLOPE</b>	1.97	3.08	3.24	5.465	6.8	14	21.2	29.03
<b>Kd FACTOR</b>	0.838	0.791	0.832	0.836	0.786	0.837	0.808	0.741
<b>ASME CODE</b>	YES	YES	YES	YES	YES	YES	YES	YES
<b>SET PRESSURE (PSIG)</b>	<b>CAPACITY IN SCFM. OVERPRESSURE = 110% OR 3 PSI, WHICHEVER IS GREATER</b>							
15	80	126	132	223	278	572	866	1186
20	93	145	152	258	320	660	998	1367
25	105	164	172	292	363	747	1130	1549
30	117	183	193	326	405	834	1263	1730
50	171	268	281	476	592	1219	1845	2528
100	306	479	504	852	1059	2181	3301	4523
150	441	690	726	1228	1526	3144	4757	6517
200	576	901	948	1604	1993	4106	6212	8512
250	711	1112	1170	1979	2460	5068	7668	10507
300	846	1323	1392	2355	2927	6030	9124	12501
400	1117	1746	1836	3107	3862	7954	12036	16491
500	1387	2168	2280	3858	4796	9879	14947	20480
600	1657	2590	2724	4610	5730	11803	17859	
700	1927	3012	3168	5361	6664	13727	20770	
900	2467	3857	4057	6864	8533	17576	26594	
1000	2737	4279	4501	7616	9467	19500	29505	
1500	4088	6391	6722	11374	14138	29122		
1750	4763	7446	7832		16474			
2000	5438	8502	8943		18809			
2500	6789	10613	11163					
3000	8139							
4000	10840							
4500	12191							
5000	13541							
5500	14892							
<b>CONDITIONS</b>								
Temp. (°F)	Baro. Press.	SG	Cp/Cv	Comp. Factor	MW	Density	Gas Constant	
60	14.7	0.6	1.27	0.9	17.39	0.0458	344	

**WATER FLOW CAPACITY VS. PRESSURE (FOR CONDITIONS SHOWN BELOW)**

ORIFICE	D	E - 1/2" MNPT	E	F	G	H	J	K
<b>BODY SIZE (IN.)</b>	1	1	1	1	2	2	3	3
<b>ORIFICE DIA. (IN.)</b>	0.404	0.52	0.52	0.674	0.775	1.078	1.35	1.65
<b>ORIFICE AREA (SQ.IN.)</b>	0.128	0.212	0.212	0.357	0.472	0.913	1.431	2.138
<b>FLOW FACTOR</b>	3.02	5.29	5.29	8.41	10.54	21.5	34.62	50.95
<b>K FACTOR</b>	0.62	0.656	0.656	0.62	0.588	0.62	0.637	0.62
<b>ASME CODE</b>	NO	YES	YES	NO	YES	NO	NO	NO
<b>SET PRESSURE (PSIG)</b>	<b>CAPACITY IN GPM. OVERPRESSURE = 110% OR 3 PSI, WHICHEVER IS GREATER</b>							
15	13	22	22	36	45	91	147	214
20	14	25	25	40	51	103	166	242
25	16	28	28	45	56	114	183	267
30	17	30	30	48	61	124	199	289
50	22	39	39	62	78	160	257	374
100	32	55	55	88	111	226	363	528
150	39	68	68	108	135	276	445	647
200	45	78	78	125	156	319	514	747
250	50	88	88	139	175	357	574	835
300	55	96	96	153	192	391	629	915
400	63	111	111	176	221	451	727	1057
500	71	124	124	197	247	504	812	1181
600	77	136	136	216	271	553	890	
700	84	147	147	233	293	597	961	
900	95	166	166	265	332	677	1090	
1000	100	175	175	279	350	713	1149	
1500	122	215	215	342	428	874		
1750	132	232	232		463			
2000	141	248	248		495			
2500	158	277	277					
3000	173							
4000	200							
4500	212							
5000	224							
5500	235							
<b>CONDITIONS</b>								
Temp. (°F)	Baro. Press.	SG	Back Pressure	Kv	MW	Density	Kp, Kw	
70	14.7	1	0	1	18.02	62.306	1	

# PART NUMBERING SYSTEM



- Valve Series
- Orifice Size
- Set Pressure Range
- Body Configuration
- Orifice
- Cold Set Differential Requirement
- Body and Inlet Material

