



### BV2I-Series Ball Valve

The BV2I-series ball valve is a full port valve and available with a manual handle, pneumatic or electric actuator and a variety of control options.

Used in oil, water, and gas applications when you need a valve for isolation or control of the flow of a product. They are found in the industrial market and in the sanitary process markets on the non-process side where there is not product contact.

#### Sizes

- 1/4", 3/8", 1/2", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4"

#### Features

- Blow-out proof stem design
- Live-loaded stem packing
- ISO 5211 mounting pad
- 3-piece design allows for ball and seat replacement without having to remove the valve from the line
- Self centering valve ends
- Anti-static stem

#### Materials

- Product contact metal components: CF8M stainless steel
- Non-product contact metal components: 316 stainless steel
- Product contact seals: RTFE or 25% carbon PTFE

#### Specifications

- Standard connections:
  - FNPT, schedule 5/10 socket weld
- Valve data
  - Maximum pressure:
    - 1/4" to 2": **1000 PSI WOG**
    - 2-1/2" to 3": **800 PSI WOG**
    - 4": **600 PSI WOG**
  - Operating pressure range: **-20°F to 400 °F (-28°C to 200°C)**
- Actuator data
  - ISO 5211 mounting pad connection (see chart on page 3)
- Surface finish
  - Product contact metal components:  $\leq 32$  Ra
  - Seat lubricant: BESSIL F-100



### BV2I-Series Ball Valve - ISO 5211 Mounting Pad Connection Chart

Size	ISO 5211 Mounting Pad Connections		Stem Width (mm)	Stem Height (mm)
1/4"	F03	F04	9	9
3/8"	F03	F04	9	10
1/2"	F03	F04	9	10
3/4"	F03	F04	9	11
1"	F04	F05	11	12.5
1-1/4"	F04	F05	11	14
1-1/2"	F05	F07	14	17
2"	F05	F07	14	17
2-1/2"	F07	F10	17	18.5
3"	F07	F10	17	18.5
4"	F07	F10	17	21

### BV2I-Series Ball Valve - Weight and Break Torque Chart

Part #	Size	Base Break Torque (in-lbs)	Flow Coefficient (Cv)	Weight (lbs)
BV2I_025_	1/4"	17	8.1	1.00
BV2I_038_	3/8"	18	14	1.10
BV2I_050_	1/2"	50	26	1.26
BV2I_075_	3/4"	57	51	1.57
BV2I_100_	1"	115	68	2.27
BV2I_125_	1-1/4"	186	120	3.44
BV2I_150_	1-1/2"	220	170	5.51
BV2I_200_	2"	405	376	7.58
BV2I_250_	2-1/2"	452	510	14.11
BV2I_300_	3"	1020	996	24.69
BV2I_400_	4"	1180	1893	48.50

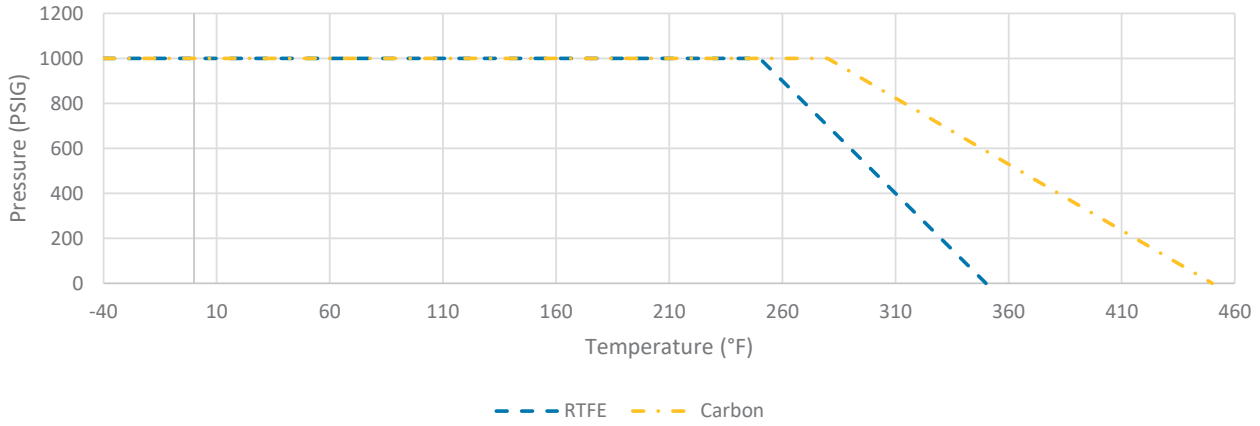
### BV2I-Series Ball Valve - Seat Material

Code (Seat Material)	Material Torque Multiplier
GN (15% Glass Reinforced RTFE)	1
CN (25% Carbon Reinforced PTFE)	1.25

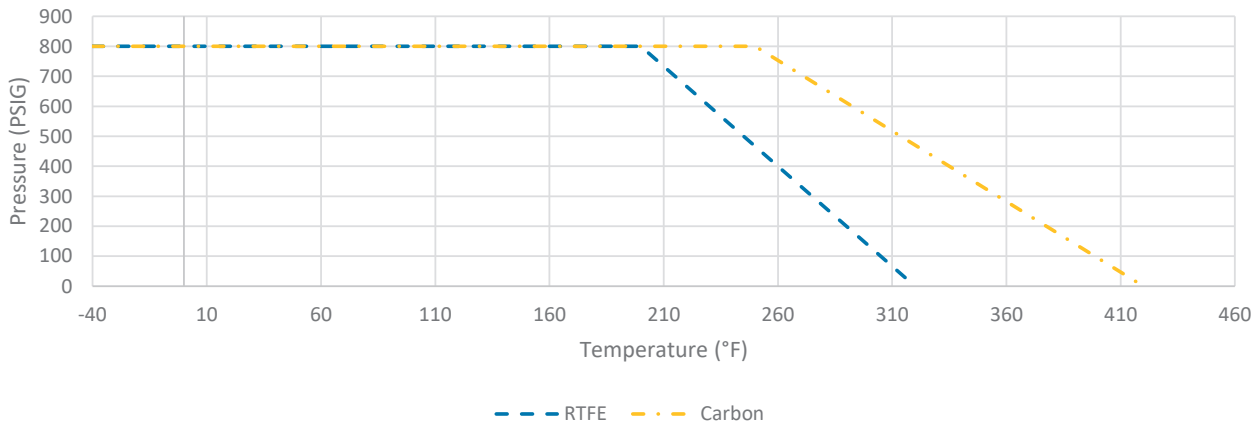
NOTE: 1) Base Break Torque \* Material Torque Multiplier = Material Break Torque

