Air Actuated 3-Way Ball Valves

L-Port, Lead Free Brass, Full Port
1/4" to 2" NPT

SERIES
5216

Features

- Full Port Lead Free Brass Diverter Valve
- Spring return or double acting actuators
- Ball Valve direct mounted to actuator with ISO5211 standard
- Ball and stem 316 stainless steel
- Actuators designed for minimum 1 million cycles
- Quarter turn rack and pinion design
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime
- Energized PTFE ball seats for lower torque and longer life
- Triple PTFE/FKM stem seal packing design
- Valve Certified NSF372 & NSF61 for potable/drinking water

Applications

Air actuated brass 3-way diverter or selector ball valves are typically used to control the flow of water, air, oil, vacuum and other media compatible with the materials of construction. Ideal where lead free and NSF approved construction are required for potable drinking water as well as general industrial applications. Unique four ball seat design allows for full pressure at any port. Cycle times approximately 1 to 1.5 seconds per 90° rotation. Valve can be mounted in any orientation. Suitable for steam service up to 25 PSI with optional high temperature mounting kit and vacuum service to 29"Hg.

Operation

Double acting actuators use pilot air pressure to open (position 2) and air pressure to close (position 1) the ball valve (4-way pilot required). Spring return actuators use air pressure to open and springs to close the ball valve—failsafe design (3-way pilot required). Position 1 is the standard or normal position. Actuator will work with filtered dry or lubricated compressed air. Air supply pilot pressure should be between 80 and 120 PSI. Easy to read visual valve position indicator.

Construction

Valve Body	Lead Free Brass C69300
Ball/Stem	316 stainless steel
Ball Seats	(4) PTFE (Teflon) energized with FKM (Viton)
Stem Seals	PTFE (Teflon) with dual FKM (Viton) seals
Actuator Seals	NBR (Buna-N)
Actuator Body	Anodized aluminium, polyester powder coated end covers
Position Indicator	Glass filled Polyamide
Fasteners	Stainless Steel

L- Flow Path

Position 1 **Position 2**

Description

Heavy duty quarter turn air actuators designed for a minimum 1 million operations. Three port valve available in spring return or double acting. Full port lead free brass ball valve direct mounts to the actuator. Unique 316 stainless steel ball and stem rather than your typical plated brass. Ball seats are energized PTFE for low torque and extended life. Leak free triple stem seal design. Standard Namur/ISO mounting pads for easy mounting of optional solenoid valve or limit switches.

Approvals

Actuators

- CE Conformance– MD 2006/42/CE
  - ISO5211/ DIN3337 valve mounting
  - Namur VDI/VDE 3845 accessory mounting

LEAD FREE

Valves

- IAPMO RT certified to:
  - NSF/ANSI 372 - 2011 Drinking Water
  - NSF/ANSI 61 - 2015
  - Weighted average lead content < =0.25%
- Meets design MSS-SP-110

Construction Features

- Heavy duty rugged rack and pinion design
- Aluminum alloy covers with 60-80 micron polyester powder coating
- Spring return models use multiple pre-compressed spring cartridges
- Stainless steel fasteners
- 316 stainless steel stem with triple PTFE/FKM leak free stem seal design
- Full Port Lead Free brass ball valve, Certified for use with potable/drinking water
- Visual valve position indicator
- Namur standard top mounting for accessories
- Extruded aluminum body with 15 micron hard anodizing
- NPT threaded ports with Namur VDI/VDE-3845 solenoid mounting pad
- Ball valve direct mounted to actuator, no brackets required
- 316 stainless steel ball with energized PTFE seats for reduced torque and extended cycle life

Pressure-Temperature

Valve Pressure Rating: 400 PSI (27 Bar)* non-shock, 1-4" to 2" NPT sizes
25 PSI saturated steam with high temp kit
29" Hg vacuum

Air Pilot Pressure Range: 80-120 PSI (5.5-8.3 Bar)

Ball Valve Temperature Rating: -4 to 344° F (-20 to 173° C)

Actuator Temperature Rating: -4 to 176° F (-20 to 80° C)

*See P/T chart

Optional Accessories

- Direct Mount Solenoid Valves - pilot valve for electrically operating the ball valve
- Valve Monitor/Limit Switches - limit switches used to confirm valve position
- High Temperature Mounting Kit - increases allowable media temperature

