Air Actuated Stainless Ball Valves

2-Piece Stainless Steel, Full Port
1/4" to 4" NPT

SERIES
5235
5236

Features

- 316 stainless steel body, ball, & stem
- RTFE (reinforced Teflon) ball seats
- Triple PTFE/Viton live loaded stem seals, adjustable
- Valves are tested per API 598
- Valve anti-static device
- Rack and pinion quarter turn (90°) rotation
- Spring Return or Double Acting Actuators
- Type IP67 weatherproof actuator
- Actuators designed for minimum 1 million cycles
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime

Description

Heavy duty quarter turn air actuators designed for long life and tested for a minimum 1 million operations. Investment cast 2-piece full port stainless steel body/ball for unrestricted flow and minimum pressure loss. Adjustable live loaded stem seal packing helps compensate for wear, pressure or temperature fluctuations, extending the cycle life of the valve. Blow-out proof stem. Standard Namur mounting pads for optional accessory confirmation switches, pilot valves and valve positioners.

Applications

On-off control of water, air, oil and other media compatible with the materials of construction. Cycle times approx. 1 to 1.5 seconds per 90° rotation. Steam service up to 25 PSI with optional high temperature mounting bracket. Suitable for vacuum service to 29"Hg.

Operation

Double acting actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return actuators use air pressure to open and springs to close the ball valve (3-way pilot). 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 located on top of actuator.

Approvals– Actuators

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

Construction

Valve Body	316 stainless steel ASTM A351 CF8M
Ball/Stem	316 stainless steel
Ball Seats	RTFE (reinforced Teflon)
Stem Seals	PTFE, Viton
Actuator Seals	NBR (Buna-N)
Actuator Body	Anodized aluminium, epoxy-polyester coated end covers
Position Indicator	Glass filled Polyamide
Fasteners	Stainless Steel

Standards– Valves

- Design: API 608
- Testing: API 598
- Threaded Connection:
ASME B1.20.1 (NPT)/ ISO 228-1/ BS21
- Pressure/Temperature Rating:
ASME B16.34
- Marking: MSS SP-25
- CE conformance- EPED 2014/68/UE

Construction Features

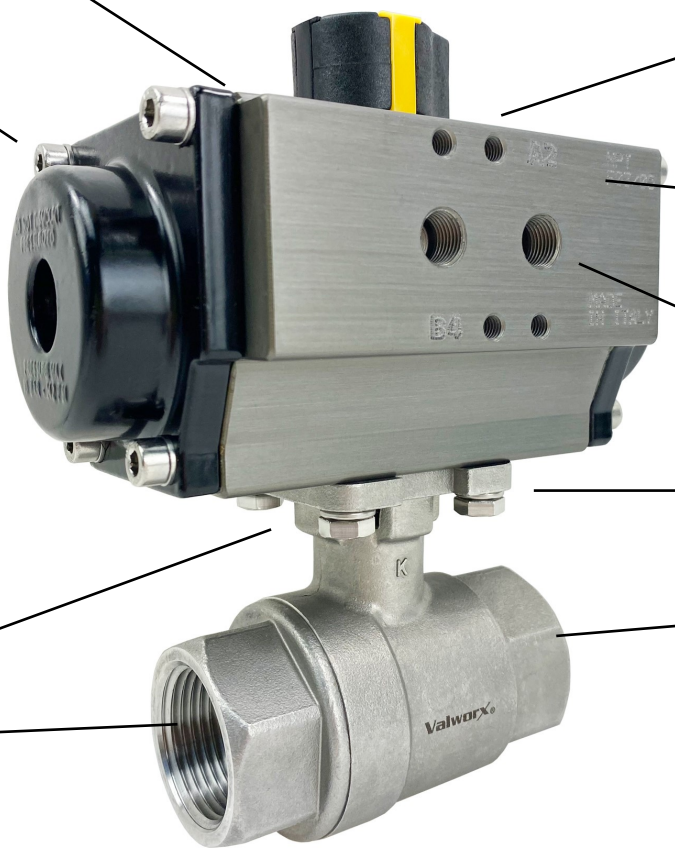
Heavy duty rugged rack and pinion design

Aluminum alloy covers with 60-80 micron polyester powder coating

Spring return models use multiple pre-compressed spring cartridges with polyester coating

