

# INTERNATIONAL VALVE TECHNOLOGIES

## FUSION FORGED SERIES

Forged Steel, Gate, Globe,  
Check, Ball, Piston &  
Bellows Seal Valves



**Size Range: 1/2" to 2"**  
**Pressure Class: 150 - 2500**



### *Our Products*



# INTERNATIONAL VALVE TECHNOLOGIES



International Valve Technologies made its presence in 2007 as a Forged Steel Valve Division. IVT is a globally recognized manufacturer of Forge Steel ball valves and butterfly valves with manufacturing operation in India, Taiwan, and China supported by a worldwide distribution network.

We are professionally managed ISO 9001-2015 & IBR approved firm. Perfection in design, stringent quality checks at every manufacturing stage, unmatched performance, and prompt after sales service are some of the salient features of our business, IVT provides maximum safety, reliability and suitability virtually in all branches of Industrial Applications.

## MODEL NUMBER IDENTIFIER

VALVE TYPE		END CONNECTION		PRESSURE CLASS					
CV	Check Valve - Swing (Cast)	1	THREADED	150	ANSI 150				
GV	Gate Valve (Cast)	2	SOCKET WELD	300	ANSI 300				
GL	Globe Valve (Cast)	3	BUTT WELD	800	API 800				
GVF	Gate Valve (Forged)	4	FLANGED	1500	API 1500				
GLF	Globe Valve (Forged)	*	CONSULT FACTORY FOR ADDITIONAL MODELS	2500	API 2500				
CVF	Check Valve - Lift (Forged)			*	CONSULT FACTORY FOR ADDITIONAL MODELS				
BVF	Ball Valve (Forged)								
BVFF	Ball Valve - Fire-Safe (Forged)								
PVF	Piston Valve (Forged)								
BSF	Bellow Seal Globe (Forged)								
*	CONSULT FACTORY FOR ADDITIONAL MODELS								
BODY MATERIAL		TRIM		OPERATOR		SIZE		SIZE	
						INCH	MM	INCH	MM
CS	Carbon Steel (A105, WCB)	T1	Trim 1	H*	Handwheel*	1/2"	15	8"	200
SS	Stainless Steel (CF8M)	T2	Trim 2	CW	Chainwheel	3/4"	20	10"	250
CI	Cast Iron	T3	Trim 3	G	Gear Operator	1"	25	12"	300
PV	PVC	T4	Trim 4	L	Level Operator	1 1/4"	32	14"	350
SL	Stainless Steel (CF3M)	T5	Trim 5	A	Actuator	1 1/2"	40	16"	400
*	SPECIAL ALLOYS AVAILABLE	T6	Trim 6			2"	50	18"	450
		T7	Trim 7			3"	80	20"	500
		T8	Trim 8			4"	100	24"	600
		T9	Trim 9			6"	150	30	750
		T10	Trim 10					36"	900
		T11	Trim 11						
		T12	Trim 12						
		*	ADDITIONAL TRIMS AVAILABLE						

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## Model GVF

**Ideal for General Industrial, Power, Oil & Gas, and Commercial Applications.**

### Technical Features

- Design and Manufacturing conform to API 602 Testing and
- Inspection conform to API 598
- Available in NPT/SW/BW / Flanged end connections
- Conventional Port
- Bolted Bonnet
- OS&Y
- API 624 Emissions Testing



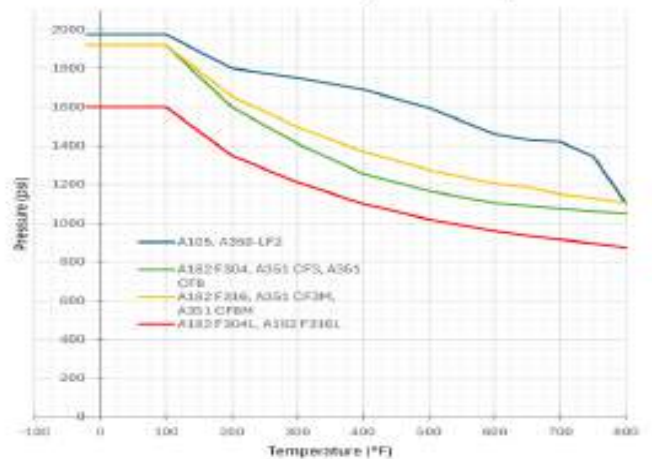
**Size Range: 1/2" to 2"**

### Gate Valve

#### Technical Specifications

Design Standard	API 602/ISO 1541/ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

#### Class 800 Pressure-Temperature Ratings



#### Material of Construction

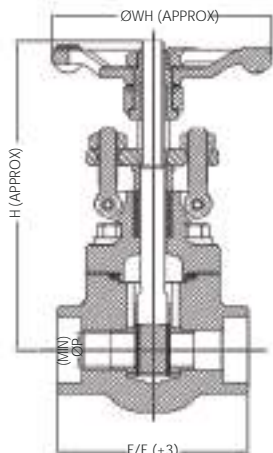
18	BACK SEAT	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL
17	GLAND PACKING	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS
16	HAND WHEEL	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON
15	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
14	STEM NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
13	YOKE SLEEVE	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303
12	EYE BOLT NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
11	GLAND FLANGE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 105	ASTM A 182 GR. F-316
10	EYE BOLT	ASTM A 193 GR. B7	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 193 GR. B7	ASTM A 182 GR. F-316
09	GLAND BUSH	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
08	EYE BOLT PIN	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-316
07	HEX BOLT (*)	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M	ASTM A 193 GR. B16	ASTM A 193 GR. B8M
06	BONNET	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
05	GASKET (*)	SS-316 SPW+GRAPHITE	SS-316 SPW + GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE
04	STEM	ASTM A 182 GR. F6a	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F6a	ASTM A 182 GR. F-51
03	WEDGE	ASTM A 217 GR. CA-15	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M	ASTM A 217 GR. CA-15	ASTM A 182 GR. F-51
02	SEAT RING	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
	<b>DESCRIPTION</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>
		MOC A 105	MOC F-304	MOC F-316	MOC F-22	MOC F-51

\*MOC highlighted in red is IVT's standard trim offering.

\*Marked Parts are not Applicable for Welded 2500#

**Model Number**

**GVF- x -800**



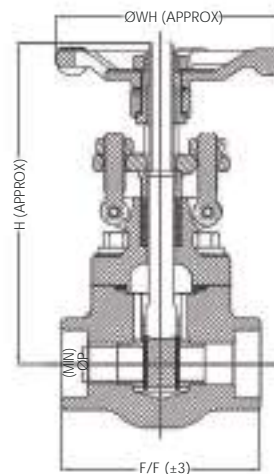
**BOLTED DESIGN**

**Size Range: 1/2" to 2"  
Pressure Class: 150 - 2500**

**Dimensions**

800#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	120	120	130
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
H OPEN (mm)	151	157	186	237	237	268
H CLOSE (mm)	135	137	162	201	201	223
ØWh (mm)	86	86	116	150	150	150
Approx. Weight (Kg)	1.5	1.8	3.1	6.3	6.1	8.3

1500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	80	100	120	120	130	140
ØP (mm)	9.5	12.7	15.9	22.2	27	34.9
H OPEN (mm)	151	178	227	227	256	303
H CLOSE (mm)	138	162	207	207	224	263
ØWh (mm)	86	116	150	150	150	225
Approx. Weight (Kg)	1.7	2.9	6.1	5.9	8.5	13.9



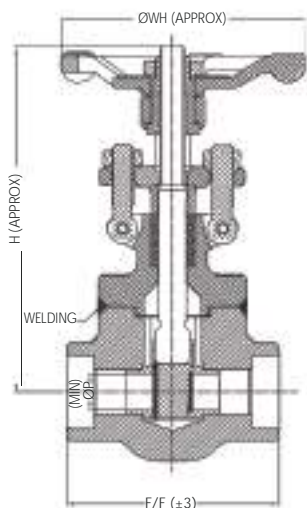
**BOLTED DESIGN**

**Model Number**

**GVF- x -1500**

**Model Number**

**GVF- x -2500**

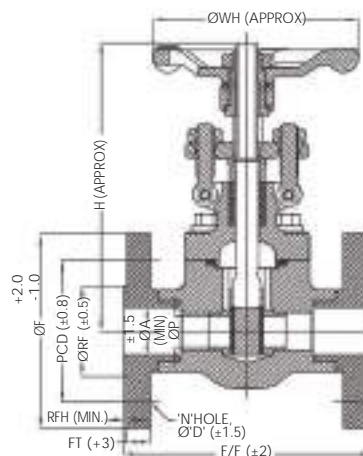


**WELDED DESIGN**

2500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	100	120	130	140	140	-
ØP (mm)	7	12.5	15.5	21.5	26.5	-
H OPEN (mm)	187	224	261	318	318	-
H CLOSE (mm)	174	204	239	290	290	-
ØWh (mm)	116	150	150	225	225	-
Approx. Weight (Kg)	2.9	6.1	8.5	14	13.9	-

150#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	108	117	127	140	165	178
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
ØF (mm)	90	100	110	115	125	150
FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight (Kg)	2.3	2.9	4.6	8.6	8.5	14

\*Flange End Valve also Available in 300#, 600# & Above Class on Request.



