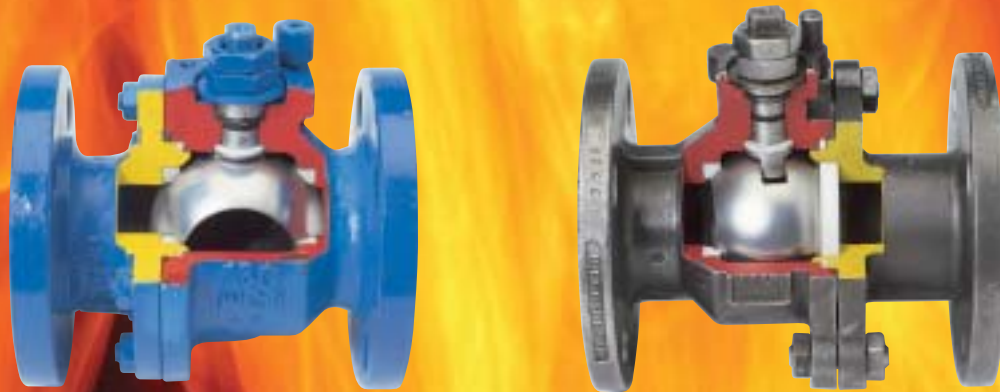
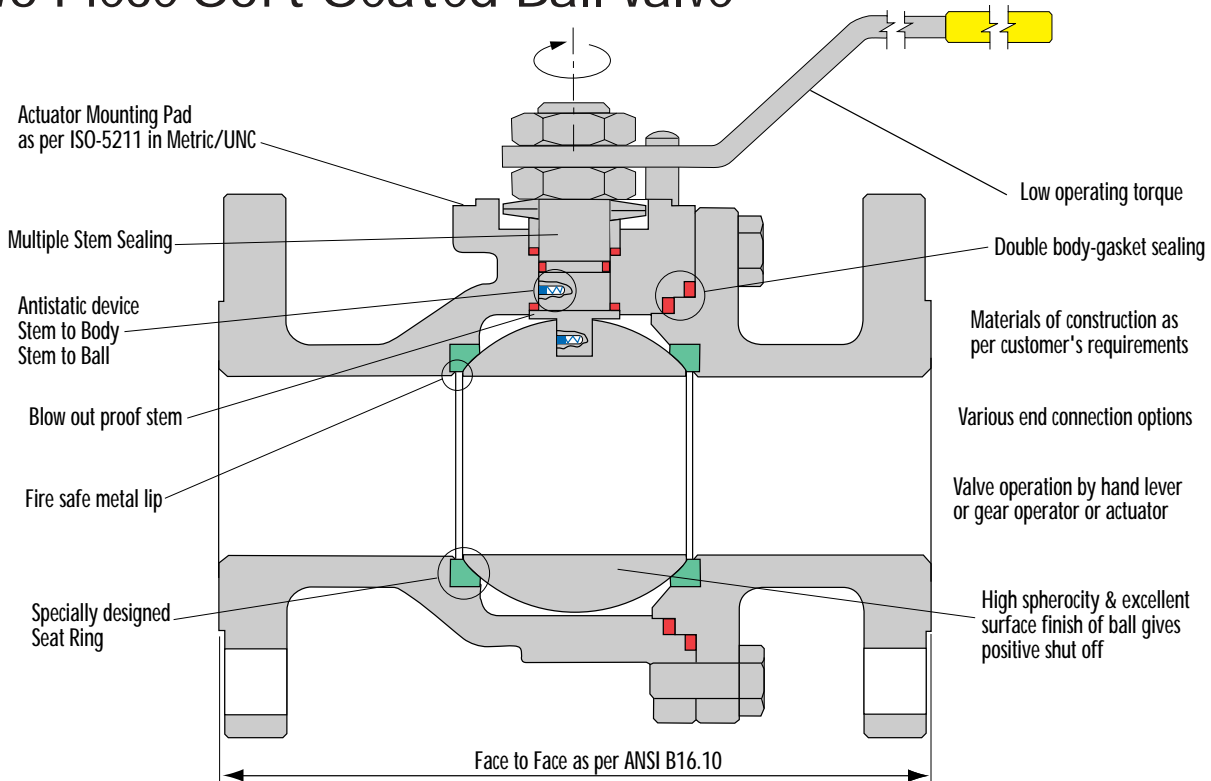