Triple PTFE/Viton live loaded stem seal design, adjustable

316SS ball and stem, RTFE ball seats



Visual valve position indicator

Standard Namur top mounting for optional switches and positioners

Extruded aluminum body with 50 micron hard anodizing

NPT pilot air ports and additional Namur VDI/VDE-3845 solenoid mounting pad

Direct mount ISO5211

Full port 316 stainless steel ball valve

Pressure-Temperature

Valve Pressure Rating: 1000 PSI (69 Bar) (1/4"-2")
800 PSI (55 Bar) (2-1/2"-4") CWP non-shock,
25 PSI saturated steam with high temp kit, Vacuum 29inHg

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

Ball Valve Temperature Rating: -4 to 392° F (-20 to 200° C)

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

*See P/T chart

Optional Accessories

DMS: Direct Mount Solenoid
- pilot to electrically operate the ball valve
VPS: Valve Position Switches
- limit switches to confirm valve position
PVP: Pneumatic Valve Positioner
- position the ball with 4-20mA or 3-15 PSI
HTB: High Temperature Bracket
- increases media working temperature

Specifications (English units)

Stock Number	Pipe Size (NPT)	Orifice Size (inch)	Cv Flow Factor	Pressure Max.(PSI)*	Air Volume/90° (cubic inches)	Cycle Time /90° (open-close)	Pilot Air Port (NPT)
VALVE WITH SPRING RETURN ACTUATOR							
523602C	1/4	0.5	6.9	1000	36.6	1-1	1/8
523603C	3/8	0.5	6.9	1000	36.6	1-1	1/8
523604C	1/2	0.6	9.7	1000	36.6	1-1	1/8
523606C	3/4	0.8	18.4	1000	79.3	1-1	1/4
523608E	1	1.0	55.4	1000	103.7	1-1	1/4
523610C	1-1/4	1.3	89.7	1000	103.7	1-1	1/4
523612C	1-1/2	1.5	144.2	1000	305.1	1-1	1/4
523616C	2	2.0	226.0	1000	305.1	1-1	1/4
523620C	2-1/2	2.6	289.0	800	476.0	3-1	1/4
523624C	3	3.1	454.0	800	836.0	3-1	1/4
523632C	4	3.9	710.0	800	836.0	3-1	1/4
VALVE WITH DOUBLE ACTING ACTUATOR							
523502C	1/4	0.5	6.9	1000	97.6	1-1	1/8
523503C	3/8	0.5	6.9	1000	97.6	1-1	1/8
523504C	1/2	0.6	9.7	1000	97.6	1-1	1/8
523506C	3/4	0.8	18.4	1000	97.6	1-1	1/8
523508C	1	1.0	55.4	1000	97.3	1-1	1/8
523510C	1-1/4	1.3	89.7	1000	195.3	1-1	1/4
523512C	1-1/2	1.5	144.2	1000	262.4	1-1	1/4
523516C	2	2.0	226.0	1000	262.4	1-1	1/4
523520C	2-1/2	2.6	289.0	800	421.1	1-1	1/4
523524C	3	3.1	454.0	800	768.9	1-1	1/4
523532C	4	3.9	710.0	800	1196.1	1-1	1/4

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

* Pressure @ 100° F (see P/T chart)

Specifications (Metric units)

