The Right Connection®

BV3I-Series Multi-Port Ball Valve

Engineered Product Reference Guide

dixonvalve.com

Customer Service
800.789.1718

BV3I-Series Multi-Port Ball Valve

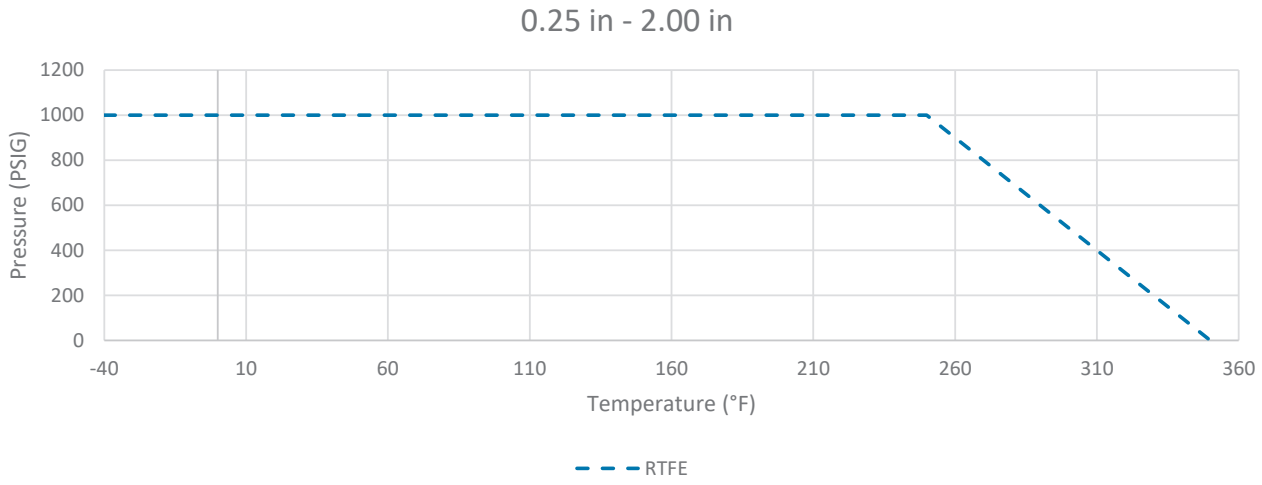
Sizes
- 1/4", 3/8", 1/2", 3/4", 1", 1-1/4", 1-1/2", 2"

Features
- Full port stainless steel ball
- ISO 5211 mounting pad
- Blow-out proof stem

Specifications
- Surface Finish
  - Product Contact Metal Components: ≤ 32 Ra
  - Non-Product Contact Metal Components: ≤ 63 Ra

Size	L-Port Part #	T-Port Part #	Weight (lbs)	Break Torque (in-lbs)	ISO 5211	Flow Coefficient (Cv)
1/4”	BV3IGLF-0251-A	BV3IGTF-0251-A	.70	105	F03/F04	7
3/8”	BV3IGLF-0381-A	BV3IGTF-0381-A	.72	105	F03/F04	7
1/2”	BV3IGLF-0501-A	BV3IGTF-0501-A	.72	138	F03/F04	11
3/4”	BV3IGLF-0751-A	BV3IGTF-0751-A	1.11	184	F04/F05	20
1”	BV3IGLF-1001-A	BV3IGTF-1001-A	1.71	323	F04/F05	30
1-1/4”	BV3IGLF-1251-A	BV3IGTF-1251-A	2.77	461	F05/F07	47
1-1/2”	BV3IGLF-1501-A	BV3IGTF-1501-A	3.82	633	F05/F07	70
2”	BV3IGLF-2001-A	BV3IGTF-2001-A	6.73	1037	F07/F10	156

