

Features

- Environmentally friendly lead free brass body
- Industrial grade and designed for low operating torque
- Energized PTFE ball seats for lower torque and longer life
- Leak free Triple PTFE/FKM stem seal packing
- Certified per NSF372 and NSF61 for potable/drinking water
- Spring Return or Double Acting Actuators
- Type IP66 & IP68 weatherproof actuator
- Rugged scotch yoke construction tested for 1 million+ cycles
- Anodized aluminum body with epoxy-polyester end covers
- Namur and ISO mounting standards
- Highly visible valve position indicator
- Actuator factory lubricated for normal lifetime

Applications

On-off control of water, air, oil, vacuum and other media compatible with the materials of construction. These valves are ideal where lead free and NSF approved construction are required for potable drinking water. Cycle times 0.3 to 0.9 seconds per 90° rotation. Suitable for vacuum service to 29"Hg.

Operation

Double acting scotch yoke actuators use air pressure to open and air pressure to close the ball valve (4-way pilot). Spring return scotch yoke 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. Recommended air supply pilot pressure should be between 58 and 87 PSI. Easy to read visual valve position indicator located on top of actuator.

Construction

Valve Body	Lead free brass C69300
Ball/Stem	316 stainless steel, full port
Ball Seats	PTFE (Teflon) energized with FKM (Viton)
Stem Seals	PTFE/ Viton
Anti-Static Device	PTFE (Teflon) with dual FKM (Viton) seals
Actuator Seals	NBR
Actuator Body/ End Covers	Hard anodized aluminium/ Polyester coated aluminium
Position Indicator	Glass filled Polyamide
Fasteners	ASTM 304 Stainless Steel



Description

Heavy duty quarter turn scotch yoke actuators designed for long life and tested for a minimum 1 million+ operations. Full port lead free brass ball valve direct mounts to the actuator. Full port for unrestricted flow. High quality 316 stainless steel ball and stem (vs plated brass.) Ball seats are energized PTFE for low torque and extended life. Unique leak free triple stem seal design with PTFE and dual Viton seals stem seal design. Standard Namur mounting pads for optional accessory confirmation switches and pilot valves.

Approvals– Actuators

- CE Declaration of conformity– MD 2006/42/CE
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting
- SIL3– EN 17955:2024 & IEC 61508-1/-2:2010