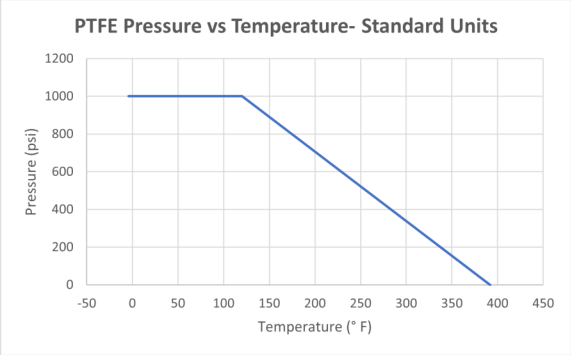
Stock Number	Pipe Size (NPT)	Orifice Size (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Air Volume/90° (cubic liters)	Cycle Time/90° (open-close)	Pilot Air Port (NPT)
VALVE WITH SPRING RETURN ACTUATOR							
523602C	1/4	11.5	5.9	69	0.6	1-1	1/8
523603C	3/8	12.5	5.9	69	0.6	1-1	1/8
523604C	1/2	15	8.4	69	0.6	1-1	1/8
523606C	3/4	20	15.9	69	1.3	1-1	1/4
523608E	1	25	47.9	69	1.7	1-1	1/4
523610C	1-1/4	32	77.6	69	1.7	1-1	1/4
523612C	1-1/2	38	124.7	69	5.0	1-1	1/4
523616C	2	50	195.5	69	5.0	1-1	1/4
523620C	2-1/2	65	250.0	55	10.4	3-1	1/4
523624C	3	80	392.7	55	13.7	3-1	1/4
523632C	4	100	614.2	55	13.7	3-1	1/4
VALVE WITH DOUBLE ACTING ACTUATOR							
523502C	1/4	11.5	5.9	69	1.6	1-1	1/8
523503C	3/8	12.5	5.9	69	1.6	1-1	1/8
523504C	1/2	15	8.4	69	1.6	1-1	1/8
523506C	3/4	20	15.9	69	1.6	1-1	1/8
523508C	1	25	47.9	69	1.6	1-1	1/8
523510C	1-1/4	32	77.6	69	3.2	1-1	1/4
523512C	1-1/2	38	124.7	69	4.3	1-1	1/4
523516C	2	50	195.5	69	4.3	1-1	1/4
523520C	2-1/2	65	250.0	55	6.9	1-1	1/4
523524C	3	80	392.7	55	12.6	1-1	1/4
523532C	4	100	614.2	55	19.6	1-1	1/4

* Pressure @ 70° C (see P/T chart)

Pressure/Temperature Chart:

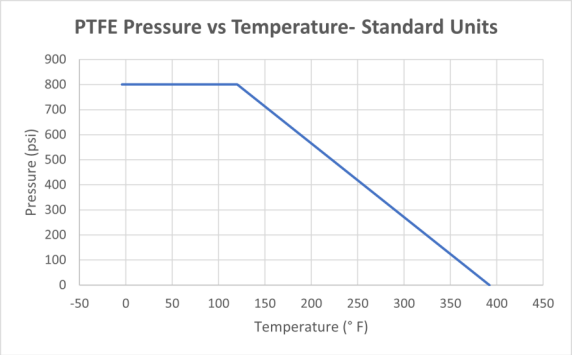
Pressure/Temp. Chart - 1000 PSI (69 Bar)

P/T Chart (PSI/°F)				
PSI	1000	1000	100	0
°F	-4	50	330	392



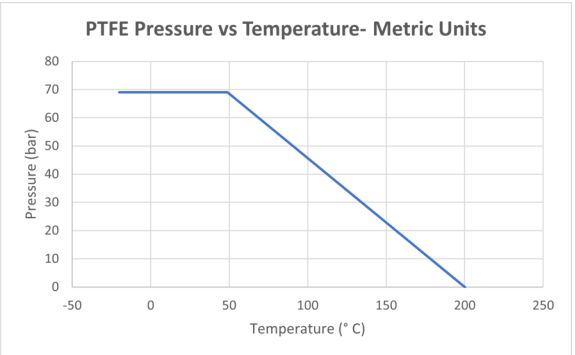
Pressure/Temp. Chart - 800 PSI (55 Bar)

P/T Chart (PSI/°F)				
PSI	800	800	100	0
°F	-4	50	330	392



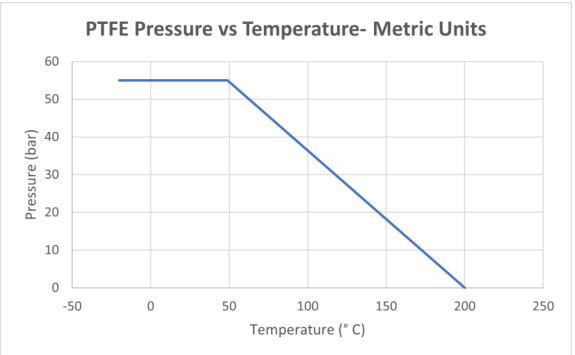
Pressure/Temp. Chart - 69 Bar (1000 PSI)