**FLANGE END DESIGN**

**Model Number**

**GVF- x -150**

### Model GLF

Ideal for General Industrial, Power, Oil & Gas, and Commercial Applications.

### Technical Features

- Design and Manufacturing conform to API 602 Testing and
- Inspection conform to API 598
- Available in NPT/SW/BW/ Flanged end connections
- Conventional Port
- Bolted Bonnet
- OS&Y
- API 624 Emissions Testing



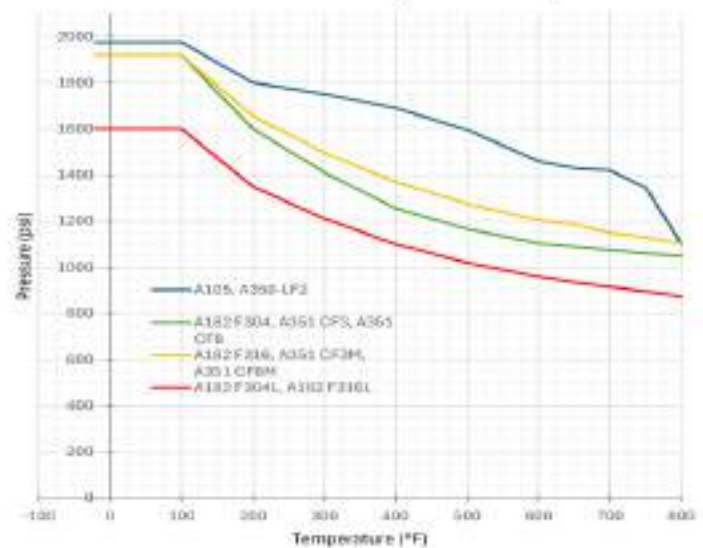
Size Range: 1/2" to 2"

### Gate Valves

#### Technical Specifications

Design Standard	ISO 15761/API602/BS5352/ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Class 800 Pressure-Temperature Ratings



### Material of Construction

18	BACK SEAT	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL	INTEGRAL
17	GLAND PACKING	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS	FLEXIBLE GRAPHITE RINGS
16	HAND WHEEL	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON	MI / SGIRON
15	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
14	STEM NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
13	YOKE SLEEVE	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-303	ASTM A 582 GR. SS-416	ASTM A 582 GR. SS-303
12	EYE BOLT NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M	ASTM A 194 GR. 2H	ASTM A 194 GR. B8M
11	GLAND FLANGE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 105	ASTM A 182 GR. F-316
10	EYE BOLT	ASTM A 193 GR. B7	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 193 GR. B7	ASTM A 182 GR. F-316
09	GLAND BUSH	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51
08	EYE BOLT PIN	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-316
07	HEX BOLT (*)	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M	ASTM A 193 GR. B16	ASTM A 193 GR. B8M
06	BONNET	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
05	GASKET (*)	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE
04	STEM	ASTM A 182 GR. F6a	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F6a	ASTM A 182 GR. F-51
03	PLUG	ASTM A 217 GR. CA-15	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M	ASTM A 217 GR. CA-15	ASTM A 182 GR. F-51
02	SEAT RING	13% CR. INTEGRAL	ASTMA 182GR. F-304INTEGRAL	ASTMA 182GR. F-316INTEGRAL	13% CR. INTEGRAL	ASTM A 182 F-51 INTEGRAL
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51
	DESCRIPTION	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL
		MOC A 105	MOC F-304	MOC F-316	MOC F-22	MOC F-51

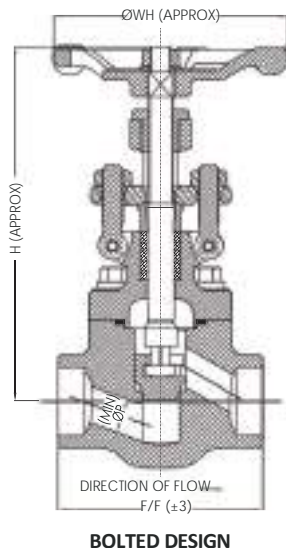
\*Marked Parts are not Applicable for Welded 2500#



## Forged Body Design

### Model Number

**GLF- X- 800/1500**



### Dimensions

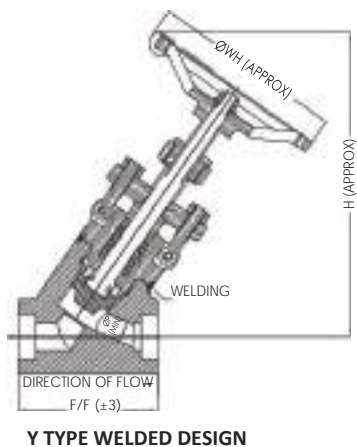
800#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	145	160
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
H OPEN (mm)	159	162	191	228	228	265
H CLOSE (mm)	143	146	171	199	199	236
ØWh (mm)	86	86	116	150	150	150
Approx. Weight (Kg)	1.6	1.8	3.1	6.6	6.3	9.4

1500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	80	100	145	145	160	172
ØP (mm)	8.5	9.5	14.5	20.5	25.5	27.5
H OPEN (mm)	160	174	224	224	239	318
H CLOSE (mm)	148	187	204	204	261	290
ØWh (mm)	86	116	150	150	150	225
Approx. Weight (Kg)	1.9	3.1	6.6	6.5	10	15

2500# Straight Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	100	145	160	172	172	-
ØP (mm)	7	12.5	15.5	21.5	26.5	-
H OPEN (mm)	178	227	256	303	303	-
H CLOSE (mm)	162	207	224	263	263	-
ØWh (mm)	116	150	150	225	225	-
Approx. Weight (Kg)	3.1	6.5	10	15.1	15	-

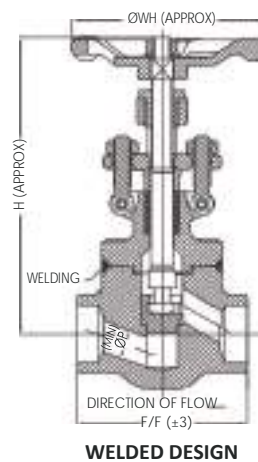
### Model Number

**GLFY- x-2500**



150#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	108	117	127	140	165	203
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
ØF (mm)	90	100	110	115	125	150
FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight (Kg)	2.2	2.9	4.7	4.9	9	12.5

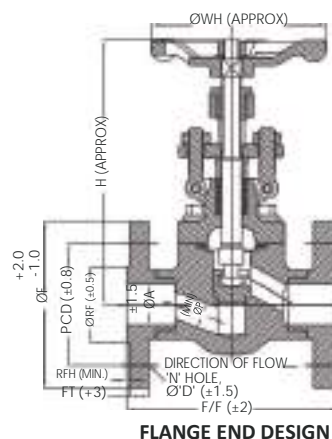
\*Flange End Valve also Available in 300#, 600# & Above Class on Request.



### Model Number

**GLF- x-2500**

2500# Y Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	85	100	105	145	145	145
ØP (mm)	7	12.5	15.5	21.5	26.5	27
H OPEN (mm)	180	222	231	324	324	345
H CLOSE (mm)	175	212	219	309	309	330
ØWh (mm)	116	150	150	225	225	225
Approx. Weight (Kg)	2.5	4	4.6	13.1	13	15



### Model Number

**GLF- X-150**

## CVF MODEL LIFT/PISTON CHECK



**Size Range: 1/2" to 2"**

### Technical Features

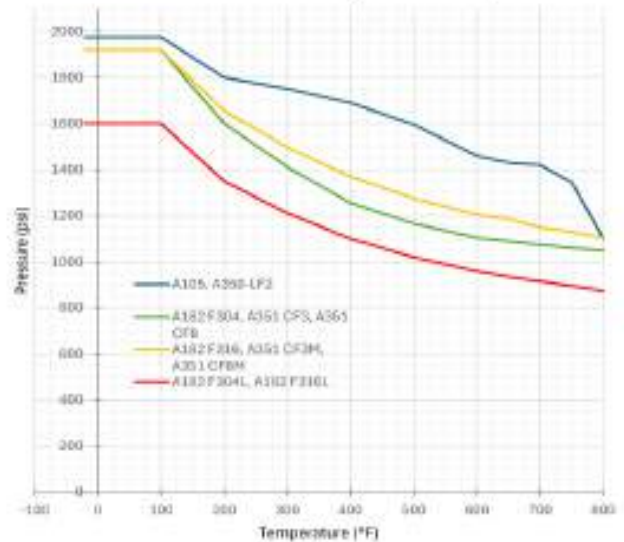
- Design and Manufacturing conform to API 602 Testing and
- Inspection conform to API 598
- Available in NPT/SW/BW/ Flanged end connections
- Conventional Port