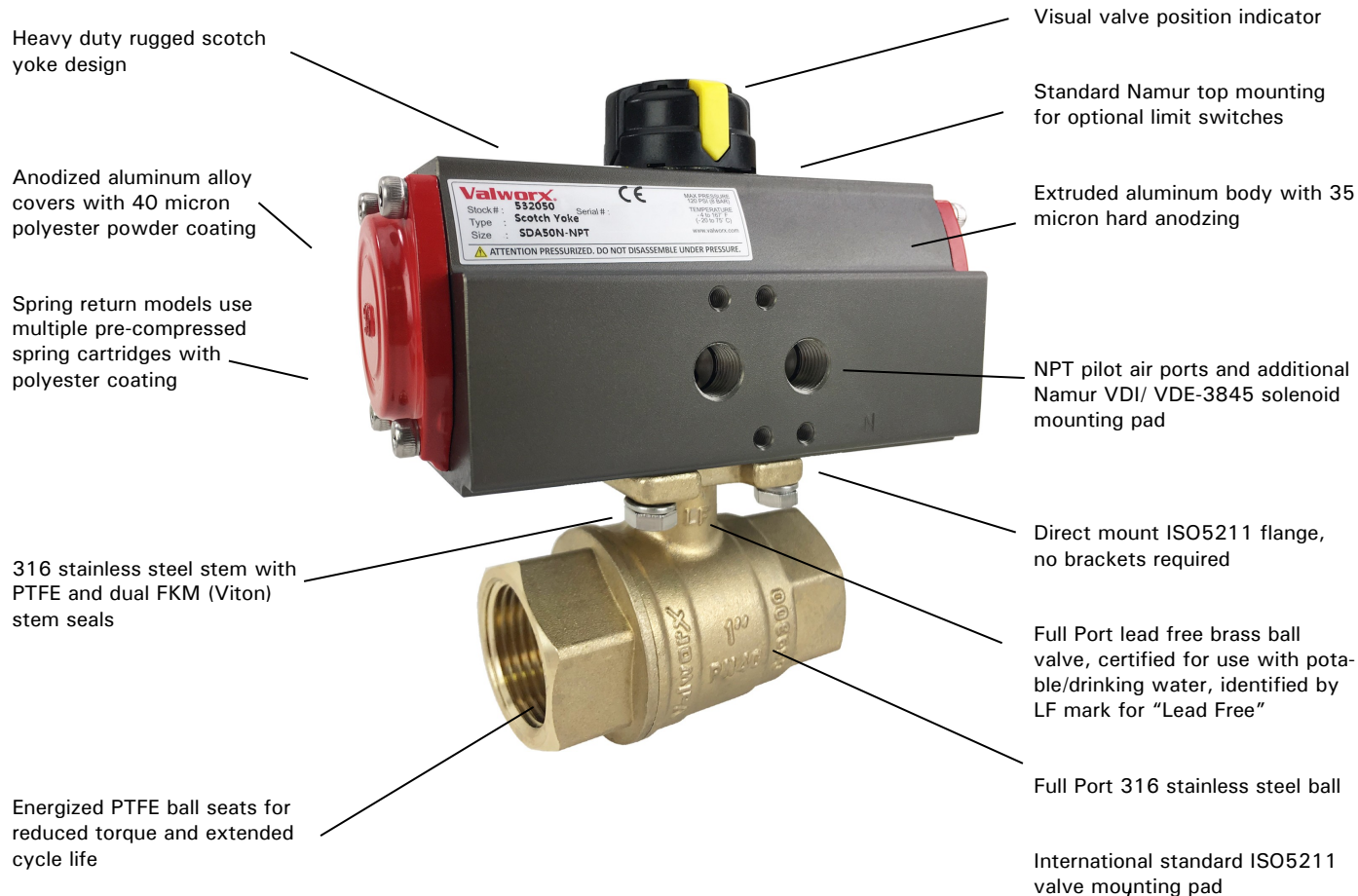


Standards– Valves

- IAPMO RT certified to:
 - NSF/ANSI 61 - 2015
 - NSF/ANSI 372 - 2011 Drinking Water
 - California Health & Safety 116875
 - Section 1417 of Safe Drinking Water Act
 - Weighted average lead content <= 0.25%
- Meets design MSS-SP-110



Features



Pressure-Temperature*

Pressure Rating*: 600 PSI CWP (40 Bar) non-shock

Vacuum service to 29"Hg

Recommended Air Pilot Pressure: 58-87 PSI (4-6 Bar)

Max Air Pilot Pressure: 120 PSI

Valve Temperature Rating: -4° to 366° F (-20 to 186°C)

*See P/T Chart

Actuator Temperature Rating: -4 to 167° F (-20 to 75° 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
- HTB: High Temperature Bracket
 - increases media working temperature
- DSP: Digital Smart Positioner
 - simplify throttling applications

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)
Valve with Spring Return Actuator						
541102	1/4	0.4	6.0	600	0.3-0.5	1/4
541103	3/8	0.5	10.0	600	0.3-0.5	1/4
541104	1/2	0.6	15.0	600	0.3-0.5	1/4
541106	3/4	0.8	35.0	600	0.3-0.5	1/4
541108	1	1.0	60.0	600	0.3-0.5	1/4
541110	1-1/4	1.2	90.0	600	0.3-0.5	1/4
541112	1-1/2	1.5	125.0	600	0.4-0.6	1/4
541116	2	2.0	240.0	600	0.4-0.6	1/4
541120	2-1/2	2.5	320.0	600	0.6-0.9	1/4
541124	3	3.0	551.0	600	0.6-0.9	1/4
Valve with Double Acting Actuator						
541002	1/4	0.4	6.0	600	0.3	1/4
541003	3/8	0.5	10.0	600	0.3	1/4
541104	1/2	0.6	15.0	600	0.3	1/4
541006	3/4	0.8	35.0	600	0.3	1/4
541008	1	1.0	60.0	600	0.3	1/4
541010	1-1/4	1.2	90.0	600	0.3	1/4
541012	1-1/2	1.5	125.0	600	0.3	1/4
541016	2	2.0	240.0	600	0.3	1/4
541020	2-1/2	2.5	320.0	600	0.4	1/4
541024	3	3.0	551.0	600	0.4	1/4

