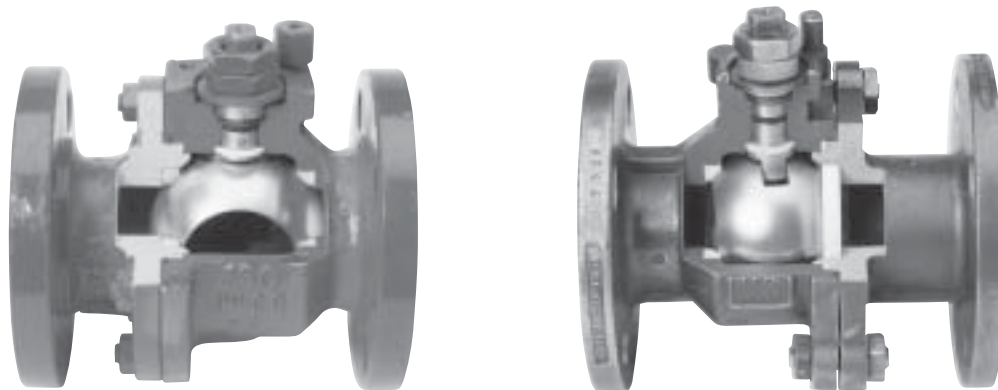
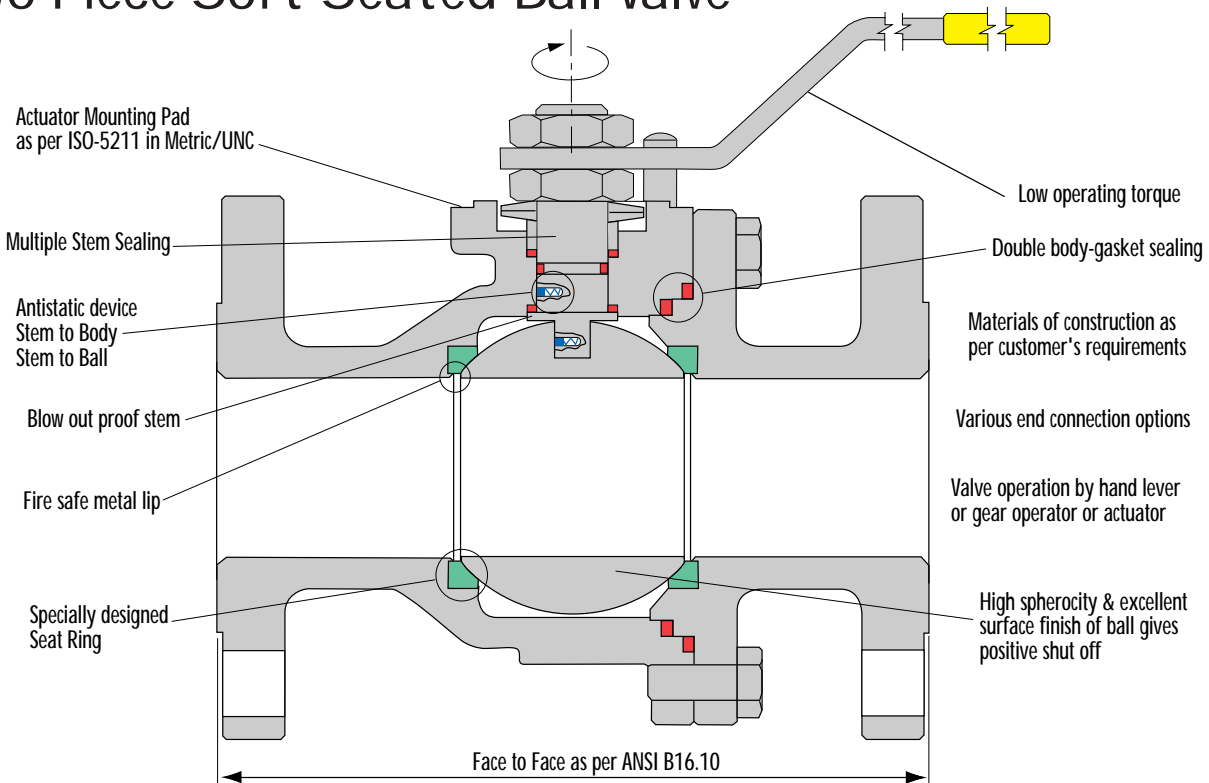