### → Check Valves

#### Technical Specifications

<b>Design Standard</b>	ISO 15761/API 602/BS 5352/ASME B16.34
<b>Testing Standard</b>	API 598
<b>Face to Face Standard</b>	Manufacturer's Standard
<b>Socket Weld Standard</b>	ASME B16.11
<b>Screwed End Standard</b>	ASME B1.20.1
<b>Butt Weld Standard</b>	ASME B16.25
<b>Flange End Standard</b>	ASME B16.5

Class 800 Pressure-Temperature Ratings



#### Material of Construction

	08	07	06	05	04	03	02	01
NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
HEX BOLT (*)	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M	ASTM A 193 GR. B16	ASTM A 193 GR. B8M	ASTM A 193 GR. B8M	ASTM A 193 GR. B8M	ASTM A 193 GR. B8M
CHECK PLATE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51
GASKET (*)	SS-316 SPW+GRAPHITE	SS-316 SPW + GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE	SS-316 SPW+GRAPHITE
SPRING	ASTM A 313 SS-304	ASTM A 313 SS-304	ASTM A 313 SS-316	ASTM A 313 SS-304	ASTM A 313 SS-316	ASTM A 313 SS-316	ASTM A 313 SS-316	ASTM A 313 SS-316
PLUG	ASTM A 276 TYPE SS-410	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-410	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51
SEAT RING	13% CR. INTEGRAL	ASTM A 182 GR. F-304 INTEGRAL	ASTM A 182 GR. F-316 INTEGRAL	13% CR. INTEGRAL	ASTM A 182 F-51 INTEGRAL	ASTM A 182 F-51 INTEGRAL	ASTM A 182 F-51 INTEGRAL	ASTM A 182 F-51 INTEGRAL
BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 182 GR. F-22	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51	ASTM A 182 GR. F-51
<b>DESCRIPTION</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>
	MOC A 105	MOC F-304	MOC F-316	MOC F-22	MOC F-51	MOC F-51	MOC F-51	MOC F-51

\*Marked Parts are not Applicable for Welded 2500#

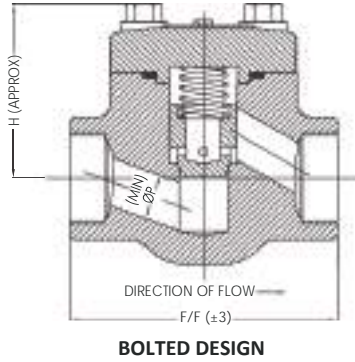
#### Check Valve Cracking Pressure

Size	Piston Type		Y Pattern Piston Type	
	Spring Loaded		Spring Loaded	
15 mm	0.7 Bar		0.7 Bar	
20 mm	0.7 Bar		0.7 Bar	
25 mm	0.7 Bar		0.7 Bar	
40 mm	0.7 Bar		0.7 Bar	
50 mm	0.8 Bar		0.7 Bar	



**Model Number**

**CVF - X -1500/800**



**Dimensions**

800#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	145	160
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
H (mm)	53	56	66	86	86	104
Approx. Weight (Kg)	1.0	1.2	2.1	4.8	4.7	7.7

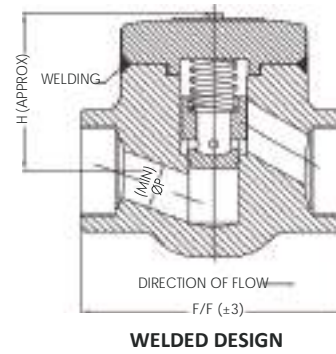
  

1500#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	80	100	145	145	160	172
ØP (mm)	8.5	9.5	14.5	20.5	25.5	27.5
H (mm)	56	66	86	86	104	127
Approx. Weight (Kg)	1.2	2	4.8	4.6	7.2	10.5

2500# Straight Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	100	145	160	172	172	-
ØP (mm)	7	12.5	15.5	21.5	26.5	-
H (mm)	66	86	104	127	127	-
Approx. Weight (Kg)	2	4.6	7.2	10.6	10.6	-

**Model Number**

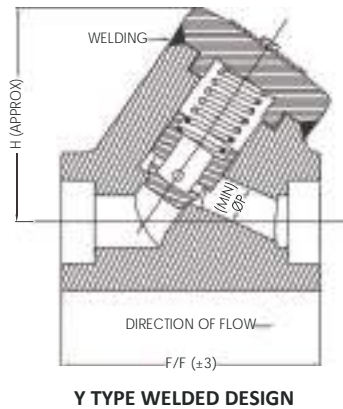
**CVF - X -2500**



2500# Y Type	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	85	100	105	145	145	145
ØP (mm)	7	12.5	15.5	21.5	26.5	27
H (mm)	72	80	86	118	118	124
Approx. Weight (Kg)	1.3	2.1	2.8	7.1	7	9.5

**Model Number**

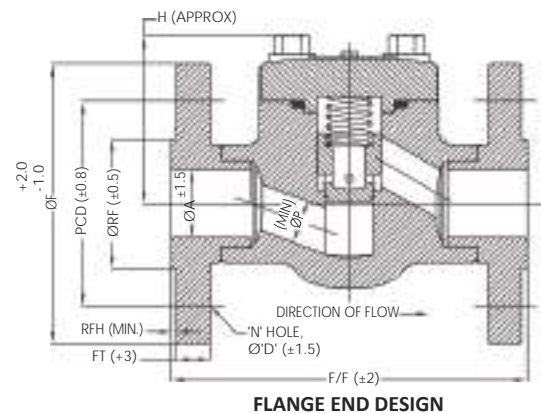
**CVF - X -2500**



**Model Number**

**CVF - X -150**

150#	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
F/F (mm)	108	117	127	140	165	203
ØP (mm)	9.5	12.7	17.5	23.8	28.6	36.5
ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
ØF (mm)	90	100	110	115	125	150
FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight (Kg)	1.7	1.9	3.6	3.8	7.4	11.6

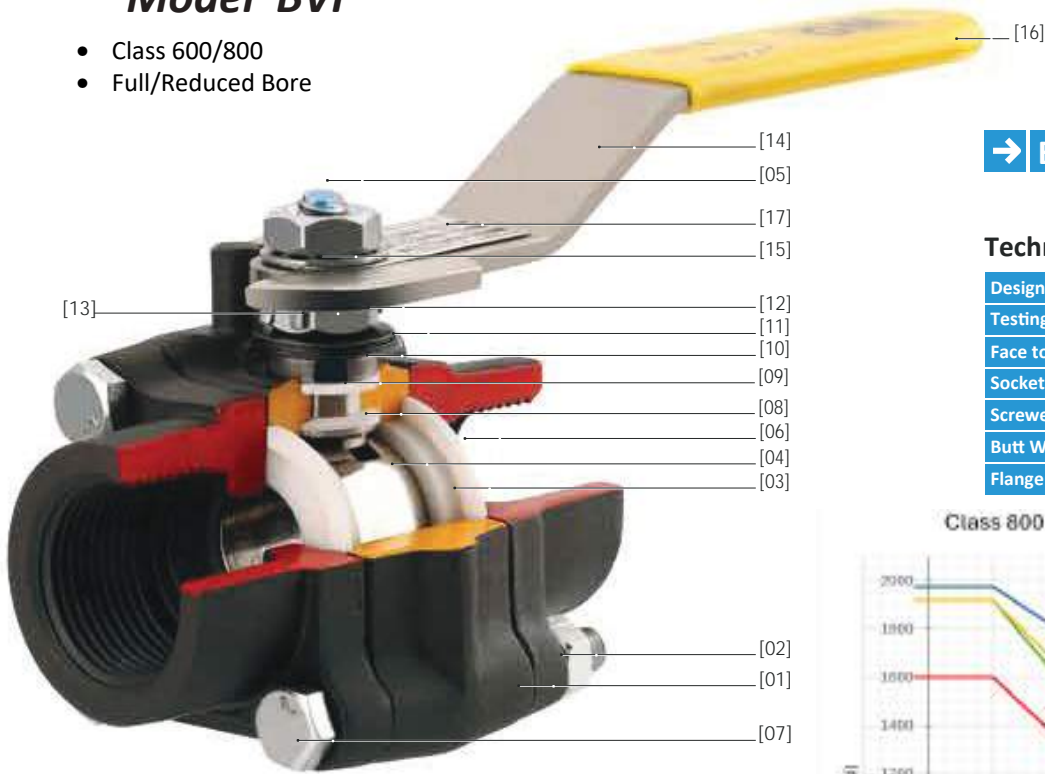


\*Flange End Valve also Available in 300#, 600# & Above Class on Request.