- Options
- Seat Material
- Inlet Flange Size
- Inlet Flange Class
- Outlet Flange Size
- Outlet Flange Class
- Flange Face

XX VALVE SERIES	
CODE	SERIES
82	8200
83	8300

Y ORIFICE SIZE	
CODE	SIZE (IN)
D	1
E	1
F	1
G	2
H	2
J	3
K	3

8200 Series are available only in 1" and 2".  
8300 Series are available only in 3".

A SET PRESSURE RANGE				
ORIFICE	STANDARD SERVICE		NACE SERVICE	
	CODE	RANGE	CODE	RANGE
D	1	15-40	1	15-40
	2	41-100	2	41-100
	3	101-215	3	101-215
	4	216-350	4	216-350
	5	351-750	5	351-750
	6	751-1000	6	751-1000
	7	1001-1800	7	1001-1800
	8	1801-4000	8	1801-4000
	9	4001-5500		
	0	5501-6000		
E	1	3-25	1	3-25
	2	26-50	2	26-50
	3	51-100	3	51-100
	4	101-225	4	101-200
	5	226-450	5	201-350
	6	451-650	6	351-700
	7	651-1200	7	701-1200
	8	1201-1600	8	1201-1600
	9	1601-2100	9	1601-2100
	0	2101-2500	0	2101-2500
F	1	15-35	1	15-35
	2	36-75	2	36-75
	3	76-140	3	76-140
	4	141-250	4	141-290
	5	251-375	5	291-440
	6	376-445	6	441-650
	7	446-650	7	651-920
	8	651-920	8	921-1500
	9	921-1500		

A SET PRESSURE RANGE				
ORIFICE	STANDARD SERVICE		NACE SERVICE	
	CODE	RANGE	CODE	RANGE
G	1	2-5	1	5-10
	2	6-25	2	11-30
	3	26-60	3	31-60
	4	61-110	4	61-130
	5	111-170	5	131-200
	6	171-240	6	201-300
	7	241-310	7	301-450
	8	311-475	8	451-650
	9	476-520	9	651-900
	0	521-650	0	901-1200
	10	651-900	10	1201-1600
	11	901-1200	11	1601-2000
	12	1201-1600		
13	1601-2000			
H	1	15-30	1	15-30
	2	31-50	2	31-50
	3	51-75	3	51-75
	4	76-110	4	76-110
	5	111-180	5	111-180
	6	181-270	6	181-270
	7	271-400	7	271-400
	8	401-610	8	401-610
	9	611-800	9	611-800
	0	801-1050	0	801-1050
	10	1051-1200	10	1051-1200
	11	1201-1500	11	1201-1500
J	1	6-13	1	6-13
	2	14-35	2	14-35
	3	36-60	3	36-60
	4	61-90	4	61-90
	5	91-140	5	91-140
	6	141-250	6	141-250
	7	251-380	7	251-380
	8	381-500	8	381-500
	9	501-620	9	501-620
	0	621-775	0	621-775
	10	776-1000	10	776-1000
K	1	10-24	1	10-24
	2	25-40	2	25-40
	3	41-70	3	41-70
	4	71-107	4	71-107
	5	108-220	5	108-220
	6	221-250	6	221-250
	7	251-325	7	251-325
	8	326-400	8	326-400
	9	401-500	9	401-500



## EXAMPLE OF MODEL NUMBER

82 - D - 5 - 2 - 4 - 1 - 5 - 4 - 3 - 9 - 2 - 9 - 2 - 4  
 XX Y A B C D E F G H I J K L

VALVE SERIES: 8200 Series / ORIFICE SIZE: 1" / SET PRESSURE: 351-750  
 BODY: 3/4 MNPT x 1 FNPT / ORIFICE: D / COLD SET DIFFERENTIAL REQUIREMENT: Ambient  
 BODY & INLET MATERIAL: Stainless Steel / TOP STYLE / OPTIONS: NACE  
 SEAT MATERIAL: HNBR / INLET FLANGE SIZE: 1/2" / INLET FLANGE CLASS: 400  
 OUTLET FLANGE SIZE: 1/2" / OUTLET FLANGE CLASS: 400 / FLANGE FACES: RFF x SKT

in spite of example we can't do 1/2" outlet

## REQUIRED SIZING INFORMATION

- Set Pressure
- Medium / Application
- Specific Gravity or Molecular Weight
- Temperature
- Blowdown
- Material Requirement
- Material Certification Requirement
- Special Testing Requirement (if any)
- Capacity or Flow Rate

