



(281) 482-4728 · www.scvvalve.com







SCV VALVE manufactures some of the most dependable cast and forged steel Ball Valves in the industry. Our products are manufactured and tested in accordance with respective API, ASME, and ANSI standards. With features such as double block and bleed capabilities, secondary sealant injections, and spring energized self relieving seats, the SCV design offers many features and options beneficial for oil, gas, and liquid applications making it one of the most preferred ball valves on the market.

Innovative Valve Solutions.®

SCV Ball Valves	
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[Product Preview]

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For more information call us @ (281) 482-4728 or visit our website @ www.scvvalve.com

3-Piece Trunnion Ball Valves - API 6A

- Basic Design: API 6A
- Wall Thickness: API 6A
- Face-to-Face Dimension: API 6A
- Flange End Dimension: API 6A
- Inspection & Testing: API 6A
- Fire Safe Design: API 607/BS 6755

Note: Not recommended for throttling applications. Note: SCV reserves the right to change any technical design and dimensional data without prior notice. Please contact SCV to confirm all Dimensions and Data offered in this catalog.



SCV Valve's product lines include commodity valves as well as specialty valves in all sizes, pressure classes & metallurgy; including carbon steel, stainless steel & exotic alloys. The valve types include:

- Thru Conduit Gates Slab & Expanding Gate Designs
- 3-Piece Trunnion Mounted Balls
- Floating Balls
- Wedge Gates
- Globes
- Full Port Swing Checks
- Piston Checks
- Dual Plate Checks Wafer & Lug Designs
- Pressure Balanced Lubricated Plugs

SCV Valve's high quality standards demand 100% pressure testing of every valve to insure its reliability and full customer satisfaction. We pride ourselves with high quality products, timely deliveries, and competitive prices.

Company History

The SCV valve brand was established in 1972. The primary focus of the Company was to provide full inline field service for valve maintenance as well as in house valve modifications. While serving the Power Industry, Paper & Pulp, Oil & Gas, and the Petro Chemical Industry; through years of dedication and commitment to quality and service, SCV had become one of the largest full range, field service companies, with a reputation for superior quality.

In the mid 1970s, the SCV brand entered the valve manufacturing industry, primarily serving the Power Industry. Since that time, the SCV brand has expanded its products to cover a broad range of valves. SCV Valve holds the API 6A & API 6D Monogram, API Q1 Quality Management System, and ASME "R" stamp. The manufacturing facility, sales and projects office is located in Santa Fe, Texas.

Mission Statement

SCV Valve is committed to consistently providing products that meet or exceed customer and regulatory specifications. SCV Valve aims to enhance customer satisfaction through implementing the highest levels of quality standards while assuring full conformity to those requirements.

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Complete Product Line

Call SCV Valve today @ [281] 482-4728 for all your valve needs or visit us on the web @ www.scvvalve.com.



Design: B16.34 Sizes: 1/2" - 12" Class: 150 - 1500 Standard stock.



Design: API 6D Sizes: 2" - 36" Class: 150 - 2500 Standard stock.

8-900

CCN663BY

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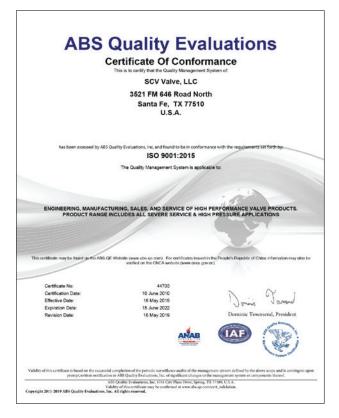
American Petroleum Institute (API)

API 6A Certification



Note: Extension letter availavle on our website.

ISO 9001:2015 Certificate



Canadian Registration Number

- Alberta - 0C07063.2
- British Columbia - 0C07063.21
- 0C07063.27 • New Foundland & Laborador 🔗 Novascotia - 0C07063.20

New Brunswick

- 0C07063.25
 - 0C07063.27

Northwest Territory

API 6D Certification



Note: Extension letter available on our website.

CE PED Certificate



 Ontario 	
- 0C07063.25	
Duine a Estructual internal	

 Manitoba - OCO7063.24 Prince Edward island - 0C07063.29

Yukon

- 0C07063.2

Nunavut

- 0C07063.2N

SCV Figure Number Chart

1	2	3	4	5	6	7	8
Valve Type	Bore Size	Class	Body/Bonnet Conf.	Body Material	Obturator Material	Ends	Operator
BAL = Trunnion Ball Valve	50 = 1/2"	01 = 150	B = Bolted	02 = A352 LCC	01 = A352 LLC + 410	A = RF x WE	/ = N/A
CEG = Compact Expanding Gate Valve	75 = 3/4"	03 = 300	L = Lug Style	06 = A351 CF8M	02 = A352 LCC + ENP	B = RTJ x WE	B = Bare Stem
DCK = Dual Plate Check Valve	01 = 1"	04 = 400	P = Pressure Seal	08 = A216 WCC	06 = A216 WCC + ENP	D = RF x RTJ	D = Dual Acting Actuator
EPG = Expanding Gate Valve	15 = 1-1/2"	06 = 600	S = Seal Weld	10 = A216 WCB	09 = A351 CF8M	E = RTJ x RF	E = Electric Actuator
FBV = Floating Ball Valve	02 = 2"	09 = 900	T = Top Entry	11 = A352 LCB	10 = A216 + CR13	J = RTJ	G = Gear
FCK = Full Port Swing Check Valve	21 = 2-1/16"	15 = 1500	U = Union	12 = A350 LF2	11 = CR13 HF	K = WE x RF	H = Handwheel
GAT = Wedge Gate Valve	25 = 2-1/2"	20 = 2000		13 = A105	12 = A105 + CR13	L = WE x RTJ	I = Linear Actuator
GLB = Globe Valve	27 = 2-9/16"	25 = 2500		16 = A217 WC6	13 = A105 + ENP	R = RF	L = Lever
PCK = Piston Check Valve	03 = 3"	30 = 3000		30 = A29 4130	14 = A694 Gr. F60 + ENP	W = WE	
PLG = Lubricated Plug Valve	31 = 3-1/8"	50 = 5000		36 = A182 316	15 = A350 LF2 + ENP		
PSG = Parallel Slide Gate Valve	37 = 3-9/16"	10 = 10000		51 = A182 F51 Duplex	16 = A216 WCC + 316		
RSB = Rising Stem Ball Valve	04 = 4"			55 = A182 F55 Duplex	17 = 17-4 PH		
SCK = Conv. Port Swing Check Valve	41 = 4-1/16"			60 = A216 WCC + Inconel 625	20 = A216 WCB + Ni65		
TCG = Slab Gate Valve	05 = 5"			87 = A487 4C	23 = A182 316L + Stellite 21		
	51 = 5-1/8"			88 = A890-4A	34 = A182 304		
	06 = 6"				35 = A182 316 HF		
	71 = 7-1/16"				36 = A182 316		
	08 = 8"				41 = A182 F6A Class 2		
	09 = 9"				42 = A182 F6A + Nitride		
	10 = 10"				51 = A182 F51 Duplex		
	23 = 10-3/8"				52 = A351 CF8M + Stellite 6		
	11 = 11"				54 = A182 F51 Duplex + CoCr-A		
	12 = 12"				59 = A352 LCC + Stellite 6		
	19 = 12-3/8"				60 = A105 + HF		
	13 = 13-5/8"				61 = A105 + Nitride + Stellite 6		
	14 = 14"				62 = A105 + Inconel 625		
	16 = 16"				69 = A350 LF2 + Tungsten Carbide		
	17 = 16-3/4"				73 = A182 410 +Tungsten Carbide		
	18 = 18"				81 - A350 LF2 + Nitride + HF		
	20 = 20"				85 = A743 CA15 + Nitride		
	22 = 22"				88 = A890-4A		
	24 = 24"				96 = A216 WCB + CR13		
	26 = 26"						
	28 = 28"						
	30 = 30"						
	32 = 32"						
	34 = 34"						
	36 = 36"						
	38 = 38"						
	40 = 40"						
	42 = 42"						
	48 = 48"						
	52 = 52"						
	56 = 56"						
	60 = 60"						
							<u> </u>

9	10	11	12	13	14	15
Bore Type	Seal Material	Seat Material	Seat Insert/Overlay Material	Stem Material	Packing Material	Service
F = Full Port	A = Aflas	/ = N/A	B = Nickel Boron	/ = N/A	/ = N/A	A = Stem Extension
R = Reduced Port	B = Buna	08 = A216 WCB	D = Devlon	A = A350 LF2 + ENP	B = Braided Graphoil	C = Cryogenic
C = Conventional	E = EPDM	09 = A351 CF8M	F = PTFE	B = A105 + ENP	G = Graphite	D = *DPE x DPE
T = Regular Pattern	F = Fluorosilicone	11 = CR13 HF	G = RTFE - Glass filled	C = A182 F6a Class 2	T = Teflon	E = External Coating
U = Short Pattern	G = Graphite	13 = A105 + ENP	H = Hard Face (Stellite 6)	D = 17-4 PH	V = Viton Duck	F = Dampener
V = Venturi Pattern	H = HNBR	14 = A105 + HF	K = PCTFE	F = A182 F316		G = Geothermal
	K = Kalrez	15 = A350 LF2 + ENP	N = Nylon	G = A182 F51 Duplex		H = High Temperature
	L = Lip Seal	16 = A350 LF2 + HF	P = Peek	H = A182 F56 Duplex		I = Internal Coating
	N = Neoprene	17 = 17-4 PH	R = RTFE - Carbon Filled	l = Inconel 625		J = **SPE x DPE
	P = Polyuerethane	30 = A29 4130	T = Tungsten Carbide	J = 17-4 + QPQ		L = Lock Open Device
	R = NBR	32 = A182 316L + HF	V = Viton			P = Pipe Pups
	S = Silicone	35 = A182 316/HF	3 = 316			S = Standard Service
	T = Teflon	36 = A182 316	W = UHMWE			X = Special
	U = Floursint	41 = A182 F6a Class 2				
	V = Viton	42 = A182 F6a Class 2 + HF				
	3 = 304 Ring	51 = F51 Duplex				
	4 = 304 / Graphite	52 = A182 F51 Duplex + HF				
	5 = 316 Ring	54 = A182 F51 Duplex + CoCr-A				
	6 = 316 / Graphite	55 = F55 Duplex				
	7 = Soft Iron Ring	91 = A105/HF				