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

* Pressure @ 0 to 176° F (reduced pressure at higher temperatures—see P/T chart)

Pressure/Temperature Chart (PSI/°F)

P/T Chart						
PSI	600	600	600	600	550	425
°F	0	50	100	176	200	250

Specifications (Metric units)

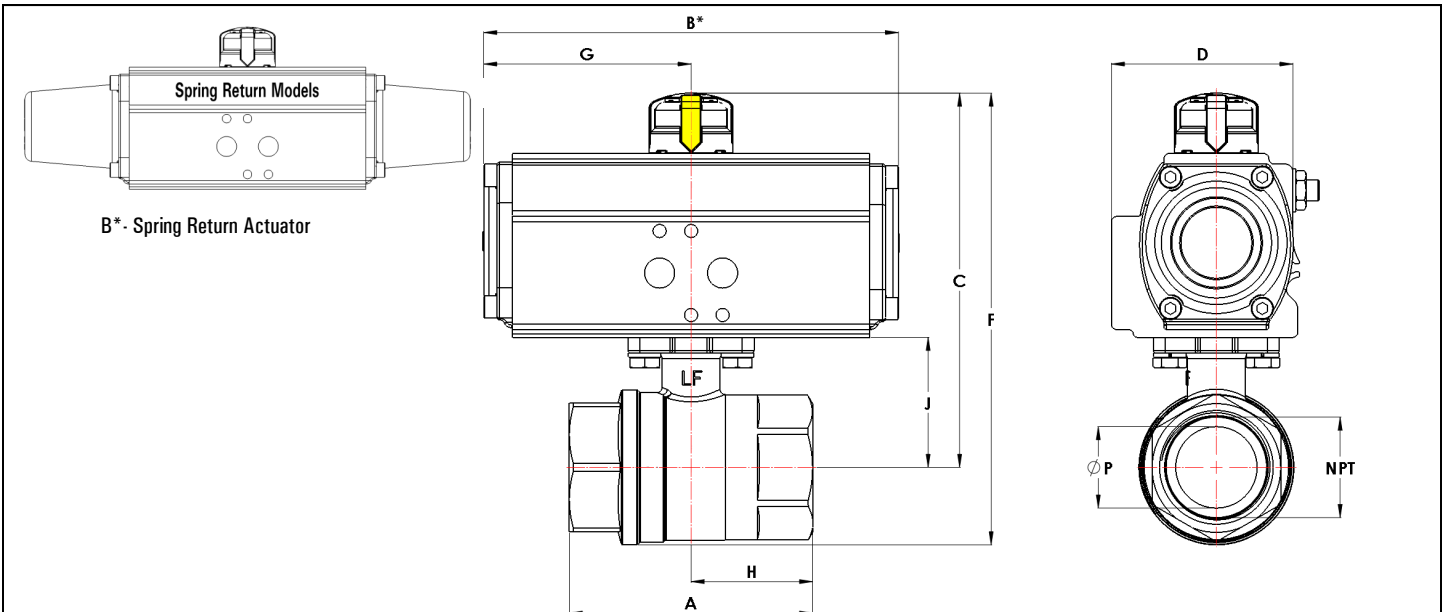
Stock Number	Pipe Size	Orifice Size	Kv Flow Factor	Pressure	Cycle Time/90°	Pilot Air Port
VALVE WITH SPRING RETURN ACTUATOR						
541102	1/4	10.0	5.0	40	0.3-0.5	1/4
541103	3/8	12.7	8.6	40	0.3-0.5	1/4
541104	1/2	15.0	13.0	40	0.3-0.5	1/4
541106	3/4	20.0	30.0	40	0.3-0.5	1/4
541108	1	25.0	52.0	40	0.3-0.5	1/4
541110	1-1/4	31.0	77.0	40	0.3-0.5	1/4
541112	1-1/2	38.0	107.0	40	0.4-0.6	1/4
541116	2	50.0	206.0	40	0.4-0.6	1/4
541120	2-1/2	63.0	275.0	40	0.6-0.9	1/4
541124	3	76.0	474.0	40	0.6-0.9	1/4
VALVE WITH DOUBLE ACTING ACTUATOR						
541002	1/4	10.0	5.0	40	0.3	1/4
541003	3/8	12.7	8.6	40	0.3	1/4
541104	1/2	15.0	13.0	40	0.3	1/4
541006	3/4	20.0	30.0	40	0.3	1/4
541008	1	25.0	52.0	40	0.3	1/4
541010	1-1/4	31.0	77.0	40	0.3	1/4
541012	1-1/2	38.0	107.0	40	0.3	1/4
541016	2	50.0	206.0	40	0.3	1/4
541020	2-1/2	63.0	275.0	40	0.4	1/4
541024	3	76.0	474.0	40	0.4	1/4

