Air Actuated 3-Way PVC Ball Valves

L-Port, PVC Body, Teflon/ EPDM Seals, Full Port
1/2" to 2" NPT

SERIES
5462
5463

Features

- Industrial grade PVC functions as diverter or selector valve
- Energized ball seats for lower torque and extended cycle life
- Dual leak free stem seals
- Union nut locking device prevents back-off
- Valve NSF certified for use with 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

Flow Pattern

Position 1 **Position 2**

As Shipped

Applications

On-off control of water and other liquid media compatible with the materials of construction (not suitable for compressed air or gas). Cycle times 0.3 to 0.6 seconds per 90° rotation. Valve can be mounted in any orientation. Typical applications include industrial/process piping systems, pulp and paper, food processing, potable water and irrigation.

Scotch Yoke actuators should not be used for positioning applications.

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	PVC cell class 12454 per ASTM D1784 (dark gray)
Ball/Stem	PVC cell class 12454 per ASTM D1784
Ball Seats	PTFE (Teflon) energized with EPDM seals
Stem Seals	Dual EPDM seals
End Connectors and Lock Nuts	PVC cell class 12454 per ASTM D1784
Actuator Seals	NBR
Actuator Body/ End Covers	Hard anodized aluminium/ Polyester coasted 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. Three port valve has a L-Port flow path for diverter or selector applications. Industrial quality PVC ball valve with a unique union nut locking system preventing back-off due to vibration or thermal cycling. Features include a patented seat stop carrier for inline micro-adjustment of the ball seats, high quality machined stem/ball system and energized Teflon ball seats for lower torque and extended life. Valves are NSF certified for potable (drinking) water. Standard Namur mounting pads for optional accessory confirmation

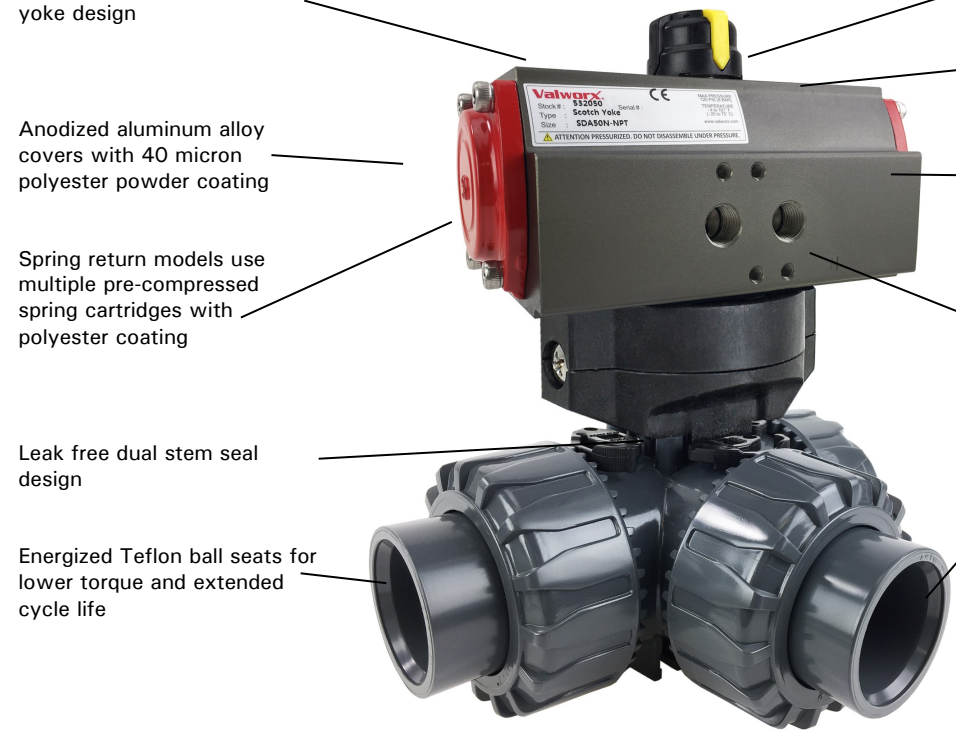
Approvals– Actuators

- CE Declaration of conformity
- EN ISO 12100:2010
- EN ISO 4414:2010
- ISO5211/ DIN3337 valve mounting
- Namur VDI/VDE 3845 accessory mounting

Standards– Valves

- NSF International certified to:
  - NSF/ANSI 372 Drinking Water
  - NSF/ANSI 61 G
- ANSI B1.20.1
- ASTM D1784, cell class 12454

Features



Pressure Rating*: 232 PSI at 73 °F (16 Bar at 23 °C*), Vacuum 29inHg

Valve Temperature Rating: 32 to 140° F (0 to 60° C)

*See P/T Chart

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

Max Air Pilot Pressure: 120 PSI

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
Actuator Mounting Kits

Specifications (English units)