Sample Figure Numbers & Descriptions

	Figure No. Chart Column	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Pressure Classes	Туре	Size	Class	Body Conf.	Body	Obturator	End	Oper	Bore Type	Seal	Seat.base	Seat/Insert	Stem	Packing	Service
	150, 300, 600	BAL	12	06	В	12	15	R	G	F	Н	15	D	A	1	S
TRUNNION	12" 600 Trunnion Ball Valve, Bolted A350 LF2 Body, LF2 + ENP Obturator, RF Ends, Gear Operated, Full Bore, HNBR AED Seals, A350 LF2 + ENP Seat Base Material, Devlon Seat Inserts, A350 LF2 + ENP Stem, Standard Service, API 60 Design and Test, NACE MR-01-75 Compliant															
BALL	900, 1500, 2500	BAL	12	15	В	12	41	J	G	F	Н	41	D	С	/	S
	12" 1500 Trunnion Ball Valve, Bolted Configuration, A350 LF2 Body, A182 F6a Class 2 Obturator, RTJ Ends, Gear Operated, Full Bore, HNBR AED Seals, A182 F6a Class 2 Seat Base Material, Devion Seat Inserts, A182 F6a Class 2 Stem, Standard Service, API 6D Design and Test, NACE MR-01-75 Compliant															
	ALL	FBV	12	01	В	10	36	R	L	F	3	36	R	F		S
FLOATING BALL	12" 150 Floating Ball Valve, Bolted C Design, API 598 Test, NACE MR-01-7	Configurat 75 Compli	ant		ly, A182 F316 Obti			ated, Fu	II Bore, A1	182 F316 Seat B	ase Materi			em, Standa	ard Service, AP	
DUAL PLATE	ALL	DCK	12	06	W	10	09	R		C		08	H	/		S
WAFER CHECK	12" 600 Dual Plate Check Valve, Wa NACE MR-01-75 Compliant				Body, A351 CF8M			ntional I	Bore, A21	6 WCB Seat Base	e Material,		verlay, Standard Ser	vice, API 59	14 Design, API	598 Test,
	ALL	TCG	12	06	В	08	13	R	В	F	V	13	R	D	V	S
SLAB GATE		12" 600 Thru Conduit Slab Gate Valve, Bolted A216 WCC Body, A105 + ENP Obturator, RF Ends, Bare Stem, Full Bore, Viton AED Seals, A105 + ENP Seat Base Material, RTFE Seat Inserts, 17-4 PH Stem, Viton Duck Packing, Standard Service, API 60 Design and Test, NACE MR-01-75 Compliant														
EXPANDING	ALL	EPG	12	06	В	08	06	R	В	F	V	13	R	D	V	S
GATE	12" 600 Thru Conduit Expanding Gate Valve, Bolted A216 WCC Body, A216 WCC + ENP Obturator, RF Ends, Bare Stem, Full Bore, Viton AED Seals, A105 + ENP Seat Base Material, RTFE Seat Inserts, 17-4 PH Stem, Viton Duck Packing, Standard Service, API 6D Design and Test, NACE MR-01-75 Compliant															
FULL PORT	ALL	FCK	12	06	В	08	16	R		F	V	11	V	/		S
SWING CHECK	12" 600 Full Port Swing Check Valve, Bolted A216 WCC Body, A216 WCC + 316 Obturator, RF Ends, Full Bore, Viton AED Seals, CR13 HF Seat Base Material, Viton Seat Inserts, Standard Service, API 6D Design and Test, NACE MR-01-75 Compliant															
	150, 300, 600, 900	PCK	12	06	В	08	61	R	/	C	V	14	Н	1	/	S
PISTON CHECK	12" 600 Piston Check Valve, Bolted A216 WCC Body, A105 + Nitride + HF Obturator, RF Ends, Coventional Bore, Viton AED Seals, A105 Seat Base Material, Hardface Seat Overlay, Standard Service, API 6D Design and Test, NACE MR-01-75 Compliant															
TIOTON ONLON	1500, 2500	PCK	12	15	В	08	61	R		C	V	41	Н	/		S
	12" 1500 Piston Check Valve, Bolter Test, NACE MR-01-75 Compliant	d A216 W0	CC Body,	A105 + Nit	ride + HF Obturato	ır, RF Ends	s, Coventional Bo	re, Viton	AED Seal	ls, A182 F6a Clas	is 2 Seat E	ase Material, Har	dface Seat Overlay,	Standard S	Service, API 6D	Design and
LUBRICATED	ALL	PLG	12	06	В	10	84	R	L	C	V				G	S
PLUG	12" 600 Lubricated Plug Valve, Bolt		·			nds, Lever	Operated, Cover	ntional B	ore, Viton	AED Seals, Stan	dard Servi	ce, API 6D Desigr	and Test, NACE MR	-01-75 Cor	npliant	
	ALL	GAT	12	06	В	10	7	R	H	C	4	14	H	C	G	S
WEDGE GATE	12" 600 Wedge Gate Valve, Bolted A Stem, Graphite Packing, Standard S							erated, (Conventio	nal Bore, 304 + (Graphite G	asket, A105 Seat	Base Material, Hard	face Seat C	lverlay, A182 F	6a Class 2
	ALL	GLB	12	06	В	10	60	R	H	С	4	14	Н	С	G	S
GLOBE	12" 600 GlobeValve, Bolted A216 Wi Graphite Packing, Standard Service,							entional	Bore, 304	4 + Graphite Gasl	ket, A105 S	eat Base Materia	al, Hardface Seat Ove	erlay, A182	F6a Class 2 St	:em,

Optional Seal Selections

Code	Material	Description
В	BUNA	Also called Buna N or Nitrile, this sealing material is widely used because of its compatability with most hydraulic fluid media, including petroleum oils, water, water glycol, Di-Ester based fluids, air, and inactive gases. The temperature of this material ranges from -54C to +135C [-65F to +275F].
N	NEOPRENE	This sealing material is excellent for refrigerants, amonia, and freon. Its temperature range is from -37C to +107C (-35F to +225F).
E	EPDM	Also called Ethylene-Propylene, this sealing material is recommended for low pressure steam, hot water, phosphate ester base fluid, weak alkalines, and acids. This material is not recommended for petroleum service, hydrocarbons, alchohol, and radiation. Its temperature range is -54C to 149C [-65F to +250F].
v	VITON	Also called Fluorocarbon Rubber (FKM), this material is known for being excellent in condition up to +204C (+400F). Viton offers excellent resistence to aggressive fuels and chemicals.
т	PTFE	Teflon has excellent resistence to a wide range of chemicals. It is excellent at pressures below 1500 PSI. It can withstand temperatures up to +204C(+400F).
R	NBR	NBR is typically resistant to mineral oil-based lubricants and greases, hydraulic fluids, hydrocarbons, and water. NBR is not resistant to polar solvents or chlorinated hydrocarbons. The material's temperature range is from -30C to +100C (-22F to +212F).
н	HNBR	HNBR is simply hydrogenated NBR. It is typically resistant to mineral oil-based lubricants and greases, hydraulic fluids, hydrocarbons, and water just like NBR. HNBR is more resistent to heat, o-zone, and aging than NBR. The material's temperature range is from -30C to +100C (-22F to +212F).
S	SILICONE	This material is capable of operating in a wide temperature range and has excellent resistence to o-zone, water, weathering, and aging. This material is generally not resistent to fuels, oils, steams, acids, or high pressures. This materials temperature range is from -65C to +250C (-85F to +482F).
F	FLUOROSILICONE	This material is far more resistent to oils and fules than other silicones. The temperature range, however, is limited from -73C to +177C (-100F to +350F).
G	GRAPHOIL	Grafoil is chemically resistant to attack from nearly all organic and inorganic fluids with exception of highly oxidizing chemicals and highly concentrated oxidizing mineral acids. The material is good up to +538C (+1000F) as well as at cryogenic temperatures.
U	FLUORSINT	This material contains a mica filler and offers superb mechanical properties such as resistence to abrasion, wear, and extrusion. It is ideal for high pressure applications and offers low co-efficient of friction. Its temperature range is from -46C to +343C (-50F to +650F).

-

Note: Additional options available upon request

Optional Seat Selections

Code	Material	Description
D	DEVLON	Devlon is a polyamide with additives which allow it to perform at -46C to +121C (-50F to +250F). This material covers a wide range of applications while having excellent wear poperties, low friction, and improved impact strength.
M-S	METAL (STELLITE)	Metal seats hardfaced with Stellite 6 are recommended for use in high temperature fluid and gas applications. The temperature range of the material allows it to get up to the maximum temperature of the valve body material.
M-TC	METAL (TUNGSTEN CARBIDE)	Metal seats hardfaced with Tungsten Carbide are recommended for use in high temperature fluid and gas applications. The temperature range of the material allows it to get up to the maximum temperature of the valve body material.
N	NYLON	Nylon is offered for high pressure applications. The material is ideal for use in high pressure air, oil, and other gas media but is not suitable for strong oxidizing agents. The temperature range of this material is -34C to +121C [-29F to +250F].
0	NOVA	This Teflon based product is filled with glass amorphous carbon powder and graphite. It has a lower thermal contraction-expansion than PTFE and is ideal for steam or thermal fluid applications up to +288C (+550F).
Р	PEEK	Peek offers a unique combination of chemical, mechanical, and thermal properties. This material is excellent for high temperatures up to +260C (+500F).
т	TEFLON (VIRGIN PTFE)	PTFE is a fluorocarbon-based polymer. This material has excellent chemical resistance and co-efficient of friction. The material is not recommended for liquid alkalis and flourine. Its temperature range is good from -34C to +204C (-30F to +400F).
к	PCTFE	Kel-F is a fluorocarbon based polymer offering a unique combination of physical and mechanical characteristics such as non-flamability, chemical resistance, and near zero moisture absorbtion. The temperature range of this material is from -240C to +204C (-400F to +400F).
R	RPTFE	PTFE's mechanical properties are enhanced by adding a percentage of filler material to provide improved strength, stability, and wear resistance. The temperature range of this material is -46C to +232C (-50F to +450F).

Note: Additional options available upon request

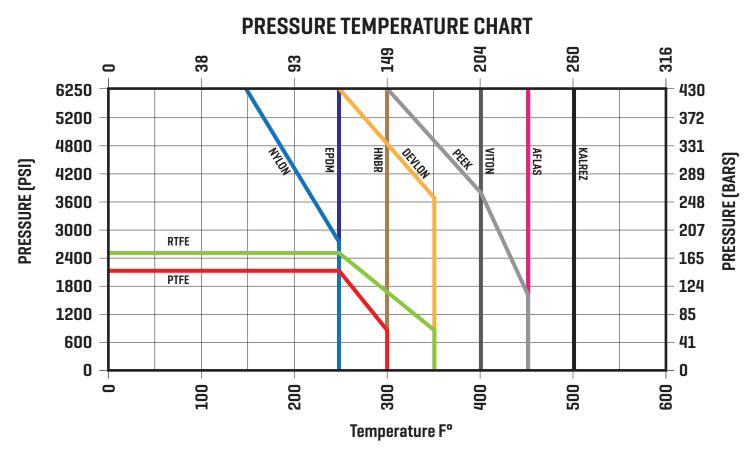
Seal & Seat Pressure Temperature Chart

This chart depicts pressure and temperature ratings for common plastics and elastomers used in SCV Valve products.

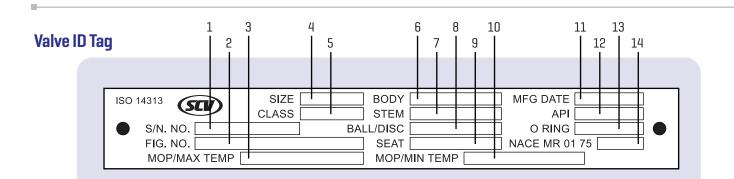
SCV VALVE SOFT GOOD CHEMICAL COMPATIBILITY

	S	EAL MATERI	AL.	SEAT MATERIAL						
	Viton	HNBR	Kalrez	RTFE	Devlon	PEEK				
Amines	X	Х	•	•	X	X	•			
Ammonia	X	Х	•	•	•	•	•			
Butane	•	•	•	•	•	•	•			
Carbon Dioxide	•	•	•	•	•	•	•			
Crude Oil	•	•	•	•	•	•	•			
Ethane	•	•	•	•	X	X	•			
Ethylene	•	•	•	•	•	•	•			
Glycol	•	•	•	•	•	X	•			
Hydrocarbon	•	•	•	•	•	•	•			
Hydrogen	•	•	•	•	•	•	•			
Jet Fuel	*	*	•	•	X	X	•			
Methane	•	•	•	•	•	•	•			
Natural Gas	•	•	•	•	•	•	•			
Nitrogen	•	•	•	•	•	•	•			
Propane	•	•	•	•	•	•	•			
Propylene	•	X	•	•	•	•	•			

* Viton OK for JP-3/4/5/6/8/9/10. * HNBR OK for JP-3/4/5/6.



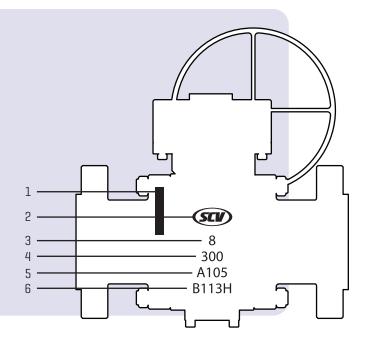
Valve ID Tag & Valve Markings Identification



No.	Figure Number Code	Description
1	Serial Number	Identifies certified manufacturers serial number
2	Figure Number	Identifies the detailed valve configuration (valve type, bore size, pressure class, materials, etc.)
3	MOP/Max. Temp.	Identifies the maximum operating pressure in PSI and maximum operating temperature in Fahrenheit
4	Size	Identifies bore size
5	Pressure Class	Identifies pressure classifications per API requirements
6	Body Material	Identifies body metal material composition (A105, WCB, F51, CF8M, etc.)
7	Stem Material	Identifies stem material composition (A105, 410SS, 17-4pH, etc.)
8	Ball/Disc Material	Identifies ball/disc material composition (A105, 316SS, ENP, etc.)
9	Seat Material	Identifies seat material composition (PEEK, Teflon, Nylon, etc.)
10	MOP/Min. Temp.	Identifies the maximum operating pressure in PSI and minimum operating temperature in Fahrenheit
11	Manufacturing Date	Identifies the date the valve manufacturing completion date
12	API Conformance	Identifies API conformance (600, 6D, 6A, etc.)
13	0 Ring	Identifies the O Ring material composition (Viton, Viton GLT, etc.)
14	NACE MR 01 75	Identifies corrosion resistance

Valve Markings

No.	Valve ID Components							
1	Tag							
2	Brand							
3	Size							
4	Pressure Class							
5	Body Material							
6	Heat Number							



Note: SCV reserves the right to modify our products for improvement without prior notice.