Pressure/Temperature Chart (PSI/°F)

P/T Chart						
PSI	400	400	400	400	375	275
°F	0	50	100	176	200	266

Pressure/Temperature Chart (Bar/°C)

P/T Chart						
Bar	27	27	27	27	26	19
°C	-18	10	38	80	93	130

Specifications (English units)

Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Cycle Time /90° (seconds)	Pilot Air Port (NPT)
3-WAY L-PORT LEAD FREE BRASS BALL VALVE: SPRING RETURN ACTUATOR						
521620	1/4	0.39	3.2	400	1	1/8
521621	3/8	0.39	3.5	400	1	1/8
521622	1/2	0.59	4.5	400	1	1/8
521623	3/4	0.75	10	400	1	1/4
521624	1	1.00	16	400	1	1/4
521625	1-1/4	1.22	31	400	1	1/4
521626	1-1/2	1.50	49	400	1	1/4
521627	2	2.00	82	400	1.5	1/4
3-WAY L-PORT LEAD FREE BRASS BALL VALVE: DOUBLE ACTING ACTUATOR						
521602	1/4	0.39	3.2	400	1	1/8
521603	3/8	0.39	3.5	400	1	1/8
521604	1/2	0.59	4.5	400	1	1/8
521606	3/4	0.75	10	400	1	1/4
521608	1	1.00	16	400	1	1/4
521610	1-1/4	1.22	31	400	1	1/4
521612	1-1/2	1.50	49	400	1	1/4
521616	2	2.00	82	400	1.5	1/4

Cv is the GPM of water at 60° F that will pass through the valve with 1 PSI pressure drop

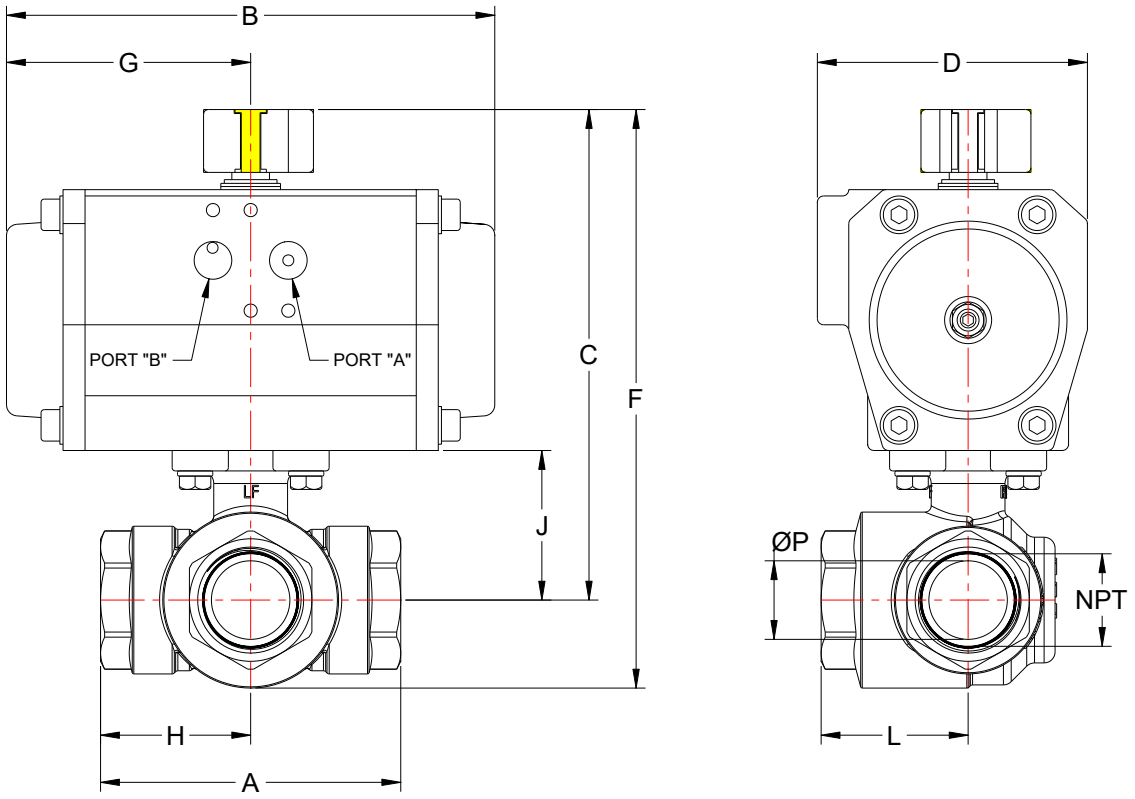
* Pressure at 176° F (reduced pressure for higher temperatures—see P/T chart)