Design & Testing Standards

Design & Testing Standards

- Sure Flow valves are designed and manufactured as per ANSI B 16.34, API 6D & BS 5351. These standards cover Pressure-Temperature ratings, minimum shell thickness and bore diameter for each size/class. Manufacturer has achieved ISO 9001 Certificate of Registration
- We offer valve castings and trim standard per NACE MR0175-96.
- Castings inspection as per MSS - SP 53, 54, 59, 93 & 94.
- Actuator mounting pad on the valve is as per ISO 5211.
- Other applicable standards:
 - ◆ Face to face: ANSI B 16.10
 - ◆ Flange dimensions: ANSI B 16.5
 - ◆ Butt welded valve ends: ANSI B 16.25
 - ◆ Pressure tests: API 598 / B 6 6755 Part 1
 - ◆ Fire safe: API 607 4th Edition / API 6FA / BS 6755 Part II

Two Piece Soft Seated Ball Valve



Range at a glance

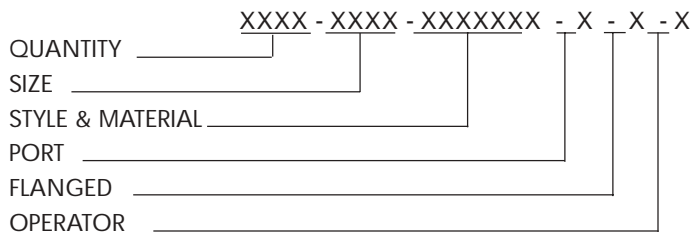
Soft Seated Ball Valve Range

Type	End Connection	Bore	ANSI Class	Size										
				1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"
Two Piece	Flanged	Full	150	•	•	•	•	•	•	•	•	•	•	•
		Reduced	150					•	•	•	•	•	•	•
		Full	300	•	•	•	•	•	•	•	•	•	•	•
		Reduced	300					•	•	•	•	•	•	•

Material of Construction

Part No.	Part	Material Options
01	Body	ASTM-A216 WCB / A351 CF8M
02	Body Adaptor	ASTM-A216 WCB / A351 CF8M
03	Ball	A351 CF8M
04	Stem	A 479 SS316
05	Seat	RPTFE
06	O Ring	VITON
07	Stem Gasket	RPTFE / GRAPHITE (Combination)
08	Spacer	ASTM - A479 SS316
09	Cup Spring	50 Cr V4
10	Stem Nut	A 194 GR8M / A 194 2H
11	Handle	MS (zinc plated)
12	Stop Pin	ASTM - A 479 SS316 / MS
13	Body Gasket	RPTFE / GRAPHITE (Combination)
14	Stud/Bolt	A 193 B8M / A 193 B7
15	Nut	A 194 GR8M / A 194 2H
16	Stem Bush	PHOSPHOR BRONZE
17	Stem Housing	ASTM - A216 WCB / A 351 CF8M