# Forged Ball Valves

## Model BVF

- Class 600/800
- Full/Reduced Bore

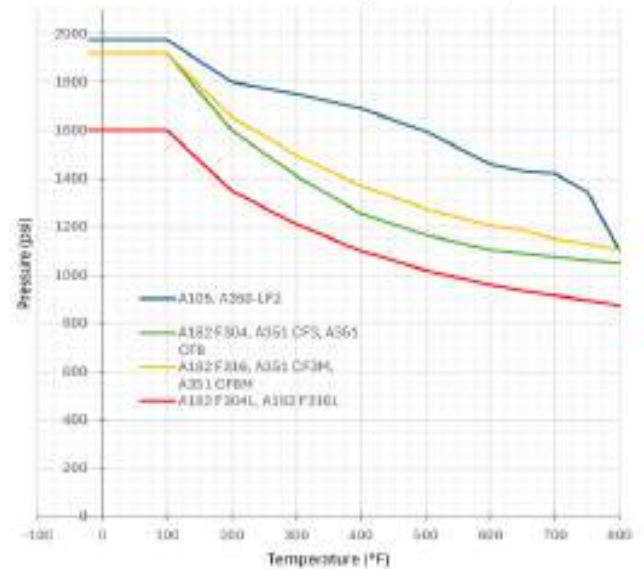


### → Ball Valve

#### Technical Specification

Design Standard	ISO 17292 / BS 5351
Testing Standard	EN12266-1/API 598
Face to Face Standard	Manufacturer's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Class 800 Pressure-Temperature Ratings

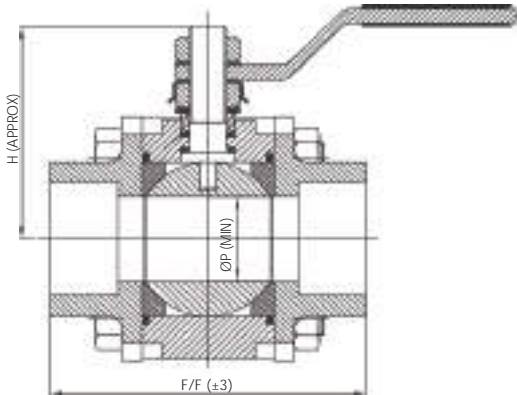


#### Material of Construction

17	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
16	SLEEVE	PVC	PVC	PVC	PVC	PVC
15	STAR WASHER	MS	MS	MS	MS	MS
14	HANDLE	CARBON STEEL	SS-304	SS-304	SS-304	SS-304
13	LOCKING WASHER	MS	MS	MS	MS	MS
12	STEM NUT	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H	ASTM A 194 GR. 2H
11	DISC SPRING	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
10	GLAND BUSH	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316
09	STEM PACKING	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL
08	THRUST WASHER	GLASS FILLED TEFLON	GLASS FILLED TEFLON	GLASS FILLED TEFLON	GLASS FILLED TEFLON	GLASS FILLED TEFLON
07	HEX. BOLTS & NUTS	ASTM A 193 GR. B7/2H	ASTM A 193 GR. B8/8	ASTM A 193 GR. B8M /8M	ASTM A 193 GR. B8/8	ASTM A 193 GR. B8M/8M
06	GASKET	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL	PTFE/CFT/ *GRAFOIL
05	STEM	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316	ASTM A 276 TYPE SS-304	ASTM A 276 TYPE SS-316
04	BALL	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M
03	SEAT	PTFE/CFT	PTFE/CFT	PTFE/CFT	PTFE/CFT	PTFE/CFT
02	END PIECE	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M
01	BODY	ASTM A 105	ASTM A 182 GR. F-304	ASTM A 182 GR. F-316	ASTM A 351 GR. CF8	ASTM A 351 GR. CF8M
	DESCRIPTION	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL
		MOC A 105	MOC F-304	MOC F-316	MOC CF8	MOC CF8M

Size Range: 1/2" to 2"

## Forged Ball Valves *Model BVF*



**NON FIRE SAFE DESIGN**

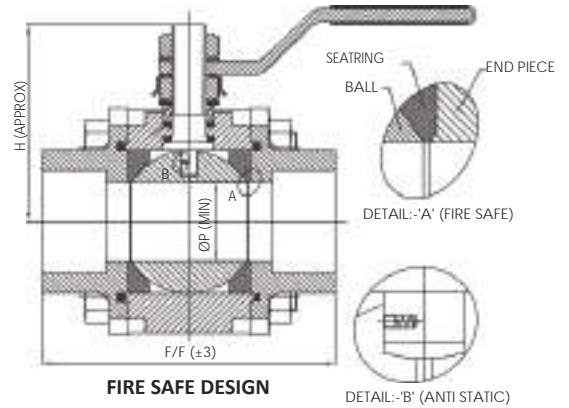
### Dimensions

600#/800#	R.B.	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")	
	F.B.	10mm (3/8")	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
Face To Face	F/F (mm)	68	73	96	103	116	128	142
Bore Diameter	ØP (mm)	10	14	20	25	30.5	37.3	50.5
Height	H (mm)	38	40	53	56	75	80	90
Approx. Weight	W(Kg)	0.6	0.9	1.7	2.3	3.1	4.7	6.2

### Model Number BVF - X -600/800

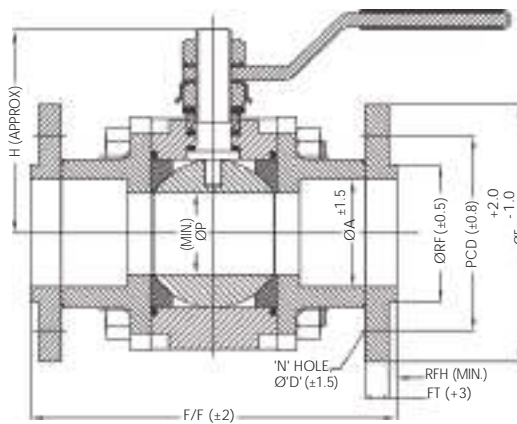
### Model Number BVFF- X - 600/800

600#/800#	R.B.	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")	
	F.B.	10mm (3/8")	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
Face To Face	F/F (mm)	68	73	96	103	116	128	142
Bore Diameter	ØP (mm)	10	14	20	25	30.5	37.3	50.5
Height	H (mm)	38	40	53	56	75	80	90
Approx. Weight	W(Kg)	0.6	0.9	1.7	2.3	3.1	4.7	6.2



**FIRE SAFE DESIGN**

### Model Number BVF - X -150



**FLANGE END DESIGN**

150#		15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1-1/4")	40mm (1-1/2")	50mm (2")
Face To Face	F/F (mm)	108	117	127	140	165	178
Bore Diameter	ØP (mm)	10	14	20	25	30.5	37.3
Flange Bore	ØA (mm)	15.7	20.9	26.7	35	40.9	52.5
Flange Dia	ØF (mm)	90	100	110	115	125	150
Flange Thickness	FT (mm)	9.6	11.2	12.7	14.3	15.9	17.5
Raised Face	ØRF (mm)	34.9	42.9	50.8	63.5	73	92.1
Raise Face Height	RFH (mm)	1.7	1.7	1.7	1.7	1.7	1.7
Pitch Center Dia.	PCD (mm)	60.3	69.9	79.4	88.9	98.4	120.7
Approx. Weight	W (kg.)	1.7	1.9	3.6	3.8	7.4	11.6

\*Flange End Valve also Available in 300#, 600# & Above Class on Request.



## Model PVF

→ Forged Steel Piston Valve



Size Range: 1/2" to 2"

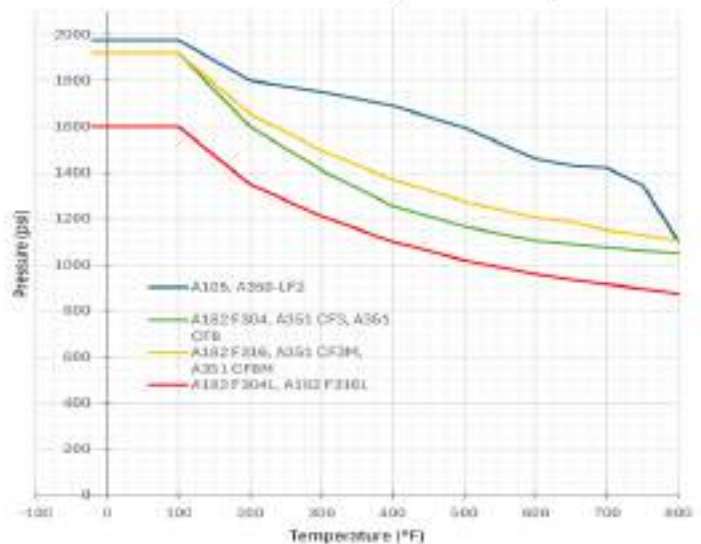
### Maximum Operating Testing Pressure

Pressure Rating for 800#	
Hydro Test Pressure (Body) kg/cm <sup>2</sup>	209
Pneumatic Test Pressure kg/cm <sup>2</sup>	7

### Technical Specification

Design Standard	ASME B16.34
Testing Standard	API 598
Face to Face Standard	Manufacture's Stanard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

Class 800 Pressure-Temperature Ratings



### Design Feature

- > IVT Piston Valve is basically Seatless and Glandless Valve and by virtue of its design can replace both, the conventional type of Gate & Globe valves, with distinct advantages over them.
- > Piston Valve works on the principle of Resilient rings in conjunction with a Metallic Stainless Steel Piston, that moves vertically between the rings, giving a Seal that is both effective as well as Durable. This sealing system gives a bubble tight shut off.