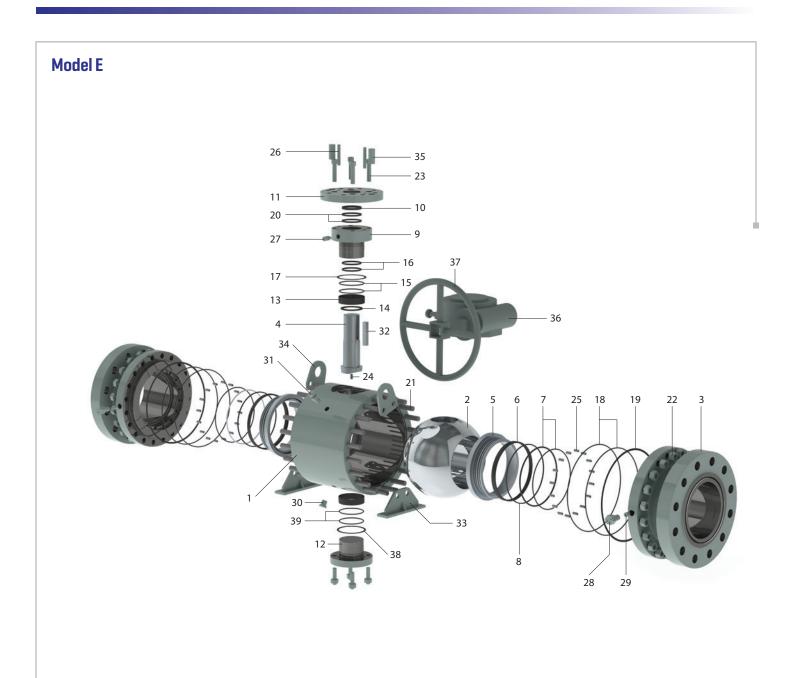
3-Piece Trunnion Ball Valves - API 6A Class: 2000, 3000, & 5000/Sizes: 2-1/16" - 13-5/8"

Design and Manufacturing Standards										
Basic Design	API 6A									
Wall Thickness	API 6A									
Face-to-Face Dimension	API 6A									
Flange End Dimension	API 6A									
Inspection & Testing	API 6A									
Fire Safe Design	API 607/BS 6755									



3-Piece Trunnion Ball Valves - API 6A

[Expanded View]



[Bill of Materials]

No	Name Of Part	Materials
1	Body	4130 NQT
2	Ball	410 SS NQT
3	Adapter	4130 NQT
4	Stem	410 SS NQT
5	Seat Ring	410 SS NQT
6	Seat Insert	Devlon
7	Seat O-ring (2)	HNBR
8	Seat Seal	Graphoil
9	Gland	4130 NQT
10	Gland Ring	4130 NQT
11	Mounting Plate	4130 NQT
12	Trunnion	4130 NQT
13	Trunnion Bearing (2)	316 SS/FIBREX
14	Thrust Washer	PEEK
15	Gland O-ring (2)	HNBR
16	Stem O-ring (2)	HNBR
17	Gland Gasket	Graphite/Stainless Steel
18	Adapter O-ring (2)	HNBR
19	Adapter Gasket	Graphite/Stainless Steel
20	Mounting Plate Gasket (2)	Graphoil
21	Stud Bolt*	A320 L7M
22	Hex Nut*	A320 L7M
23	SHCS	A320 L7M
24	Anti-Static Spring	X-750
25	Seat Spring	X-750
26	Dowel Pin	Hardened Steel
27	Grease Fitting	316 SS
28	Grease Fitting, BGH	316 SS
29	Ball Check	316 SS
30	NPT Plug	316 SS
31	Vent Fitting	316 SS
32	Stem Key	1045 or Equal
33	Foot Plate*	Carbon Steel
34	Lift Plate*	Carbon Steel
35	Body Dowel Pin	Hardened Steel
36	Gear Operator	Carbon Steel
37	Handwheel	Carbon Steel
38	Trunnion Gasket	Graphite/Stainless Steel
39	Trunnion O-ring (2)	HNBR
Note: M	aterials also available in F321, F347, F51, F53, monel, inconel, incolloy and hastelloy. Metal-to	-metal seated ball valve designs are available upon request.

3-Piece Trunnion Ball Valves - API 6A Design Features & Applications

The SCV 3-piece forged body Trunnion Mounted ball valves are designed to meet API's highest industry standards. SCV manufactures these trunnion ball Valves in bolted body and welded body to meet the most stringent requirements for industries such as oil, gas, gathering, transmission, distribution, storage, LNG and Petrochemical.

Seal Feature

The SCV trunnion mounted ball valves are produced with spring loaded seats. This spring load keep the seats in constant contact with the ball, even in the absence of line pressure and makes a very effective seal at low line pressure. As the pressure increases the seat ring is forced onto the ball and a tight seal becomes effective. The higher the line pressure the greater the force exerted by the seat against the ball.

Self Lubrication

SCV uses seat insert material that provides self lubrication. The seat insert material choices consist of PTFE. Nylon, Devlon, Peek, or any other low friction material that that may be required to meet the application. The self-lubrication insert materials help support the predictable operating torque.

Fire Safe Construction with Secondary Metal Seat

SCV ball valves have been fire tested and can be supplied to API 6FA and API 607. The soft seat inserts, irrespective of their materials, will possibly fail when subjected to fire conditions. SCV provides a fire-safe design which may substantially prevent leakages through seals when damaged by fire. The function of the seats before and after the fire test are as shown. If the seat inserts are destroyed, a metal to metal seal is formed between seat and ball. The seat to body graphite seals, graphite stem packing, and graphite gasket end closures are designed to resist high temperature and will remain undamaged. **[Figures 1 & 2]**

Trunnion Mounting

Trunnion mounted TEFLON coated bearings on the stems absorb the thrust from line pressure, preventing excess friction between the ball and seats, so even at full rated working pressure, operating torque stays low. **(Figure 3)**

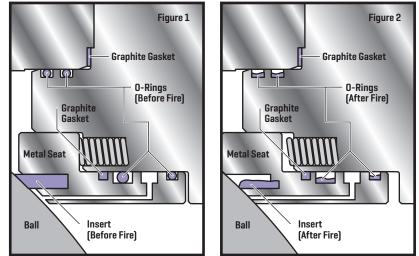
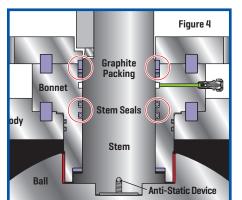


Figure 3



Anti-Static Device

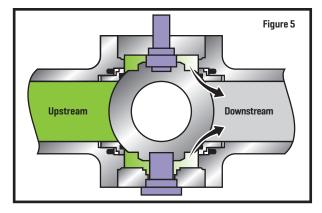
The ball/spring assembly provided at the stem allows the static charges to be discharged to the piping. In this way, an electrostatic charging of the ball is eliminated. **[Figure 4]**

Blow Out Proof Stem with Stem Seals

The stem has been designed with a lower flange. The valve body bonnet retains the stem in place and prevent any possible blowout. The stem is sealed with 2 orings, this feature allows for the stem packing to be replaced while the valve is in line and under pressure. **(Figure 4)**

Single Piston Effect (SPE) - Self Relieving Seats

With the ball in the closed position, media pressure builds on the upstream side of the ball. This pressure forces the upstream seat ring against the ball for a tight seal. With only spring pressure sealing the downstream side, excess body cavity pressure pushes the downstream seat rings away from the ball relieving overpressure in the body cavity. This seat arrangement meets **Block & Bleed** requirements. Single Piston Effect (SPE) seat rings are "self-relieving." **(Figure 5)**



Double Piston Effect (DPE)

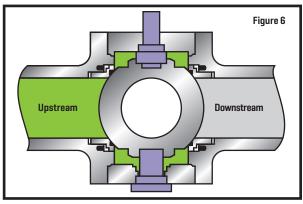
With the ball in the closed position and pressure from a single source, in the event the upstream seat fails, pressure will increase in the body cavity. The cavity pressure activates the downstream seat's double piston effect creating a second seal on the ball. This seat arrangement meets **Double Isolation & Bleed** requirements. **(Figure 6)**

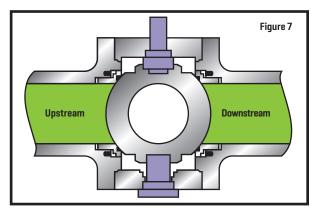
Definition of Double Isolation and Bleed (DIB): A single valve with two seating surfaces, each of which, in the closed position, provides a seal against pressure from a single source, with a means of venting/bleeding the cavity between the seating surfaces. This feature can be provided in one direction or both directions.



The Double Block and Bleed feature is offered with both seat ring configurations (SPE & DPE). When the ball is closed, pressure is "blocked" from the body cavity by the pressure activated seats. The body cavity can then be vented/bled. **(Figure 7)**

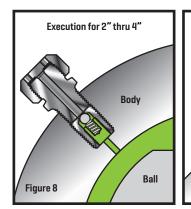
Definition of Double Block and Bleed: A single valve with two seating surfaces that, in the closed position, provides a seal against pressure from both ends of the valve with a means of venting/bleeding the cavity between the seating surfaces.

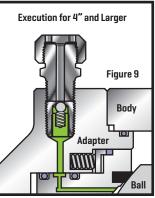


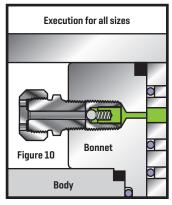


Sealant Fitting

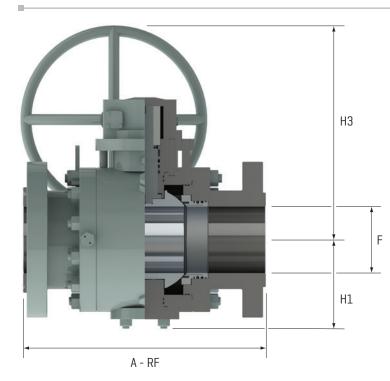
Sealant lubrication fittings are standard on this SCV design. In the event of seat insert or stem seal damage, leakage can occur. Emergency sealant/lubricant injection can save the integrity of the valve by incorporating a seal around the stem or between the seat and the ball until properly serviced. These fittings also act as a lubrication port for regular maintenance. **[Figures 8, 9 & 10]**

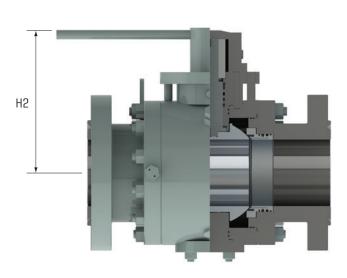






3-Piece Trunnion Ball Valves - API 6A Size: 2-1/16" - 13-5/8" Class: 2000, 3000, & 5000





FLG Weights Bore End-to-End **Body Dimensions** Size LBS/KG A - RTJ H1 H2 F H3 IN 2-1/16 2.09 11.625 4.44 6.50 8.90 68 2-9/16 7.28 IN 2.59 14.125 5.22 9.68 79 IN 3-1/8 14.125 8.69 119 3.22 5.56 11.09 2000 PSI 9.56 IN 4-1/16 4.28 17.125 6.50 11.96 218 IN 5-1/16 5.16 22.125 8.69 12.19 14.59 598 IN 7-1/16 7.16 26.125 9.47 1 15.59 697 9* 9.00 29.785 10.25 24.25 IN 1 1369 11* IN 11.03 31.125 12.75 1 28.78 1696 IN 13-5/8* 13.66 33.125 15.88 1 31.84 2193 IN 2-1/16 2.09 14.625 4.44 7.28 10.90 119 IN 2-9/16 2.59 15.125 5.22 8.06 11.64 139 IN 3-1/8 3.22 15.125 5.56 9.47 13.05 178 **3000 PSI** 10.34 IN 4-1/16 4.28 18.125 6.50 13.92 319 5-1/16 24.125 8.69 12.97 IN 5.16 16.55 697 IN 7-1/16 7.16 29.125 10.38 19.10 1247 1 9* 9.00 IN 33.85 11.125 1 27.65 1575 IN 11* 11.03 36.125 15.13 30.74 1846 1 IN 13-5/8* 13.66 39.125 17.15 1 33.80 2593 IN 2-1/16 2.09 14.625 6.50 4.44 8.90 119 5.22 IN 2-9/16 2.59 18.625 7.28 9.68 170 IN 3-1/8 3.22 18.625 8.69 5.56 11.09 240 5000 PSI IN 4-1/16 4.28 21.625 9.56 6.50 11.96 420 8.69 IN 5-1/16 5.16 28.00 12.19 14.59 1190 7-1/16 33.125 14.80 IN 7.16 1 17.20 1936 29.25 IN 9* 9.00 41.00 11.5 2880 1 IN 11* 42.125 11.03 16.63 1 32.78 3420 IN 13-5/8* 13.66 45.125 18.69 35.84 5120

* = Sizes are not industry standard, but are agreed upon between client and manufacturer.

Flow Coefficients Cv Values

The Flow Coefficiency (Cv) of a valve is the rate of gallons per minute of water at 60° F through a fully opened valve at a pressure drop of 1 PSI across the valve.