P/T Chart (BAR/°C)				
Bar	69	69	7	0
°C	-20	10	166	200

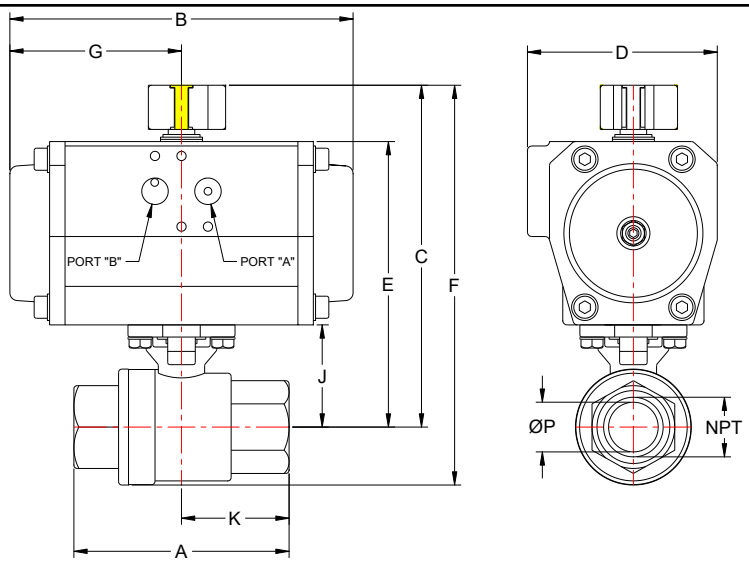


Pressure/Temp. Chart - 55 Bar (800 PSI)

P/T Chart (BAR/°C)				
Bar	55	55	7	0
°C	-20	10	166	200

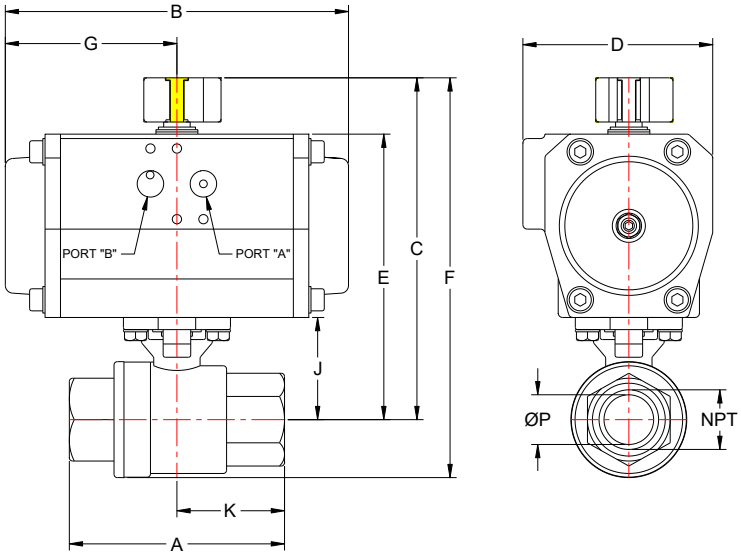


Dimensions: Spring Return



Pipe Size		A	B	C	D	E	F	G	J	K	P	A & B Ports	Weight
1/4	inch	2.6	5.5	4.9	3.0	4.1	5.5	2.7	1.5	1.2	0.5	1/8	3.6 lb
	mm	65.3	139.0	124.5	75.0	104.1	139.7	69.5	37.0	31.0	11.5		1.6 kg
3/8	inch	2.6	5.5	4.9	3.0	4.1	5.5	2.7	1.5	1.2	0.5	1/8	3.6 lb
	mm	65.3	139.0	124.5	75.0	104.1	139.7	69.5	37.0	31.0	12.5		1.6 kg
1/2	inch	2.6	5.5	4.9	3.0	4.1	5.5	2.7	1.5	1.2	0.6	1/8	3.5 lb
	mm	65.3	139.0	124.5	75.0	104.1	139.7	69.5	37.0	31.0	15.0		1.5 kg
3/4	inch	3.0	6.1	5.9	3.4	5.1	6.7	3.1	1.8	1.5	0.8	1/4	5.2 lb
	mm	77.3	156.0	149.9	86.0	129.5	170.2	78.0	45.0	38.7	20.0		2.4 kg
1	inch	3.5	8.3	6.8	3.7	6.0	7.8	4.2	2.1	1.7	1.0	1/4	9.2 lb
	mm	88.7	210.0	172.7	94.0	152.4	198.1	105.0	53.5	43.8	25.0		4.2 kg
1-1/4	inch	4.0	8.3	7.0	3.7	6.2	8.3	4.2	2.3	2.0	1.3	1/4	10.2 lb
	mm	102.0	210.0	177.8	94.0	157.5	210.8	105.0	59.0	50.7	32.0		4.6 kg
1-1/2	inch	4.3	11.0	8.6	4.7	7.8	10.1	5.5	2.9	2.2	1.5	1/4	19.0 lb
	mm	109.0	280.0	218.4	120.0	198.1	256.5	139.7	74.8	55.0	38.0		8.6 kg
2	inch	4.9	11.0	9.0	4.7	8.2	10.8	5.5	3.3	2.4	2.0	1/4	21.2 lb
	mm	125.0	280.0	228.6	120.0	208.3	274.3	139.7	83.5	61.3	50.0		9.6 kg
2-1/2	inch	6.5	14.3	11.6	5.6	10.4	13.6	7.2	4.3	3.2	2.6	1/4	44.5 lb
	mm	165.0	363.2	294.6	142.2	264.2	345.4	190.5	108.8	82.5	65.0		20.2 kg
3	inch	7.5	15.4	12.8	6.4	11.6	15.4	7.7	4.7	3.7	3.1	1/4	62.2 lb
	mm	189.5	391.2	325.1	162.6	294.6	391.2	195.6	118.3	94.8	80.0		28.2 kg
4	inch	9.4	15.4	14.2	6.4	13.0	17.4	7.7	6.1	4.7	3.9	1/4	77.4 lb
	mm	238.0	391.2	360.7	162.6	330.2	442.0	195.6	153.8	119.0	100.0		35.1 kg