Specifications (Metric units)

Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Cycle Time /90° (seconds)	Pilot Air Port (NPT)
3-WAY L-PORT LEAD FREE BRASS BALL VALVE: SPRING RETURN ACTUATOR						
521620	1/4	10	2.8	27	1	1/8
521621	3/8	10	3.0	27	1	1/8
521622	1/2	15	3.9	27	1	1/8
521623	3/4	19	8.6	27	1	1/4
521624	1	25	14	27	1	1/4
521625	1-1/4	31	27	27	1	1/4
521626	1-1/2	38	42	27	1	1/4
521627	2	50	70	27	1.5	1/4
3-WAY L-PORT LEAD FREE BRASS BALL VALVE: DOUBLE ACTING ACTUATOR						
521602	1/4	10	2.8	27	1	1/8
521603	3/8	10	3.0	27	1	1/8
521604	1/2	15	3.9	27	1	1/8
521606	3/4	19	8.6	27	1	1/4
521608	1	25	14	27	1	1/4
521610	1-1/4	31	27	27	1	1/4
521612	1-1/2	38	42	27	1	1/4
521616	2	50	70	27	1.5	1/4

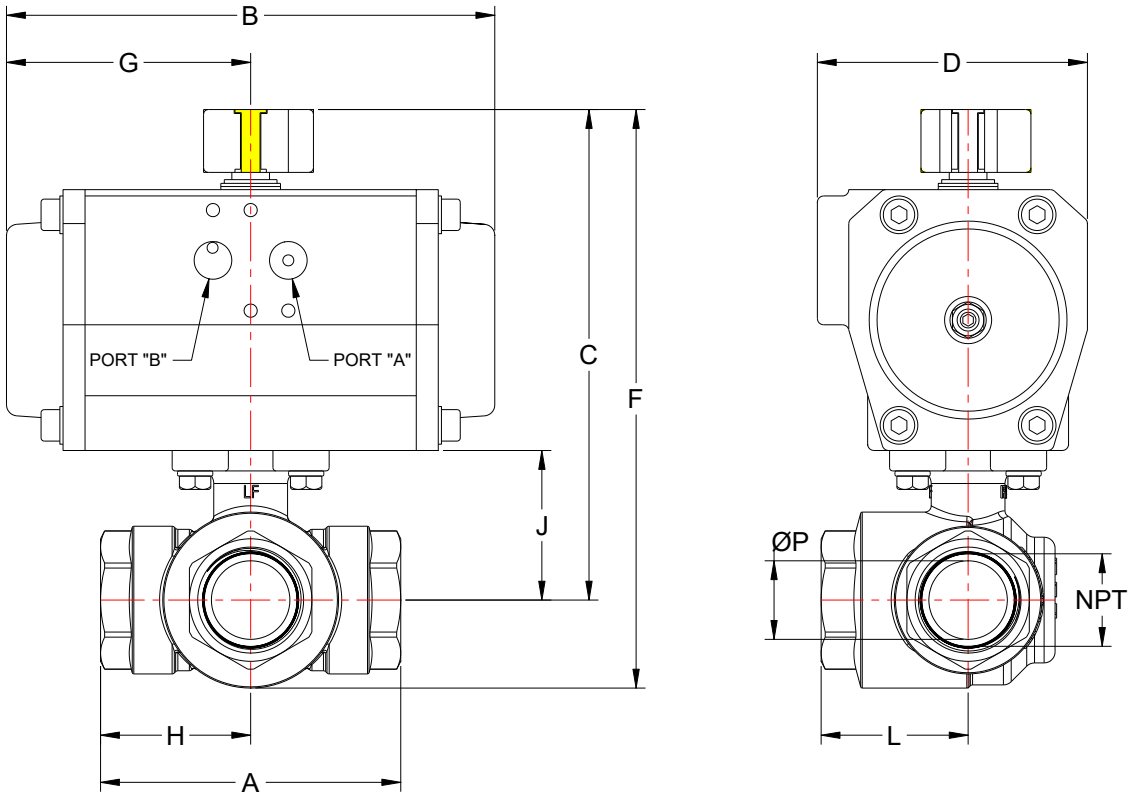
* Pressure at 80° C (reduced pressure for higher temperatures—see P/T chart)