	Size			Pressure PSI				
0	26		2000	3000	5000			
NPS	2-1/16	GPM	350	320	320			
NPS	2-9/16	GPM	190	185	180			
NPS	3-1/8	GPM	1,000	910	820			
NPS	4-1/16	GPM	1,850	1,760	1,610			
NPS	7-1/16	GPM	4,400	4,300	4,080			
NPS	9	GPM	8,450	8,400	7,980			
NPS	11	GPM	14,250	14,160	13,020			
NPS	13-5/8	GPM	22,790	21,230	16,910			



Superior Performance Plug Valves

Available Sizes: 2" thru 12" | Class: 150 thru 2500

SCV Valve Pressure Balanced Lubricated Plug Valves are ideal for the following applications:

- Oil & Gas Distribution, Processing, & Transmission
- Wastewater Collection & Treatment
- Crude Handling & Treatment
- Petro Chemical & Refineries
- Waste Transfer & Processing
- Slurry Transfer & Processing
- Steam Systems
- General Industries

API 6D | Pressure Balanced | Lubricated | Metal-to-Metal Seal | API 6FA Firesafe Design | 410SS Trim | NACE MR 01 75



www.scvvalve.com Phone: 281.482.4728

SCV is Certified: API 6A, API 6D, CE PED, CRN (Alberta, Manitoba, & Ontario)

Pressure Temperature Ratings - ASME B16.34

Note: Pressures in PSI

	Temp. F	A105	WCB	LF2	WCC	LCB	WC6	LCC	C5	C12	C12A	316	CF8M	F51	F53
	-20 to 100	285	285	285	290	265	290	290	290	290	290	275	275	290	290
	200	260	260	260	260	255	260	260	260	260	260	235	235	260	260
	300	230	230	230	230	230	230	230	230	230	230	215	215	230	230
	400	200	200	200	200	200	200	200	200	200	200	195	195	200	200
	500	170	170	170	170	170	170	170	170	170	170	170	170	170	170
	600	140	140	140	140	140	140	140	140	140	140	140	140	140	140
	650	125	125	125	125	125	125	125	125	125	125	125	125	125	125
	700	110	110	110	110	110	110	110	110	110	110	110	110	110	110
	750 800	95 80	95 80	95 80	95	95 80	95 80	95	95	95 80	95 80	95	95 80	95	95
	850	65	65	65	80 65	65	65	80	80 65	65	65	80	65	1	1
150	900	50	50	50	50	50	50	65 50	50	50	50	65 50	50	•	
- H	950	35	35	35	35	35	35	35	35	35	35	35	35	1	1
	1000	20	20	20	20	20	20	20	20	20	20	20	20	1	
	1050	20	20	1	20	20	20	20	20	20	20	20	20	1	
	1100		1			1	20	1	20	20	20	20	20	1	
	1150	1	1				20	1	20	20	20	20	20	1	
	1130					1	15		15	20	20	20	20	1	
	1250	1				1	13	1	13	20	20	20	20	1	
	1230	1			1		1					20	20	1	
	1350	1	1				1	1			1	20	20		
	1400											20	20		
	1450	1						1	1			20	20		
	1500	1	1	1		1	1	1	1	1	1	15	15	1	
	Temp. F	A105	WCB	LF2	WCC	LCB	WC6	LCC	C5	C12	C12A	316	CF8M	F51	F53
	-20 to 100		740	740		695	750								
	L010100	740	740	/40	750	033	/30	750	750	750	750	720	720	750	750
	200	740 680	680	680	750 750	660	750	750	750	750	750	720 620	620	750 745	750
											750				745
	200	680	680	680	750	660	750	750	750	750		620	620	745	
	200 300	680 655	680 655	680 655	750 730	660 640	750 720	750 730	750 730	750 730	750 730	620 560	620 560	745 665	745 665
	200 300 400	680 655 635	680 655 635	680 655 635	750 730 705	660 640 615	750 720 695	750 730 705	750 730 705	750 730 705	750 730 705	620 560 515	620 560 515	745 665 615	745 665 615
	200 300 400 500	680 655 635 605	680 655 635 605	680 655 635 605	750 730 705 665	660 640 615 585	750 720 695 665	750 730 705 665	750 730 705 665	750 730 705 665	750 730 705 665	620 560 515 480	620 560 515 480	745 665 615 580	745 665 615 580
	200 300 400 500 600	680 655 635 605 570	680 655 635 605 570	680 655 635 605 570	750 730 705 665 605	660 640 615 585 550	750 720 695 665 605	750 730 705 665 605	750 730 705 665 605	750 730 705 665 605	750 730 705 665 605	620 560 515 480 450	620 560 515 480 450	745 665 615 580 555	745 665 615 580 555
	200 300 400 500 600 650	680 655 635 605 570 550	680 655 635 605 570 550	680 655 635 605 570 550	750 730 705 665 605 590	660 640 615 585 550 535	750 720 695 665 605 590	750 730 705 665 605 590	750 730 705 665 605 590	750 730 705 665 605 590	750 730 705 665 605 590	620 560 515 480 450 440	620 560 515 480 450 440	745 665 615 580 555 545	745 665 615 580 555 545
	200 300 400 500 600 650 700	680 655 635 605 570 550 530	680 655 635 605 570 550 530	680 655 635 605 570 550 530	750 730 705 665 605 590 555	660 640 615 585 550 535 510	750 720 695 665 605 590 570	750 730 705 665 605 590 555	750 730 705 665 605 590 570	750 730 705 665 605 590 570	750 730 705 665 605 590 570	620 560 515 480 450 440 435	620 560 515 480 450 440 435	745 665 615 580 555 545 545	745 665 615 580 555 545 545
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00	200 300 400 500 600 650 700 750 800	680 655 635 570 550 530 505 410	680 655 635 570 550 530 505 410	680 655 635 570 550 530 505 410	750 730 705 665 605 590 555 505 410	660 640 615 585 550 535 510 475 390	750 720 695 665 605 590 570 530 510	750 730 705 665 605 590 555 505 410	750 730 705 665 605 590 570 530 510	750 730 705 665 605 590 570 530 510	750 730 705 665 605 590 570 530 510	620 560 515 480 450 440 435 425 425	620 560 515 480 450 440 435 425 425 420	745 665 615 580 555 545 545	745 665 615 580 555 545 540 530 /
300	200 300 400 500 600 650 700 750 800 850	680 655 635 570 550 530 505 410 320	680 655 635 570 550 530 505 410 320	680 655 635 570 550 530 505 410 320	750 730 705 665 605 590 555 505 410 320	660 640 615 585 550 535 510 475 390 300	750 720 695 665 590 570 530 510 485	750 730 705 665 605 590 555 505 410 320	750 730 705 665 605 590 570 530 510 485	750 730 705 665 605 590 570 530 510 485	750 730 705 665 605 590 570 530 510 485	620 560 515 480 450 440 435 425 425 420 420	620 560 515 480 450 440 435 425 425 420 420	745 665 615 580 555 545 545	745 665 615 580 555 545 540 530 / /
	200 300 400 500 600 650 700 750 800 850 900	680 655 635 570 550 530 505 410 320 230	680 655 635 570 550 530 505 410 320 230	680 655 635 570 550 530 505 410 320 230	750 730 705 665 605 590 555 505 410 320 225	660 640 615 585 550 535 510 475 390 300 200	750 720 695 665 590 570 530 510 485 450	750 730 665 605 590 555 505 410 320 225	750 730 705 665 605 590 570 530 510 485 375	750 730 705 665 605 590 570 530 510 485 450	750 730 705 665 605 590 570 530 510 485 450	620 560 515 480 450 440 435 425 420 420 420 415	620 560 515 480 450 440 435 425 425 420 420 415	745 665 615 580 555 545 545	745 665 615 580 555 545 540 530 / / / /
	200 300 400 500 600 650 700 750 800 850 900 950	680 655 635 570 550 530 505 410 320 230 135	680 655 635 570 550 530 505 410 320 230 135	680 655 635 570 550 530 505 410 320 230 135	750 730 705 665 605 590 555 505 410 320 225 135	660 640 615 585 550 535 510 475 390 300 200 135	750 720 695 665 590 570 530 510 485 450 320	750 730 705 665 590 555 505 410 320 225 135	750 730 705 665 605 590 570 530 530 510 485 375 275	750 730 705 665 590 570 530 510 485 450 375	750 730 705 665 605 590 570 530 530 510 485 450 385	620 560 515 480 450 440 435 425 420 420 415 385	620 560 515 480 450 440 435 425 420 420 420 415 385	745 665 615 580 555 545 545	745 665 615 580 555 545 540 530 / / / /
	200 300 400 500 600 650 700 750 800 850 900 950 1000	680 655 635 570 550 530 505 410 320 230 135 85	680 655 635 570 550 530 505 410 320 230 135 85	680 655 605 570 550 530 505 410 320 230 135 85	750 730 705 665 590 555 505 410 320 225 135 85	660 640 615 585 550 535 510 475 390 300 200 135 85	750 720 695 665 590 570 530 510 485 450 320 215	750 730 665 605 590 555 505 410 320 225 135 85	750 730 705 665 590 570 530 510 485 375 275 200	750 730 705 665 590 570 530 530 510 485 450 375 255	750 730 705 665 605 590 570 530 510 485 450 385 365	620 560 515 480 450 440 435 425 425 420 420 415 385 365	620 560 515 480 450 440 435 425 420 420 415 385 365	745 665 615 580 555 545 540 530 / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / /
	200 300 400 600 650 700 750 800 850 900 950 1000 1050	680 655 635 570 550 530 505 410 320 230 135 85 /	680 655 635 570 550 530 505 410 320 230 135 85 /	680 655 635 570 550 530 505 410 320 230 135 85 /	750 730 705 665 590 555 505 410 320 225 135 85 <i>8</i> 5 <i>/</i>	660 640 615 585 550 535 510 475 390 300 200 135 85 <i>/</i>	750 720 695 665 590 570 530 510 485 450 320 215 145	750 730 705 665 590 555 505 410 320 225 135 85 85	750 730 705 665 590 570 530 510 485 375 275 200 145	750 730 705 665 590 570 530 510 485 450 375 255 170	750 730 705 665 605 590 570 530 510 485 450 385 365 360	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160	745 665 615 580 555 545 540 530 / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / /
	200 300 400 600 650 700 750 800 850 900 950 1000 1050 1100	680 655 635 570 550 530 505 410 320 230 135 85 /	680 655 635 570 550 530 505 410 320 230 135 85 / /	680 655 635 570 550 530 505 410 320 230 135 85 /	750 730 705 665 590 555 505 410 320 225 135 85 / /	660 640 615 585 550 535 510 475 390 300 200 135 85 / /	750 720 695 605 590 570 530 510 485 450 320 215 145 95	750 730 705 665 590 555 505 410 320 225 135 85 85	750 730 705 665 590 570 530 510 485 375 275 200 145 100	750 730 705 665 590 570 530 510 485 450 375 255 170 115	750 730 705 665 590 570 530 510 485 450 385 365 360 300	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160 305	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160 305	745 665 615 580 555 545 540 530 / / / / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / /
	200 300 400 500 600 650 700 750 800 850 850 900 950 1000 1050 1100 1150	680 655 635 570 550 530 505 410 320 230 230 135 85 <i>I</i> <i>I</i> <i>I</i> <i>I</i> <i>I</i>	680 655 635 570 550 530 505 410 320 230 230 135 85 <i>/</i> <i>/</i> <i>/</i>	680 655 635 570 550 530 505 410 320 230 135 85 <i>I</i> <i>I</i> <i>I</i> <i>I</i> <i>I</i>	750 730 705 665 590 555 505 410 320 225 135 85 <i>/</i> <i>/</i> <i>/</i> <i>/</i>	660 640 615 585 550 535 510 475 390 300 200 135 85 <i>/</i> <i>/</i> <i>/</i> <i>/</i>	750 695 665 590 570 530 510 485 450 320 215 145 95 65	750 730 705 665 590 555 505 410 320 225 135 85 85 / / / /	750 730 705 665 590 570 530 510 485 375 275 200 145 100 60	750 730 705 665 590 570 530 510 485 450 375 255 170 115 75	750 730 705 665 590 570 530 510 485 450 385 365 360 300 225	620 560 515 480 450 435 425 425 420 420 420 415 385 365 160 305 235	620 560 515 480 450 440 435 425 425 420 420 415 385 365 160 305 235	745 665 615 580 555 545 530 / / / / / / / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / / / / /
	200 300 400 500 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200	680 655 635 570 550 530 505 410 320 230 230 135 85 / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / /	750 730 705 665 590 555 505 410 320 225 135 85 / / / / /	660 640 615 585 550 535 510 475 390 300 200 135 85 / / / / /	750 695 665 590 570 530 510 485 450 320 215 145 95 65 40	750 730 705 665 590 555 505 410 320 225 135 85 85 / / / / /	750 730 705 665 590 570 530 510 485 375 275 200 145 100 60 35	750 730 705 665 590 570 530 510 485 450 375 255 170 115 75 50	750 730 705 665 590 570 530 510 485 450 385 365 365 360 300 225 145	620 560 515 480 450 435 425 425 420 420 415 385 365 365 160 305 235 185	620 560 515 480 450 435 425 425 422 420 415 385 365 160 305 235 185	745 665 615 580 555 545 530 / / / / / / / / / / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / / / / / / / / / /
	200 300 400 500 600 650 700 750 800 850 900 950 900 950 1000 1050 1100 1150 115	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / /	750 730 705 665 590 555 505 410 320 225 135 85 / / / / / / /	660 640 615 585 550 535 510 475 390 300 200 135 85 / / / / / / /	750 720 695 665 590 570 530 510 485 450 320 215 145 95 65 40 /	750 730 705 665 590 555 505 410 320 225 135 85 135 85 / / / / / /	750 730 705 665 590 570 530 510 485 375 275 200 145 100 60 35 <i>/</i>	750 730 705 665 590 570 530 510 485 450 375 255 170 115 75 50 /	750 730 705 665 590 570 530 510 485 450 385 365 365 360 300 225 145 /	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160 305 235 185 185	620 560 515 480 450 435 425 425 420 420 415 385 365 365 160 305 235 185 185	745 665 615 580 555 545 530 / / / / / / / / / / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / / / / / / / / / /
	200 300 400 500 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1150 1200 1250 1300	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / /	750 730 705 665 590 555 505 410 320 225 135 85 / / / / / / / /	660 640 615 585 550 535 510 475 390 300 200 135 85 / / / / / / /	750 720 695 665 590 570 530 510 485 450 320 215 145 95 65 40 /	750 730 705 665 590 555 505 410 320 225 135 85 135 85 / / / / / /	750 730 705 665 590 570 530 510 485 375 275 200 145 100 60 35 <i>/</i>	750 730 705 665 590 570 530 510 485 450 375 255 170 115 75 50 /	750 730 705 665 590 570 530 510 485 450 385 365 365 360 300 225 145 /	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160 305 235 185 185 145 115	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160 305 235 185 145 115	745 665 615 580 555 545 530 / / / / / / / / / / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / / / / / / / / / /
	200 300 400 500 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / / /	680 655 635 570 550 530 505 410 320 230 135 85 / / / / / /	750 730 705 665 590 555 505 410 320 225 135 85 / / / / / / / /	660 640 615 585 550 535 510 475 390 300 200 135 85 / / / / / / /	750 720 695 665 590 570 530 510 485 450 320 215 145 95 65 40 /	750 730 705 665 590 555 505 410 320 225 135 85 135 85 / / / / / /	750 730 705 665 590 570 530 510 485 375 275 200 145 100 60 35 / /	750 730 705 665 590 570 530 510 485 450 375 255 170 115 75 50 /	750 730 705 665 590 570 530 510 485 450 385 365 360 300 225 145 / /	620 560 515 480 450 435 425 420 420 415 385 365 160 305 235 185 145 145 115 95	620 560 515 480 450 440 435 425 420 420 415 385 365 365 160 305 235 185 185 145 115 95	745 665 615 580 555 545 530 / / / / / / / / / / / / / / / / / / /	745 665 615 580 555 545 540 530 / / / / / / / / / / / / / / / / / / /

