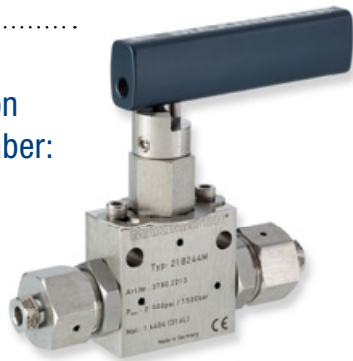


2-Way Ball Valves

» Pressures to 21,000 psi (1,500 bar)

Ordering Information
Typical catalog number:
21B244M



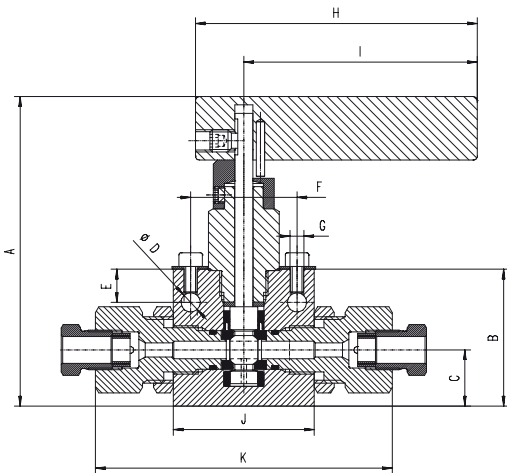
2-Way Ball Valves

2-Way Ball Valves are available with 1/4", 3/8" or 1/2" orifices and are capable of safe handling of liquids and gases up to 21,000 psi (**1,500 bar**) pressure. Their 90° handle rotation allows for full flow capabilities with minimal pressure drop. Robust one-piece trunnion style stem design eliminates shear failure that is found in a two-piece stem design.

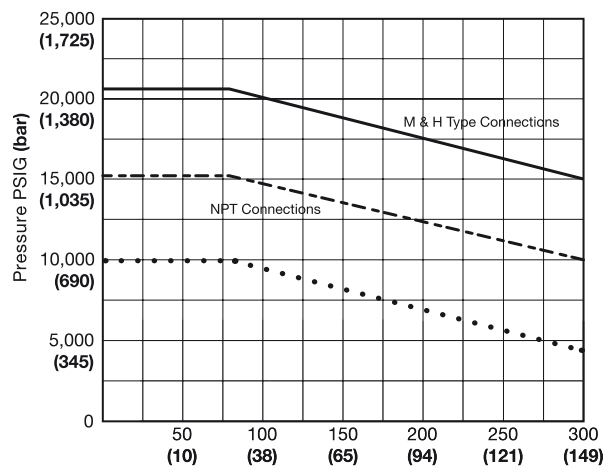
Ball seats are made of Torlon material providing excellent sealing capabilities with low handle operating torque. Re-torqueable seat glands provide longer valve life and dependability. Standard valves are supplied with FKM O-Rings rated to 300°F (**150°C**).

21 Pressure (x 1000 psi)	B2 Valve Series	4 Orifice Diameter	4M Connection Type	Options
10 = 10,000 psi (690 bar)	B2 = Ball Valve 2-way	4 = 1/4"	See chart (page 3)	See Ball Valve Actuators (page 4 & 5)
15 = 15,200 psi (1,050 bar)		6 = 3/8"		
21 = 21,000 psi (1,500 bar)		8 = 1/2"		

Manually Operated 2-Way Ball Valve



Pressure Temperature Ratings



Valve Models	Orifice Size in. (mm)	Dimensions in. (mm)										Valve Panel hole	Block Thickness
		A	B	C	D	E	F	H	I	J	K		
15B24	1/4	4.41	1.95	0.80	0.28	0.47	1.52	4.02	3.33	2.01	4.21	1.03	1.02
21B24	(6.4)	(112)	(49.5)	(20.3)	(7)	(12)	(38.5)	(102)	(84.5)	(51)	(107)	26.2	(26)
15B26	3/8	4.96	2.5	1.09	0.28	0.39	2	5.87	5.08	2.99	5.55	1.42	1.38
21B26	(9.5)	(126)	(63.5)	(27.8)	(7)	(10)	(50.8)	(149)	(129)	(76)	(141)	(36)	(35)
10B28	1/2	5.9	3.07	1.31	0.28	0.49	3	10.35		4.16	7.76	1.54	1.772
	(12.7)	(149.8)	(78)	(33.4)	(7)	(12.5)	(76.2)	(263)		(105)	(197.2)	(39)	(45)

G - Panel mounting screw thread size 10-24 UNC (screw included). All dimensions are for reference only and are subject to change.