### BV2I-Series Pressure Temperature Charts

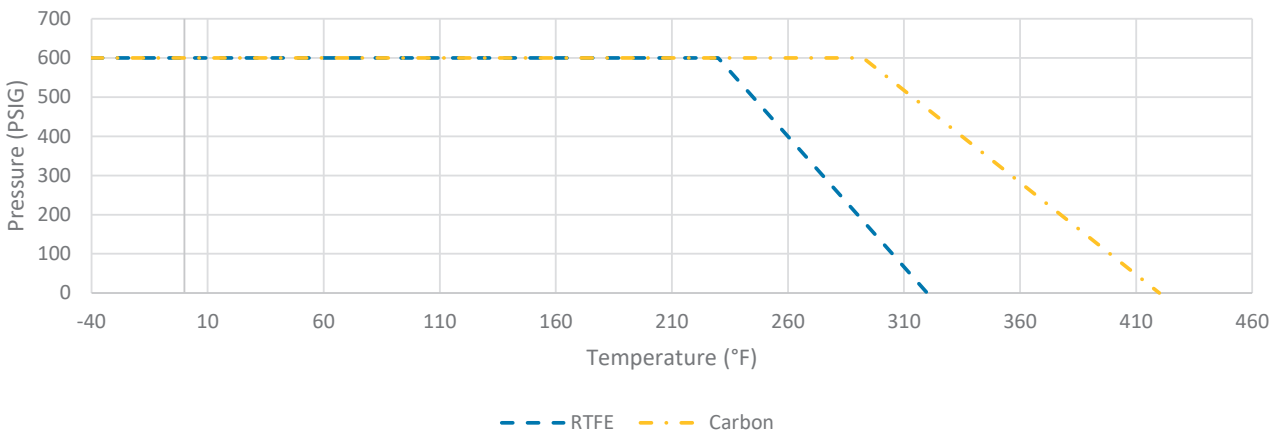
0.25 in - 2.00 in



2.50 in & 3.00 in



4.00 in



### BV2I-Series Industrial Ball Valve - Part Number Key

BV2I-Series Industrial Ball Valve Part Number Key Example: BV2IGN02511-A		Series	Seat Material	Valve Size	Connection End	Connection End	Handle
		BV2I	GN	025	1	1	- A
<b>Series</b>	<b>Code</b>						
BV2I	BV2I						
<b>Seat Material</b>	<b>Code</b>						
15% glass reinforced PTFE (standard)	GN						
25% carbon reinforced PTFE	CN						
<b>Valve Size</b>	<b>Code</b>						
1/4"	025						
3/8"	038						
1/2"	050						
3/4"	075						
1"	100						
1-1/4"	125						
1-1/2"	150						
2"	200						
2-1/2"	250						
3"	300						
4"	400						
<b>Connection End</b>	<b>Code</b>						
Female NPT	1						
Socket weld	3						
<b>Handle</b>	<b>Code</b>						
Manual handle (standard)	A						
No handle (actuation)	blank						

Industrial 2-Way Actuated Ball Valve Part Number Key Example: 2IG0311XX00XX1		Series	Seat Material	Size	Connections
		2I	G	03	1
<b>Series</b>	<b>Code</b>				
Stainless steel 3-piece body, non-encapsulated	2I				
<b>Seat Material</b>	<b>Code</b>				
RTFE (15% glass reinforced PTFE)	G				
25% carbon reinforced PTFE	C				
<b>Size</b>	<b>Code</b>				
1/4"	03				
3/8"	04				
1/2"	50				
3/4"	75				
1"	10				
1-1/4"	13				
1-1/2"	15				
2"	20				
2-1/2"	25				
3"	30				
4"	40				
<b>Connections</b>	<b>Code</b>				
Female NPT	1				
Socket weld	3				

NOTE: Continue part number selection by following column 1 or 2 on page 6.

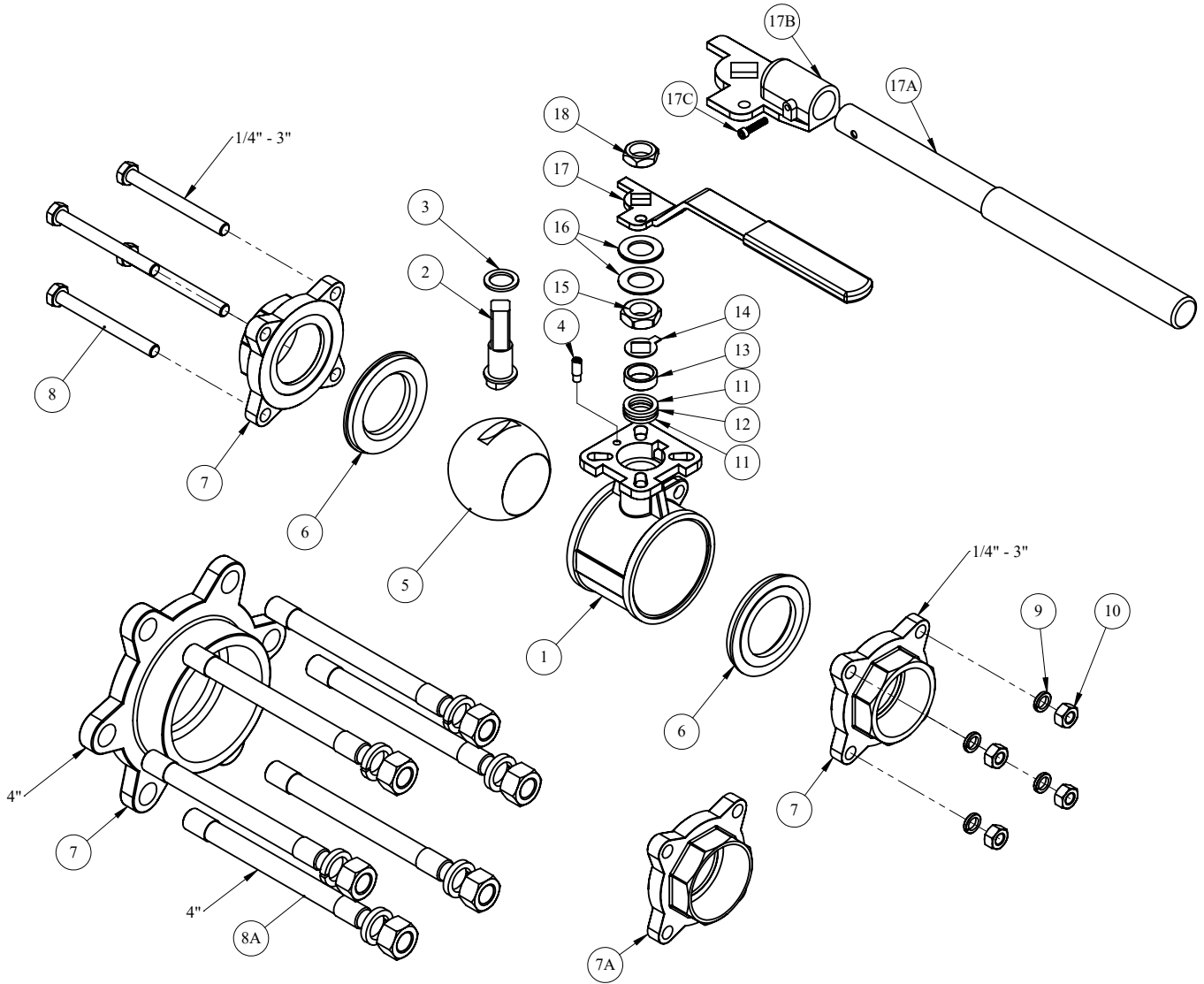
**BV2I-Series Industrial Actuated Ball Valve - Part Number Key**