* Pressure range @ -18 to 80°C (reduced pressure for higher temperatures—see P/T chart)

Pressure/Temperature Chart (Bar/°C)

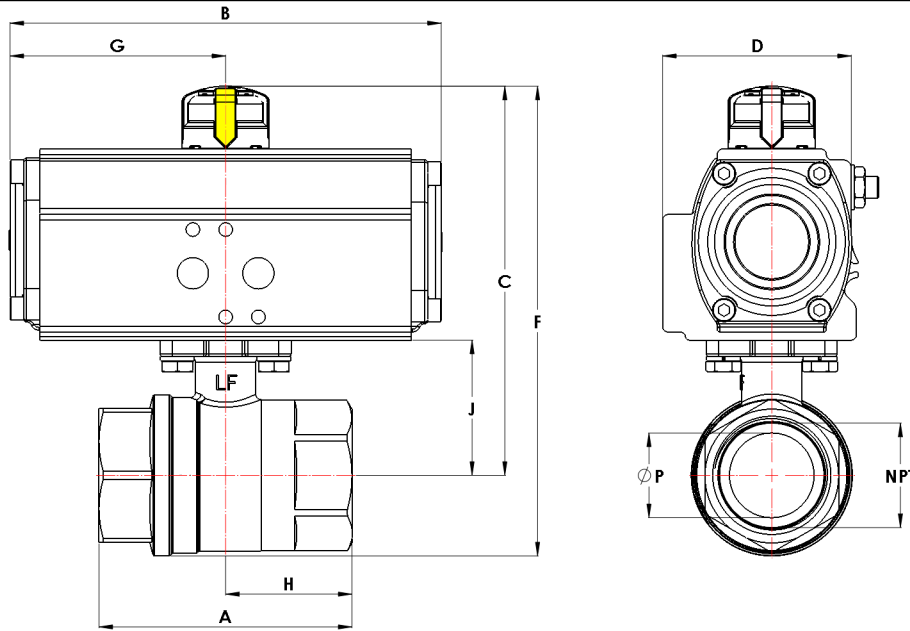
P/T Chart						
Bar	41	41	41	41	38	29
°C	-18	10	38	80	93	121