Dimensions: Double Acting



Pipe Size		A	B	C	D	E	F	G	J	K	P	A & B Ports	Weight
1/4	inch	2.6	5.5	4.9	3.0	4.1	5.5	2.7	1.5	1.2	0.5	1/8	3.6 lb
	mm	65.3	139.0	124.5	75.0	104.1	139.7	69.5	37.0	31.0	11.5		1.6 kg
3/8	inch	2.6	5.5	4.9	3.0	4.1	5.5	2.7	1.5	1.2	0.5	1/8	3.6 lb
	mm	65.3	139.0	124.5	75.0	104.1	139.7	69.5	37.0	31.0	12.5		1.6 kg
1/2	inch	2.6	5.5	4.9	3.0	4.1	5.5	2.7	1.5	1.2	0.6	1/8	3.3 lb
	mm	65.3	139.0	124.5	75.0	104.1	139.7	69.5	37.0	31.0	15.0		1.4 kg
3/4	inch	3.0	5.5	5.2	3.4	4.4	6.0	2.7	1.8	1.5	0.8	1/4	3.6 lb
	mm	77.3	139.0	132.1	86.0	111.8	152.4	69.5	45.0	38.7	20.0		1.6 kg
1	inch	3.5	5.5	5.5	3.7	4.7	6.5	2.7	2.1	1.7	1.0	1/4	4.3 lb
	mm	88.7	139.0	139.7	94.0	119.4	165.1	69.5	53.5	43.8	25.0		1.9 kg
1-1/4	inch	4.0	6.1	6.4	3.7	5.6	7.7	3.0	2.3	2.0	1.3	1/4	6.8 lb
	mm	102.0	156.0	162.6	94.0	142.2	195.6	76.2	59.0	50.7	32.0		3.1 kg
1-1/2	inch	4.3	8.3	7.6	4.1	6.8	9.1	4.5	2.9	2.2	1.5	1/4	10.9 lb
	mm	109.0	210.0	193.0	104.0	172.7	231.1	115.0	74.8	55.0	38.0		4.9 kg
2	inch	4.9	8.3	7.6	4.1	6.8	9.1	4.5	2.9	2.2	1.5	1/4	13.2 lb
	mm	125.0	210.0	193.0	104.0	172.7	231.1	115.0	74.8	55.0	38.0		5.9 kg
2-1/2	inch	6.5	9.1	9.4	4.1	4.3	11.4	4.6	4.3	3.2	2.6	1/4	23.5 lb
	mm	165.0	231.1	238.8	104.1	109.2	289.6	116.8	108.8	82.5	65.0		10.7 kg
3	inch	7.5	11.0	10.4	4.7	4.7	13.0	5.5	4.7	3.7	3.1	1/4	33.3 lb
	mm	189.5	279.4	264.2	119.4	119.4	330.2	139.7	118.3	94.8	80.0		15.1 kg
4	inch	9.4	12.2	12.9	5.3	6.1	16.1	6.1	6.1	4.7	3.9	1/4	55.7 lb
	mm	238.0	309.9	327.7	134.6	154.9	408.9	154.9	153.8	119.0	100.0		25.3 kg