1. Pneumatic Actuator or Spring Return Manual Handle					2. Electric Actuator			
Actuator	Actuator Options	Feedback	Control	Valve Operation	Actuator	Voltage	Option 1	Option 2
1	XX	00	XX	1	E	B	1	1
<b>Actuator</b>				<b>Code</b>	<b>Actuator</b>			<b>Code</b>
Aluminum spring return pneumatic rack and pinion				1	Electric			E
Aluminum double acting pneumatic rack and pinion				2	Oversized (1-UP) electric			F
Stainless steel spring return pneumatic rack and pinion				3	Explosion proof (Class I Div I group C and D, Class II Div I group E, F, and G) electric			G
Stainless steel double acting pneumatic rack and pinion				4	Electric with riser kit			H
Dead man spring return handle				6	<b>Voltage</b>		<b>Explosion Proof</b>	<b>Code</b>
Technopolymer spring return pneumatic rack and pinion				7	115VAC		115VAC	B
<b>Actuator Options</b>				<b>Code</b>	12VDC		n/a	C
None				XX	n/a		24VAC	D
Oversized (1-UP)				AA	24VDC/AC		24VDC	E
Actuator mounted perpendicular to flow				AB	220VAC		220VAC	F
High temp FKM elastomers				AC	12VAC		n/a	G
Extended travel stops				AD	<b>Option 1</b>			<b>Code</b>
Riser kit				AE	None			1
<b>Feedback</b>				<b>Code</b>	Torque switches			2
None				00	4-20mA input/output modulating controller			3
Limit switch box, OPEN/CLOSE beacon, (2) SPDT mechanical switches				11	Current position transmitter			4
Limit switch box, OPEN/CLOSE beacon, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus Class 1/2 Div 2, NEMA 4 and 4X				12	Potentiometer			5
Limit switch box, OPEN/CLOSE beacon, AS-I				13	Local control unit			6
Limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure				14	Two extra travel cams and switches			7
Limit switch box, OPEN/CLOSE beacon, (2) DPDT mechanical switches				15	Three position cam set			8
Limit switch box, OPEN/CLOSE beacon, (2) switches, electro mechanical SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1				16	Local control unit with lock			9
Limit switch box, OPEN/CLOSE beacon, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO				17	1-5V input/2-10V output modulating controller			A
Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter				18	2-10V input/output modulating controller			B
Limit switch box, OPEN/CLOSE beacon, SPDT proximity, 0.25A at 120VAC, 0.416A at 48VDC, resistive				19	75% duty cycle			C
Limit switch box, OPEN/CLOSE beacon, 4-20ma analog position transmitter + 2 SPDT mechanical switches				20	Relay			D
Stainless steel limit switch box, OPEN/CLOSE beacon, (2) proximity SPDT switches				21	Four position cam set			E
					25% duty cycle (actuator Code G only)			F
					75% duty cycle (actuator Code G only)			G

### BV2I-Series Industrial Actuated Ball Valve - Part Number Key

Control	Code	Option 2	Code
None	XX	None	1
Single coil solenoid, 120VAC	AA	Torque switches	2
Single coil solenoid, 24VDC	AB	4-20mA input/output modulating controller	3
Single coil solenoid, 12VDC	AC	Current position transmitter	4
Single coil solenoid, 220VAC	AD	Potentiometer	5
Dual coil solenoid, 120VAC	AE	Local control unit	6
Dual coil solenoid, 24VDC	AF	Two extra travel cams and switches	7
Dual coil solenoid, 220VAC	AG	Three position cam set	8
Pneumatic positioner 3-15psi input, no feedback	AH	Local control unit with lock	9
Pneumatic positioner 3-15psi input, (2) SPDT mechanical switches for feedback	AI	1-5V input/2-10V output modulating controller	A
Pneumatic positioner 3-15psi input, 4-20mA for feedback	AJ	2-10V input/output modulating controller	B
Electropneumatic positioner 4-20mA input, no feedback	AK	75% duty cycle	C
Electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback	AL	Relay	D
Electropneumatic positioner 4-20mA input, 4-20mA for feedback	AM	Four position cam set	E
Electropneumatic positioner 0-10v input, no feedback	AN	25% duty cycle (actuator Code G only)	F
Electropneumatic positioner 0-10v input, (2) SPDT mechanical switches for feedback	AO	75% duty cycle (actuator Code G only)	G
Electropneumatic positioner 0-10v input, 4-20mA for feedback	AP		
V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback	AQ		
Electropneumatic positioner 4-20mA input, no feedback, Class 1, Div II explosion proof	AR		
Single coil solenoid, 24VDC and 24V Banjo solenoid valve with Form B plug	AS		
Single coil solenoid, 24VDC, AS-I, 2.5W low power	AT		
Single coil solenoid, 24VDC, intrinsically safe	AU		
Single coil solenoid, 120VAC, explosion proof, Class H coil	AV		
Single coil solenoid, 24VDC, explosion proof, Class H coil	AW		
Single coil solenoid, 24VAC	AX		
V200 rotary electropneumatic positioner 4-20mA input, 4-20mA feedback, Class 1, Div II explosion proof	AY		
Single coil solenoid, 24VDC, molded LED, ind. form, 2M Leads	AZ		
TUFRAM coated electropneumatic positioner 4-20mA input, no feedback	BA		
V200 rotary pneumatic positioner, (2) REED SWITCH feedback	BB		
Single coil solenoid, 24VDC, pre-wired to limit switch with CORDSET (dual keyway, 1/2"-20 UNF mating thread, single ended, straight female connector, 22 AWG PVC, auto color code 2P to 6P cable, 12' length)	BC		
Single coil solenoid, 24VDC, pre-wired to limit switch, 6P male connector	BD		
<b>Valve Operation</b>	<b>Code</b>		
Normally closed (spring return)	1		
Normally open (spring return)	2		
Fail in place (double acting)	3		