Design Features

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



Soft Seated Ball Valve Range

				Size										
Type	End Connection	Bore	ANSI Class	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

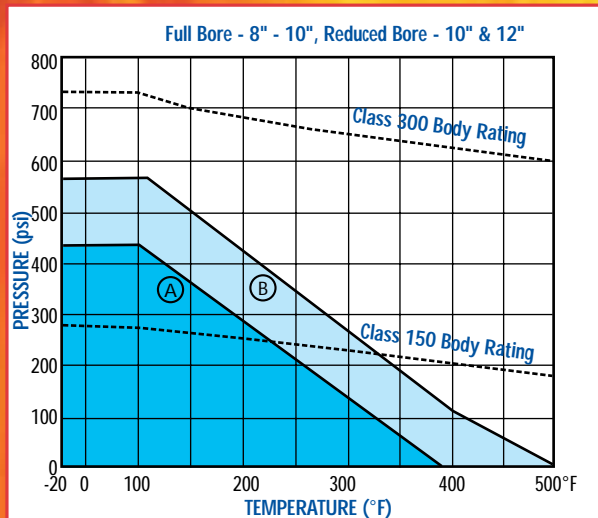
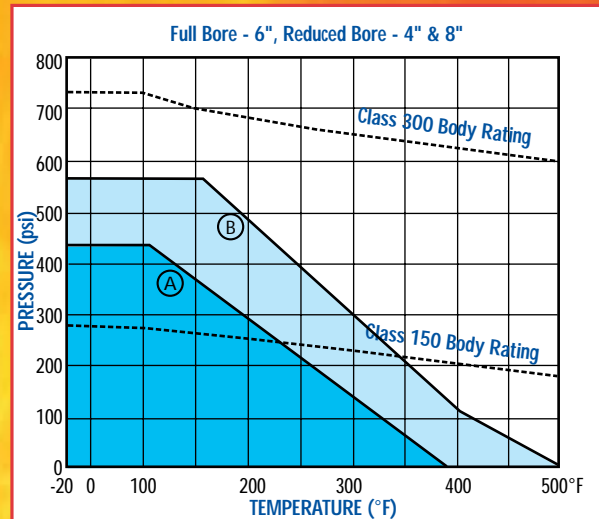
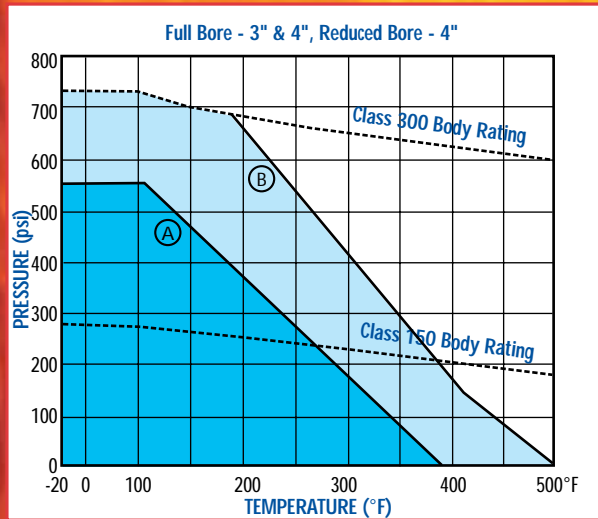
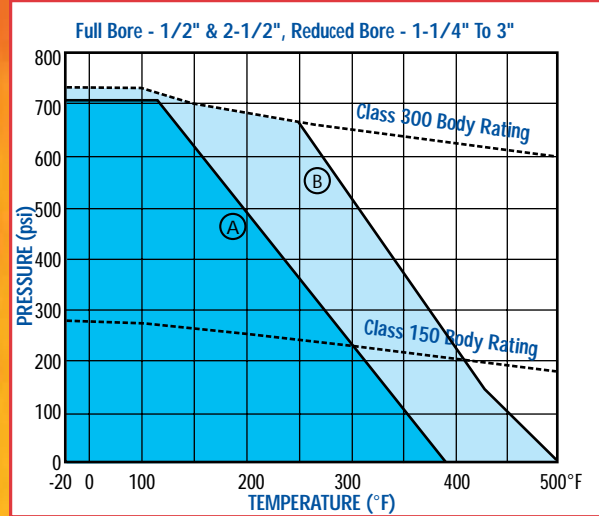
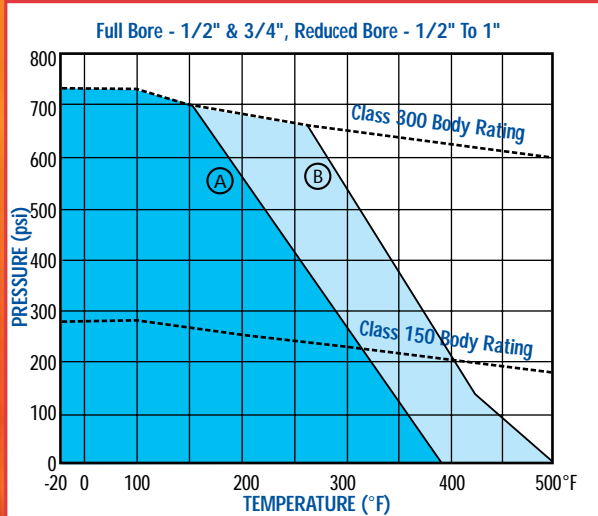