BV3I-Series Multi-Port Ball Valve - Pressure Temperature Chart



BV3-Series Industrial Actuated Ball Valve - Part Number Key

BV3-Series Industrial Actuated Ball Valve Part Number Key Example: 3BLV031100XX10		Valve Style	Seat Material	Size	Connections
		3BL	V	03	1
BV3B/BV3I Valve Style	**Code**				
Brass 3-way L-port	3BL				
Brass 3-way T-port	3BT				
Stainless steel 3-way L-port	3IL				
Stainless steel 3-way T-port	3IT				
Seat Material	**Code**				
Virgin-PTFE (3B valve style only)	V				
RTFE (15% glass reinforced PTFE) (3I valve styles only)	G				
Size	**Code**				
1/4"	03				
3/8"	38				
1/2"	50				
3/4"	75				
1"	10				
1-1/4"	13				
1-1/2"	15				
2"	20				
2-1/2" (3B valve style only)	25				
3" (3B valve style only)	30				
Connections	**Code**				
Female NPT	1				

Continue number selection by following column 1 (pneumatic actuators) or 2 (electric actuators) below.

1. Pneumatic Actuator or Spring Return Manual Handle			
Actuator	Feedback	Control	Flow Path
1	XX	00	10
Actuator			**Code**
Aluminum spring return pneumatic rack and pinion			1
Aluminum double acting pneumatic rack and pinion			2
Stainless steel spring return pneumatic rack and pinion			3
Stainless steel double acting pneumatic rack and pinion			4
Dead man spring return handle			6
Oversized (1-UP) aluminum spring return pneumatic rack and pinion			7
Technopolymer spring return pneumatic rack and pinion			8
Oversized (1-UP) aluminum double acting pneumatic rack and pinion			9
Manual handle with riser kit			A

2. Electric Actuator				
Actuator	Voltage	Option 1	Option	Flow Path
E	B	1	1	12
Actuator				**Code**
Electric				E
Oversized (1-UP) electric				F
Explosion proof (Class I Div I group C and D, Class II Div I group E, F, and G) electric				G
Electric with riser kit				H
Voltage			**Explosion Proof**	**Code**
115VAC			15VAC	B
12VDC			n/a	C
n/a			24VAC	D
24VDC/AC			24VDC	E

BV3-Series Industrial Actuated Ball Valve - Part Number Key

1. Pneumatic Actuator or Spring Return Manual Handle			
Actuator	Feedback	Control	Flow Path
1	XX	00	10

2. Electric Actuator				
Actuator	Voltage	Option 1	Option	Flow Path
E	B	1	1	12

Feedback	Code
None	00
Limit switch box, position indicator, (2) SPDT mechanical switches	11
Limit switch box, position indicator, (2) switches, magnetic reed SPDT, hermetically sealed, up to SIL3, Exia ready, cULus Class 1/2 Div 2, NEMA 4 and 4X	12
Limit switch box, position indicator, AS-I	13
Limit switch box, position indicator, (2) proximity SPDT switches, aluminum Exd IIB certified enclosure	14
Limit switch box, position indicator, (2) DPDT mechanical switches	15
Limit switch box, position indicator, (2) switches, electro mec. SPDT, silver contacts, up to SIL3, cULus Class 1/2 Div 1	16
Limit switch box, position indicator, inductive proximity P+F NBB2-V3-E2, 3 wire PNP NO	17
Limit switch box, position indicator, 4-20ma analog position transmitter	18
Limit switch box, position indicator, SPDT proximity, 0.25A @120VAC, 0.416A @ 48VDC, resistive	19
Limit switch box, position indicator, 4-20ma analog position transmitter + 2 SPDT mechanical switches	20
Stainless steel limit switch box, position indicator, (2) proximity SPDT switches	21

Control	Code
None	XX
Single coil solenoid, 120VAC	AA
Single coil solenoid, 24VDC	AB
Single coil solenoid, 12VDC	AC
Single coil solenoid, 220VAC	AD
Dual coil solenoid, 120VAC	AE
Dual coil solenoid, 24VDC	AF
Dual coil solenoid, 220VAC	AG
Pneumatic positioner 3-15psi input, no feedback	AH
Pneumatic positioner 3-15psi input, (2) SPDT mechanical switches for feedback	AI
Pneumatic positioner 3-15psi input, 4-20mA for feedback	AJ
Electropneumatic positioner 4-20mA input, no feedback	AK
Electropneumatic positioner 4-20mA input, (2) SPDT mechanical switches for feedback	AL
Electropneumatic positioner 4-20mA input, 4-20mA for feedback	AM
Electropneumatic positioner 0-10v input, no feedback	AN
Electropneumatic positioner O-10V input, (2) SPDT mechanical switches for feedback	AO