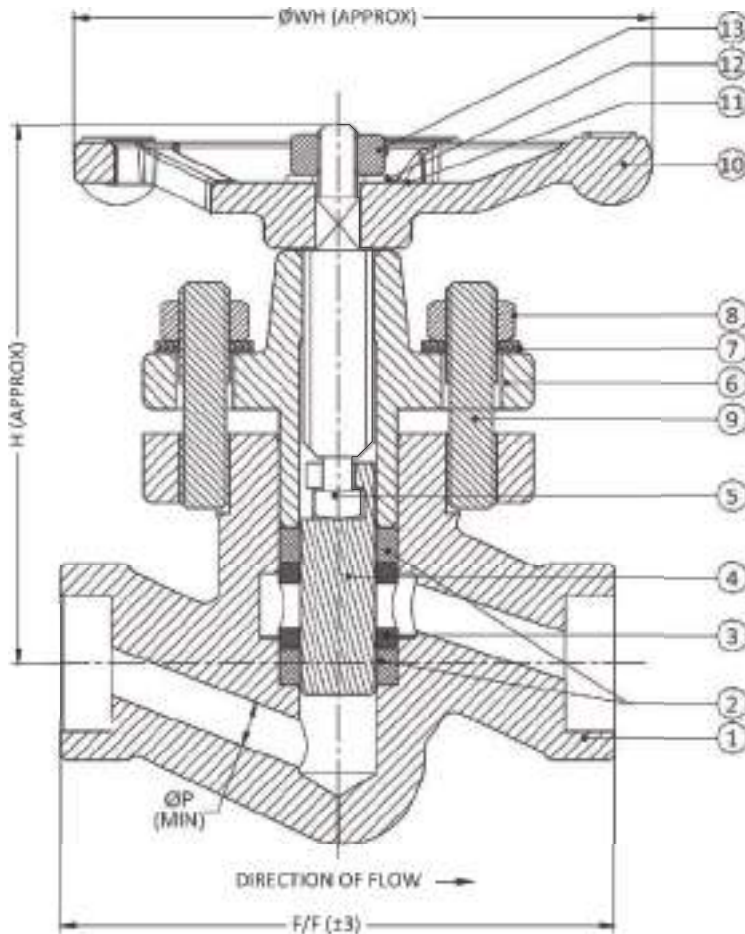
### Maintenance

- > In case any leakage is observed the bonnet nuts should be tightened with the valve in the fully closed position. Tightening the bonnet nuts may be repeated as and when required until the rings are worn out and no further tightening is possible. At this stage the sealing rings need to be replaced.
- > Care should be taken while tightening the nuts to avoid tilting of the bonnet. Undue force should not be used to shut the valve as this may damage the spindle or the wheel.

**Model Number**  
**PVF - X -800**

**Forged Steel Piston Valve**

**Model PVF**



**Dimension Table**

800#				
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")
F/F (mm)	110	110	126	180
ØP (mm)	9	12	17	28
H OPEN (mm)	130	130	171	231
H CLOSE (mm)	105	105	137	185
ØWh (mm)	86	86	116	150
Approx. Weight (Kg)	1.9	1.9	4	5.3

**Key Features**

- Seatless & Glandless Valve
- Tight Shut Off
- Robust, Maintenance Free for Long Time
- Tight Sealing is achieved by the cylindrical, precision ground stainless steel piston
- Economy & Easy to Service
- Absolutely leak-tight across the ports and to the atmosphere
- No Erosion of Sealing Surface

**Material of Construction**

13	HANDEHEEL NUT	ASTM 194 GR. 2H	ASTM A 194 GR. B8	ASTM A 194 GR. B8M
12	HANDWHEEL WASHER	MS	MS	MS
11	NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
10	HAND WHEEL	MI / SGIRON	MI / SGIRON	MI / SGIRON
09	STUD	ASTM A 193 GR. B7	ASTM A 193 GR. B8	ASTM A 193 GR. B8M
08	NUT	ASTM 1 194 GR. 2H	ASTM 1 194 GR. B8	ASTM 1 194 GR. B8M
07	BELLEVILLE WASHER	50CR V4	50CR V4	50CR V4
06	BONNET	ASTM A 105	ASTM A 182 GR. F304	ASTM A 182 GR. F316
05	SPINDLE	ASTM A 276 TYPE SS 410	ASTM A 276 TYPE SS 304	ASTM A 276 TYPE SS 316
04	PISTON	ASTM A 276 TYPE SS 410	ASTM A 276 TYPE SS 304	ASTM A 276 TYPE SS 316
03	LANTERN BUSH	ASTM A 276 TYPE SS 410	ASTM A 276 TYPE SS 304	ASTM A 276 TYPE SS 316
02	SEALING RING	GRAPHITE WITH SS304 REINFORCED	GRAPHITE WITH SS304 REINFORCED	GRAPHITE WITH SS304 REINFORCED
01	BODY	ASTM A 105	ASTM A 182 GR. F304	ASTM A 182 GR. F316
		<b>MATERIAL</b>	<b>MATERIAL</b>	<b>MATERIAL</b>
		MOC A105	MOC F-304	MOC F-316

## Forged Steel Bellow Seal Globe Valve Model BSF



### Technical Features

- Design and Manufacturing conform to API 602 Testing and Inspection conform to API 598
- Available in NPT/SW/BW/ Flanged end connections
- Conventional Port
- Bolted Bonnet
- OS&Y

### → Forged Steel Bellow Seal Globe Valve

### Technical Specifications

Design Standard	API 602
Testing Standard	API 598
Face to Face Standard	Manufacture's Standard
Socket Weld Standard	ASME B16.11
Screwed End Standard	ASME B1.20.1
Butt Weld Standard	ASME B16.25
Flange End Standard	ASME B16.5

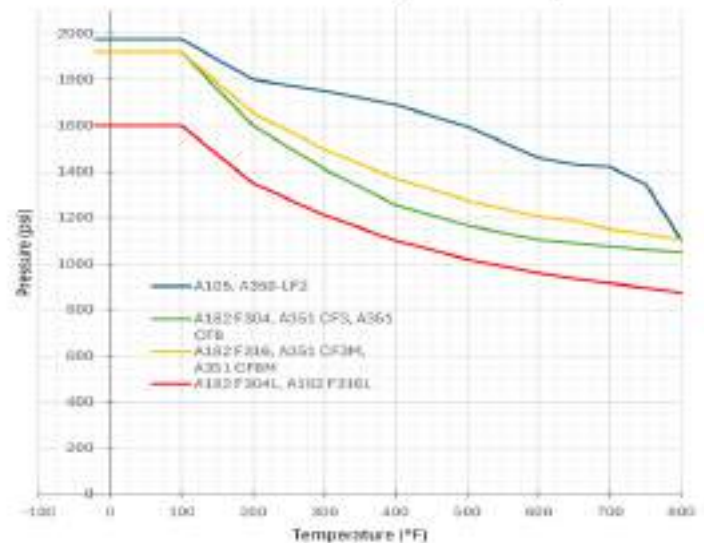
### Maximum Operating Testing Pressures

Pressure Rating	150#	300#	800#
Hydro Test Pressure (Body) kg/cm <sup>2</sup>	32	78	211
Hydro Test Pressure (Seat) kg/cm <sup>2</sup>	22	56	153
Pneumatic Test Pressure kg/cm <sup>2</sup>	7	7	7

### Model BSF

Size Range: 1/2" to 2"