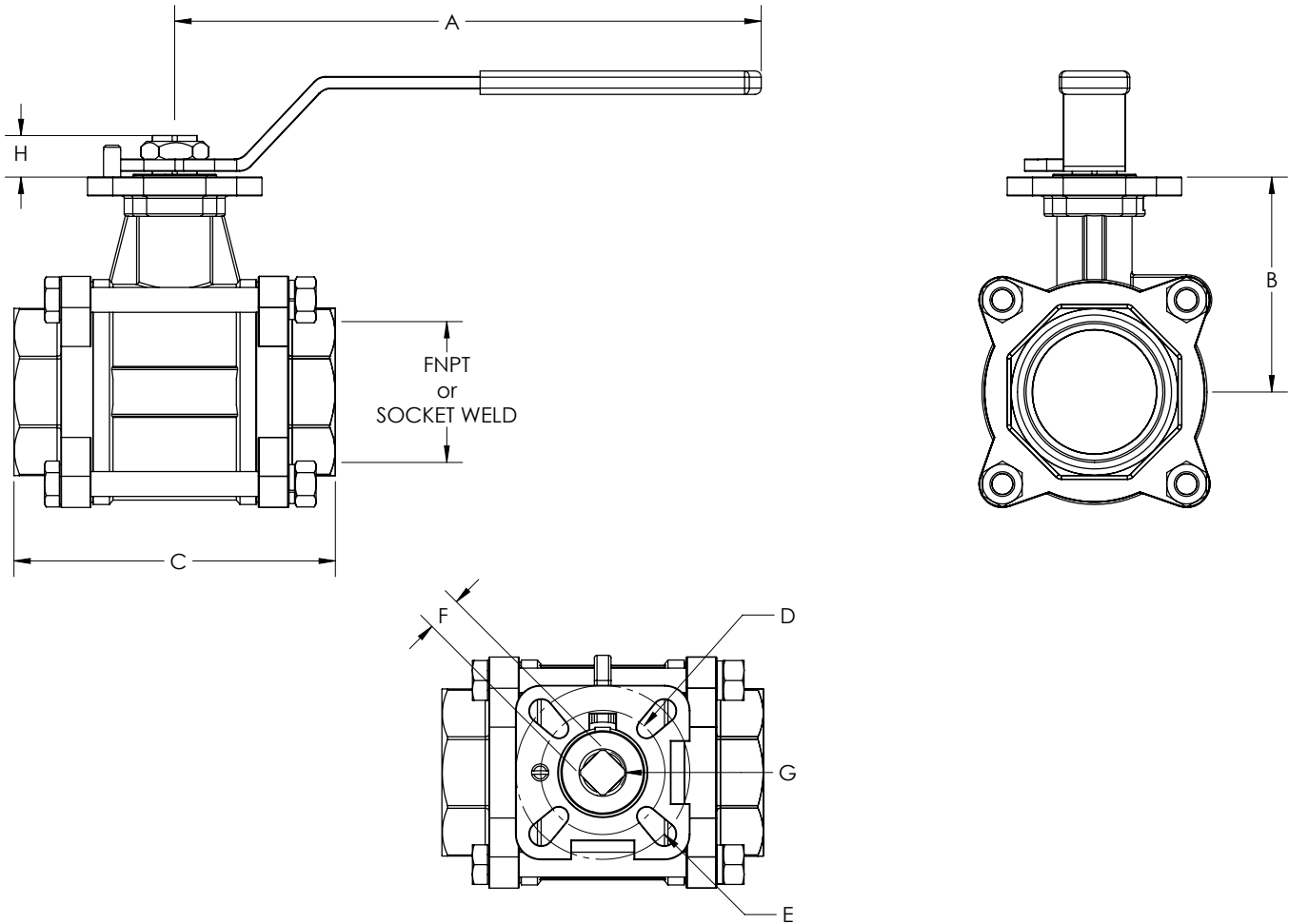
BV2I-Series Ball Valve - Bill of Materials



**BV2I-Series Ball Valve - Bill of Materials**

Item #	Description	Material	Qty		
			1/4" to 2"	2-1/2" to 3"	4"
1	body	CF8M		1	
2	stem	316 SS		1	
3	thrust washer	G or C		1	
4	stopper	304 SS		1	
5	ball	316 SS		1	
6	seat	G or C		2	
7	end (FNPT)	CF8M		2	
7A	end (socket weld)	CF8M		2	
8	body bolt	304 SS	4		n/a
8A	body bolt	304 SS	n/a		6
9	body washer	304 SS	4		12
10	body nut	304 SS	4		12
11	stem packing	G or C		2	
12	O-ring	Silicone		1	
13	gland bushing	304 SS		1	
14	tap washer	304 SS		1	
15	gland nut	304 SS		1	
16	spring washer	304 SS		1	
17	handle	304 SS/plastic		1	n/a
17A	handle rod	304 SS/plastic	n/a		1
17B	handle hub	304 SS	n/a		1
17C	hub bolt	304 SS	n/a		1
18	handle nut	304 SS		1	

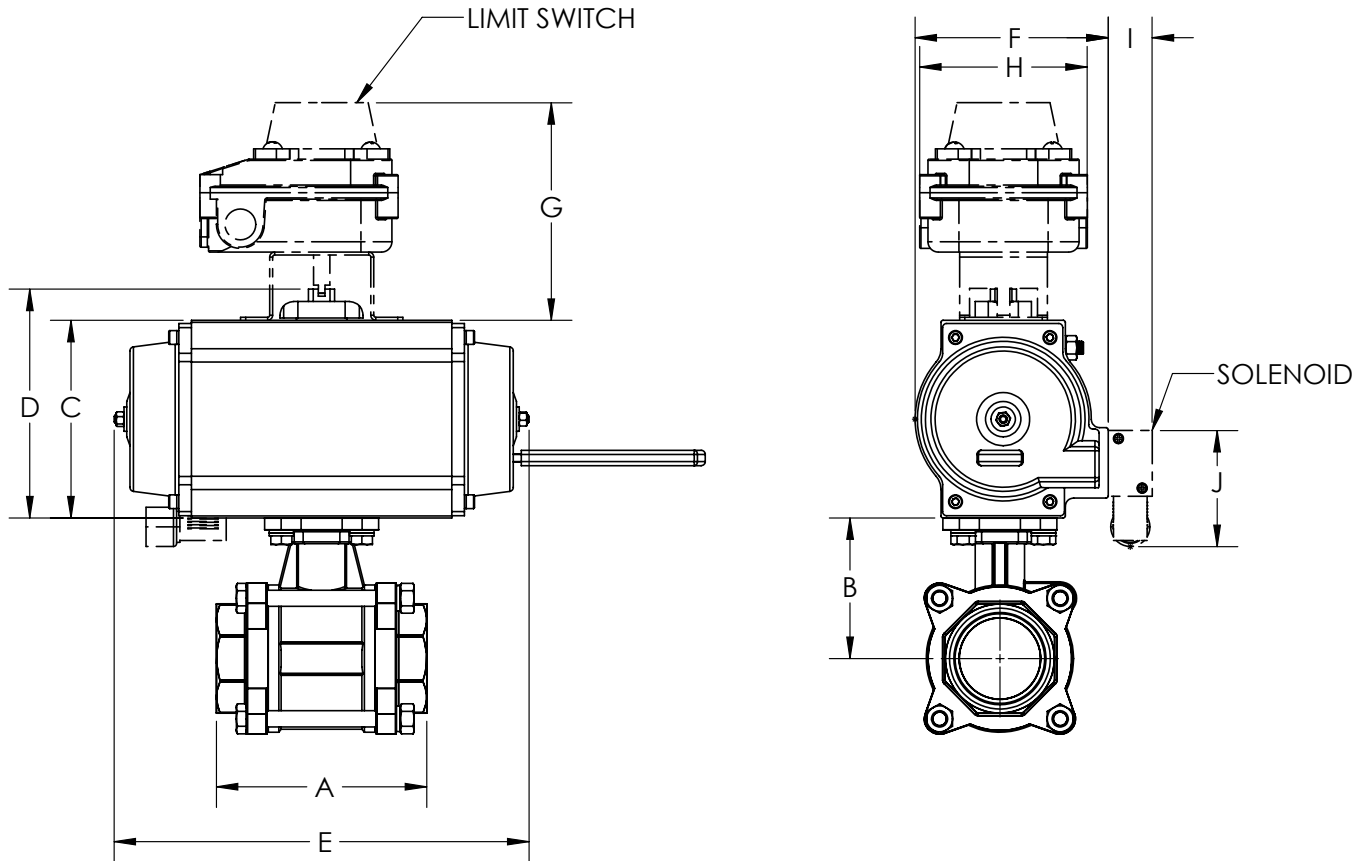
**BV2I-Series Ball Valve - Dimensions**



Size	A (in)	B (in)	C (in)	D	E	F (mm)	G (threads)	H (mm)	FNPT	Socket Weld
1/4"	4.72	1.52	2.51	F03	F04	9	M12 x 1.75	9	0.25	N/A
3/8"	4.72	1.52	2.51	F03	F04	9	M12 x 1.75	10	0.38	0.71
1/2"	4.72	1.67	2.84	F03	F04	9	M12 x 1.75	10	0.50	0.88
3/4"	4.72	1.91	3.11	F03	F04	9	M12 x 1.75	11	0.75	1.09
1"	5.35	2.17	3.29	F04	F05	11	M14 x 2	12	1.00	1.35
1-1/4"	5.35	2.35	4.14	F04	F05	11	M14 x 2	14	1.25	1.70
1-1/2"	9.17	2.77	4.41	F05	F07	14	M18 x 2.5	17	1.50	1.94
2"	9.17	3.38	5.13	F05	F07	14	M18 x 2.5	17	2.00	2.44
2-1/2"	17.32	4.29	6.64	F07	F10	17	M22 x 2.5	18	2.50	3.01
3"	17.32	4.67	7.34	F07	F10	17	M22 x 2.5	18	3.00	3.52
4"	17.32	4.54	8.88	F07	F10	17	M22 x 2.5	21	4.00	4.52