Voltage	Explosion Proof	ode
220VAC	220VAC	F
12VAC	n/a	G

Option 1	Code
None	1
Torque switches	2
4-20mA input/output modulating controller	3
Current position transmitter	4
Potentiometer	5
Local control unit	6
Two extra travel cams and switches	7
Three position cam set	8
Local control unit with lock	9
1-5V input/2-10V output modulating controller	A
2-10V input/output modulating controller	B
75% duty cycle	C
Relay	D
Four position cam set	E
25% duty cycle (actuator code G only)	F
75% duty cycle (actuator code G only)	G

Option 2	Code
None	1
Torque switches	2
4-20mA input/output modulating controller	3
Current position transmitter	4
Potentiometer	5
Local control unit	6
Two extra travel cams and switches	7
Three position cam set	8
Local control unit with lock	9
1-5V input/2-10V output modulating controller	A

BV3-Series Industrial Actuated Ball Valve - Part Number Key

1. Pneumatic Actuator or Spring Return Manual Handle			
Actuator	Feedback	Control	Flow Path
1	XX	00	10
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, 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)			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, 120VAC, explosion proof, Class H coil			BC
Single coil solenoid, 24VDC, pre-wired to limit switch, 6P male connector			BD
Flow Path			**Code**
Rest A, Energize B (spring return)			10
Rest A, Energize D (spring return)			11
Energize A, Energize B (double acting)			12
Energize A, Energize D (double acting)			13
Rest B, Energize A, Energize D (spring return, 180°)			14
Rest B, Energize A (spring return)			15

2. Electric Actuator				
Actuator	Voltage	Option 1	Option	Flow Path
E	B	1	1	12
2-10V input/output modulating controller				B
75% duty cycle				C
Relay				D
Four position cam set				E
25% duty cycle (actuator code G only)				F
75% duty cycle (actuator code G only)				G
Flow Path				**Code**
Energize A, Energize B				12
Energize A, Energize D				13
Energize A, Energize B, Energize D (80°)				39

NOTE: Refer to the flow path codes on the following pages for other available configurations.

BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way L-Port

A	B	C

3-Way T-Port

A	B	C	D

4-Way L-Port

A	B	C	D

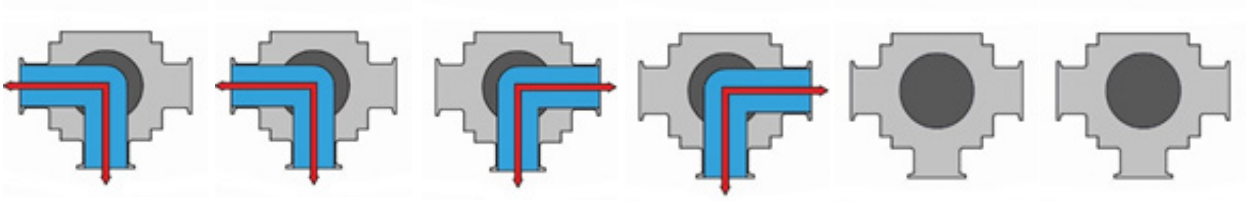
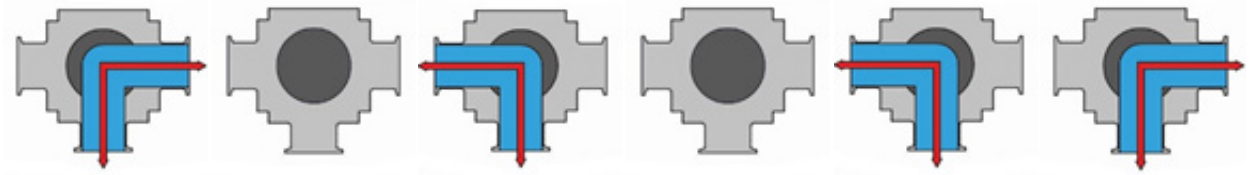
4-Way T-Port

A	B	C	D

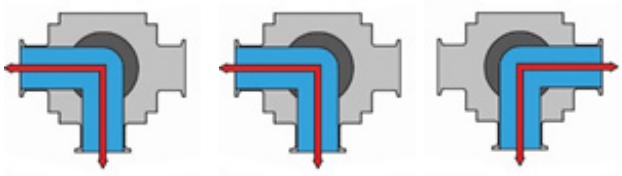
BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