Examples: Include Full Description

- (1) **0400/BV150CS/RFL**
4" 150# Carbon Steel Ball Valve
Reduced Bore, Flanged, Lever
- (2) **0800/BV300SS/FFG**
8" 300# Stainless Steel Ball Valve
Full Bore, Flanged, Gear

SIZE	0050 - 1/2" 0200 - 2" 0800 - 8"	0075 - 3/4" 0300 - 3" 1000 - 10"	0100 - 1" 0400 - 4" 1200 - 12"	0150 - 1 1/2" 0600 - 6"
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:

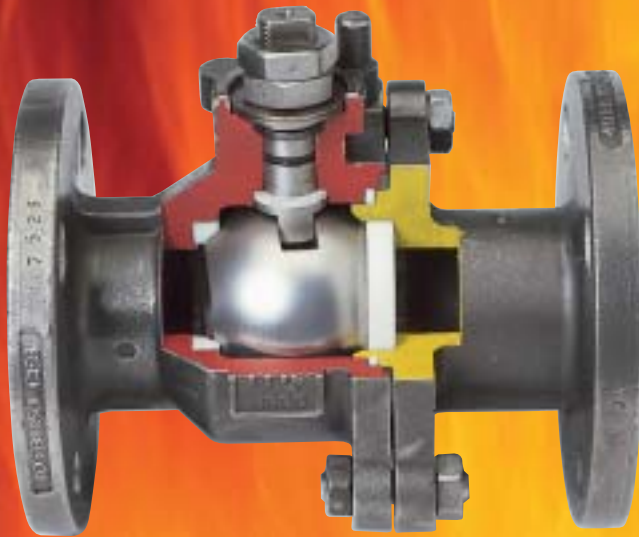
A = Virgin PTFE, B = RPTFE

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



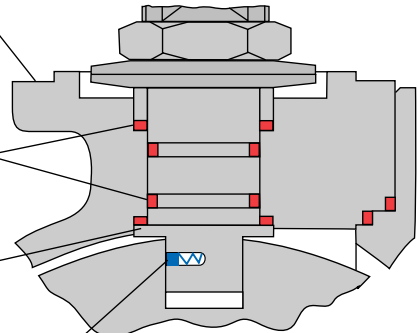