## Actuated Ball Valve Dimensions

### Actuated Spring Return

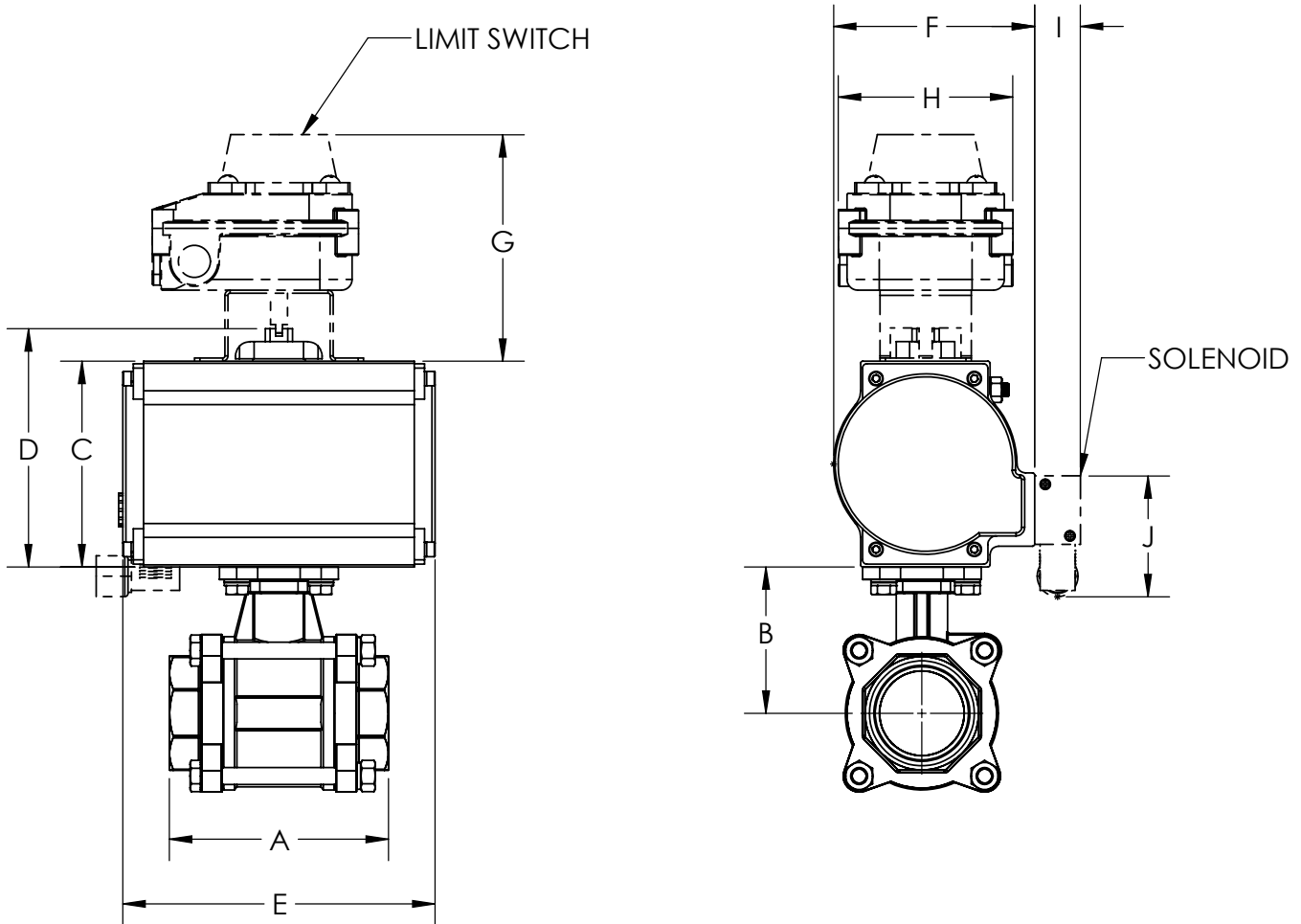


Size	A (in)	B (in)	RP-BA Series Actuator	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)	J (in)
								XLS-B4 Series		X Series	
1/4"	2.51	1.52	RP-BA-025-SR	3.10	3.83	7.66	3.20	5.27	4.06	1.07	2.81
3/8"	2.51	1.52									
1/2"	2.84	1.67									
3/4"	3.11	1.91									
1"	3.29	2.17	RP-BA-025-SR05	3.10	3.83	7.66	3.20	5.27	4.06	1.07	2.81
1-1/4"	4.14	2.35									
1-1/2"	4.41	2.77	RP-BA-045-SR	3.86	4.63	8.09	3.72				
2"	5.13	3.38	RP-BA-101-SR	4.79	5.54	9.84	4.68				
2-1/2"	6.64	4.29	RP-BA-225-SR	5.58	6.34	13.98	5.56	5.27	4.06	1.07	2.81
3"	7.34	4.67									
4"	8.88	4.54									

NOTE: For more information on actuation accessories, see relevant EPRG for the actuator, limit switch, and solenoid.