Pressure Temperature Ratings - ASME B16.34

Note: Pressures in PSI

	Temp. F 20 to 100 200	A105 1480	WCB 1480	LF2 1480	WCC 1500	LCB 1395	WC6 1500	LCC 1500	C5 1500	C12 1500	C12A	316	CF8M	F51	F53
				1480	1500	1395	1500	1500	1500	1500	1000	1////0	1////0	1-00	
	200						1000	1000	1300	1300	1500	1440	1440	1500	1500
		1360	1360	1360	1500	1320	1500	1500	1500	1500	1500	1240	1240	1490	1490
	300	1310	1310	1310	1455	1275	1445	1455	1455	1455	1455	1120	1120	1335	1335
	400	1265	1265	1265	1405	1230	1385	1405	1410	1410	1410	1025	1025	1230	1230
	500	1205	1205	1205	1330	1175	1330	1330	1330	1330	1330	995	995	1160	1160
_	600	1135	1135	1135	1210	1105	1210	1210	1210	1210	1210	900	900	1115	1115
	650	1100	1100	1100	1175	1065	1175	1175	1175	1175	1175	885	885	1095	1095
_	700	1060	1060	1060	1110	1025	1135	1110	1135	1135	1135	870	870	1085	1085
_	750	1015	1015	1015	1015	955	1065	1015	1065	1065	1065	855	855	1065	1065
	800	825	825	825	825	780	1015	825	1015	1015	1015	845	845	1	1
2	850	640	640	640	640	595	975	640	975	975	975	835	835	1	1
99	900	460	460	460	445	405	900	445	745	900	900	830	830	1	1
	950	275	275	275	275	275	640	275	550	755	775	775	775		
_	1000	170	170	170	170	170	430	170	400	505	725	725	725	1	1
-	1050	1	1	1	1	1	290	1	290	345	720	720	720	1	1
	1100	1	1	1	1	1	190	1	200	225	605	610	610	1	1
-	1150	1		1	1	1	130	1	125	150	445	475	475	1	1
	1200	-	1	1	1	1	80	1	70	105	290	370	370		
	1250	1	1		1	1	1	1	1		1	295	295	1	
	1300	1	1		1			1	1			235	235	1	
	1350		1				1					190	190		
_	1400	- 1	1	1		1	1	1	1			150	150	1	
	1450 1500	- 1					1	1				115 85	115 85		
		A105	WOD			,	Wee				0104			,	LEJ
	Temp. F	A105	WCB	LF2	WCC	LCB	WC6	LCC	C5	C12	C12A	316	CF8M	F51	F53
-i															2250
															2230
															2000
_															1845
-															1740 1670
_			1650	1650		1600	1765			1765					1670
	650 700	1650 1590	1590	1590	1765 1665	1535	1765	1765 1665	1765 1705	1765	1765 1705	1325 1305	1325 1305	1640 1625	1640
	750	1590	1590	1590	1520	1430	1595	1520	1595	1595	1595	1280	1280	1525	1595
	800	1235	1235	1235	1235	1430	1595	1235	1595	1555	1555	1265	1265	1292	1393
	850	955	955	955	955	895	1460	955	1460	1460	1460	1255	1255	1	
	900	690	690	690	670	605	1350	670	1120	1350	1350	1245	1235		
ଁ ଚ	950	410	410	410	410	410	955	410	825	1130	1160	1160	1160		
- E	1000	255	255	255	255	255	650	255	595	760	1090	1090	1090		- /
	1050	1	1	1	1	1	430	1	430	515	1030	1030	1030	1	1
	1100	1	1	1	1	1	290	1	300	340	905	915	915	1	1
	1150	1	1	1	1	1	195	1	185	225	670	710	710	1	1
	1200			1	1	1	125	1	105	155	430	555	555	1	1
	1250	i	I	1	1	1	1	1	1	1	1	440	440		
	1300	1		,			1	1	,	1	1	350	350	,	,
	1350			1	1	1	1		1	1	1	290	290	1	1
	1400		1	1	1			1				225	225		1
	1400 1450	1	1	1	1	1	1	1				225 175	225 175		
	20 to 100 200 300 400 500 600	2220 2035 1965 1900 1810 1705	2220 2035 1965 1900 1810 1705	2220 2035 1965 1900 1810 1705	2250 2250 2185 2110 1995 1815	2090 1980 1915 1845 1760 1655	2250 2250 2165 2080 1995 1815	2250 2250 2185 2110 1995 1815	2250 2250 2185 2115 1995 1815	2250 2250 2185 2115 1995 1815	2250 2250 2185 2115 1995 1815	2160 1860 1680 1540 1435 1355	2160 1860 1680 1540 1435 1355	2250 2230 2000 1845 1740 1670	

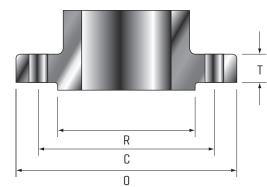
Pressure Temperature Ratings - ASME B16.34