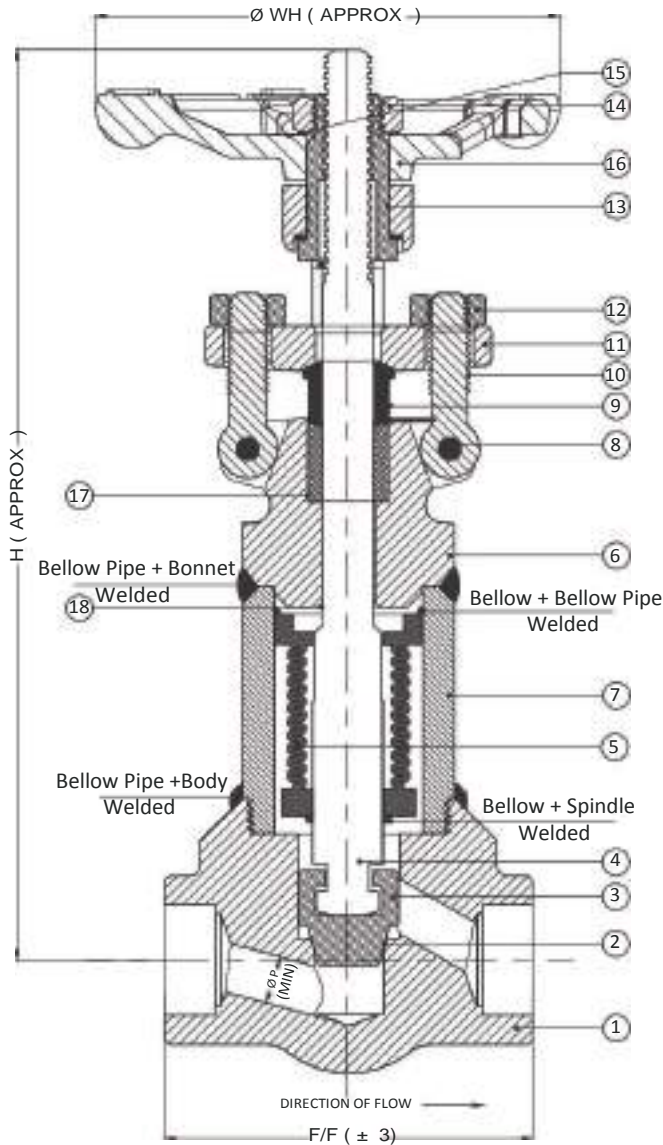
Class 800 Pressure-Temperature Ratings



### Comparison Between Bellow Seal, Piston & Traditional Valves

	Bellow Seal Valve	Piston Valve	Conventional Valve
Stem Seal	Metallic Bellow Gland Packing	Sealing Ring	Gland Packing
Steam Leakage	Not Possible Since Metallic Bellow are designed to several thousands cycle	Not Possible till the ring wear out	Very Common Due to friction between stem & gland
Equipment Downtime	Nil	Low for replacing ring	Very High for replacing gland packing
Safety	Can be used safely for almost any media	Can be used for limited media steam, hot water	Highly unsafe when the media is poisonous/hazardous
Valve Life	Very High in Years	High compared to Conventional Valve	Very low due to leakage through gland occur in some month





## Forged Steel Bellow Seal Globe Valve

### *Model BSF - x -150*

150#					
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	160
ØP (mm)	9.5	12.7	17.5	28.6	36.5
ØWh (mm)	86	86	116	150	150

### *Model BSF - x -300*

300#					
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	160
ØP (mm)	9.5	12.7	17.5	28.6	36.5
ØWh (mm)	86	86	116	150	150

### *Model BSF- x - 800*

800#					
DIMENSION	15mm (1/2")	20mm (3/4")	25mm (1")	40mm (1-1/2")	50mm (2")
F/F (mm)	73	80	100	145	160
ØP (mm)	9.5	12.7	17.5	28.6	36.5
ØWh (mm)	86	86	116	150	150

### Material of Construction

18	BACK SHEET	INTEGRAL	-
17	GLAND PACKING	FLEXIBLE GRAPHITE RINGS	5
16	HAND WHEEL	MI / SGIRON	1
15	NAME PLATE	STAINLESS STEEL	1
14	STEM NUT	ASTM A 194 GR. 2H	1
13	YOKE SLEEVE	ASTM A 582 GR. SS-416	1
12	EYE BOLT NUT	ASTM A 194 GR. 2H	2
11	GLAND FLANGE	ASTM A 105	1
10	EYE BOLT	ASTM A 193 GR. B7	2
09	GLAND BUSH	ASTM A 276 TYPE SS-410	1
08	EYE BOLT PIN	ASTM A 276 TYPE SS-410	2
07	BELLOW PIPE	ASTM A 105	1
06	BONNET	ASTM A 105	1
05	BELLOW	SS316Ti / SS321	1
04	STEM	ASTM A 182 GR. F6a	1
03	PLUG	ASTM A 217 GR. CA-15	1
02	SEAT RING	13% CR. INTEGRAL	-
01	BODY	ASTM A 105	1
DESCRIPTION		MATERIAL	QTY.

### Flow Coefficient Cv

The Cv's a valve property and is defined as follows. "The Flow Coefficient Cv states the flow capacity of a valve in U.S. gallons per minute of water at a standard temperature of 60°F (15.6° C) that will flow through the valve with a pressure loss of one pound per square inch at a specific opening position". For the metric system the analog value is Kv where measure unit are Bar, Kg and meters. The Cv show the quality and accuracy of a valve in terms of pressure loss, the highest values of Cv indicate the highest quality of a valve.

Valve Size	GATE VALVE		GLOBE VALVE			CHECK VALVE		
	Regular Port	Full Port	Regular Port	Full Port	Y-Pattern	Regular Port	Full Port	Y-Pattern
1/4	-	2.5	-	1.1	2.9	-	0.9	2.3
3/8	-	4.3	-	1.4	3.8	-	1.1	3.5
1/2	4.50	11.60	1.00	2.60	3.50	0.50	1.10	3.50
3/4	11.00	25.60	2.80	5.60	9.00	2.80	4.80	6.50
1	26.00	53.60	5.80	9.90	15.00	5.00	6.00	10.00
1-1/4	54.00	78.80	10.00	13.00	22.00	8.50	8.20	17.00
1-1/2	79.00	86.00	13.30	23.30	45.00	10.00	14.40	36.00
2	104.00	108.00	24.00	39.70	75.00	17.00	32.00	66.50

To measure the property value of Cv there is not a standard method. International Valve Company R & D team has used two different methods: 1-Using Cv definition, through the means of a specifically built test rig, it has been obtained 1Bar of pressure loss and the flow has been verified with specific equipment. Calculation is possible to convert the measure to Cv. 2-In the same machine the flow has been changed and different measure of process loss has been obtained: a table has been defined and an average value per each has been calculated.

### Flow - Rate

$$Q = C_v \sqrt{\frac{\Delta p}{S}}$$

### Pressure Drop

$$\Delta p = S \left( \frac{Q}{C_v} \right)^2$$

For liquids other than water

$\Delta p$  = Pressure drop (p.s.i.)

Q = Liquid flow in gallons per minute (GPM)

S = Specific gravity of liquid relative to water (60°F)

Cv = Valves flow coefficient.

### Conversion Table to Metric STD

Flow Coefficient	Cv	Kv
Cv	1	0.865
Kv	1.156	1

### International Valve Technologies Standard Trim Definitions

API TRIM NO.	NOMINAL TRIM	STEM	DISC / WEDGE	SEAT	GLAND BUSH
1	F6	410 (13 Cr)	F6 (13Cr)	410 (13Cr)	410 (13 Cr)
2	304	304 (18Cr -8Ni)	304 (18Cr -8Ni)	304 (18Cr -8Ni)	304 (18Cr -8Ni)
5	HARDFACED	410 (13 Cr)	F6 + St GR. 6 (CoCr Alloy)	410 + St GR. 6 (CoCr Alloy)	410 (13 Cr)
8	F6 & HARDFACED	410 (13 Cr)	F6 (13Cr)	410 + St GR. 6 (CoCr Alloy)	410 (13 Cr)
9	MONEL	MONEL(NiCu Alloy)	MONEL(NiCu Alloy)	MONEL(NiCu Alloy)	70Ni - 30Cu
10	316	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)
11	MONEL & HARDFACED	MONEL(NiCu Alloy)	MONEL(NiCu Alloy)	MONEL+ St GR. 6	70Ni-30Cu/1/2Co-Cr-A
12	316 & HARDFACED	316 (18Cr - 8Ni- Mo)	316 (18Cr - 8Ni- Mo)	316 + St GR. 6	316 (18Cr - 8Ni- Mo)
15	HARDFACED (304)	304 (18Cr - 8Ni)	304 + St GR. 6	304 + St GR. 6	304 (18Cr - 8Ni)
16	316-FULL HARDFACED	316 (18Cr - 8Ni- Mo)	316(18Cr-8Ni-Mo)+StGR.6	316 + St GR. 6	316 (18Cr - 8Ni- Mo)

### Maximum Operating Testing Pressures

GGC	150#	300#	600#	800#	1500#	2500#
SHELL / BODY	32 KG /CM <sup>2</sup>	78 KG /CM <sup>2</sup>	156 KG /CM <sup>2</sup>	211 KG /CM <sup>2</sup>	390 KG /CM <sup>2</sup>	655 KG /CM <sup>2</sup>
SEAT	22 KG /CM <sup>2</sup>	56 KG /CM <sup>2</sup>	115 KG /CM <sup>2</sup>	153 KG /CM <sup>2</sup>	290 KG /CM <sup>2</sup>	485 KG /CM <sup>2</sup>
BACK SEAT#	22 KG /CM <sup>2</sup>	56 KG /CM <sup>2</sup>	115 KG /CM <sup>2</sup>	153 KG /CM <sup>2</sup>	290 KG /CM <sup>2</sup>	485 KG /CM <sup>2</sup>
PNEUMATIC SEAT#	7 KG /CM <sup>2</sup>	7 KG /CM <sup>2</sup>	7 KG /CM <sup>2</sup>	7 KG /CM <sup>2</sup>	7 KG /CM <sup>2</sup>	7 KG /CM <sup>2</sup>

BALL VALVE	600#	800#
SHELL / BODY	156 Kg /cm <sup>2</sup>	211 Kg /cm <sup>2</sup>
SEAT	76 Kg /cm <sup>2</sup>	76 Kg /cm <sup>2</sup>
PNEUMATIC SEAT	7 KG /CM <sup>2</sup>	7 KG /CM <sup>2</sup>

\* For Globe & Gate Valve Testing Duration is 15 sec. For Check Valve Testing Duration is 60 sec.