### Actuated Ball Valve Dimensions

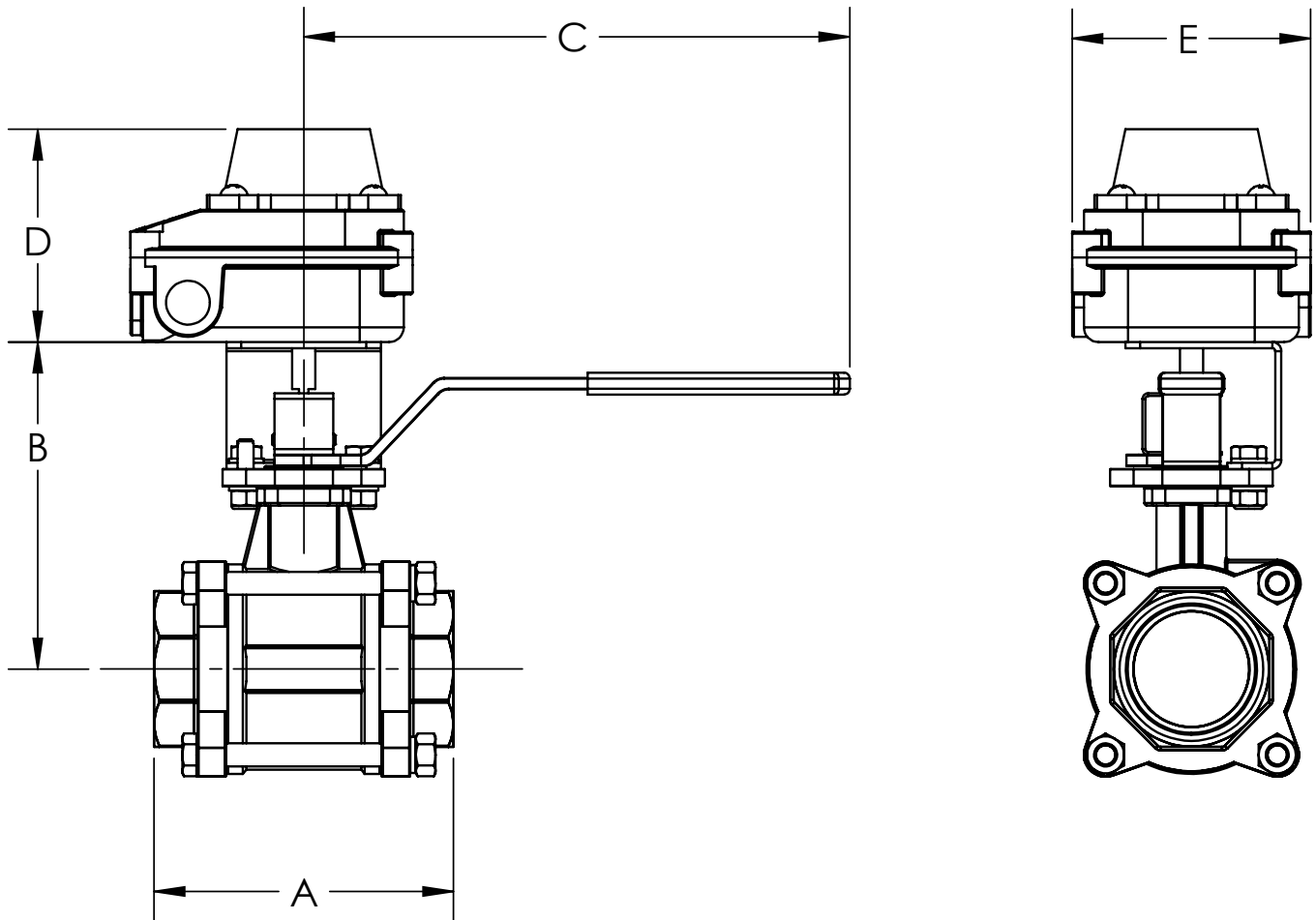
#### Actuated Double Acting



Size	A (in)	B (in)	RP-BA Series Actuator	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)	J (in)
								XLS-B4 Series		X Series	
1/4"	2.51	1.52	RP-BA-012-DA	2.6	3.39	4.72	2.93	5.27	4.06	1.07	2.81
3/8"	2.51	1.52									
1/2"	2.84	1.67									
3/4"	3.11	1.91	RP-BA-025-DA	3.1	3.87	5.68	3.2				
1"	3.29	2.17	RP-BA-025-DA05	3.1	3.87	5.68	3.2				
1-1/4"	4.14	2.35									
1-1/2"	4.41	2.77	RP-BA-045-DA	3.86	4.63	5.87	3.72				
2"	5.13	3.38									
2-1/2"	6.64	4.29	RP-BA-101-DA	4.79	5.54	7.2	4.77				
3"	7.34	4.67	RP-BA-225-DA	5.58	6.34	10.22	5.56				
4"	8.88	4.54									

NOTE: For more information on actuation accessories, see relevant EPRG for the actuator, limit switch, and solenoid.

## Actuated Ball Valve Dimensions Actuated Manual Handle and Limit Switch

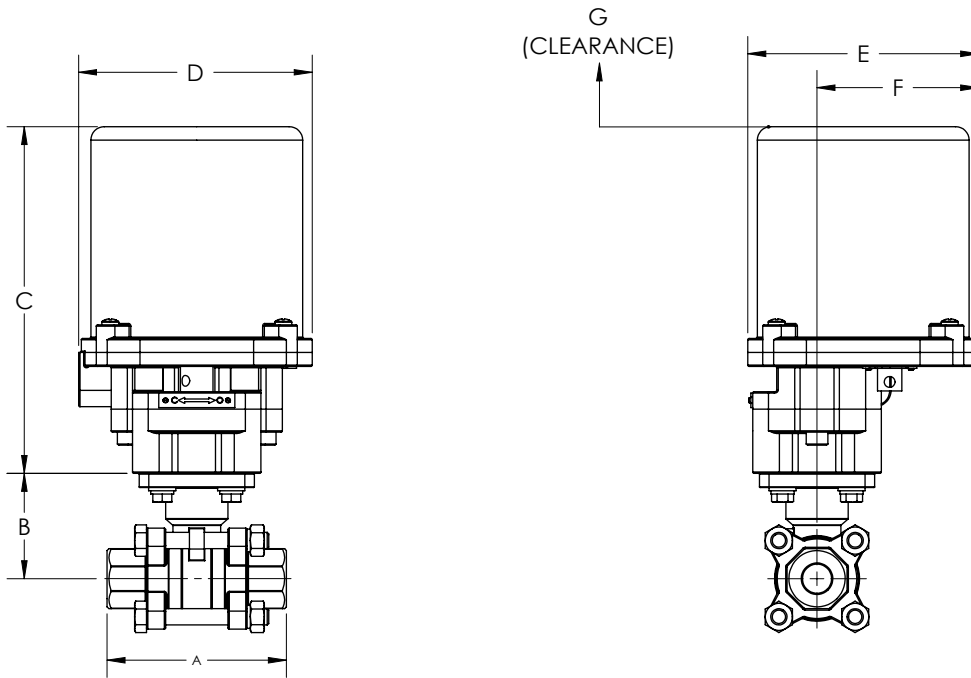


Size	A (in)	B (in)	C (in)	D (in)	E (in)
				XLS-B4A0120P	
1/4"	2.51	3.59	4.72	3.62	4.06
3/8"	2.51	3.59	4.72		
1/2"	2.84	3.74	4.72		
3/4"	3.11	3.98	4.72		
1"	3.29	4.35	5.35		
1-1/4"	4.14	4.53	5.35		
1-1/2"	4.41	4.94	9.17		
2"	5.13	5.55	9.17		
2-1/2"	6.64	6.60	17.32		
3"	7.34	6.98	17.32		
4"	8.88	6.85	17.32		

NOTE: The limit switch depicted is XLS-B4A0120P. For more information on actuation accessories, see relevant EPRG.