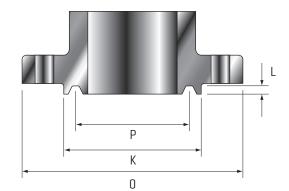
Note: Pressures in PSI

	Ĩ				1									1	
	Temp. F	A105	WCB	LF2	WCC	LCB	WC6	LCC	C5	C12	C12A	316	CF8M	F51	F53
	-20 to 100	3705	3705	3705	3750	3480	3750	3750	3750	3750	3750	3600	3600	3750	3750
	200	3395	3395	3395	3750	3300	3750	3750	3750	3750	3750	3095	3095	3720	3720
	300	3270	3270	3270	3640	3190	3610	3640	3640	3640	3640	2795	2795	3335	3335
	400	3170	3170	3170	3520	3075	3465	3520	3530	3530	3530	2570	2570	3070	3070
	500	3015	3015	3015	3325	2930	3325	3325	3325	3325	3325	2390	2390	2905	2905
	600	2840	2840	2840	3025	2755	3025	3025	3025	3025	3025	2255	2255	2785	2785
	650	2745	2745	2745	2940	2665	2940	2940	2940	2940	2940	2210	2210	2735	2735
	700	2665	2665	2665	2775	2560	2840	2775	2840	2840	2840	2170	2170	2710	2710
	750	2535	2535	2535	2535	2385	2660	2535	2660	2660	2660	2135	2135	2660	2660
	800	2055	2055	2055	2055	1955	2540	2055	2540	2540	2540	2110	2110	1	1
0	850	1595	1595	1595	1595	1490	2435	1595	2435	2435	2435	2090	2090	1	1
	900	1150	1150	1150	1115	1010	2245	1115	1870	2245	2245	2075	2075		
Ë,	950	685	685	685	685	685	1591	685	1370	1885	1930	1930	1930	1	1
	1000	430	430	430	430	430	1080	430	995	1270	1820	1820	1820	1	1
	1050	1	1	1	1	1	720	1	720	855	1800	1800	1800	1	1
	1100						480		495	565	1510	1525	1525		
	1150	1	1	1	1	1	325	1	310	375	1115	1185	1185	1	1
	1200	1	1	1	1	1	205	1	170	255	720	925	925	1	1
	1250	1	1	1	1	1	1	1	1	1	1	735	735	1	1
	1300	1	1	1	1	1	1	1	1	1	1	585	585	1	1
	1350	1	1	1	1	1	1	1	1	1	1	480	480	1	1
	1400	1	1	1	1	1	1	1	1	1	1	380	380	1	1
	1450	1	1	1	1	1	1	1	1	1	1	290	290	1	1
	1500	1	1	1	1	1	1	1	1	1	1	205	205	1	1
	Temp. F	A105	WCB	LF2	WCC	LCB	WC6	LCC	C5	C12	C12A	316	CF8M	F51	F53
	Temp. F -20 to 100	A105 6170	WCB 6170	LF2 6170	WCC 6250	LCB 5805	WC6 6250	LCC 6250	C5 6250	C12 3250	C12A 6250	316 6000	CF8M 6000	F51 6250	F53 6250
	-20 to 100	6170	6170	6170	6250	5805	6250	6250	6250	3250	6250	6000	6000	6250	6250
	-20 to 100 200	6170 5655	6170 5655	6170 5655	6250 6250	5805 5505	6250 6250	6250 6250	6250 6250	3250 6250	6250 6250	6000 5160	6000 5160	6250 6200	6250 6200
	-20 to 100 200 300	6170 5655 5450	6170 5655 5450	6170 5655 5450	6250 6250 6070	5805 5505 5315	6250 6250 6015	6250 6250 6070	6250 6250 6070	3250 6250 6070	6250 6250 6070	6000 5160 4660	6000 5160 4660	6250 6200 5560	6250 6200 5560
	-20 to 100 200	6170 5655	6170 5655	6170 5655	6250 6250 6070 5865	5805 5505	6250 6250	6250 6250	6250 6250	3250 6250	6250 6250	6000 5160	6000 5160	6250 6200	6250 6200
	-20 to 100 200 300 400	6170 5655 5450 5280	6170 5655 5450 5280	6170 5655 5450 5280	6250 6250 6070	5805 5505 5315 5125	6250 6250 6015 5775	6250 6250 6070 5865	6250 6250 6070 5880	3250 6250 6070 5880	6250 6250 6070 5880	6000 5160 4660 4280	6000 5160 4660 4280	6250 6200 5560 5120	6250 6200 5560 5120
	-20 to 100 200 300 400 500	6170 5655 5450 5280 5025	6170 5655 5450 5280 5025	6170 5655 5450 5280 5025	6250 6250 6070 5865 5540	5805 5505 5315 5125 4885	6250 6250 6015 5775 5540	6250 6250 6070 5865 5540	6250 6250 6070 5880 5540	3250 6250 6070 5880 5540	6250 6250 6070 5880 5540	6000 5160 4660 4280 3980	6000 5160 4660 4280 3980	6250 6200 5560 5120 4840	6250 6200 5560 5120 4840
	-20 to 100 200 300 400 500 600	6170 5655 5450 5280 5025 4730	6170 5655 5450 5280 5025 4730	6170 5655 5450 5280 5025 4730	6250 6250 6070 5865 5540 5040	5805 5505 5315 5125 4885 4595	6250 6250 6015 5775 5540 5040	6250 6250 6070 5865 5540 5040	6250 6250 6070 5880 5540 5040	3250 6250 6070 5880 5540 5040	6250 6250 6070 5880 5540 5040	6000 5160 4660 4280 3980 3760	6000 5160 4660 4280 3980 3760	6250 6200 5560 5120 4840 4640	6250 6200 5560 5120 4840 4640
	-20 to 100 200 300 400 500 600 650	6170 5655 5450 5280 5025 4730 4575	6170 5655 5450 5280 5025 4730 4575	6170 5655 5450 5280 5025 4730 4575	6250 6250 5865 5540 5040 4905	5805 5505 5315 5125 4885 4595 4440	6250 6250 6015 5775 5540 5040 4905	6250 6250 5865 5540 5040 4905	6250 6250 5880 5540 5040 4905	3250 6250 6070 5880 5540 5040 4905	6250 6250 5880 5540 5040 4905	6000 5160 4660 4280 3980 3760 3680	6000 5160 4660 4280 3980 3760 3680	6250 6200 5560 5120 4840 4640 4560	6250 6200 5560 5120 4840 4640 4560
	-20 to 100 200 300 400 500 600 650 700	6170 5655 5450 5280 5025 4730 4575 4425	6170 5655 5450 5280 5025 4730 4575 4425	6170 5655 5450 5280 5025 4730 4575 4425	6250 6250 5865 5540 5040 4905 4630	5805 5505 5315 5125 4885 4595 4440 4270	6250 6250 6015 5775 5540 5040 4905 4730	6250 6250 5865 5540 5040 4905 4630	6250 6250 5880 5540 5040 4905 4730	3250 6250 6070 5880 5540 5040 4905 4730	6250 6250 5880 5540 5040 4905 4730	6000 5160 4660 4280 3980 3760 3680 3620	6000 5160 4660 4280 3980 3760 3680 3620	6250 6200 5560 5120 4840 4640 4560 4520	6250 6200 5560 5120 4840 4640 4560 4520
0	-20 to 100 200 300 400 500 600 650 700 750	6170 5655 5450 5280 5025 4730 4575 4425 4230	6170 5655 5450 5280 5025 4730 4575 4425 4230	6170 5655 5450 5280 5025 4730 4575 4425 4230	6250 6250 6070 5865 5540 5040 4905 4630 4230	5805 5505 5315 5125 4885 4595 4440 4270 3970	6250 6250 5775 5540 5040 4905 4730 4430	6250 6250 5865 5540 5040 4905 4630 4230	6250 6250 6070 5880 5540 5040 4905 4730 4430	3250 6250 5880 5540 5040 4905 4730 4430	6250 6250 6070 5880 5540 5040 4905 4730 4430	6000 5160 4660 4280 3980 3760 3680 3620 3560	6000 5160 4660 4280 3980 3760 3680 3620 3560	6250 6200 5560 5120 4840 4640 4560 4520	6250 6200 5560 5120 4840 4640 4560 4520
500	-20 to 100 200 300 400 500 600 650 700 750 800	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430	6250 6250 5865 5540 5040 4905 4630 4230 3430	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255	6250 6250 6015 5775 5540 5040 4905 4730 4430 4230	6250 6250 5865 5540 5040 4905 4630 4230 3430	6250 6250 5880 5540 5040 4905 4730 4430 4230	3250 6250 6070 5880 5540 5040 4905 4730 4430 4230	6250 6250 5880 5540 5040 4905 4730 4430 4230	6000 5160 4660 4280 3980 3760 3680 3680 3620 3560 3520	6000 5160 4660 4280 3980 3760 3680 3620 3560 3520	6250 6200 5560 5120 4840 4640 4560 4520 4430 /	6250 6200 5560 5120 4840 4640 4560 4520
2500	-20 to 100 200 300 400 500 600 650 700 750 800 850	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485	6250 6250 6015 5775 5540 5040 4905 4730 4430 4230 4060	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060	3250 6250 6070 5880 5540 5040 4905 4730 4430 4230 4060	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480	6000 5160 4660 4280 3980 3760 3680 3620 3560 3520 3480	6250 6200 5560 5120 4840 4640 4560 4520 4430 /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / /
	-20 to 100 200 300 400 500 600 650 700 750 800 850 900	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685	6250 6250 6015 5775 5540 5040 4905 4730 4430 4230 4060 3745	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115	3250 6250 6070 5880 5540 5040 4905 4730 4430 4230 4060 3745	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3745	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3460	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3460	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / / /
	-20 to 100 200 300 400 500 600 650 700 750 800 850 900 950	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 5775 5540 5040 4905 4730 4430 4230 4060 3745 3655	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115 2285	3250 6250 6070 5880 5540 5040 4905 4730 4430 4230 4060 3745 3145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3745 3220	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3460 3220	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3460 3220	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / / / /
	-20 to 100 200 300 400 500 600 650 700 750 800 850 900 950 1000	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 5775 5540 5040 4905 4730 4430 4230 4230 4060 3745 3655 1800	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115 2285 1655	3250 6250 6070 5880 5540 5040 4905 4730 4430 4230 4060 3745 3145 2115	6250 6250 5880 5540 5040 4905 4730 4430 4230 4230 4060 3745 3220 3030	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3220 3030	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3460 3220 3030	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / / / /
	-20 to 100 200 300 400 500 650 650 700 750 800 850 800 850 900 950 1000	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 6015 5775 5540 4905 4730 4430 4430 4230 4060 3745 3655 1800 1200	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 4905 4730 4430 4230 4060 3115 2285 1655 1200	3250 6250 6070 5880 5540 4905 4730 4430 4230 4060 3745 3145 2115 1430	6250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3220 3030 3000	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3460 3220 3030	6000 5160 4660 4280 3980 3760 3680 3620 3560 3520 3480 3460 3220 3030 3000	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / / / /
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	-20 to 100 200 300 400 500 650 700 750 800 850 800 850 900 950 1000 1050 1100	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 6015 5775 5540 4905 4730 4430 4230 4230 4230 4060 3745 3655 1800 1200 800 545	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5380 5540 5040 4905 4730 4430 4230 4230 4060 3115 2285 1655 1200 830 515	3250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3145 2115 1430 945 630	6250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3220 3030 3000 2515 1855	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3460 3220 3030 3000 2545 1970	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3460 3220 3030 3000 2545 1970	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / / / /
	-20 to 100 200 300 400 500 650 700 750 800 850 900 950 1000 1050 1100 1150 1200	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 6015 5775 5540 4905 4730 4430 4230 4230 4230 4060 3745 3655 1800 1200 800 545	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115 2285 1655 1200 830 515 285	3250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3145 2115 1430 945 630	6250 6250 5280 5540 5040 4905 4730 4430 4230 4060 3745 3220 3030 3000 2515 1855 1200	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3460 3220 3030 3030 2545 1970 1545	6000 5160 4660 4280 3980 3760 3620 3560 3520 3480 3480 3460 3220 3030 3030 2545 1970 1545	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / / / /
	-20 to 100 200 300 400 500 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 6015 5775 5540 4905 4730 4430 4230 4230 4230 4060 3745 3655 1800 1200 800 545	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115 2285 1655 1200 830 515 285	3250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3145 2115 1430 945 630	6250 6250 5280 5540 5040 4905 4730 4430 4230 4060 3745 3220 3030 3000 2515 1855 1200	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3460 3220 3030 3000 2545 1970 1545	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3480 3460 3220 3030 2545 1970 1545 1230	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4560 4520 4430 / / / / / / / / / / / / / / / / / / /
	-20 to 100 200 300 400 500 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1150 11200 1250 1300	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 6015 5775 5540 4905 4730 4430 4230 4230 4230 4060 3745 3655 1800 1200 800 545	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115 2285 1655 1200 830 515 285	3250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3145 2115 1430 945 630	6250 6250 5280 5540 5040 4905 4730 4430 4230 4060 3745 3220 3030 3000 2515 1855 1200	6000 5160 4660 3980 3760 3680 3520 3520 3480 3460 3220 3030 3220 3030 2545 1970 1545 1230 970	6000 5160 4660 3980 3760 3680 3620 3560 3520 3480 3460 3220 3030 3000 2545 1970 1545 1230 970	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4560 4520 4430 / / / / / / / / / / / / / / / / / / /
	-20 to 100 200 300 400 500 600 650 700 750 800 850 900 950 1000 1050 1100 1150 1200 1250 1300 1350	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6170 5655 5450 5280 5025 4730 4575 4425 4230 3430 2655 1915 1145 715	6250 6250 6070 5865 5540 4905 4630 4230 3430 2655 1855 1145 715	5805 5505 5315 5125 4885 4595 4440 4270 3970 3255 2485 1685 1145	6250 6250 6015 5775 5540 4905 4730 4430 4230 4230 4230 4060 3745 3655 1800 1200 800 545	6250 6250 5865 5540 5040 4905 4630 4230 3430 2655 1855 1145	6250 6250 5880 5540 5040 4905 4730 4430 4230 4060 3115 2285 1655 1200 830 515 285	3250 6250 6070 5880 5540 4905 4730 4430 4230 4230 4060 3745 3145 2115 1430 945 630	6250 6250 5280 5540 5040 4905 4730 4430 4230 4060 3745 3220 3030 3000 2515 1855 1200	6000 5160 4660 3980 3760 3680 3520 3520 3480 3460 3220 3030 3220 3030 2545 1970 1545 1230 970 800	6000 5160 4660 3980 3760 3680 3560 3560 3520 3480 3460 3220 3030 3220 3030 2545 1970 1545 1230 970 800	6250 6200 5560 5120 4840 4640 4560 4520 4430 / / / /	6250 6200 5560 5120 4840 4560 4520 4430 / / / / / / / / / / / / / / / / / / /

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Flange Dimensions - ANSI B16.5 & B16.47

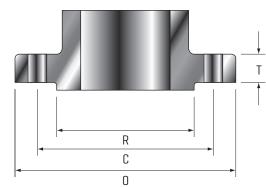


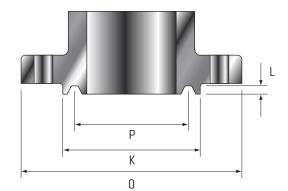




				Raised		Drilling		_			Ring Joint	t	
Class	Size	Flg. Dia.	Flg. Thick.	Face Dia.	Bolt CIrcle Dia.	# of Bolts	Hole Dia.	Face Dia.	Pitch Dia.	Grv. Depth	Grv. Width	Btm. Radius	Ring No.
		0	T	R	C	Donta	Dia.	K	Р	L	F	r	NU.
	2	6.00	0.75	3.62	4.75	4	0.75	4.00	3.250	0.250	0.344	0.03	R22
	2.5	7.00	0.88	4.12	5.50	4	0.75	4.75	4.000	0.250	0.344	0.03	R25
	3	7.50	0.94	5.00	6.00	4	0.75	5.25	4.500	0.250	0.344	0.03	R29
	4	9.00	0.94	6.19	7.50	8	0.75	6.75	5.875	0.250	0.344	0.03	R36
	6	11.00	1.00	8.50	9.50	8	0.88	8.62	7.625	0.250	0.344	0.03	R43
	8	13.50	1.12	10.62	11.75	8	0.88	10.75	9.750	0.250	0.344	0.03	R48
	10	16.00	1.19	12.75	14.25	12	1.00	13.00	12.000	0.250	0.344	0.03	R52
	12	19.00	1.25	15.00	17.00	12	1.00	16.00	15.000	0.250	0.344	0.03	R56
	14	21.00	1.38	16.25	18.75	12	1.12	16.75	15.625	0.250	0.344	0.03	R59
150	16	23.50	1.44	18.50	21.25	16	1.12	19.00	17.875	0.250	0.344	0.03	R64
	18	25.00	1.56	21.00	22.75	16	1.25	21.50	20.375	0.250	0.344	0.03	R68
	20	27.50	1.69	23.00	25.00	20	1.25	23.50	22.000	0.250	0.344	0.03	R72
	22	29.50	1.81	25.25	27.25	20	1.38					/	/
	24	32.00	1.88	27.25	29.50	20	1.38	28.00	26.500	0.250	0.344	0.03	R76
	26	34.25	2.69	29.50	31.75	24	1.38		29.500	0.500	0.781	0.060	R93
	28	36.50	2.81	31.50	34.00	28	1.38		31.500	0.500	0.781	0.060	R94
	30	38.75	2.94	33.75	36.00	28	1.38		33.750	0.500	0.781	0.060	R95
	32	41.75	3.19	36.00	38.50	28	1.62		36.000	0.562	0.906	0.060	R96
	34	43.75	3.25	38.00	40.50	32	1.62		38.000	0.562	0.906	0.060	R97
	36	46.00	3.56	40.25	42.75	32	1.62		40.250	0.562	0.906	0.060	R98
	2	6.50	0.88	3.62	5.00	8	0.75	4.25	3.250	0.312	0.469	0.03	R23
	2.5	7.50	1.00	4.12	5.88	8	0.88	5.00	4.000	0.312	0.469	0.03	R26
	3	8.25	1.12	5.00	6.62	8	0.88	5.75	4.875	0.312	0.469	0.03	R31
	4	10.00	1.25	6.19	7.88	8	0.88	6.88	5.875	0.312	0.469	0.03	R37
	6	12.50	1.44	8.50	10.62	12	0.88	9.50	8.312	0.312	0.469	0.03	R45
	8	15.00	1.62	10.62	13.00	12	1.00	11.88	10.625	0.312	0.469	0.03	R49
	10	17.50	1.88	12.75	15.25	16	1.12	14.00	12.750	0.312	0.469	0.03	R53
	12	20.50	2.00	15.00	17.75	16	1.25	16.25	15.000	0.312	0.469	0.03	R57
0	14	23.00	2.12	16.25	20.25	20	1.25	18.00	16.500	0.312	0.469	0.03	R61
300	16	25.50	2.25	18.50	22.50	20	1.38	20.00	18.500	0.312	0.469	0.03	R65
м Т	18	28.00	2.38	21.00	24.75	24	1.38	22.62	21.000	0.312	0.469	0.03	R69
	20	30.50	2.50	23.00	27.00	24	1.38	25.00	23.000	0.375	0.531	0.06	R73
	22	33.00	2.62	25.25	29.25	24	1.62	27.00	25.000	0.438	0.594	0.06	R81
	24	36.00	2.75	27.25	32.00	24	1.62	29.50	27.250	0.438	0.656	0.06	R77
	26	38.25	3.31	29.50	34.50	28	1.75	31.88	29.500	0.500	0.781	0.06	R93
	28	40.75	3.56	31.50	37.00	28	1.75	33.88	31.500	0.500	0.781	0.06	R94
	30	43.00	3.75	33.75	39.25	28	1.88	36.12	33.750	0.500	0.781	0.06	R95
	32	45.25	3.94	36.00	41.50	28	2.00	38.75	36.000	0.562	0.906	0.06	R96
	34	47.50	4.12	38.00	43.50	28	2.00	40.75	38.000	0.562	0.906	0.06	R97
	36	50.00	4.38	40.25	46.00	32	2.12	43.00	40.250	0.562	0.906	0.06	R98