2 Position

3-Way | L-Port | Spring Return

Code	10	16	15	17	18	19
Rotation	90°	90°	90°	90°	90°	90°
Air Rotation Detection	CCW	CW	CW	CCW	CCW	CW
	A	A	B	B	C	C
Rest Position						
	B	C	A	C	A	B
Energize Position						

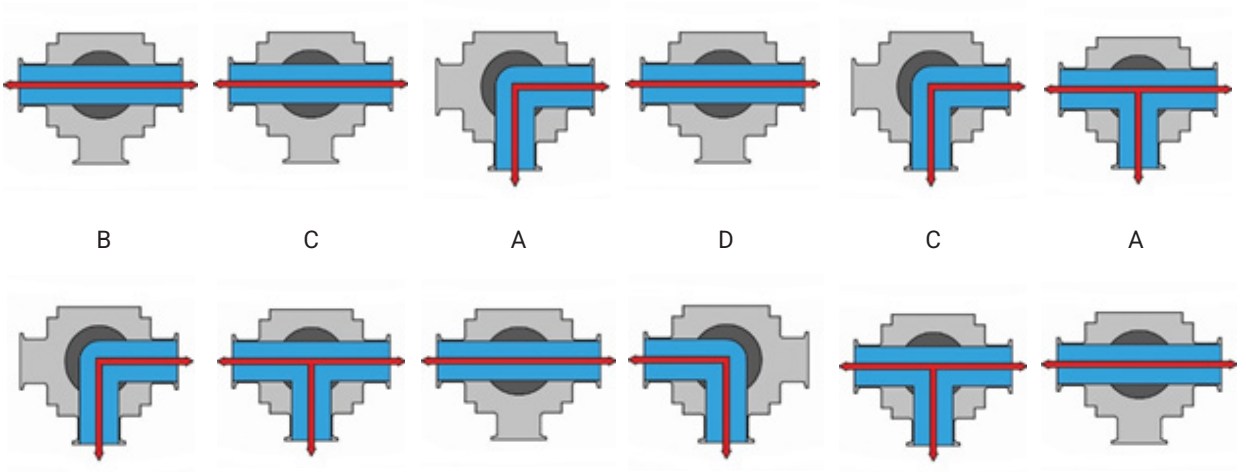
3-Way | L-Port | Double Acting or Electric

Code	12	20	21
Rotation	90°	90°	90°
	A	A	B
Energize Position			
	B	C	C
Energize Position			

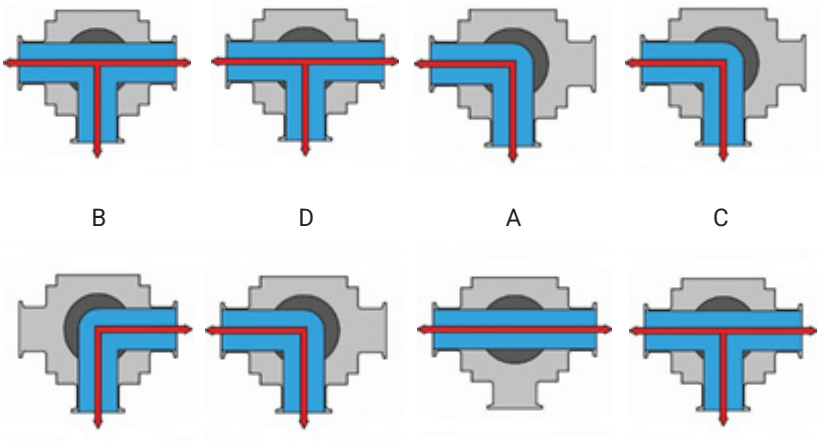
BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

Code	10	16	15	11	17	18
Rotation	90°	180°	90°	90°	90°	180°
Air Rotation Detection	CW	Either	CCW	CCW	CW	Either
Rest Position	A	A	B	A	B	C
Energize Position	B	C	A	D	C	A