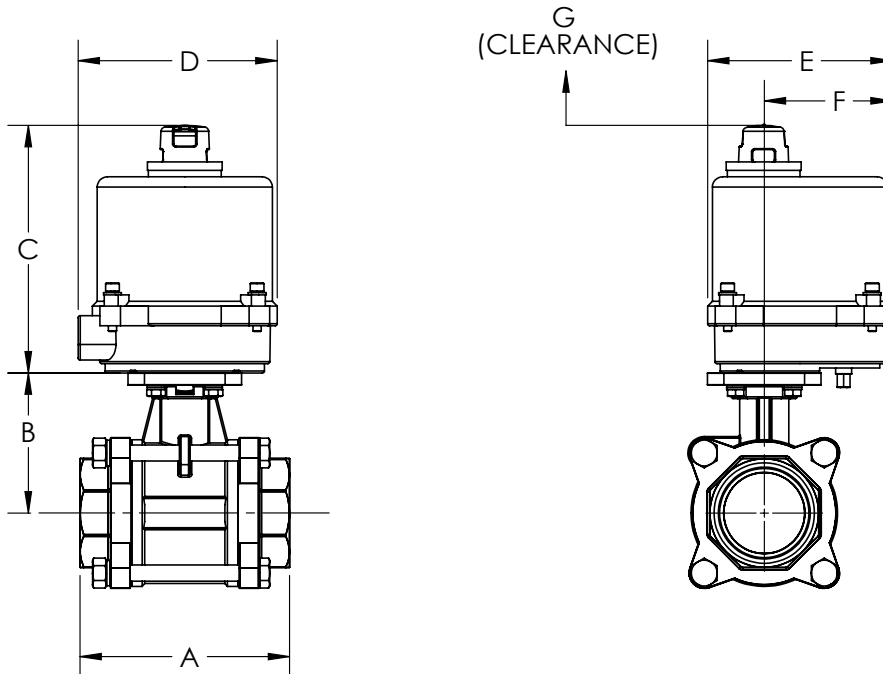
## Actuated Ball Valve Dimensions

### Electric Actuator



NOTE: The electric actuator shown is a OM-T model. For more information on actuation accessories see relevant EPRG for electric actuators.

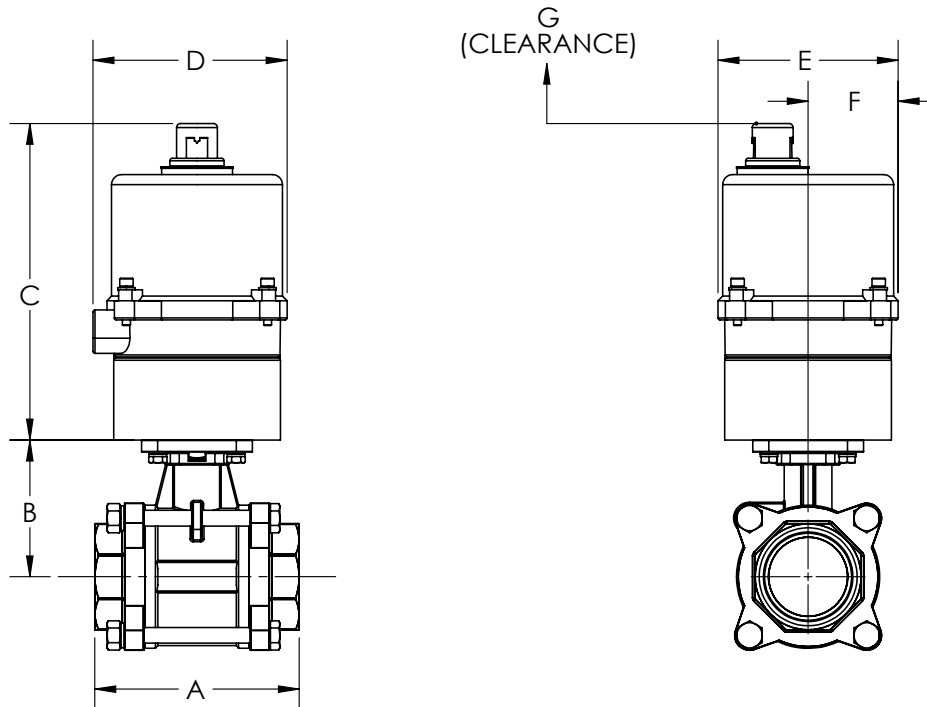
### Electric Actuator



NOTE: The electric actuator shown is a BEOM-1B-1 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

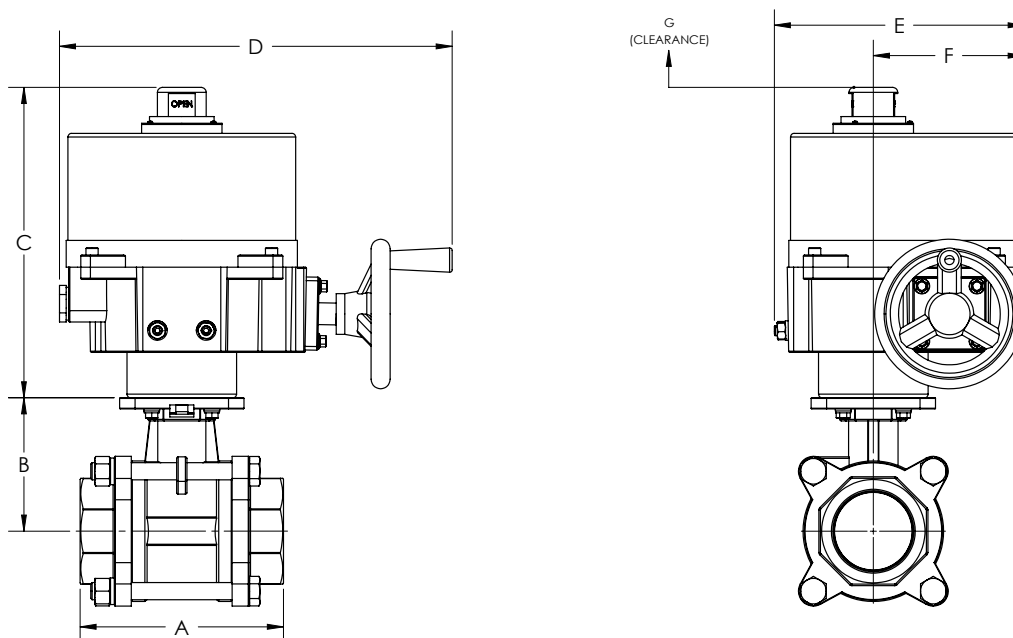
## Actuated Ball Valve Dimensions

### Electric Actuator



NOTE: The electric actuator shown is a BEOM-A model. For more information on actuation accessories see relevant EPRG for electric actuators.