Flange Dimensions - ANSI B16.5 & B16.47







				Raised		Drilling		U			Ring Joint	2	
Class	Size	Flg. Dia.	Flg. Thick.	Face Dia.	Bolt CIrcle Dia.	# of Bolts	Hole Dia.	Face Dia.	Pitch Dia.	Grv. Depth	Grv. Width	Btm. Radius	Ring No.
		0	Т	R	C	DUILS	Dia.	K	Р	L	F	r	NU.
	2	6.50	1.00	3.62	5.00	8	0.75	4.25	3.250	0.312	0.469	0.03	R23
	2.5	7.50	1.12	4.12	5.88	8	0.88	5.00	4.000	0.312	0.469	0.03	R26
	3	8.25	1.25	5.00	6.62	8	0.88	5.75	4.875	0.312	0.469	0.03	R31
	4	10.75	1.50	6.19	8.50	8	1.00	6.88	5.875	0.312	0.469	0.03	R37
	6	14.00	1.88	8.50	11.50	12	1.12	9.50	8.312	0.312	0.469	0.03	R45
	8	16.50	2.19	10.62	13.75	12	1.25	11.88	10.625	0.312	0.469	0.03	R49
600	10	20.00	2.50	12.75	17.00	16	1.38	14.00	12.750	0.312	0.469	0.03	R53
9	12	22.00	2.62	15.00	19.25	20	1.38	16.25	15.000	0.312	0.469	0.03	R57
	14	23.75	2.75	16.25	20.75	20	1.5	18.00	16.500	0.312	0.469	0.03	R61
	16	27.00	3.00	18.50	23.75	20	1.62	20.00	18.500	0.312	0.469	0.03	R65
	18	29.25	3.25	21.00	25.75	20	1.75	22.62	21.000	0.312	0.469	0.03	R69
	20	32.00	3.50	23.00	28.50	24	1.75	25.00	23.000	0.375	0.531	0.06	R73
	22	34.25	3.75	25.25	30.62	24	1.88	27.00	25.000	0.438	0.594	0.06	R81
	24	37.00	4.00	27.25	33.00	24	2.00	29.50	27.250	0.438	0.659	0.06	R77
	2	8.5	1.5	3.62	6.5	8	1	4.88	3.75	0.312	0.469	0.03	R24
	2.5	9.62	1.62	4.12	7.50	8	1.12	5.39	4.250	0.312	0.469	0.03	R27
	3	9.50	1.50	5.00	7.50	8	1.00	6.12	4.875	0.312	0.469	0.03	R31
	4	11.50	1.75	6.19	9.25	8	1.25	7.12	5.875	0.312	0.469	0.03	R37
	6	15.50	2.19	8.50	12.50	12	1.25	9.50	8.312	0.312	0.469	0.03	R45
0	8	18.50	2.50	10.62	15.50	12	1.50	12.12	10.625	0.312	0.469	0.03	R49
00	10	21.50	2.75	12.75	18.50	16	1.50	14.25	12.750	0.312	0.469	0.03	R53
900	12	24.00	3.12	15.00	21.00	20	1.50	16.50	15.000	0.312	0.469	0.03	R57
	14	25.25	3.38	16.25	22.00	20	1.62	18.38	16.500	0.438	0.656	0.06	R62
	16	27.75	3.50	18.50	24.25	20	1.75	20.62	18.500	0.438	0.656	0.06	R66
	18	31.00	4.00	21.00	27.00	20	2.00	23.38	21.00	0.500	0.781	0.06	R70
	20	33.75	4.25	23.00	29.50	20	2.12	25.50	23.000	0.500	0.781	0.06	R74
	24	41.00	5.50	27.25	35.50	20	2.62	30.38	27.250	0.625	1.062	0.09	R78
	2	8.50	1.50	3.62	6.50	8	1.00	4.88	3.750	0.312	0.469	0.03	R24
	2.5	9.62	1.62	4.12	7.50	8	1.12	5.38	4.250	0.312	0.469	0.03	R27
	3	10.50	1.88	5.00	8.00	8	1.25	6.62	5.375	0.312	0.469	0.03	R35
	4	12.25	2.12	6.19	9.50	8	1.38	7.62	6.375	0.312	0.469	0.03	R39
	6	15.50	3.25	8.50	12.50	12	1.50	9.75	8.312	0.375	0.531	0.06	R46
0	8	19.00	3.62	10.62	15.50	12	1.75	12.50	10.625	0.438	0.656	0.06	R50
1500	10	23.00	4.25	12.75	19.00	12	2.00	14.62	12.750	0.438	0.656	0.06	R54
2	12	26.00	4.88	15.00	22.50	16	2.12	17.25	15.000	0.562	0.906	0.06	R58
	14	29.50	5.25	16.25	25.00	16	2.38	19.25	16.500	0.625	1.062	0.09	R63
	16	32.50	5.75	18.50	27.75	16	2.62	21.50	18.500	0.688	1.188	0.09	R67
	18	36.00	6.38	21.00	30.50	16	2.88	24.12	21.000	0.688	1.188	0.09	R71
	20	38.75	7.00	23.00	32.75	16	3.12	26.50	23.000	0.688	1.312	0.09	R75
	24	46.00	8.00	27.25	39.00	16	3.62	31.25	27.250	0.812	1.438	0.09	R79
	2	9.25	2.00	3.62	6.75	8	1.00	4.48	4.000	0.312	0.469	0.030	R26
	2.5	10.50	2.25	4.12	7.75	8	1.13	5.86	4.375	0.375	0.531	0.060	R28
	3	12.00	2.62	5.00	9.00	8	1.25	6.61	5.000	0.375	0.531	0.060	R32
2500	4	14.00	3.00	6.19	10.75	8	1.50	7.99	6.188	0.438	0.656	0.060	R38
0	5	16.50	3.62	7.31	12.75	8	1.75	9.48	7.500	0.500	0.781	0.060	R40
5	6	19.00	4.25	8.50	14.50	8	2.00	10.98	9.000	0.500	0.781	0.060	R47
	8	21.75	5.00	10.62	17.25	12	2.00	13.38	11.000	0.562	0.906	0.060	R51
	10	26.50	6.50	12.75	21.75	12	2.50	16.73	13.500	0.688	1.188	0.090	R55
	12	30.00	7.25	15.00	24.38	12	2.75	19.48	16.000	0.688	1.312	0.090	R60
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Industry Standards for Valve Manufacturing

This information is for reference only.

American Society of Mechanical Engineers (ASME)

- ASME Code Boiler & pressure vessel code
- ASME A13.1 Scheme for the identification of piping systems
- ASME B1.1 Unified inch screw threads, UN, & UNR thread form ASME B1.5 - ACME screw threads
- ASME B1.7M Nomenclature, definitions, & letter symbols for screw threads
- ASME B1.8 Stub ACME screw threads
- ASME B1.12 Class 5 interference fit thread ASME B1.20.1 - Pipe threads, general purpose, inch
- ASME B1.20.3 Dry-seal pipe threads, inch
- ANSI/ASME B16.1 Cast iron pipe flanges & flanged fittings
- ANSI/ASME B16.5 Pipe flanges & flanged fittings: NPS 1/2" 24'
- ASME B16.9 Factory made wrought steel buttwelding fittings
- ANSI/ASME B16.10 Face-to-face & end-to-end dimensions of valves
- ASME B16.11 Forged fittings, socket welding & threaded
- ASME B16.20 Metallic gaskets for pipe flanges: ring joint spiral wound & jacketed ASME B16.21 - Non-metallic flat gaskets for pipe flanges
- ASME B16.25 Buttwelding ends ANSI/ASME B16.33 - Manually operated metallic gas valves for use in gas piping systems up to 125 PSI (sizes NPS 1/2" - 2") ANSI/ASME B31.1 - Power piping
- ANSI/ASME B31.3 Process piping
- ANSI/ASME B16.34 Valves flanged, threaded & welding end
- ANSI/ASME B16.36 Orifice flanges ANSI/ASME B16.38 - Large metallic valves for gas distribution (manually operated, NPS 2-1/2" - 12", 125 PSIG maximum)
- ANSI/ASME B16.42 Ductile iron pipe flanges & flanged fittings: classes 150 & 300
- ANSI/ASME B16.47 Large diameter steel flanges

ANSI B17.1 - Kevs & kevseats

- ANSI B18.2.2 Square & hex nuts
- ASME B31.4 Pipeline transportation systems for liquid hydrocarbons & other ammonia & alcohols ANSI/ASME B31.8 - Gas transmission & distribution piping systems
- ANSI/ASME B36.10 Welded & seamless wrought steel pipe
- ANSI/ASME B36.19 Stainless steel pipe
- ANSI FCI-2 Control valve seat leakage

American Society Non-destructive Test (ASNT)

ASNT-TC-1A - Recommended practice no. SNT-TC-1A 1996

American Society for Testing and Materials (ASTM)

American Petroleum Institute (API)

- API RP 574 Inspection practices for piping system components
- API 589 Fire test for evaluation of valve stem packing
- API RP 591 Process valve qualification procedure API 594 - Check valves-flanged, lug, wafer & buttwelding
- API 597 Steel venturi gate valves, flanged, buttwelding ends
- API 598 Valve inspection & testing
- API 599 Metal plug valves flanged, welding ends
- API 601 Metallic gaskets for raised-face pipe flanges & flanged connections (double-jacketed corrugated & spiral wound)
- API 600 Bolted bonnet steel gate valves for petroleum & natural as industries "ISO adoption from ISO 10434"
- API 602 Steel gate, globe, & check valves for sizes DN100 and smaller for the petroleum & natural gas industries
- API 603 Corrosion-resistant, bolted bonnet gate valves-flanged & buttweld ends
- API 604 Ductile iron gate valves, flanged ends
- API 605 Large-diameter carbon steel flanges (nominal pipe sizes 26" 60", classes 75, 150, 300, 400, 600, & 900 (replaced by ANSI/ASME B16.47)
- API 606 Compact steel gate valves, extended body (included in API 602) fire test for soft-seated quarter-turn valves "ISO adoption from ISO 10497-5 2004"
- API 607 Fire test for soft-seated quarter-turn valves "ISO adoption from ISO 10497-5 2004"
- API 608 Metal ball valves, flanged, threaded, & welding ends
- API 609 Butterfly valves-double flanged, lug- & wafer-type
- API RP 941 Steel for hydrogen service at elevated temperatures & pressures in petroleum refineries & petrochemical plants
- API RP 520, Part 1 Sizing, selection & installation of pressure relieving devices in refineries
- API RP 520, Part 2 Sizing, selection & installation of pressure relieving devices in refineries devices in refineries
- API Spec 6A Specification for wellhead & christmas tree equipment
- API Spec 6D Specifications for pipeline valves
- API Spec 14D Specifications for wellhead surface safety valves & underwater safety valves for offshore service
- API 5B Threading, gauging thread inspection of coring, tubing, & line pipe threads API 6AM - Material toughness
- API 6FA Fire test for valves
- API 6FC Fire test for valves with backseats
- API 6FD Specification for fire test for check valves
- API Q1 Specification for quality programs for the petroleum, petrochemical, & natural gas