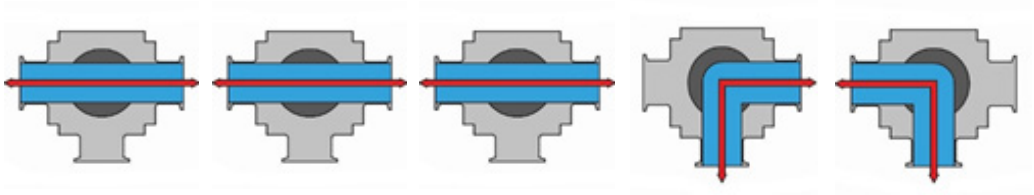
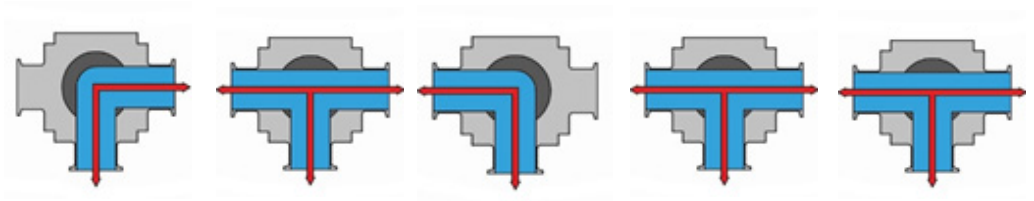


Code	19	22	23	24
Rotation	90°	90°	90°	90°
Air Rotation Detection	CCW	CW	CW	CCW
Rest Position	C	C	D	D
Energize Position	B	D	A	C

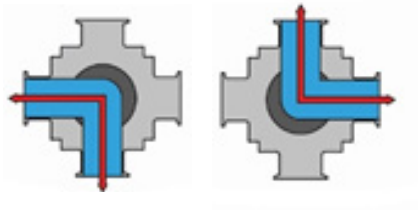
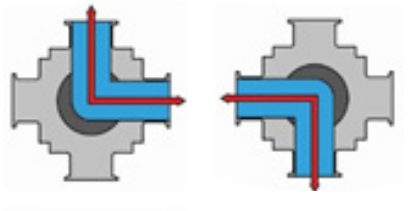


BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way | T-Port | Double Acting or Electric

Code	12	20	13	21	25
Rotation	90°	180°	90°	90°	90°
	A	A	A	B	D
Energize Position					
	B	C	D	C	C
Energize Position					

4-Way | L-Port | Spring Return

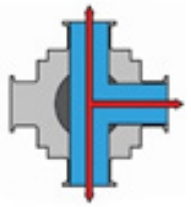
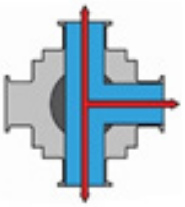
Code	10	16
Rotation	180°	180°
Air Rotation Detection	Either	Either
	A	A
Rest Position		
	B	C
Energize Position		

4-Way | L-Port | Double Acting or Electric

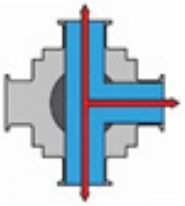
Code	12
Rotation	180°
	A
Energize Position	
	B
Energize Position	

BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

4-Way | T-Port | Spring Return

Code	10	16	11	15	18	23
Rotation	90°	180°	90°	90°	90°	180°
Air Rotation Detection	CCW	Either	CW	CW	Either	CCW
Rest Position	A	A	A	B 	C	D
Energize Position	B 	C	D	A	A	A

4-Way | T-Port | Double Acting or Electric

Code	12	20	13
Rotation	90°	180°	90°
Energize Position	A	A	A
Energize Position	B 	C	D

BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3 Position

3-Way | L-Port | Spring Return

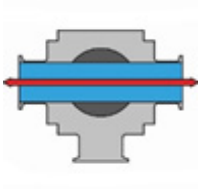
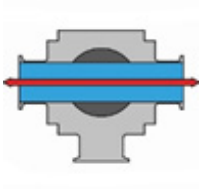
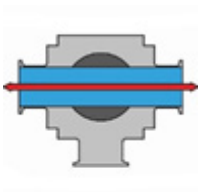
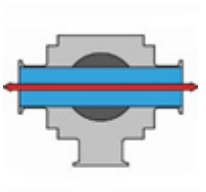
Code	26	28	29
Rotation	180°	180°	180°
Air Rotation Detection	Either	Either	Either
Return	Either	Either	End
	A	B	C
Rest Position			
	B	A	A
Energize Position			
	C	C	B
Energize Position			