Multi-Seal Stem

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

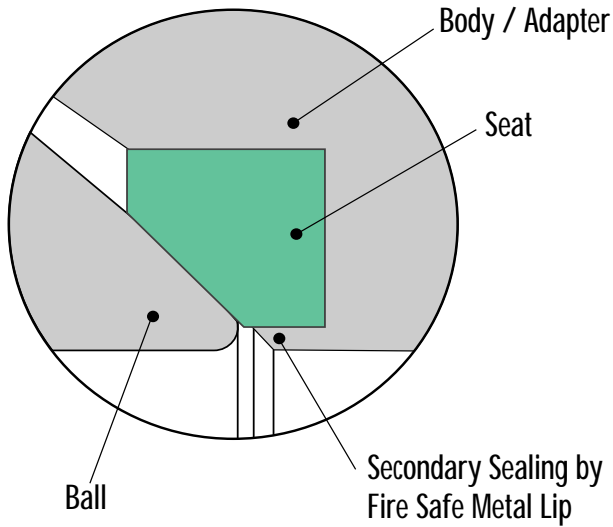


- Sure Flow valves incorporate ISO-5211 top pad which simplifies actuator/gear operator mounting.



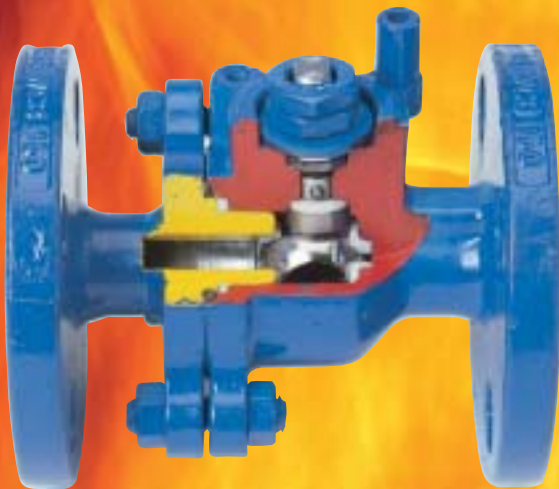
Fire Safe Design Features

Fire Safe Design

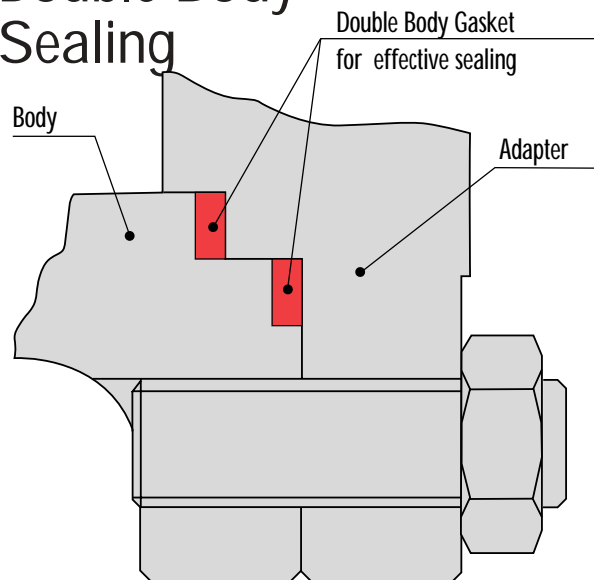


- Fire safe conformance to API 607 (Edition IV) / API 6FA / BS-6755 Part II assures highest standard of safety.
- Certified by customer's inspector and independent certifying authorities.