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Products for Sour Gas Applications
Pipe Valves & Fittings
to 15,200 psi (1,050 bar)

Adapters and Couplings
Medium Pressure
to 22,500 psi (1,550 bar)

Accessories
High Pressure
to 65,000 psi (4,500 bar)

Tools
Ultra High Pressure
to 152,000 psi (10,500 bar)

Technical Information
Valve Actuators

Customized Solutions
Ball Valves
to 21,000 psi (1,500 bar)

Products for Sour Gas Applications
Pipe Valves & Fittings
 to 15,200 psi (1,050 bar)

Adapters and Couplings
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 to 22,500 psi (1,550 bar)

Accessories
High Pressure
 to 65,000 psi (4,500 bar)

Tools
Ultra High Pressure
 to 152,000 psi (10,500 bar)

Technical Information
Valve Actuators

Customized Solutions
Ball Valves
 to 21,000 psi (1,500 bar)

Orifice Series	Catalog Number	Pressure Rating @ RT psi. (bar)	OD Tubing Size in.	Connection Type	Orifice Size in. (mm)	Cv
1/4"	21B244M	21,000 (1,500)	1/4	4MF	0.106 (2.7)	0.25
	21B246M	21,000 (1,500)	3/8	6MF	0.203 (5.1)	0.91
	21B249M	21,000 (1,500)	9/16	9MF	0.250 (6.4)	1.51
	21B244H	21,000 (1,500)	1/4	4HF	0.094 (2.4)	0.20
	21B246H	21,000 (1,500)	3/8	6HF	0.125 (3.2)	0.30
	21B249H	21,000 (1,500)	9/16	9HF	0.188 (4.8)	0.68
	15B242P	15,200 (1,050)	1/8	FNPT	0.250 (6.4)	1.51
	15B244P	15,200 (1,050)	1/4	FNPT	0.250 (6.4)	1.51
	15B246P	15,200 (1,050)	3/8	FNPT	0.250 (6.4)	1.51
	15B248P	15,200 (1,050)	1/2	FNPT	0.250 (6.4)	1.51
	15B242B	15,200 (1,050)	1/8	FBSP	0.250 (6.4)	1.51
	15B244B	15,200 (1,050)	1/4	FBSP	0.250 (6.4)	1.51
	15B246B	15,200 (1,050)	3/8	FBSP	0.250 (6.4)	1.51
	15B248B	15,200 (1,050)	1/2	FBSP	0.250 (6.4)	1.51
3/8"	21B266M	21,000 (1,500)	3/8	6MF	0.203 (5.1)	0.91
	21B269M	21,000 (1,500)	9/16	9MF	0.307 (7.8)	1.91
	21B2612M	21,000 (1,500)	3/4	12MF	0.374 (9.5)	3.51
	15B266P	15,200 (1,050)	3/8	FNPT	0.374 (9.5)	3.51
	15B268P	15,200 (1,050)	1/2	FNPT	0.374 (9.5)	3.51
	15B2612P	15,200 (1,050)	3/4	FNPT	0.374 (9.5)	3.51
	15B266B	15,200 (1,050)	3/8	FBSP	0.374 (9.5)	3.51
	15B268B	15,200 (1,050)	1/2	FBSP	0.374 (9.5)	3.51
15B2612B	15,200 (1,050)	3/4	FBSP	0.374 (9.5)	3.51	
1/2"	10B2812M	10,000 (690)	3/4	12MF	0.437 (11.1)	4.40
	10B2816M	10,000 (690)	1	16MF	0.500 (12.7)	7.60
	10B2812P	10,000 (690)	3/4	FNPT	0.500 (12.7)	7.60
	10B2816P	10,000 (690)	1	FNPT	0.500 (12.7)	7.60
	10B2812B	10,000 (690)	3/4	FBSP	0.500 (12.7)	7.60
	10B2816B	10,000 (690)	1	FBSP	0.500 (12.7)	7.60

All dimensions are for reference only and subject to change.