Ordering Information

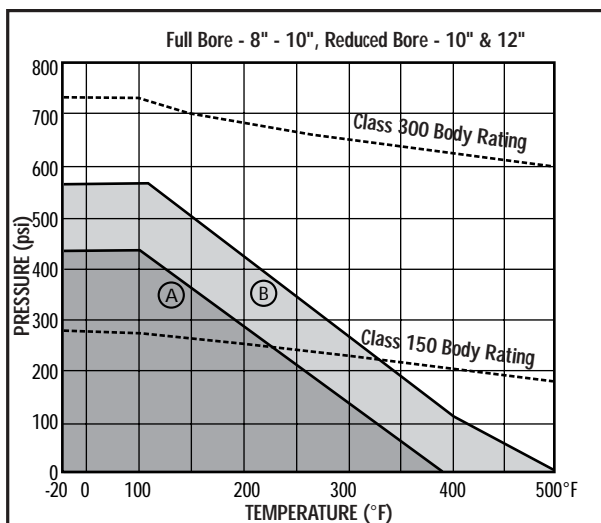
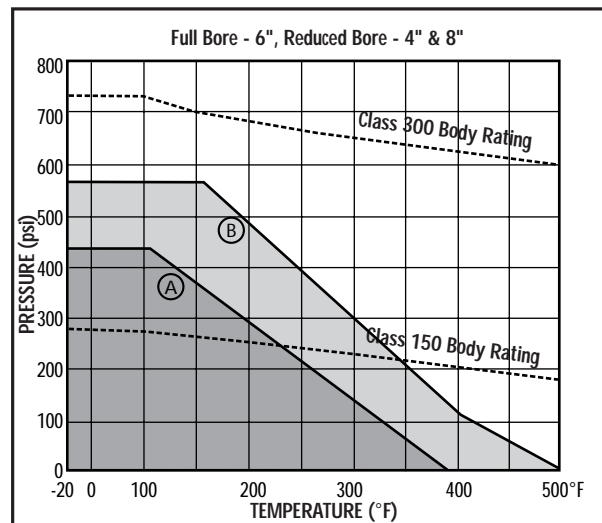
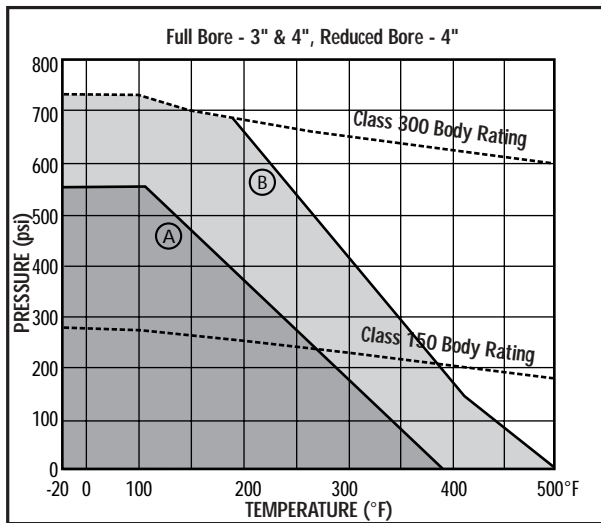
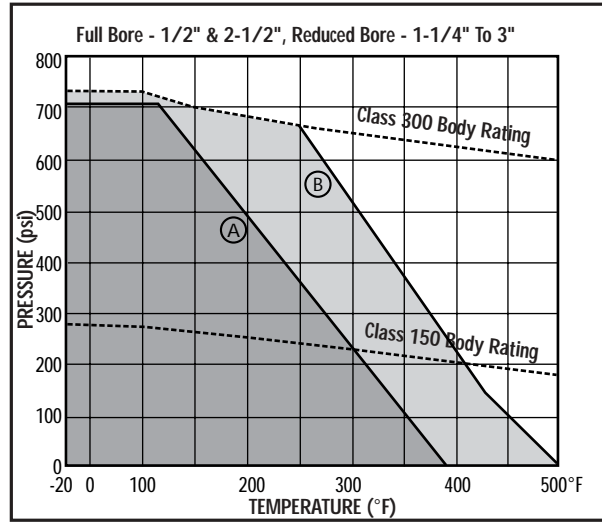
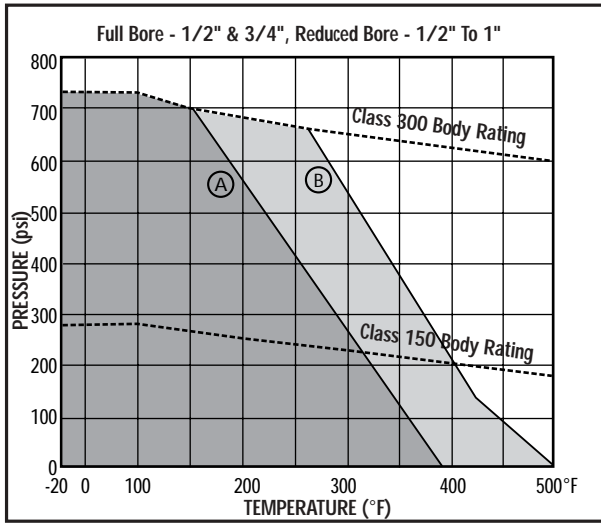


Examples: Include Full Description

- 0400/BV150CS/RFL**
4" 150# Carbon Steel Ball Valve
Reduced Bore, Flanged, Lever
- 0800/BV300SS/FFG**
8" 300# Stainless Steel Ball Valve
Full Bore, Flanged, Gear

SIZE	0050 - 1/2"	0075 - 3/4"	0100 - 1"	0150 - 1 1/2"
	0200 - 2"	0300 - 3"	0400 - 4"	0600 - 6"
	0800 - 8"	1000 - 10"	1200 - 12"	
BODY STYLE &	BV150CS 150#CLASS CS ASTM-A216 WCB	BV150SS 150#CLASS SS ASTM-A351 CF8M	BV 300CS 300#CLASS CS ASTM-A216 WCB	BV300SS 300#CLASS SS ASTM-A351 CF8M
PORT	F - FULL BORE R - REDUCED BORE			
FLANGE	F Face to Face ANSI B 16.10		Flange Dimension ANSI B 16.5	
OPERATOR	B - Bare Stem L - Lever		G - Gear w/ wheel	

Pressure-Temperature Ratings



Seat Material:

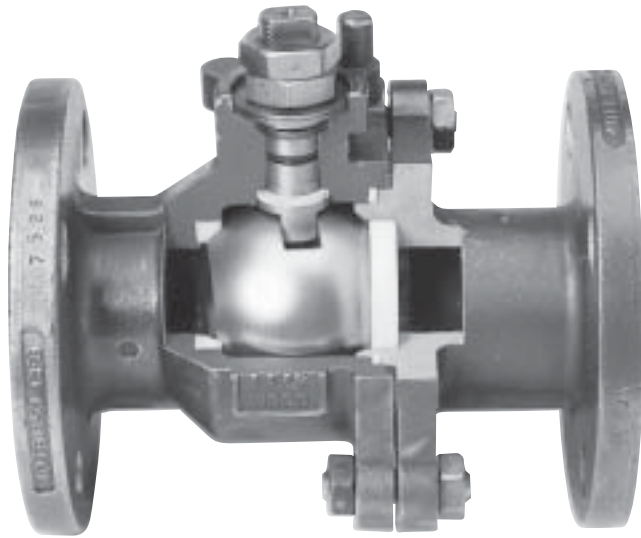
A = Virgin PTFE, B = RPTFE

Pressure - temperature seat ratings of valves are as given in the graph for body material A 216 - WCB. With the exception of body seat rings and primary soft seals, all valve components are capable of withstanding the pressure - temperature ratings as specified in ANSI B 16.34; BS 1560: Part II, BS 4504 : Part I or BS 5351 as applicable.

Temperature Limits:

		Lower limit Deg. F	Upper limit Deg. F
Body Matl.	WCB	-20	1000
	LCB	-50	650
	CF8	-425	1500
	CF8M	-425	1500
Seat	RPTFE	-50	As per graph

Fire Safe Design Features



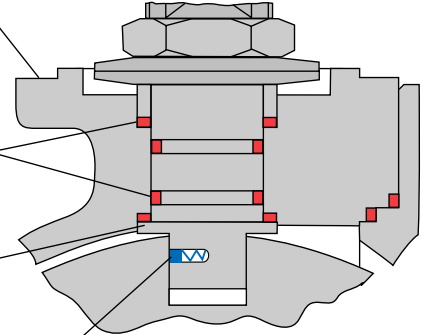
Multi-Seal Stem

ISO Mounting

Fugitive Emission
Qualified Multiple
Stem Sealing

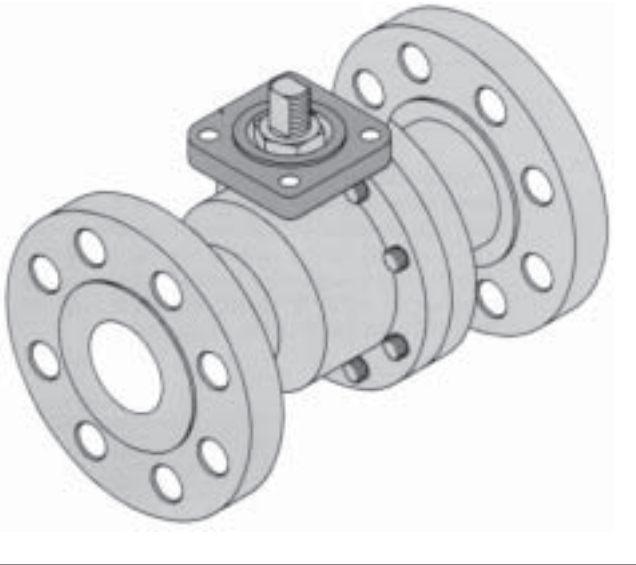
Blow Out Proof
Stem

Anti static Device
Stem to Body &
Stem to Ball

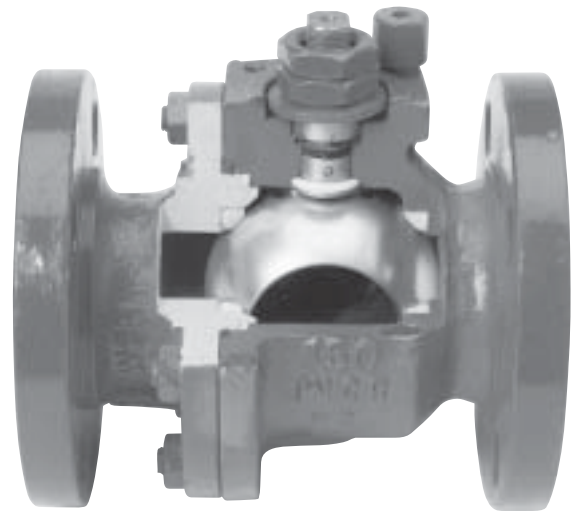


- Anti static devices are built in the valve stem to ensure electrical continuity between ball, stem and body. Thus, providing greater safety while handling volatile media.
- Higher size ball valves are designed with stem bearing to absorb radial loading on the stem.
- Multiple stem sealing ensures high degree of sealing.