Fire safe tests have been witnessed and certified by Lloyd's Register



Double Body Sealing



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

Reduced Bore - Dimensions & Assembly

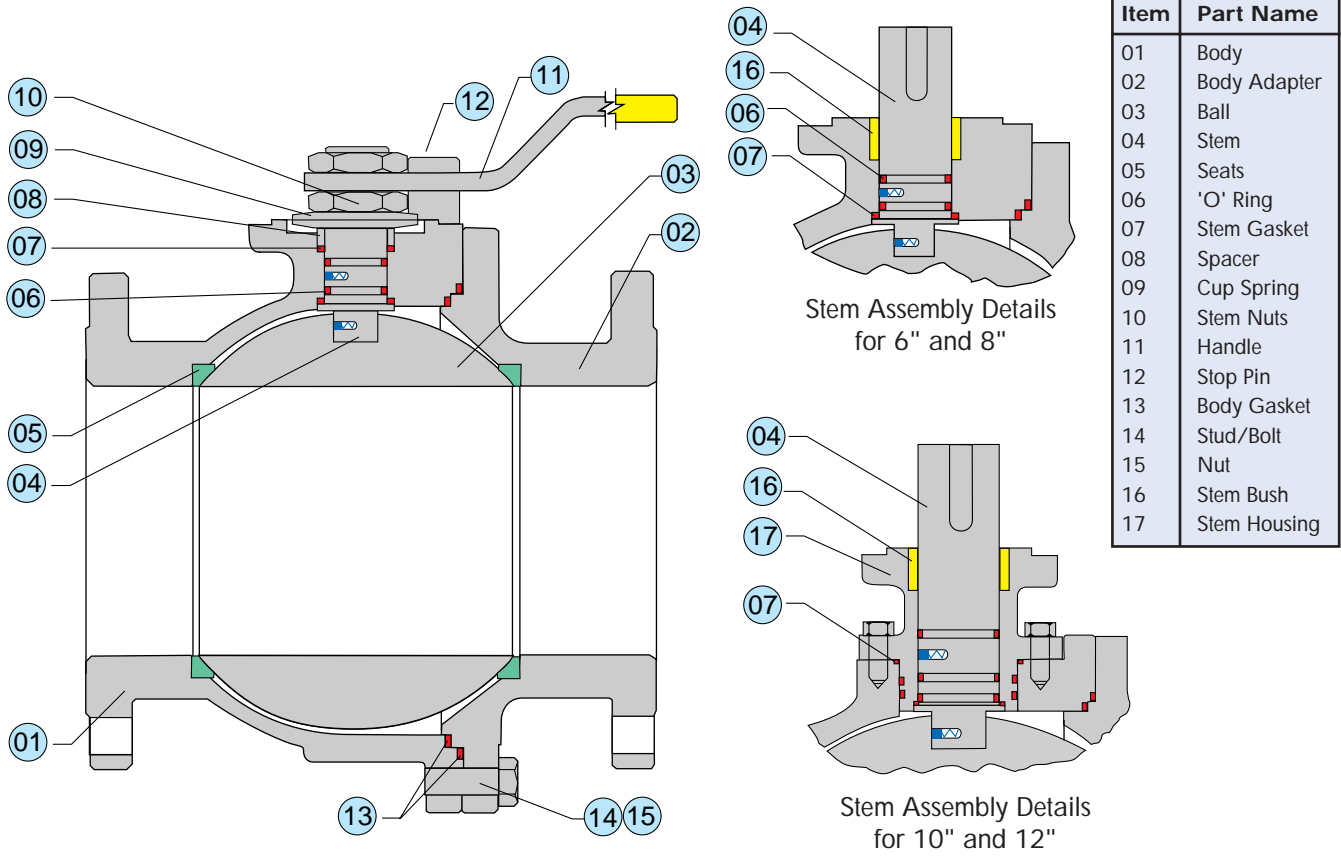


Size	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"
ANSI 150 REDUCED BORE											
E1 X E	.55 X .35	.75 X .55	1 X .75	1.5 X 1	2 X 1.5	3 X 2.5	4 X 3	6 X 4	8 X 6	10 X 8	12 X 10
L	4.25	4.62	5.00	6.50	7.00	8.00	9.00	10.50	11.50	13.00	24.00
H	2.20	3.66	3.86	5.00	6.50	7.28	8.66	9.49	12.22	-	-
G	4.33	7.09	7.09	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