3-Way | L-Port | Double Acting or Electric

Code	30
Rotation	180°
	A
Energize Position	
	B
Energize Position	
	C
Energize Position	

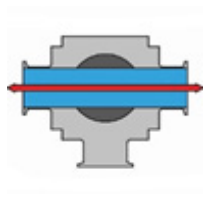
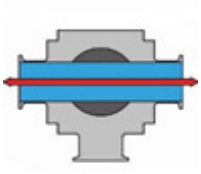
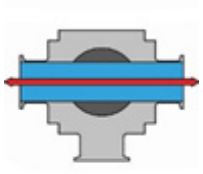
BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

Code	26	27	31	28	14	32
Rotation	180°	180°	180°	180°	180°	180°
Air Rotation Detection	CW	Both	CCW	Both	CCW	CW
Return	End	Center	End	Center	End	End
Rest Position	A	A	A	B	B	B
						
Energize Position	B	B	D	A	A	C
						
Energize Position	C	D	C	C	D	D

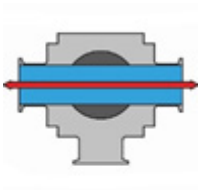
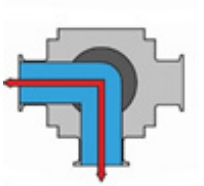
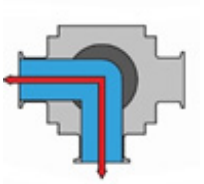
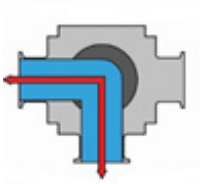
BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way | T-Port | Spring Return

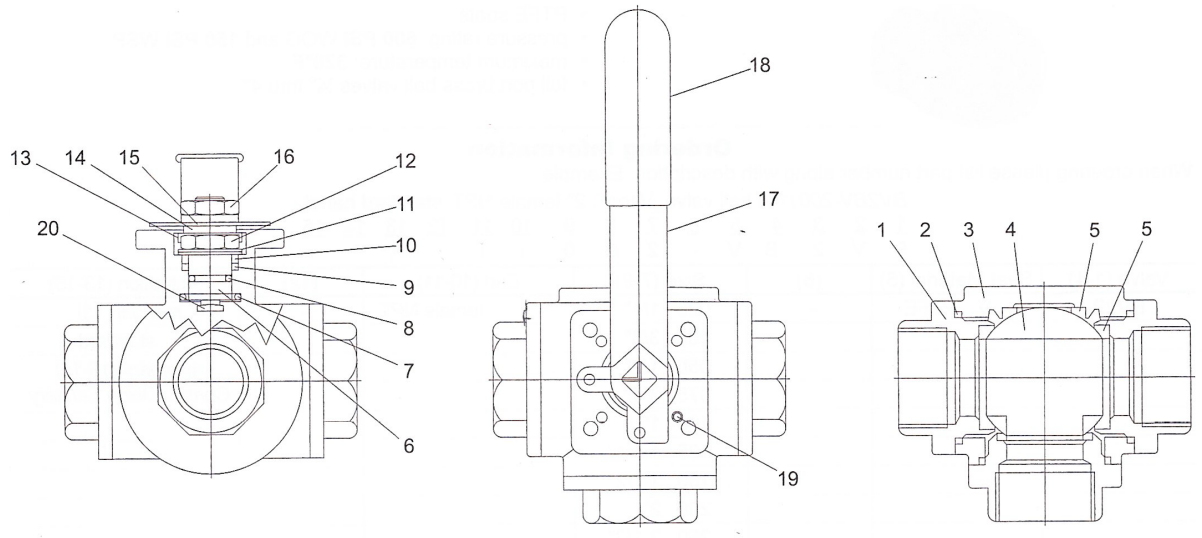
Code	33	34	35	36	37	38
Rotation	180°	180°	180°	180°	180°	180°
Air Rotation Detection	CCW	CW	Both	CW	Both	CCW
Return	End	End	Center	End	Center	End
	C	C	C	D	D	D
Rest Position						
	B	D	B	A	A	B
Energize Position						
	A	A	D	B	C	C
Energize Position						