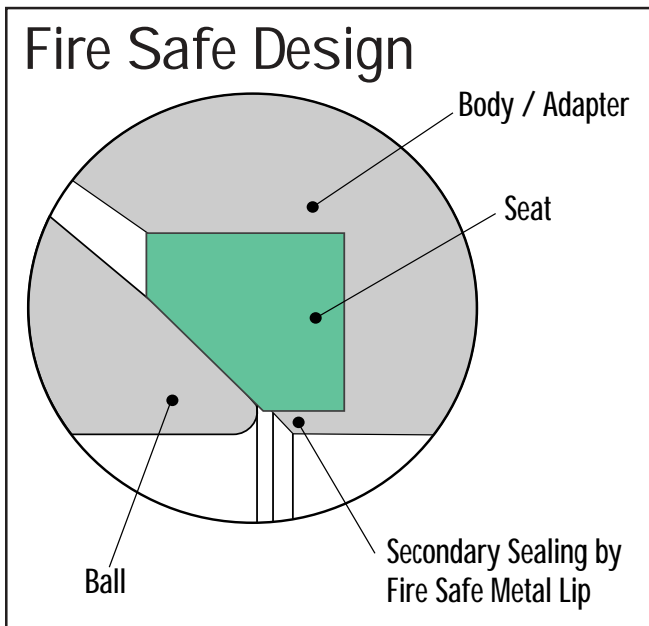
ISO Pad Details



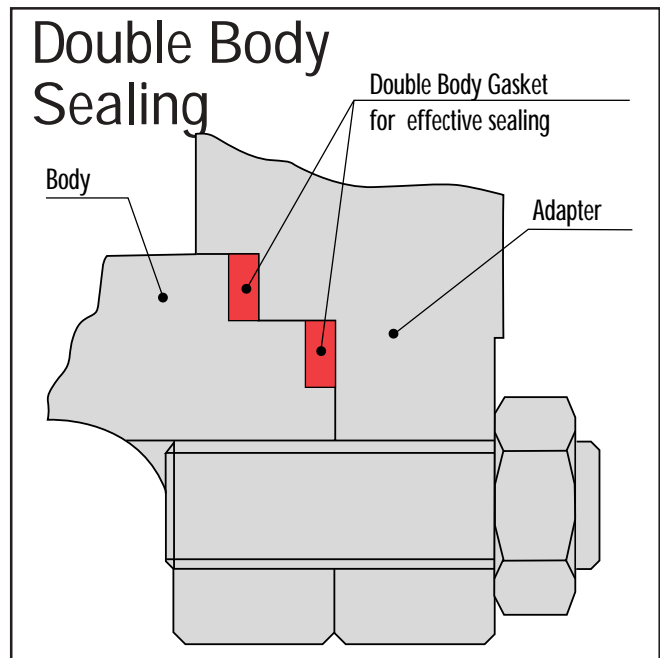
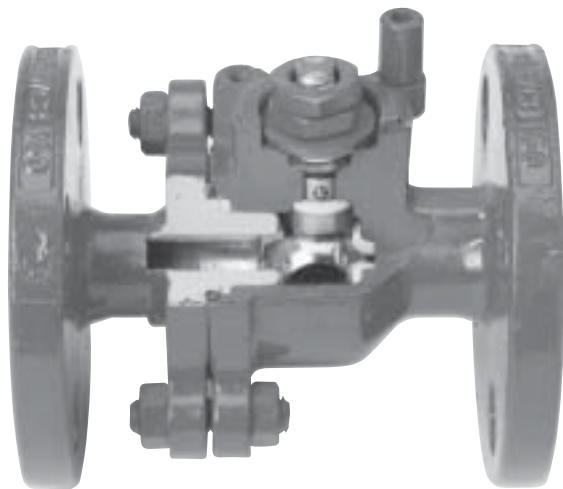
- Sure Flow valves incorporate ISO-5211 top pad which simplifies actuator/gear operator mounting.



Fire Safe Design Features



- Fire safe conformance to API 607 (Edition IV) / API 6FA / BS-6755 Part II assures highest standard of safety.
 - Certified by customer's inspector and independent certifying authorities.
- Fire safe tests have been witnessed and certified by Lloyd's Register



- Double body gasket ensures positive body-joint sealing against pipeline stresses.