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3-Way Ball Valves

» Pressures to 21,000 psi (1,500 bar)

Ordering Information

Typical catalog number:

21B3S34M



3-Way Ball Valves

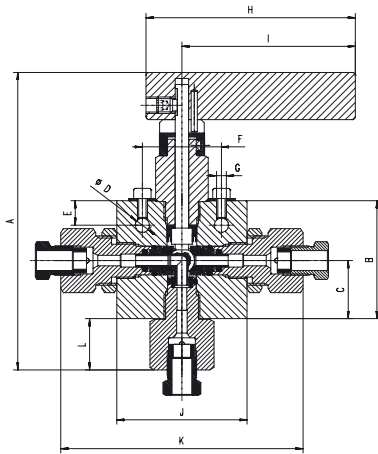
3-Way Ball Valves have 3/16", 3/8" or 1/2" orifices and are capable of safe handling of liquids and gases up to 21,000 psi (**1,500 bar**) pressure. Robust one-piece trunnion style stem design eliminates shear failure that is found in a two-piece stem design. There are two styles in the 3-way design:

The 180° rotating Switching Ball Valve is designed to have fluid enter in through the bottom connection and can be switched to either side connection. Also, the valve can be closed in the center "Off" position.

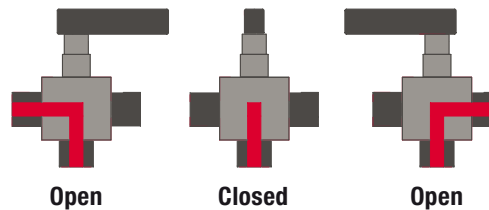
The 90° rotating Diverting Ball Valve is designed to have fluid enter in through the bottom connection and can be diverted to either side connection. There is no center off position in the diverting design.

21 Pressure (x 1000 psi)	B3S Valve Series	3 Orifice Diameter	4M Connection Type	Options
10 = 10,000 psi (690 bar)	B3S = 180° Switching	3 = 3/16"	See chart page 5	See Ball Valve Actuators (page 4 & 5)
15 = 15,200 psi (1,050 bar)	B3D = 90° Diverting	6 = 3/8"		
21 = 21,000 psi (1,500 bar)		8 = 1/2"		

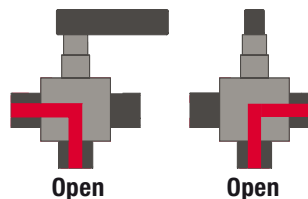
Manual 3-Way Ball Valve



3-Way, 180° Switching Style



3-Way, 90° Diverting Style



Valve Models	Orifice Size in. (mm)	Dimensions in. (mm)											Valve Panel hole	Block Thickness
		A	B	C	D	E	F	H	I	J	K	L		
15B3D3														
15B3S3	3/16	5.71	2.26	1.11	0.28	0.47	1.52	4.02	3.33	2.5	4.65	0.98	1.03	1.02
21B3D3	(4.8)	(145)	(57.5)	(28.3)	(7)	(12)	(38.5)	(102)	(84.5)	(63.5)	(118)	(25)	(26.2)	(26)
21B3S3														
15B3D6	3/8	6.55	2.89	1.50	0.28	0.39	2	5.87	5.08	2.99	5.76	1.19	1.42	1.38
15B3S6	(9.5)	(166.4)	(73.3)	(38)	(7)	(10)	(50.8)	(149)	(129)	(76)	(146.2)	(30.2)	(36)	(35)
10B3D8	1/2	7.83	3.35	1.69	0.28	0.49	3	10.2		4.13	7.78	1.7	1.81	1.77
10B3S8	(12.7)	(199)	(85.1)	(42.9)	(7)	(12.5)	(76.2)	(259)		(105)	(191.5)	(43.2)	(43.2)	(45)

G - Panel mounting screw thread size 10-24 UNC (screw included). All dimensions are for reference only and are subject to change.