B BODY CONFIGURATION			
SERIES	CODE	INLET x OUTLET (INCHES)	ORIFICES (AVAILABLE)
8200 1"	0	1/2 MNPT x 1 FNPT (UV)	D & E
	1	1/2 FNPT x 1 FNPT	D & E
	2	3/4 MNPT x 1 FNPT	D & E
	3	1 MNPT x 1 FNPT	D & E
	4	3/4 FNPT x 1 FNPT	D & E
	5	3/4 MNPT x 1-1/2 FNPT	D, E & F
	6	1 MNPT x 1-1/2 FNPT	D, E & F
	7	FLANGED	D, E & F
	8	1 FNPT x 1-1/2 FNPT	D, E & F
	9	1 FNPT x 1 FNPT	D & E
8200 2"	10	1 MNPT x 1-1/4 FNPT	D & E
	1	2 MNPT x 2-1/2 FNPT	G & H
	3	1-1/2 FNPT X 2 FNPT	G & H
	4	1/4" FNPT x 2 FNPT	G
	5	1-1/2 MNPT X 2 FNPT	G & H
	6	2 MNPT X 2 FNPT	G & H
	7	2 FNPT X 2 FNPT	G & H
	8	FLANGED	G & H
8300 3"	3	3 FNPT x 3 FNPT	J
	4	2-1/2 MNPT X 3 FNPT	J & K
	7	3 MNPT X 3 FNPT	J & K
	8	FLANGED	J
	9	FLANGED	K

F TOP STYLE / OPTIONS	
CODE	SERIES
0	OPEN LL
1	CLOSED TOP
2	1/8 NPT TAP
3	LIFT LEVER (LL)
4	NACE
5	1/4 NPT TAP
6	LL & 1/4 NPT TAP
7	STD/NACE SPRING
8	LL/NACE
9	1/4 TAP/NACE

G SEAT MATERIAL	
CODE	MATERIAL
1	VITON 90 DURO
2	TEFLON/ VITON® O-RINGS
3	HNBR
7	NITRILE 47-071
9	ETHYLENE/ PROPYLENE
0	TEFLON®*/ NEOPRENE O-RINGS

\*Teflon® and Viton® are trademarks of Dupont

A = Teflon Seat/Teflon o-rings

H INLET FLANGE SIZE		
SERIES	CODE	PIPE SIZE (in)
8200 1"	9	1/2
	0	3/4
8200 2"	1	1
	3	1-1/2
	4	2
8300 3"	7	1-1/4
	5	2-1/2
	6	3
	7	4

I INLET FLANGE CLASS	
CODE	CLASS
0	150
1	300
2	400*
3	600
4	900*
5	1500*
6	SKT

we don't carry #400

C ORIFICE CODE	
CODE	ORIFICE
1	J
2	K
4	D
5	E - 1"
	G - 2"
6	F
7	H

D COLD SET DIFFERENTIAL REQUIREMENT	
CODE	TEMPERATURE
1	AMBIENT

E BODY & INLET MATERIAL	
CODE	MATERIAL
3	CARBON STEEL
5	STAINLESS STEEL
6	CS BODY/SS SEAT FRAME
7	CS BODY/316 INTERNALS
8	SS BODY/316 INTERNALS
9	CS BODY/SS SEAT FRAME/ 316 INTERNALS

J OUTLET FLANGE SIZE		
SERIES	CODE	PIPE SIZE (in)
8200 1"	9	1/2
	0	3/4
8200 2"	1	1
	3	1-1/2
	4	2
8300 3"	7	1-1/4
	5	2-1/2
	6	3
	7	4

K OUTLET FLANGE CLASS	
CODE	CLASS
0	150
1	300
2	400*
3	600
4	900*
5	1500*
6	SKT

L FLANGE FACES			
CODE	INLET x OUTLET	CODE	INLET x OUTLET
0	RFF x RFF	3	RTJ x RTJ
1	RFF x RTJ	4	RFF x SKT
2	RTJ x RFF	5	SKT x SKT

316 SS internals (especially disc and seat holder body) not recommended above 1000 psig. 17-4 SS has a much higher yield strength.



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