Full Bore - Dimensions & Assembly

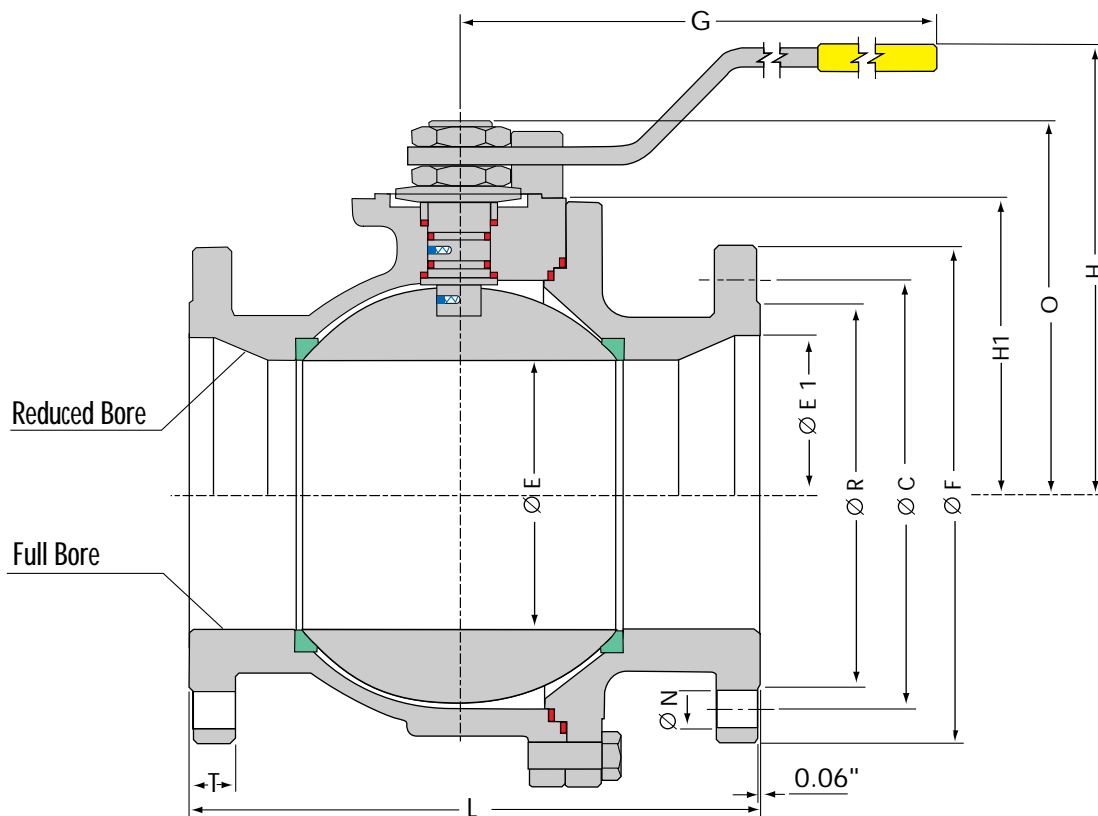


Size	1/2"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"	12"
ANSI 150 FULL											
E	0.55	0.75	1.00	1.50	2.00	3.00	4.00	6.00	8.00	10.00	12.00
L	4.25	4.62	5.00	6.50	7.00	8.00	9.00	10.50	11.50	21.00	24.00
H	3.66	3.86	5.00	6.50	7.01	8.66	9.65	-	-	-	-
G	7.09	7.09	8.27	8.27	11.42	17.72	17.72	-	-	-	-
F	3.50	3.88	4.25	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