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Technical Information
Valve Actuators

Customized Solutions
Ball Valves
to 21,000 psi (1,500 bar)

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Technical Information
Valve Actuators

Customized Solutions
Ball Valves
to 21,000 psi (1,500 bar)

Orifice Series	Catalog Number		Pressure Rating @ RT psi. (bar)*	OD Tubing Size in.	Connection Type	Orifice Size in. (mm)	Cv
	3-Way 180° Switching	3-Way 90° Diverting					
3/16"	21B3S34M	21B3D34M	21,000 (1,500)	1/4	4MF	0.106 (2.7)	0.20
	21B3S36M	21B3D36M	21,000 (1,500)	3/8	6MF	0.188 (4.8)	0.50
	21B3S39M	21B3D39M	21,000 (1,500)	9/16	9MF	0.188 (4.8)	0.50
	21B3S34H	21B3D34H	21,000 (1,500)	1/4	4HF	0.091 (2.3)	0.15
	21B3S36H	21B3D36H	21,000 (1,500)	3/8	6HF	0.125 (3.2)	0.30
	21B3S39H	21B3D39H	21,000 (1,500)	9/16	9HF	0.188 (4.8)	0.50
	15B3S32P	15B3D32P	15,200 (1,050)	1/8	FNPT	0.188 (4.8)	0.50
	15B3S34P	15B3D34P	15,200 (1,050)	1/4	FNPT	0.188 (4.8)	0.50
	15B3S36P	15B3D36P	15,200 (1,050)	3/8	FNPT	0.188 (4.8)	0.50
	15B3S38P	15B3D38P	15,200 (1,050)	1/2	FNPT	0.188 (4.8)	0.50
	15B3S32B	15B3D32B	15,200 (1,050)	1/8	FBSP	0.188 (4.8)	0.50
	15B3S34B	15B3D34B	15,200 (1,050)	1/4	FBSP	0.188 (4.8)	0.50
	15B3S36B	15B3D36B	15,200 (1,050)	3/8	FBSP	0.188 (4.8)	0.50
	15B3S38B	15B3D38B	15,200 (1,050)	1/2	FBSP	0.188 (4.8)	0.50
3/8"	15B3S69M	15B3D69M	15,200 (1,050)	9/16	9MF	0.307 (7.8)	1.65
	15B3S612M	15B3D612M	15,200 (1,050)	3/4	12MF	0.322 (8.2)	2.10
	15B3S64P	15B3D64P	15,200 (1,050)	3/8	FNPT	0.250 (6.4)	2.10
	15B3S66P	15B3D66P	15,200 (1,050)	1/2	FNPT	0.250 (6.4)	2.10
	15B3S68P	15B3D68P	15,200 (1,050)	3/4	FNPT	0.322 (8.2)	2.10
	15B3S64B	15B3D64B	15,200 (1,050)	3/8	FBSP	0.250 (6.4)	2.10
	15B3S66B	15B3D66B	15,200 (1,050)	1/2	FBSP	0.250 (6.4)	2.10
1/2"	10B3S812M	10B3D812M	10,000 (690)	3/4	12MF	0.437 (11.1)	3.90
	10B3S816M	10B3D816M	10,000 (690)	1	16MF	0.494 (12.5)	4.40
	10B3S812P	10B3D812P	10,000 (690)	3/4	FNPT	0.494 (12.5)	4.40
	10B3S816P	10B3D816P	10,000 (690)	1	FNPT	0.494 (12.5)	4.40
	10B3S812B	10B3D812B	10,000 (690)	3/4	FBSP	0.494 (12.5)	4.40
	10B3S816B	10B3D816B	10,000 (690)	1	FBSP	0.494 (12.5)	4.40

* Maximum side connection inlet pressure is 15,000 psig.
All dimensions are for reference only and subject to change. See page 2 for pressure/temperature rating chart.