BV3I-Series Industrial Multi-Port Ball Valve - Flow Path Codes

3-Way | T-Port | Double Acting or Electric

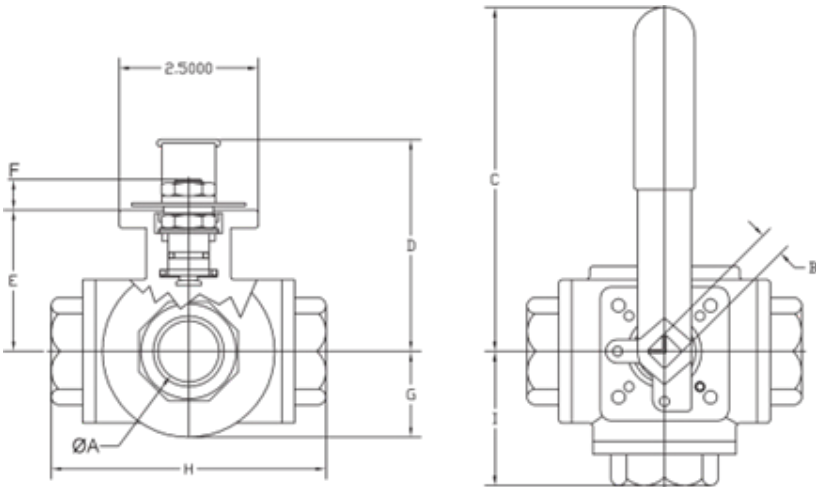
Code	30	39	40	41
Rotation	180°	180°	180°	180°
	A	B	A	B
Energize Position				
	B	A	C	C
Energize Position				
	C	D	D	D
Energize Position				

BV3I-Series Industrial Actuated Ball Valve - Bill of Materials



Item #	Description	Material	Qty
1	end cap	CF8M	1
2	gasket	PTFE	3
3	body	CF8M	1
4	ball	CF8M	1
5	seat	PTFE	4
6	stem	RTFE	1
7	stem seal	FKM	1
8	O-ring	PTFE	1
9	stem packing	PTFE	1
10	gland	301 SS	1
11	Belleville washer	304 SS	2
12	stem nut	304 SS	1
13	nut stop	304 SS	1
14	space washer	304 SS	1
15	lock saddle	304 SS	1
16	handle nut	304 SS	1
17	handle	304 SS	1
18	handle sleeve	vinyl	1
19	stop pin	304 SS	1
20	insert pin	316 SS	1

BV3I-Series Multi-Port Ball Valve - Dimensions



Size	A (in)	B (mm)	C (in)	D (in)	E (in)	F (in)	G (in)	H (in)	I (in)
1/4”	.43	9	5.12	2.44	1.45	.40	.78	2.83	1.41
3/8”	.47	9	5.12	2.44	1.45	.40	.78	2.83	1.41
1/2”	.59	9	5.12	2.51	1.65	.45	.91	3.26	1.63
3/4”	.78	11	6.49	3.22	1.65	.59	1.10	3.89	1.94
1”	.98	11	6.49	3.50	2.18	.55	1.33	4.40	2.20
1-1/4”	1.25	14	8.07	3.85	2.48	.64	1.53	4.92	2.46
1-1/2”	1.50	14	8.07	4.25	2.88	.62	1.88	5.86	2.93
2”	2.0	17	12.79	5.51	3.63	.88	2.36	6.85	3.42

BV3I-Series Multi-Port Ball Valve - Repair Kits

Valve Size	Repair Kit Part #
1/4”	BV-3I-GK0251
3/8”	BV-3I-GK0381
1/2”	BV-3I-GK0501
3/4”	BV-3I-GK0751
1”	BV-3I-GK1001
1-1/4”	BV-3I-GK1251
1-1/2”	BV-3I-GK1501
2”	BV-3I-GK2001

Repair kit contains (3) PTFE gaskets, (4) PTFE seats, (1) RTFE stem, (1) FKM stem seal, and (1) PTFE stem packing.

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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.

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

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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."

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The Right Connection®

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