Reduced Bore - Dimensions & Assembly

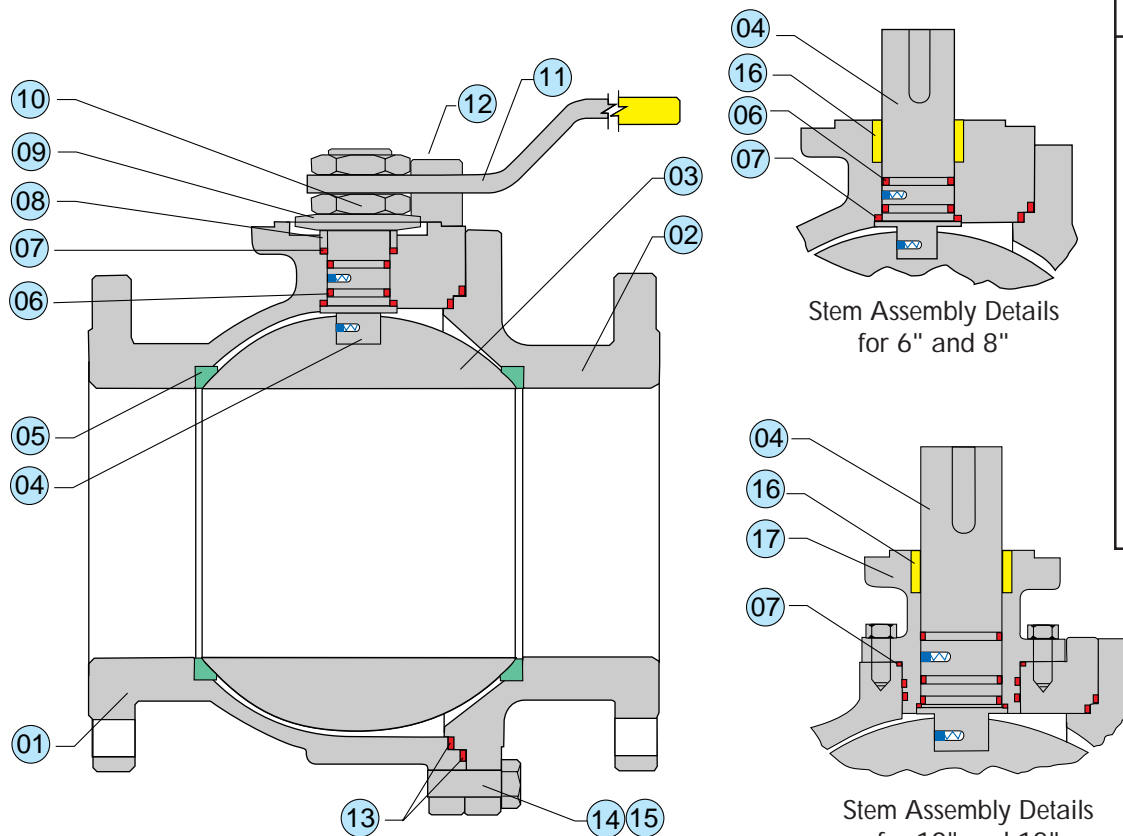


Size	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"
ANSI 150 REDUCED BORE											
E1 X E	.55 X .35	.75 X .55	1 X .75	1.5 X 1	2 X 1.5	3 X 2.5	4 X 3	6 X 4	8 X 6	10 X 8	12 X 10
L	4.25	4.62	5.00	6.50	7.00	8.00	9.00	10.50	11.50	13.00	24.00
H	2.20	3.66	3.86	5.00	6.50	7.28	8.66	9.49	12.22	-	-
G	4.33	7.09	7.09	8.27	8.27	11.42	17.72	17.72	26.38	-	-
F	3.50	3.88	4.25	5.00	6.00	7.50	9.00	11.00	13.50	16.00	19.00
C	2.38	2.75	3.12	3.88	4.75	6.00	7.50	9.50	11.75	14.25	17.00
R	1.38	1.69	2.00	2.88	3.62	5.00	6.19	8.50	10.62	12.75	15.00
T	0.44	0.50	0.44	0.56	0.62	0.75	0.94	1.00	1.12	1.19	1.25
N	0.62	0.62	0.62	0.62	0.75	0.75	0.75	0.88	0.88	1.00	1.00
No. of Holes	4	4	4	4	4	4	8	8	8	12	12
O	1.16	1.99	2.19	2.62	3.43	4.48	5.44	6.28	8.25	8.21	14.55
H1	0.61	1.50	1.65	1.89	2.48	3.21	3.86	4.80	6.57	10.45	11.97
ISO 5211 MTG	-	F05	F05	F05	F07	F07	F10	F10	F12	F14	F16
WT. (lb.)	3.32	5.97	7.29	13.04	19.90	46.41	61.88	97.24	172.38	397.80	563.55
ANSI 300 REDUCED BORE											
E1 X E	.55 X .35	.75 X .55	1 X .75	1.5 X 1.25	2 X 1.5	3 X 2.5	4 X 3	6 X 4	8 X 6	10 X 8	12 X 10
L	5.50	6.00	6.50	7.50	8.50	11.12	12.00	15.88	16.50	18.00	19.75
H	2.20	3.66	3.86	5.79	5.79	7.28	8.66	9.49	-	-	-
G	4.33	7.09	7.09	8.27	8.27	11.42	17.72	17.72	-	-	-
F	3.75	4.62	4.88	6.12	6.50	8.25	10.00	12.50	15.00	17.50	20.50
C	2.62	3.25	3.50	4.50	5.00	6.62	7.88	10.62	13.00	15.25	17.75
R	1.38	1.69	2.00	2.88	3.62	5.00	6.19	8.50	10.62	12.75	15.00
T	0.56	0.62	0.69	0.81	0.88	1.12	1.25	1.44	1.62	1.88	2.00
N	0.62	0.75	0.75	0.88	0.75	0.88	0.88	0.88	1.00	1.12	1.25
No. of Holes	4	4	4	4	8	8	8	12	12	16	16
O	1.16	1.98	2.17	2.78	3.63	4.48	5.44	6.28	9.11	10.79	14.55
H1	0.61	1.50	1.65	2.06	2.48	3.21	3.86	4.80	7.11	8.46	11.97
ISO 5211 MTG	-	F05	F05	F05	F05	F07	F10	F10	F14	F14	F16
WT. (lb.)	5.75	9.28	10.61	22.54	26.08	65.20	96.58	203.32	313.82	601.12	1200.00