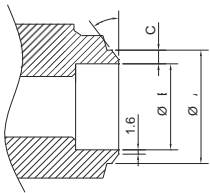
# For Check Valve Back Seat Pressure & Pneumatic Seat Pressure are not applicable.

## Pressure Temperature Ratings

CLASS 800																	
SERVICE TEMPER	A105 A350-LF2	A182 F11	A182 F22	A182 F5	A182 F9	A182 F304 A351 CF3 A351CF8	A182 F316 A351 CF3M A351 CF8M	A182 F304L A182 F316L	SERVICE TEMPER	A105 A350-LF2	A182 F11	A182 F22	A182 F5	A182 F9	A182 F304 A351 CF3 A351CF8	A182 F316 A351 CF3M A351 CF8M	A182 F304L A182 F316L
°F	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	°C	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR
-20 to 100	1975	2000	2000	2000	2000	1920	1920	1600	-29 to 38	136.2	137.9	137.9	137.9	137.9	132.4	132.4	11.03
200	1800	1900	1910	2000	2000	1600	1655	1350	93.5	124.1	131	131.7	137.9	137.9	110.3	114.1	9.31
300	1750	1795	1805	1940	1940	1410	1495	1210	149	120.7	123.8	124.5	133.8	133.8	97.2	103.1	8.34
400	1690	1755	1730	1880	1880	1255	1370	1100	204.5	116.6	121	119.3	129.7	129.7	86.5	94.5	7.58
500	1595	1710	1705	1775	1775	1165	1275	1020	260	110	117.9	117.6	122.4	122.4	80.3	87.9	7.03
600	1460	1615	1615	1615	1615	1105	1205	960	315.5	100.7	113.4	113.4	113.4	113.4	76.2	83.1	6.62
650	1430	1570	1570	1570	1570	1090	1185	935	343.5	98.6	108.3	108.3	108.3	108.3	75.2	81.7	6.45
700	1420	1515	1515	1515	1515	1075	1150	915	371	97.9	104.5	104.5	104.5	104.5	74.1	79.3	6.31
750	1345	1420	1420	1420	1420	1060	1130	895	399	92.7	97.9	97.9	97.9	97.9	73.1	77.9	6.17
800	1100	1355	1355	1325	1355	1050	1105	875	426.5	75.9	93.4	93.4	91.4	93.4	72.4	76.2	6.03
850	715	1300	1300	1170	1300	1035	1080	860	454.5	49.3	89.7	89.7	80.7	89.7	71.4	74.5	5.93
900	460	1200	1200	940	1200	1025	1050		482	31.7	82.8	82.8	64.8	82.8	70.7	72.4	
950	275	1005	1005	695	985	1000	1030		510	19	69.3	69.3	47.9	67.9	69	71	
1000	140	595	715	510	780	860	970		538	9.7	41	49.3	35.2	53.8	59.3	66.9	
1050		365	530	375	505	825	960		565.5		25.2	36.6	25.9	34.8	56.9	66.2	
1100		255	300	275	300	685	860		593.5		17.6	20.7	19	20.7	47.2	59.3	
1150		140	275	185	200	520	735		621		9.7	19	12.8	13.8	35.9	50.7	
1200		95	145	120	140	415	550		649		6.6	10	8.3	9.6	28.6	37.9	
1250						295	485		676.5						20.3	33.4	
1300						218	365		704.5						15	25.2	
1350						165	275		732						11.4	19	
1400						130	200		760						9	13.8	
1450						95	155		788						6.6	10.7	
1500						65	110		815.5						4.5	7.6	

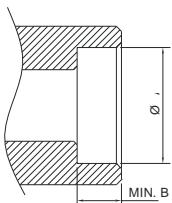
ACCORDING TO API 602/ISO 15761

## End Connection Details

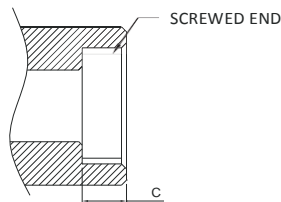


**BUTT WELD END  
AS PER B16.25.**

Size	Sh. 40			Sh. 80			Sh. 160			Sh. XXS		
	A	B	C	A	B	C	A	B	C	A	B	C
1/2"(15mm)	21.30	15.80	2.77	21.30	13.80	3.73	21.30	11.70	4.78	21.30	6.40	7.74
3/4"(20mm)	26.70	25.00	2.87	26.70	18.90	3.91	26.70	15.60	5.56	26.70	11.10	7.82
1"(25mm)	33.40	26.60	3.38	33.40	24.30	4.55	33.40	20.70	6.35	33.40	15.20	9.09
1-1/4"(32mm)	42.20	35.10	3.55	42.20	32.50	4.85	42.20	29.50	6.35	42.20	22.80	9.70
1-1/2"(40mm)	48.30	41.00	3.68	48.30	38.10	5.08	48.30	33.50	7.41	48.30	28.00	10.15
2"(50mm)	60.30	52.50	3.91	60.30	49.20	5.54	60.30	42.90	8.74	60.30	38.20	11.07



**SOCKET END  
AS PER B16.11**



**SCREWED END (BSP OR NPT OR BSPT)  
AS PER B1.20.1.**

SIZE	ØA (SOCKET ID)	B (SOCKET DEPTH)	C (SCREWED DEPTH)
1/2" (15MM)	21.8	9.5	14
3/4" (20MM)	27.2	12.5	16
1" (25MM)	33.9	12.5	20
1-1/4" (32MM)	42.7	12.5	20
1-1/2" (40MM)	48.8	12.5	24
2" (50MM)	61.2	16	26