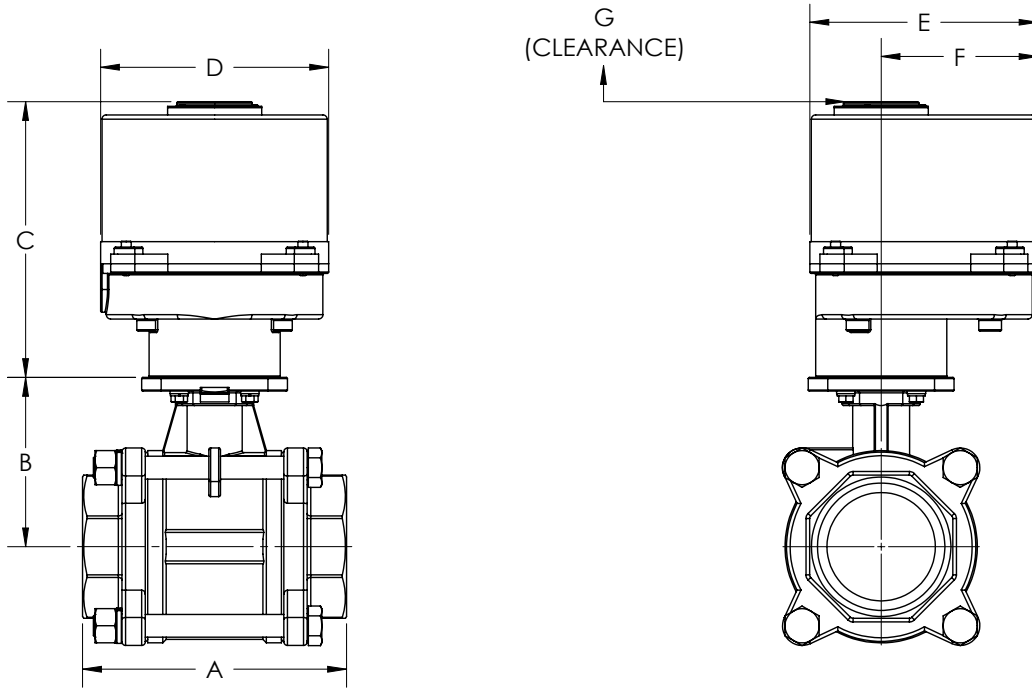
### Electric Actuator



NOTE: The electric actuator shown is a OM-3 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

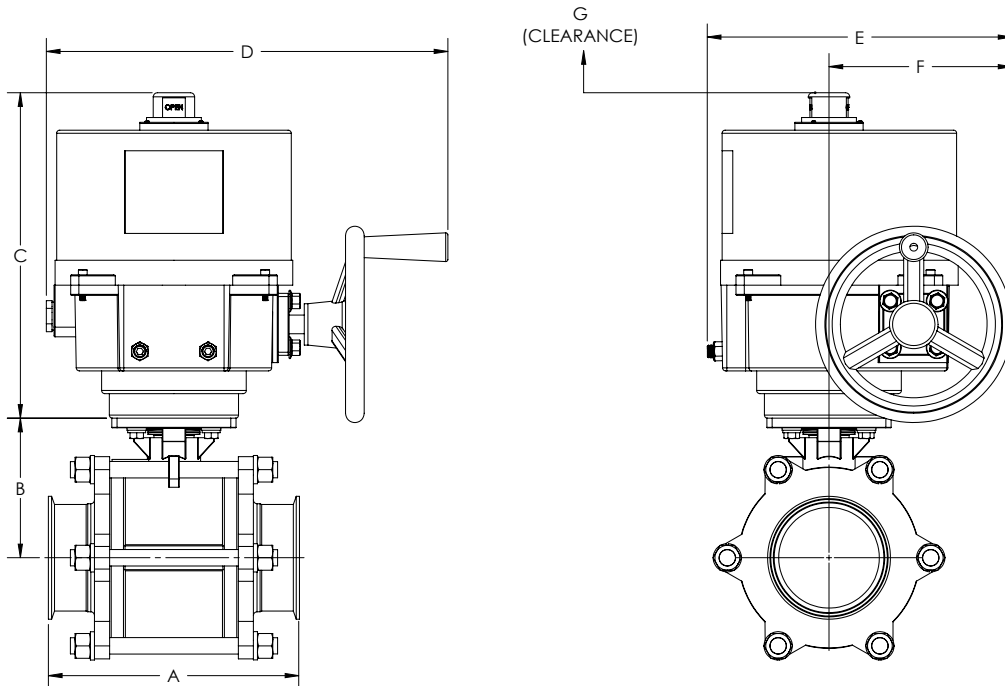
### Actuated Ball Valve Dimensions

#### Electric Actuator



NOTE: The electric actuator shown is a BM-2 model. For more information on actuation accessories see relevant EPRG for electric actuators.

#### Electric Actuator



NOTE: The electric actuator shown is a OM-4 model. For more information on actuation accessories, see relevant EPRG for electric actuators.

### Actuated Ball Valve Dimensions

Size	A (in)	B (in)	Actuator	C (in)	D (in)	E (in)	F (in)	G (in)
1/4"	2.51	1.52	BM-T	4.96	3.43	3.35	2.34	3.35
3/8"	2.51	1.52						
1/2"	2.84	1.67						
3/4"	3.11	1.91	OM-1	6.02	4.80	4.49	3.11	4.72
1"	3.29	2.17						
1-1/4"	4.14	2.35						
1-1/2"	4.41	2.77						
2"	5.13	3.38	OM-A	7.83	4.80	4.49	2.24	4.72
2-1/2"	6.64	4.29	OM-3	10.55	12.84	7.13	4.84	6.50
3"	7.34	4.67	BM-2	7.68	6.34	6.06	4.33	4.72
4"	8.88	4.54	OM-4	12.99	15.43	11.58	7.24	8.07

### BV2I-Series Repair Kit Part Numbers

Valve Size	Repair Kit Part #	Handle Kit Part #
1/4"	BV-2IN-*K025	BV-2I-HA-9
3/8"	BV-2IN-*K038	BV-2I-HA-9
1/2"	BV-2IN-*K050	BV-2I-HA-9
3/4"	BV-2IN-*K075	BV-2I-HA-9
1"	BV-2IN-*K100	BV-2I-HA-11
1-1/4"	BV-2IN-*K125	BV-2I-HA-11
1-1/2"	BV-2IN-*K150	BV-2I-HA-14
2"	BV-2IN-*K200	BV-2I-HA-14
2-1/2"	BV-2IN-*K250	BV-2I-HA-17
3"	BV-2IN-*K300	BV-2I-HA-17
4"	BV-2IN-*K400	BV-2I-HA-17

\*Use G or C

Kit contains:

1 - (G) RTFE or (C) 25% carbon/PTFE thrust washer

2 - (G) RTFE or (C) 25% carbon/PTFE seats

\*\* - (G) RTFE or (C) 25%carbon/PTFE stem packings (qty (4) for 3"-4", qty (3) for 2-1/2", qty (2) for 1/4"-2")

1 - Silicone O-ring











## Limited Warranty

DIXON VALVE & COUPLING COMPANY, LLC (herein called "Dixon") warrants the products described herein and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. Its sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) normal maintenance services and the replacement of service items (such as washers, gaskets, and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Dixon set forth herein, Dixon disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Dixon's sole obligation with respect to damages, whether direct, incidental, or consequential, resulting from the use or performance of the product.

Some products and sizes may be discontinued when stock is depleted or may require a minimum quantity for ordering.

## Limits of Liability

This brochure is intended as a product offering. It is not intended to be a user or technical manual. Information in this brochure is subject to change without notice. All users and distributors of products sold through this brochure should contact Dixon with questions of use, compatibilities, coupling procedures, and life of product. Our full-time engineering and test staff are always available to recommend uses and to assist distributors and users with any questions.



### Safety



Safety logos, which appear throughout our catalog, are used as a reminder that the user should carefully review for the appropriateness of the product for the media, application, and environment in which it will be used.

NOTE: Because of the health hazards associated with contamination and lead content in drinking water systems, Dixon couplings, unless otherwise specifically approved, are not recommended for potable water service and should not be used in applications where drinking water will contact the wetted surfaces of the coupling.

All Dixon products are shipped in cartons with the following warning:

**"WARNING:** This product contains lead, a chemical known to the State of California to cause cancer and birth defects or other reproductive harm."

## Trademark

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