Two Piece Soft Seated Ball Valve



Torque & Operator Mounting Details

SIZE	ISO PAD DETAILS										STEM END DETAILS						
	ISO 5211 FLANGE	TORQUE Inch-lb			d1	d2-f8	d3	d4	h-max	No of STUDS	DIA. (d)	A/F	Height Above Stem Nut (h)	Keyway Depth	Keyway Width	Keyway Length	
		BTO	RUN	ETC	inch	inch	inch	UNC	inch		inch	inch	inch	inch	inch	inch	
FB # 150	1/2"	F05	44	40	42	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.35	-	-	-
	3/4"	F05	80	72	76	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.35	-	-	-
	1"	F05	106	96	101	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.56	-	-	-
	1-1/2"	F05	177	159	168	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.88	-	-	-
	2"	F07	266	226	252	3.54	2.17	2.76	5/16"	0.12	4	0.79	0.55	0.90	-	-	-
	3"	F10	752	639	677	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.09	-	-	-
	4"	F10	1283	1091	1155	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.09	-	-	-
	6"	F12	3540	2655	3186	5.91	3.35	4.92	1/2"	0.12	4	1.42	0.94	1.38	-	-	-
	8"	F14	7965	5974	7169	6.89	3.94	5.51	5/8"	0.16	4	1.65	-	-	1.44	0.47	1.65
	10"	F16	13275	9965	11948	8.27	5.12	6.50	3/4"	0.20	4	2.60	-	-	2.25	0.87	2.36
12"	F25	23895	17921	21506	11.81	7.87	10.00	5/8"	0.20	8	3.15	-	-	2.82	0.87	3.58	
RB # 150	3/4"	F05	44	40	42	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.35	-	-	-
	1"	F05	80	72	76	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.35	-	-	-
	1-1/2"	F05	106	96	101	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.56	-	-	-
	2"	F05	177	159	168	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.88	-	-	-
	3"	F07	407	346	387	3.54	2.17	2.76	5/16"	0.12	4	0.79	0.55	0.90	-	-	-
	4"	F10	752	639	677	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.09	-	-	-
	6"	F10	1283	1091	1155	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.09	-	-	-
	8"	F12	3540	2655	3186	5.91	3.35	4.92	1/2"	0.12	4	1.42	0.94	1.38	-	-	-
	10"	F14	7965	5974	7169	6.89	3.94	5.51	5/8"	0.16	4	1.65	-	-	1.44	0.47	1.65
	12"	F16	13275	9965	11948	8.27	5.12	6.50	3/4"	0.20	4	2.60	-	-	2.25	0.87	2.36
FB # 300	1/2"	F05	71	60	66	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.35	-	-	-
	3/4"	F05	106	90	99	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.35	-	-	-
	1"	F05	159	127	148	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.56	-	-	-
	1-1/2"	F05	310	248	279	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.88	-	-	-
	2"	F07	389	312	350	3.54	2.17	2.76	5/16"	0.12	4	0.79	0.55	0.90	-	-	-
	3"	F10	1151	748	1035	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.09	-	-	-
	4"	F10	2036	1323	1832	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.09	-	-	-
	6"	F14	5310	3452	4514	6.89	3.94	5.51	5/8"	0.16	4	1.65	-	-	1.44	-	-
	8"	F14	11505	7478	9779	6.89	3.94	5.51	5/8"	0.16	4	1.65	-	-	1.44	0.47	1.65
	10"	F16	20355	13231	17302	8.27	5.12	5.50	3/4"	0.20	4	2.60	-	-	2.25	0.87	2.36
12"	F25	33630	21860	28586	11.81	7.87	10.00	5/8"	0.20	8	3.15	-	-	2.82	0.87	3.58	
RB # 300	3/4"	F05	71	60	66	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.47	-	-	-
	1"	F05	106	90	99	2.56	1.38	1.97	1/4"	0.12	4	0.47	0.31	0.47	-	-	-
	1-1/2"	F05	159	127	148	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.67	-	-	-
	2"	F05	310	248	279	2.56	1.38	1.97	1/4"	0.12	4	0.63	0.39	0.75	-	-	-
	3" F	07	566	368	510	3.54	2.17	2.76	5/16"	0.12	4	0.79	0.55	0.87	-	-	-
	4"	F10	1151	748	1035	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.26	-	-	-
	6"	F10	2036	1323	1832	4.92	2.76	4.02	3/8"	0.12	4	1.10	0.79	1.26	-	-	-
	8"	F14	5310	3452	4514	6.89	3.94	5.51	5/8"	0.16	4	1.65	-	-	1.44	0.47	1.65
	10"	F14	11505	7478	9779	6.89	3.94	5.51	5/8"	0.16	4	1.65	-	-	1.44	0.47	1.65
	12"	F16	20355	13231	17302	8.27	5.12	6.50	3/4"	0.20	4	2.60	-	-	2.25	0.87	2.36