### Body and Bonnet Materials

Material Group	Common Name	Nominal Type	UNS	Forging Spec.	Casting Spec. Equivalent	DIN	DIN W. No	Application Notes
Carbon Steel	CS	C-Mn-Fe	K03504	A105N	A216-WCB	C22.8 DIN 17243	1.0460	General non-corrosive service from -20F(-29C) to 800F(427C)
Low Temperature Carbon Steel	LTCS	C-Mn-Fe	K03011	A350-LF2	A352-LCA A352-LCB A352-LCC	TSTE 355 DIN 18103	1.0566	General non-corrosive service from -50F(-46C) to 650F(340C), LF2 to 800F(427C).
Low Temperature Alloy Steel	Nickel Steel	3.1/2Ni	K32025	A350-LF3	A352-LC3	10Ni14	1.5637	-150F(-101C) to 650F(340C)
Low Alloy Steel	Moly Steel	C-1/2Mo	K12822	A182-F1	A217-WC1	15MO3	1.5415	Up to 875F (468C)
	Alloy Steel Chrome Moly	1.1/4Cr-1/2Mo	K11572	A182-F11 cl2	A217-WC6	13CRMO44	1.7335	Up to 1100F (593C)
		2.1/4Cr-1Mo	K21590	A182-F22 cl3	A217-WC9	10CRMO910	1.7380	Up to 1100F(593C), HP steam
		5Cr-1/2Mo	K41545	A182-F5	A217-C5	12CRMO195	1.7362	High temp refinery service
		9Cr-1Mo	K90941	A182-F9	A217-C12	X 12 CrMo 9 1	1.7386	High temp erosive refinery service
		9Cr-1Mo-V		A182-F91	A217-C12A	X 10 CrMoVNb 9 1	1.4903	High pressure steam
Stainless Steel	Austenitic S.Steel 300 series S.Steel	304 : 18Cr-8Ni	S30400	A182-F304	A351-CF8	DIN X5CrNi 18 9	1.4301	0.04% min. carbon for temp.>1000F(538C)
		304L : 18Cr-8Ni	S30403	A182-F304L	A351-CF3	X 2 CrNi 19 11	1.4306	Up to 800F(427C)
		304H :	S30409	A182-F304H	A351-CF10	n/a	n/a	
		316 : 16Cr-12Ni-2Mo	S31600	A182-F316	A351-CF8M	DIN X5CrNiMo 18 10	1.4401	0.04% min. carbon for temp.>1000F(538C)
		316L : 16Cr-12Ni-2Mo	S31603	A182-F316L	A351-CF3M	X 5 CrNiMo 17 12 2	1.4404	Up to 800F(427C)
		316H :	S31609	A182-F316H	A351-CF10M	n/a	n/a	
		316Ti:	S31635	A182-F316Ti		X 6 CrNiMoTi 17 12 2	1.4571	0.04% min. carbon (grade F321H) and heat treat at 2000F(1100C) for service temps.>1000F(538C)
		321: 18Cr-10Ni-Ti	S32100	A182-F321		X 6 CrNiTi 18 10	1.4541	
		321H	S32109	A182-F321H		n/a	n/a	
		347: 18Cr-10Ni-Cb(Nb)	S34700	A182-F347	A351-CF8C	DIN 8556	1.4550	0.04% min. carbon (grade F347H) and heat treat at 2000F(1100C) for service temps.>1000F(538C)
	347H	S34709	A182-F347H	A351-CF8A	n/a	n/a		
	317L	S31703	A182-F317L	A351-CG3M	X2CrNiMo18-16-4	1.4438		
	Alloy 20	28Ni-19Cr-Cu-Mo	N08020	A182-F20	A351-CN7M	DIN 1.4500	2.4660	service to 600F(316C)
	Duplex 2205	22Cr-5Ni-3Mo-N	S31803 S32205	A182-F51	A890-J92205	X2CrNiMoN22-5-3 DIN 10088-1 (95)	1.4462	service to 600F(316C) -The original S31803 UNS designation has been supplemented by S32205 which has higher minimum N, Cr, and Mo.
	Super Duplex 2507	25Cr-7Ni-4Mo-N	S32750	A182-F53	A351-CD4MCu A890 5A	X2CrNiMoN25-7-4 DIN 10088-1(95)	1.4501	service to 600F(316C)
	Super Duplex F55	25Cr-7Ni-3.5Mo-N-Cu-W	S32760	A182 F55	CD3MWCuN			Service to 600F
	Super Austenitic 6Mo	20Cr-18Ni-6Mo	S31254	A182-F44	A351-CK3MCuN	X1CrNiMoCuN20-18-7 DIN 10088-1 (95)	1.4547	service to 600F(316C)
Nickel-Iron Alloy	Incoloy 800	33Ni-42Fe-21Cr	N08800	B564-N08800		X10NiCrAlTi32-20	1.4876	service to 1000F(538C)
	Incoloy 825	42Ni-21.5Cr-3Mo-2.3Cu	N08825	B564-N08825	A494-CU5MCuC	DIN 17744	2.4858	service to 600F(316C) for N02200, 1200F(648C) for N02201
Nickel	Nickel	99/95Ni	N02200	B160-N02200 (bar)	A494-CZ-100	NW2200	1.7740	
Nickel-Copper	Monel 400	67Ni-30Cu	N04400	B564-N04400	A494-M35-1	DIN 17730	2.4360	
	Monel 500		N05500	B564-N05500			2.4375	
Nickel-Alloy	904L		N08904	904L	n/a	Z2 NCDU 25-20	1.4539	
Nickel Superalloys	Inconel 600	72Ni-15Cr-8Fe	N06600	B564-N06600	A494-CY40	DIN 17742	2.4816	
	Inconel 625	60Ni-22Cr-9Mo-3.5Cb	N06625	B564-N06625*	A494-CW-6MC		2.4856	*Difficult to forge in close dye
	Hastelloy C-276	54Ni-15Cr-16Mo	N10276	B564-N10276*	A494-CW-2M	NiMo 16 Cr 15 W	2.4819	*Difficult to forge in close dye
Titanium	Titanium	98Ti	R50400	B381-Gr2	B367-C2	Ti 2	3.7035	

### Phosphatizing of CS Valves

Bath	Type of Operation	Min. Time	Temp.
1	Degreasing in Hot Water	5 MIN	55 Degree Celsius
2	Deoxidation by Concentrated Acid	5 MIN	Atmospheric Temp.
3	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
4	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
5	Dip in Zinc Phosphate	15 MIN	70 Degree Celsius
6	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
7	Rinse in Clean Water	0.5 MIN	Atmospheric Temp.
8	Passivation of Component	3 MIN	Atmospheric Temp.



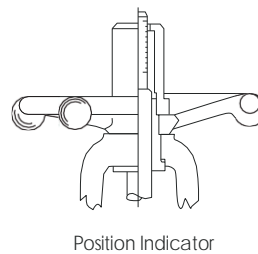
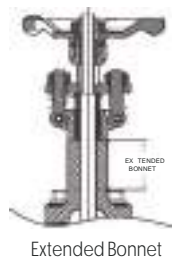
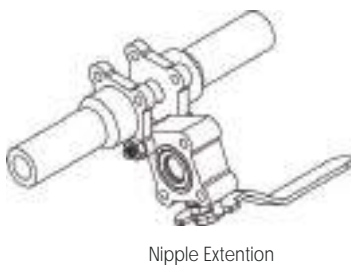
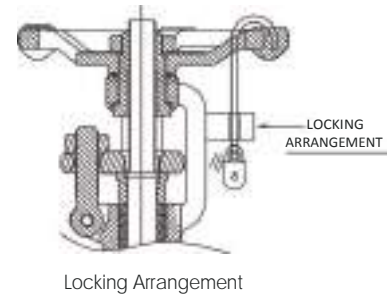
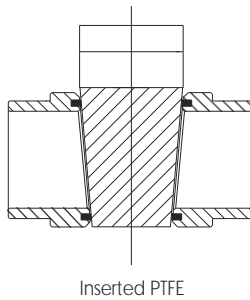
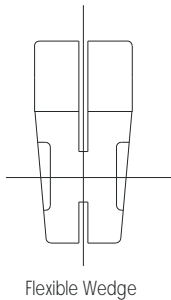
Phosphatization is carried out on all forged bodies and bonnets in carbon and alloy steel.

## Product Ranges

Valve Type	Design Stand	End Conn.	ASME Class	Port	B-B Joint	Valve Size						
						10mm (3/8")	15mm (1/2")	20mm (3/4")	25mm (1")	32mm (1 1/4")	40mm (1 1/2")	50mm (2")
Straight Pattern Gate Valves	API 602 / ISO 15761	SE / SW / BW	800 / 1500	RB	BB	Y	Y	Y	Y	Y	Y	Y
			150			Y	Y	Y	Y	Y	Y	
		300	-			Y	Y	Y	Y	Y		
		600	-			Y	Y	Y	Y	Y		
	ASME B 16.34	SW / BW	2500	WB	Y	Y	Y	Y	Y	Y	-	
Straight Pattern Globe Valves	ISO 15761 / BS 5352	SE / SW / BW	800 / 1500	RB	BB	Y	Y	Y	Y	Y	Y	Y
			150			Y	Y	Y	Y	Y	Y	
		300	-			Y	Y	Y	Y	Y		
		600	-			Y	Y	Y	Y	Y		
	ASME B 16.34	SW / BW	2500	WB	Y	Y	Y	Y	Y	Y	-	
Y-Pattern Globe Valves	ASME B 16.34	SW	2500	RB	WB	-	Y	Y	Y	Y	Y	
Straight Pattern Check Valves	ISO 15761 / BS 5352	SE / SW / BW	800 / 1500	RB	BB	Y	Y	Y	Y	Y	Y	Y
			150			Y	Y	Y	Y	Y	Y	
		300	-			Y	Y	Y	Y	Y		
		600	-			Y	Y	Y	Y	Y		
	ASME B 16.34	SW / BW	2500	WB	Y	Y	Y	Y	Y	Y	-	
Forged 3, Piece Design Ball Valves/ Firesafe / Non Firesafe	ISO 17292 / BS 5351	SE / SW / BW	800	RB	BB	-	Y	Y	Y	Y	Y	Y
			150	FB		Y	Y	Y	Y	Y	Y	
		300	RB	-		Y	Y	Y	Y	Y	Y	
		600		-		Y	Y	Y	Y	Y	Y	
	ASME B 16.34	SW / BW	2500	WB	Y	Y	Y	Y	Y	Y	-	
Cast 3, Piece Design Ball Valves Firesafe / Non Firesafe	ISO 17292 / BS 5351	SE / SW / BW	600	RB	BB	-	Y	Y	Y	Y	Y	Y
				FB		Y	Y	Y	Y	Y	Y	Y
Piston Valve	ASME B16.34	SE / SW	800	RB	BB	Y	Y	Y	Y	Y	Y	-
		FE	150			Y	Y	Y	Y	Y	Y	-
Bellow Seal Valve	API 602	SE / SW	150	RB	WB	Y	Y	Y	Y	Y	Y	-
			300			Y	Y	Y	Y	Y	Y	-
			800			Y	Y	Y	Y	Y	Y	-

RB - Reduce Bore      Y - In Our Product Range      BW - Butt Weld      SW - Socket Weld      WB - Welded Bonnet  
 FB - FullBore      BB - Bolted Bonnet      SE - Screwed End      FE - Flanged End

## Optional Features



## INDEPENDENTLY OWNED



Pneumatic Actuators  
All Types & Designs

Resilient Seated & High Performance  
Double and Triple Offsets  
Actuators & Controls Sizes: 2" - 84"



All Types of Industrial Process  
Ball Valves and Controls : 1/4" - 48"



Extreme Corrosion Alloys  
All Design Valves



Gate, Globe & Check  
1/2" - 36" Forged & Cast Designs



Worldwide Valve Sales  
All Types & Special Designs



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