• All dimensions are in inches. • Sizes 8" and above are with gear operator

Reduced Bore - Dimensions & Assembly

Two Piece Soft Seated Ball Valve



Item	Part Name
01	Body
02	Body Adapter
03	Ball
04	Stem
05	Seats
06	'O' Ring
07	Stem Gasket
08	Spacer
09	Cup Spring
10	Stem Nuts
11	Handle
12	Stop Pin
13	Body Gasket
14	Stud/Bolt
15	Nut
16	Stem Bush
17	Stem Housing



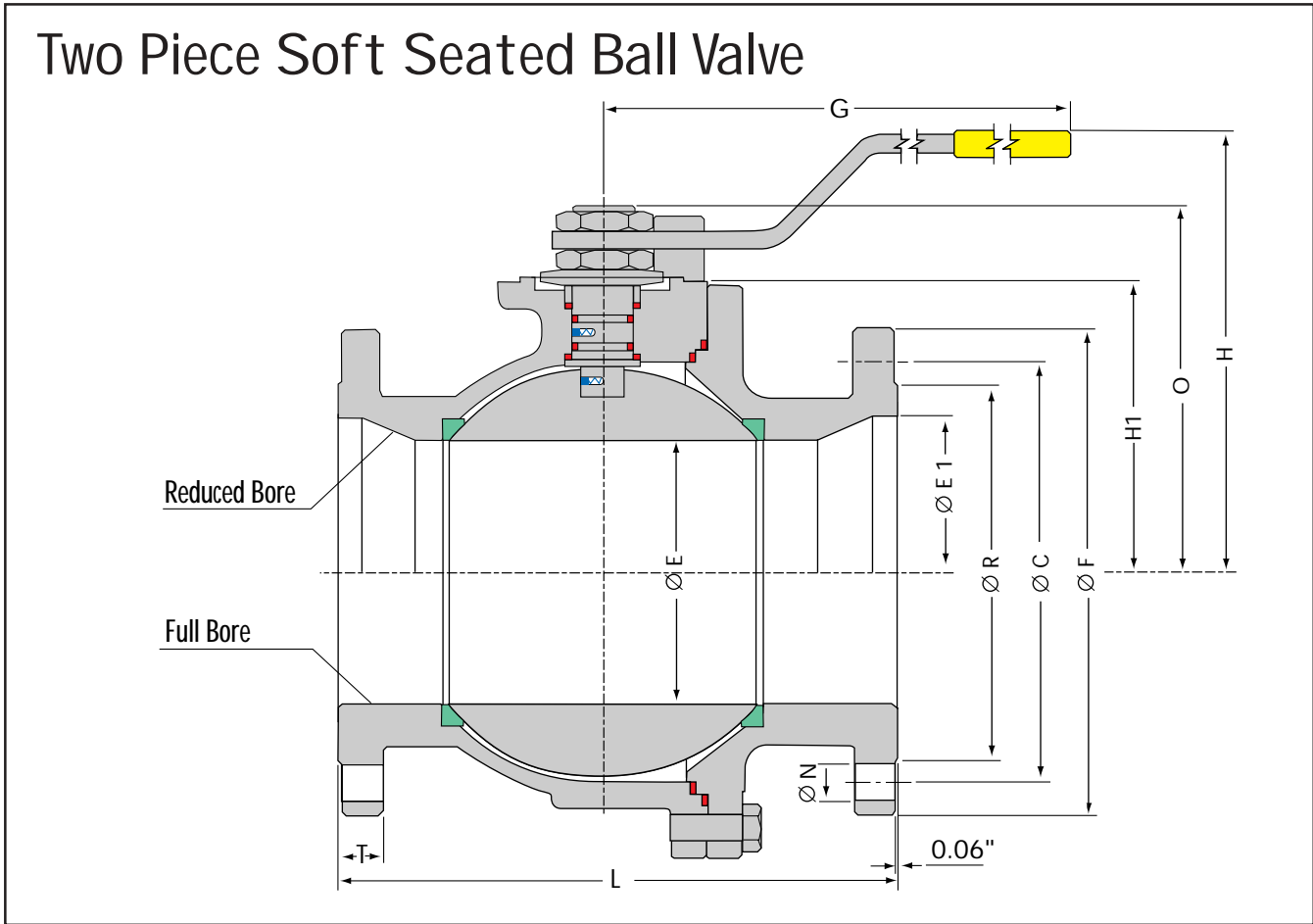
Full Bore - Dimensions & Assembly



Size	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"
ANSI 150 FULL BORE											
E	0.55	0.75	1.00	1.50	2.00	3.00	4.00	6.00	8.00	10.00	12.00
L	4.25	4.62	5.00	6.50	7.00	8.00	9.00	10.50	11.50	21.00	24.00
H	3.66	3.86	5.00	6.50	7.01	8.66	9.65	-	-	-	-
G	7.09	7.09	8.27	8.27	11.42	17.72	17.72	-	-	-	-
F	3.50	3.88	4.25	5.00	6.00	7.50	9.00	11.00	13.50	16.00	19.00
C	2.38	2.75	3.12	3.88	4.75	6.00	7.50	9.50	11.75	14.25	17.00
R	1.38	1.69	2.00	2.88	3.62	5.00	6.19	8.50	10.62	12.75	15.00
T	0.44	0.50	0.44	0.56	0.62	0.75	0.94	1.00	1.12	1.19	1.25
N	0.62	0.62	0.62	0.62	0.75	0.75	0.75	0.88	0.88	1.00	1.00
No. of Holes	4	4	4	4	4	4	8	8	8	12	12
O	1.99	2.19	2.62	3.43	4.14	5.44	6.28	8.73	10.77	14.15	20.16
H1	1.50	1.65	1.89	2.48	2.85	3.86	4.72	6.57	8.46	11.57	16.26