Dimensions: Spring Return



Pipe Size		A	B* (SR)	C	D	F	G	H	J	P	A & B Ports (NPT)	Weight
1/4	inch	1.9	10.1	4.3	2.9	4.8	5.1	0.9	0.9	0.4	1/4	4.1 lb
	mm	48.3	256.5	109.2	73.7	121.9	129.5	22.9	22.9	10.0	-	1.9 kg
3/8	inch	2.0	10.1	4.4	2.9	5.0	5.1	1.0	1.0	0.5	1/4	4.2 lb
	mm	50.8	256.5	118.8	73.7	127.0	129.5	25.4	25.4	12.7	-	1.9 kg
1/2	inch	2.5	10.1	4.7	2.9	5.3	5.1	1.3	1.3	0.6	1/4	4.4 lb
	mm	63.5	256.5	119.4	73.7	134.6	129.5	33.0	33.0	15.0	-	2.0 kg
3/4	inch	2.7	10.1	4.8	2.9	5.6	5.1	1.4	1.4	0.8	1/4	4.6 lb
	mm	68.6	256.5	121.9	73.7	142.2	129.5	35.6	35.6	20.0	-	2.1 kg
1	inch	3.3	10.1	5.2	2.9	6.1	5.1	1.7	1.8	1.0	1/4	5.2 lb
	mm	83.8	256.5	132.1	73.7	154.9	129.5	43.2	45.7	25.0	-	2.4 kg
1-1/4	inch	3.7	10.1	5.4	2.9	6.5	5.1	1.8	2.0	1.3	1/4	5.8 lb
	mm	94.0	256.5	137.2	73.7	165.1	129.5	45.7	50.8	32.0	-	2.6 kg
1-1/2	inch	4.1	12.3	6.5	3.5	7.9	6.2	2.1	2.4	1.5	1/4	10.4 lb
	mm	104.1	314.0	165.1	88.9	200.7	157.5	53.3	61.0	38.0	-	4.7 kg
2	inch	4.8	12.3	6.9	3.5	8.7	6.2	2.4	2.8	2.0	1/4	12.3 lb
	mm	121.9	314.0	175.3	88.9	221.0	157.5	61.0	71.1	50.0	-	6.6 kg
2-1/2	inch	6.1	16.5	8.2	3.9	10.4	8.3	3.0	3.4	2.5	1/4	21.3 lb
	mm	154.9	419.1	208.3	99.1	264.2	210.8	76.2	86.4	63.0	-	9.7 kg
3	inch	6.9	16.5	8.6	3.9	11.3	8.3	3.5	3.8	3.0	1/4	25.2 lb
	mm	175.3	419.1	218.4	99.1	287.0	210.8	88.9	96.5	76.0	-	11.4 kg

Dimensions: Double Acting



Pipe Size		A	B	C	D	F	G	H	J	P	A & B Ports (NPT)	Weight
1/4	inch	1.9	6.3	4.3	2.9	4.8	3.2	0.9	0.9	0.4	1/4	3.7 lb
	mm	48.3	160.0	109.2	73.7	121.9	81.3	22.9	22.9	10.0	-	1.7 kg
3/8	inch	2.0	6.3	4.4	2.9	5.0	3.2	1.0	1.0	0.5	1/4	3.8 lb
	mm	50.8	160.0	111.8	73.7	127.0	81.3	25.4	25.4	12.7	-	1.7 kg
1/2	inch	2.5	6.3	4.7	2.9	5.3	3.2	1.3	1.3	0.6	1/4	4.0 lb
	mm	63.5	160.0	119.4	73.7	134.6	81.3	33.0	33.0	15.0	-	1.8 kg
3/4	inch	2.7	6.3	4.8	2.9	5.6	3.2	1.4	1.4	0.8	1/4	4.2 lb
	mm	68.6	160.0	121.9	73.7	142.2	81.3	35.6	35.6	20.0	-	1.9 kg
1	inch	3.3	6.3	5.2	2.9	6.1	3.2	1.7	1.8	1.0	1/4	4.8 lb
	mm	83.8	160.0	132.1	73.7	154.9	81.3	43.2	45.7	25.0	-	2.2 kg
1-1/4	inch	3.7	6.3	5.4	2.9	6.5	3.2	1.8	2.0	1.3	1/4	5.4 lb
	mm	94.0	160.0	137.2	73.7	165.1	81.3	45.7	50.8	32.0	-	2.4 kg
1-1/2	inch	4.1	6.3	5.8	2.9	7.2	3.2	2.1	2.4	1.5	1/4	6.9 lb
	mm	104.1	160.0	147.3	73.7	182.9	81.3	53.3	61.0	38.0	-	3.1 kg
2	inch	4.8	6.3	6.2	2.9	8.0	3.2	2.4	2.8	2.0	1/4	8.8 lb
	mm	121.9	160.0	157.5	73.7	203.2	81.3	61.0	71.1	50.0	-	4.0 kg
2-1/2	inch	6.1	7.9	7.5	3.5	9.7	4.0	3.0	3.4	2.5	1/4	14.7 lb
	mm	154.9	200.1	190.5	88.9	246.4	101.6	76.2	86.4	63.0	-	6.7 kg
3	inch	6.9	7.9	7.9	3.5	10.6	4.0	3.5	3.8	3.0	1/4	18.6 lb
	mm	175.3	200.1	200.7	88.9	269.4	101.6	88.9	96.5	76.0	-	8.4 kg