National Association of Corrosion Engineers (NACE)

MR0175 - Sulfide stress cracking resistant metallic materials for oil field equipment MR0103 - Materials resistant to sulfide street cracking in corrosive petroleum refining environments

Canadian Standards Association

B51-97 - Boiler, pressure vessel, & pressure piping code Z245.15-96 - Steel valves CAN3-z299.4-85 - Quality assurance program - Category 4 CAN3-z299.3-85 - Quality assurance program - Category 3

British Standards Institute (BS)

- BS 1414 Gate, wedge & double disk valves: steel
- BS 1868 Check valves: steel
- BS 1873 Globe & check valves: steel
- BS 2080 Flanged & buttweld end steel valves BS 5146 - (withdrawn) Replaced by BS 6755 p.1 steel valves testing (1986) & BS 6755 p.2 (1984)
- BS 5152 Globe & check: cast iron
- BS 5153 Check: cast iron
- BS 5159 Ball: cast iron & carbon steel
- BS 5160 Globe & check: steel
- BS 5163 Gate, wedge & double disk; cast iron
- BS 5351 Ball: steel
- BS 5352 Globe & check: steel
- BS 5418 (withdrawn) Replaced by BS EN 19 (1992) marking: general purpose industrial
- BS 5840 Valve mating details for actuator operation
- BS 6364 Cryogenic
- BS 6683 Guide: installation & use of valves
- BS 6755: Part 1 Specification for production pressure testing requirements
- BS 6755: Part 2 Specification for fire type-testing requirements
- BS EN 19 Marking of general purpose industrial valves

International Organization for Standardization

ISO 521.1/1 - Industrial valves- part-turn actuator attachments ISO 5211/2 - Part-turn valve actuator attachment-flange & coupling performance characteristics ISO 5211/3 - Part-turn valve actuator attachment-dimensions of driving components ISO 5752 - Metal valves for use in flanged pipe systems face-to-face & center-to-face dimensions ISO 9000 - Quality management systems and fundamentals & vocabulary ISO 10012-1 - Quality assurance requirements for measuring equipment

Manufacturers Standardization Society

- SP-6 Standard finishes for contact faces of pipe flanges & connecting-end flanges of valves & fittings
- SP-9 Spot facing for bronze, iron & steel flanges

SP-70 - Cast iron gate valves, flanged & threaded ends

SP-71 - Grav iron swing check valves, flanged & threaded ends

SP-81 - Stainless steel, bonnetless, flanged knife gate valves

SP-72 - Ball valves with flanged or butt-welding ends for general service

- SP-25 Standard marking system for valves, fittings, flanges & unions
- SP-42 Class 150 corrosion resistant gate, globe, angle, & check valves with flanged & buttweld ends
- SP-44 Steel pipeline flanges
- SP-45 Bypass & drain connections
- SP-51 Class 150/w corrosion resistant cast flanges & flanged fittings
- SP-53 Quality standard for steel castings & forgings for valves, flanges, & fittings & other piping components: magnetic particle exam method
- SP-54 Quality standard for steel castings for valves, flanges, & fittings and other piping components: radiographic examination method
- SP-55 Quality standard for steel castings for valves, flanges other piping components-visual method for evaluation of surface irregularities
- SP-60 Connecting flange joint between tapping sleeves & tapping valves
- SP-61 Pressure testing of steel valves

SP-79 - Socket-welding reducer inserts

SP-82 - Valve pressure testing methods

SP-84 - Valves - socket welding & threaded ends SP-85 - Cast iron globe & angle valves, flanged & threaded ends

SP-91 - Guidelines for manual operation of valves

liquid penetrant exam method

SP-117 - Bellows seals for clobe & cate valves

refinery service)

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components - ultrasonic exam method

SP-98 - Protective coatings for the interior of valves, hydrants, & fittings

SP-110 - Ball valves threaded, socket-welding, solder joint, grooved, & flared ends

SP-120 - Flexible graphite packing system for rising stem steel valves (design requirements) SP-121 - Qualification testing methods for stem packing for rising stem steel valves

SP-96 - Guidelines on terminology for valves & fittings

SP-65 - High pressure chemical industry flanges & threaded stubs for use with lens gaskets

SP-86 - Guidelines for metric data in standards for valves, flanges, fittings & actuators

SP-93 - Quality standard for steel castings & forgings for valves, flanges & fittings & other piping components-

SP-94 - Quality standard for ferritic & martensitic steel castings for valves, flanges, & fittings and others piping

SP-101 - Part-turn valve actuator attachment-flange and driving component dimensions & performance characteristics

SP-102 - Multi-turn valve actuator attachment: flange and driving component dimensions & performance characteristics

SP-118 - Compact steel globe and check valves-flanged, flangeless, threaded & welding ends (chemical & petroleum

SP-67 - Butterfly valves SP-69 - ANSI/MSS edition pipe hangers & supports, selection & application

SP-88 - Diaphragm valves

SP-92 - MSS valve user quide

SP-99 - Instrument valves

Terms & Conditions

Quotation Validity

This quotation is valid for 30 days from the date quotation is sent. Validity on special metals, including Stainless Steel, is 14 days from the date the quotation is sent. All products offered from stock are subject to prior sale.

Shipments

All items quoted are EXW our Dock - [Ex Works - SCV Valve Facility Sante Fe, Texas 77510] - unless otherwise noted and agreed to in writing. Shipment may be billed either third party billing to the buyer or freight collect. Shipment dates offered above are forecasted delivery lead times and are estimated from the date payment terms (acceptable to seller) are established, clarification is received on all technical information, and resolution of customer's written approval of drawings is received (when required). The equipment quoted shall be packed in accordance with seller's standard packing procedure unless otherwise noted and agreed to in writing by the seller.

Force Majeure

If in the case of an act of God, war, riot, fire, explosion, flood, or any other circumstances of whatsoever nature which are beyond the control of the seller and which in any way affect the ability of the seller to fulfill its delivery obligations, the delivery is hindered, impeded, or delayed the seller shall be exonerated from all responsibilities and reserves the right to postpone the delivery beyond the original schedule.

Payment terms

All terms are to be negotiated. Credit cards accepted [Master Card, Visa, American Express].

Purchase Orders

All buyer's purchase orders supplied to the seller are to be written in the English language

Prices

All prices quoted are in USD as per the preceding pricing schedule. The minimum order value is \$5,000.00 (five thousand dollars), unless otherwise agreed to by seller. If for some reason any items are changed or additions to the order required, seller reserves the right to adjust prices accordingly. All sales are subject to approval of seller's credit department. If buyer fails to meet the agreed upon and established commercial terms of the contract, the seller may with-hold all subsequent deliveries until such time that the original commercial terms of the contract have been met by the buyer [or subsequent commercial terms have been agreed upon by the seller with the buyer].

Intellectual Property

All specifications, illustrations, drawings, certificates, and other particulars supplied by seller remain the intellectual property of the seller and should not be disclosed to any third party without the prior written consent of seller.

Governing Law; Arbitration; Jurisdiction

The terms and conditions of this quotation and any subsequent purchase order shall be construed, interpreted, and performed exclusively according to the laws of the State of Texas, USA. The courts of such state shall have exclusive jurisdiction out of all controversies arising out of or in connection with this agreement. The parties consent that process may be served upon them in any such action by registered mail at the address stated for Buyer on its purchase order, and upon SCV Valve at the address noted above in Santa Fe, Texas, or personally within or without the State of Texas. Any legal action with respect to any agreement must be commenced within one year after the cause of action has accrued. The provisions of the Uniform Commercial Code as adopted by the State of Texas, and not under the United Nations Convention on Contracts for the International Sale of Goods, shall apply.

Warranty

All seller's products are guaranteed against defects in workmanship for a period of twelve (12) months after being placed in service, but not exceeding eighteen (18) months after shipment, when products are properly installed per seller specifications and used within the service and pressure range for which they were manufactured. Full risk of loss shall pass to the buyer upon delivery at FOB point, or destination port in case of CIF. This guarantee is limited to the replacement of any valve parts/components found to be defective either in material or workmanship. This guarantee does not extend to costs of labor, freight, or any other consequential charges. The unauthorized use of third party components and workmanship in seller's products voids this warranty.

Limitation of Liability

The liability of the seller under this agreement or with respect to any products supplied or services performed pursuant to this agreement, whether in contract, in tort, in strict liability or otherwise, shall not exceed the purchase price paid by the buyer with respect thereto. In no event will the seller be liable in contract, in tort, in strict liability or otherwise for any special, indirect, incidental, or consequential damages. This is including but not limited to loss of anticipated profits or revenues, loss of use, non-operation or increased expense of operation of equipment, cost of capital, or claims from customer or buyer for failure or delay in achieving anticipated profits or products.

Cancellation

No contract may be canceled by the buyer except upon written notice to seller and upon payment to seller of all costs incurred by the contract arising out of, or in connection with, the contract. Export of goods covered hereby is subject to United States Customs Control. Standard stocking items will be subject to a twenty-five percent [25%] restocking and/or cancellation charge. Non-standard stocking items will be subject to a one-hundred percent [100%] restocking and/or cancellation charge.

Cancellation Charge

The following indicates the rates of cancellation charge of contract value for project manufactured items and/or special engineered items at various stages of production:

- · Time of cancellation: Order Acknowledgement and prior to Engineering engagement.
- Time of cancellation: After start of engineering but prior to release to production.
- · Time of cancellation: After release to production but prior to completion of fabrication.
- Time of cancellation: After completion of fabrication.

Cancellation Charge: 10% Cancellation Charge: 30% Cancellation Charge: 80% Cancellation Charge: 100%

Return of Goods

No product shall be returned to seller without written authorization and shipping instructions having been obtained from seller. Products authorized for returns are to be shipped freight pre-paid to the SCV Valve Facility identified in writing, unless otherwise notified, and are subject to seller's standard re-stocking fees.

Documentation

MTR's are available at no charge upon request. The seller's standard document package is per ISO 10474 3.1B requirements. Additional requested documentation is subject to charge.

Inspection

The customer or his authorized representative may, with four [4] weeks prior notice given to seller, visually inspect products manufactured by seller. Such seller approved inspections will be carried out in accordance with seller's standard or seller approved customer inspection procedures. If any inspection or documentation requested by the customer is over and beyond the scope and criteria initially agreed to by the seller, any costs incurred by conducting such inspection or preparation of special documents shall be paid by the buyer prior to release of the items for shipment.

Witness Hydro-testing

Witness hydro-testing is available at a cost. A scope of buyers inspection request is to be provided to seller at order placement. Late notice of such requested inspection is subject to additional costs. The cost associated with such witness hydro request is to be agreed on prior to any such testing taking place. Payment of this type of testing to be negotiated. Additionally, any costs associated with a third party inspector will not be at the sellers expense.

The SCV valve brand was established in 1972 as a maintenance and modification company with the ability to provide full in-line valve service and repair. In the mid-1970's, after experiencing many shortcomings of other valve products in the industry, the first SCV valve was manufactured. Since that time, the SCV brand has been expanded its manufactured products to cover a broad range of valves. Industries served include the power, paper and pulp, oil and gas, and petro-chemical sectors.

SCV Valve takes sincere pride in our ability to manufacture both commodity and specialty valves that meet and exceed the needs of our customers. All sizes, pressure classes, and metallurgical compositions are managed in house utilizing the strictest quality control measures to ensure the customer's total satisfaction.

SCV Valve products include thru conduit gates, trunnion mounted balls, floating balls, wedge gates, full port swing checks, piston checks, and lubricated plugs. Valves utilized throughout the industry must meet rigorous quality and production standards. SCV Valve has earned its API 6A, API 6D, ISO: 9001, CE-PED, and CRN certifications while operating under the API Q1 Quality Management System.

With years of dedication and commitment to quality, design, and service, SCV Valve has grown to be one of the premier valve manufacturers in the industry with the largest inventory of high pressure ball, gate, and check valves. We pride ourselves on our high quality products, timely delivery capabilities, and competitive prices.

On behalf of all of the members at SCV Valve, we thank you for the opportunity to earn your business.

Sincerely, Maria

Sid McCarra President SCV Valve, LLC

Since 1972, the SCV brand has been committed to providing quality flow control products to the Power, Paper & Pulp, Oil & Gas, and Petro Chemical industries.

As one of the largest valve manufacturers, SCV Valve's reputation is unparalleled for producing high quality commodity and specialty valves. Products range in sizes 1/2" - 48", in pressure classes from 150# - 2500# and are backed by timely deliveries and competitive prices.

> Call SCV today at [281]482-4728 for all your valve needs or visit us on the web @ www.scvvalve.com.

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