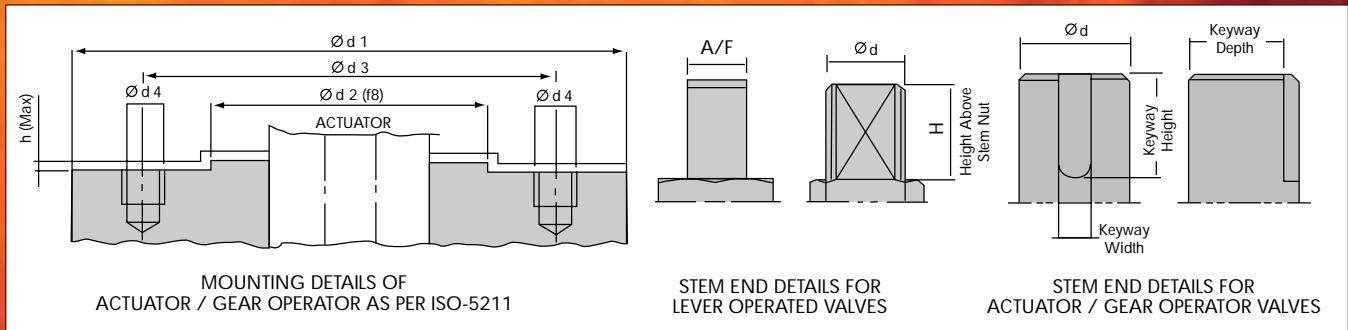
Torque values mentioned above are without safety factor and we recommend 30% more for gear operator / actuator selection.
 BTO - Break to Open. ETC = End to Close.



Toll Free: 1-800-263-8251 Toll Free Fax: 1-800-876-1164
 International 1-905-335-1350 International Fax: 1-905-332-4993
 Email: info@sureflowequipment.com www.sureflowequipment.com



Torque & Operator Mounting Details



Valve Operation

Length of lever and diameter of handwheel (maximum 31-1/2") of gear operator are designed to keep operating force less than 80 lb. All valves have a stopper for fully opened & closed position along with indicator to show position of ball port.

Sure Flow Equipment Inc. – Limited Warranty

All products are warranted to be free of defects in material and workmanship for a period of one year from the date of shipment, subject to below. **All custom products are not subject to return, credit or refund.**

If the purchaser believes a product to be defective, the purchaser shall:

- Notify the manufacturer, state the alleged defect and request permission to return the product. Merchandise will not be accepted for return without a "Return Code" clearly marked on the outside of the package. Contact the office to obtain a return code.
- If permission is given, return the product with the transportation **prepaid**. Collect shipments will not be accepted. Goods must be returned prepaid.

If the product is accepted for return and found to be defective, the manufacturer will, at its discretion, either repair or replace the product, f.o.b. factory, within 60 days of receipt, or issue credit for the purchase price.

Other than to repair, replace or credit as described above, purchaser agrees that manufacturer shall not be liable for any loss, costs, expenses or damages of any kind arising out of the product, its use, installation or replacement, labeling, instructions, information or technical data of any kind, description of product or use, sample or model, warnings or lack of any of the foregoing.

NO OTHER WARRANTIES, WRITTEN OR ORAL, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY, ARE MADE OR AUTHORIZED. NO AFFIRMATION OF ACT, PROMISE, DESCRIPTION OF PRODUCT OR USE OR SAMPLE OR MODEL SHALL CREATE ANY WARRANTY FROM MANUFACTURER, UNLESS SIGNED BY THE PRESIDENT OF MANUFACTURER.

Catalogs Available from Sure Flow Equipment