ISO 5211 MTG	F05	F05	F05	F05	F07	F10	F10	F12	F14	F16	F25
WT (lb.)	5.30	6.63	9.06	17.46	24.31	55.25	66.30	137.02	361.34	508.30	906.10
ANSI 300 FULL BORE											
E	0.55	0.75	1.00	1.50	2.00	3.00	4.00	6.00	8.00	10.00	12.00
L	5.50	6.00	6.50	7.50	8.50	11.12	12.00	15.88	16.50	22.38	25.50
H	3.66	3.86	5.00	5.79	7.01	8.66	9.65	-	-	-	-
G	7.09	7.09	8.27	8.27	11.42	17.72	17.72	-	-	-	-
F	3.75	4.62	4.88	6.12	6.50	8.25	10.00	12.50	15.00	17.50	20.50
C	2.62	3.25	3.50	4.50	5.00	6.62	7.88	10.62	13.00	15.25	17.75
R	1.38	1.69	2.00	2.88	3.62	5.00	6.19	8.50	10.62	12.75	15.00
T	0.56	0.62	0.69	0.81	0.88	1.12	1.25	1.44	1.62	1.88	2.00
N	0.62	0.75	0.75	0.88	0.75	0.88	0.88	0.88	1.00	1.12	1.25
No. of Holes	4	4	4	4	8	8	8	12	12	16	16
O	1.99	2.19	2.62	3.63	4.14	5.44	6.28	9.27	10.77	14.55	20.16
H1	1.50	1.65	1.89	2.48	2.85	3.86	4.72	6.95	8.46	11.97	16.26
ISO 5211 MTG	F05	F05	F05	F05	F07	F10	F10	F14	F14	F16	F25
Wt. (lb.)	7.07	9.95	12.82	24.09	33.15	75.14	99.45	254.15	425.35	740.35	1370.20

• All dimensions are in inches. • Sizes 6" and above are with gear operator

Full Bore - Dimensions & Assembly



For Torque & Operator Mounting details, please contact Factory

Fire Safe Ball Valves