Dimensions: Spring Return (inches (mm))



Pipe Size (NPT)		A	B	C	D	F	G	H	J	L	P	Ports (NPT)	Weight
1/4	inch	2.2	5.5	4.5	2.9	5.0	2.7	1.1	1.0	1.1	0.39	1/8	3.6 lb
	mm	55.6	139	114	75	128	69.5	27.8	26.5	27.5	10	–	1.6 kg
3/8	inch	2.2	5.5	4.5	2.9	5.0	2.7	1.1	1.0	1.1	0.39	1/8	3.5 lb
	mm	55.6	139	114	75	128	69.5	27.8	26.5	27.5	10	–	1.6 kg
1/2	inch	2.9	5.5	4.8	2.9	5.5	2.7	1.4	1.3	1.4	0.59	1/8	4.1 lb
	mm	73	139	121	75	140	69.5	36.5	33.5	36.5	15	–	1.9 kg
3/4	inch	3.3	6.1	5.8	3.4	6.7	3.1	1.6	1.7	1.6	0.75	1/4	6.5 lb
	mm	83	155.5	146	86	169	77.8	41.5	43	41.5	19	–	2.9 kg
1	inch	3.8	8.3	6.6	3.7	7.7	4.1	1.9	1.9	1.8	1.00	1/4	10.3 lb
	mm	95.6	210	168	94	196	105	47.8	47.6	46.8	25	–	4.7 kg
1-1/4	inch	4.2	9.1	7.3	4.1	8.6	4.5	2.1	2.2	2.0	1.22	1/4	14.2 lb
	mm	107	230	185	104	218	115	53.5	55	51	31	–	6.4 kg
1-1/2	inch	4.9	9.1	7.7	4.1	9.3	4.5	2.5	2.6	2.3	1.50	1/4	16.8 lb
	mm	126	230	196	104	235	115	63	65.5	60	38	–	7.6 kg
2	inch	5.9	11.0	8.7	4.7	10.7	5.5	2.9	3.0	2.7	2.00	1/4	24.7 lb
	mm	149	280	222	120	271	140	74.5	77	69	50	–	11.2 kg

Dimensions: Double Acting (inches (mm))



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	mm	55.6	139	114	75	128	69.5	27.8	26.5	27.5	10	–	1.5 kg
3/8	inch	2.2	5.5	4.5	2.9	5.0	2.7	1.1	1.0	1.1	0.39	1/8	3.2 lb
	mm	55.6	139	114	75	128	69.5	27.8	26.5	27.5	10	–	1.5 kg
1/2	inch	2.9	5.5	4.8	2.9	5.5	2.7	1.4	1.3	1.4	0.59	1/8	3.8 lb
	mm	73	139	121	75	140	69.5	36.5	33.5	36.5	15	–	1.7 kg
3/4	inch	3.3	6.1	5.8	3.4	6.7	3.1	1.6	1.7	1.6	0.75	1/4	5.9 lb
	mm	83	155.5	146	86	169	77.8	41.5	43	41.5	19	–	2.7 kg
1	inch	3.8	6.1	5.9	3.4	7.0	3.1	1.9	1.9	1.8	1.00	1/4	6.6 lb
	mm	95.6	155.5	151	86	179	77.8	47.8	47.6	46.8	25	–	2.9 kg
1-1/4	inch	4.2	8.3	6.9	3.7	8.2	4.1	2.1	2.2	2.0	1.22	1/4	10.2 lb
	mm	107	210	175	94	208	105	53.5	55	51	31	–	4.6 kg
1-1/2	inch	4.9	8.3	7.3	3.7	8.9	4.1	2.5	2.6	2.3	1.50	1/4	12.8 lb
	mm	126	210	186	94	225	105	63	65.5	60	38	–	5.8 kg
2	inch	5.9	9.1	8.2	4.1	10.1	4.5	2.9	3.0	2.7	2.00	1/4	19.3 lb
	mm	149	230	207	104	256	115	74.5	77	69	50	–	8.8 kg