Stock Number	Pipe Size (inch)	Pipe O.D. (inch)	Cv Flow Factor	Pressure Max. (PSI)*	Seals	Cycle Time /90° (seconds)	Pilot Air Port (NPT)
VALVE WITH SPRING RETURN ACTUATOR							
546304	1/2	0.8	4.6	232	PTFE, EPDM	0.3-0.5	1/4
546306	3/4	1.1	10.0	232	PTFE, EPDM	0.3-0.5	1/4
546308	1	1.3	17.0	232	PTFE, EPDM	0.3-0.5	1/4
546310	1-1/4	1.7	32.0	232	PTFE, EPDM	0.4-0.6	1/4
546312	1-1/2	1.9	42.0	232	PTFE, EPDM	0.4-0.6	1/4
546314	2	2.4	84.0	232	PTFE, EPDM	0.4-0.6	1/4
VALVE WITH DOUBLE ACTING ACTUATOR							
546204	1/2	0.8	4.6	232	PTFE, EPDM	0.3	1/4
546206	3/4	1.1	10.0	232	PTFE, EPDM	0.3	1/4
546208	1	1.3	17.0	232	PTFE, EPDM	0.3	1/4
546210	1-1/4	1.7	32.0	232	PTFE, EPDM	0.3	1/4
546212	1-1/2	1.9	42.0	232	PTFE, EPDM	0.3	1/4
546214	2	2.4	84.0	232	PTFE, EPDM	0.3	1/4

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

* Pressure at 73° F, reduced pressure for higher temperatures (see P/T chart)

Note: Both socket and threaded NPT end connectors included with each valve.

Pressure/Temperature Chart (PSI/°F)

P/T Chart							
PSI	232	232	232	180	150	100	35
°F	32	50	70	90	110	120	140

Specifications (Metric units)

Stock Number	Pipe Size (NPT)	Pipe O.D. (mm)	Kv Flow Factor	Pressure Max.(Bar)*	Seals	Cycle Time/90° (seconds)	Pilot Air Port (NPT)
VALVE WITH SPRING RETURN ACTUATOR							
546304	1/2	20.3	4.0	16.0	PTFE, EPDM	0.3-0.5	1/4
546306	3/4	27.9	8.6	16.0	PTFE, EPDM	0.3-0.5	1/4
546308	1	33.0	15.0	16.0	PTFE, EPDM	0.3-0.5	1/4
546310	1-1/4	43.2	27.5	16.0	PTFE, EPDM	0.4-0.6	1/4
546312	1-1/2	48.3	36.0	16.0	PTFE, EPDM	0.4-0.6	1/4
546314	2	61.0	72.0	16.0	PTFE, EPDM	0.4-0.6	1/4
VALVE WITH DOUBLE ACTING ACTUATOR							
546204	1/2	20.3	4.0	16.0	PTFE, EPDM	0.3	1/4
546206	3/4	27.9	8.6	16.0	PTFE, EPDM	0.3	1/4
546208	1	33.0	15.0	16.0	PTFE, EPDM	0.3	1/4
546210	1-1/4	43.2	27.5	16.0	PTFE, EPDM	0.3	1/4
546212	1-1/2	48.3	36.0	16.0	PTFE, EPDM	0.3	1/4
546214	2	61.0	72.0	16.0	PTFE, EPDM	0.3	1/4

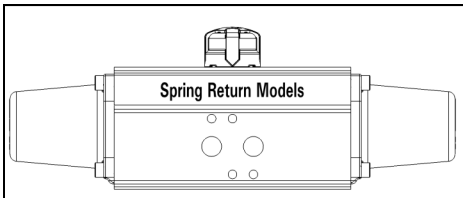
* Pressure at 23° C, reduced pressure for higher temperatures (see P/T chart)

Note: Both socket and threaded NPT end connectors included with sizes 1/2 to 2 inch, socket only for sizes 3 and 4 inch

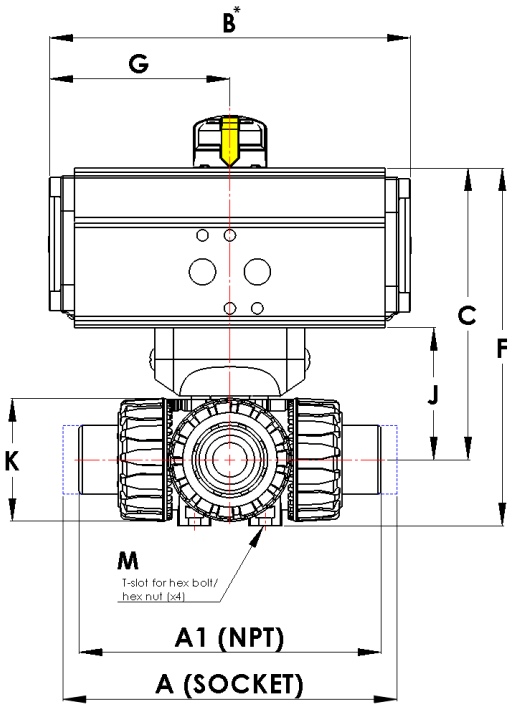
Pressure/Temperature Chart (Bar/°C)

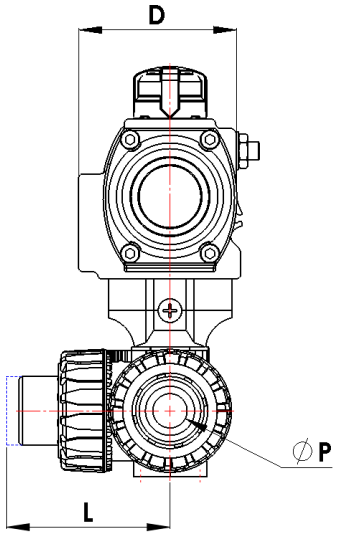
P/T Chart							
Bar	16	16	16	12	10	7	2.4
°C	0	10	21	32	43	49	60

Dimensions: Spring Return



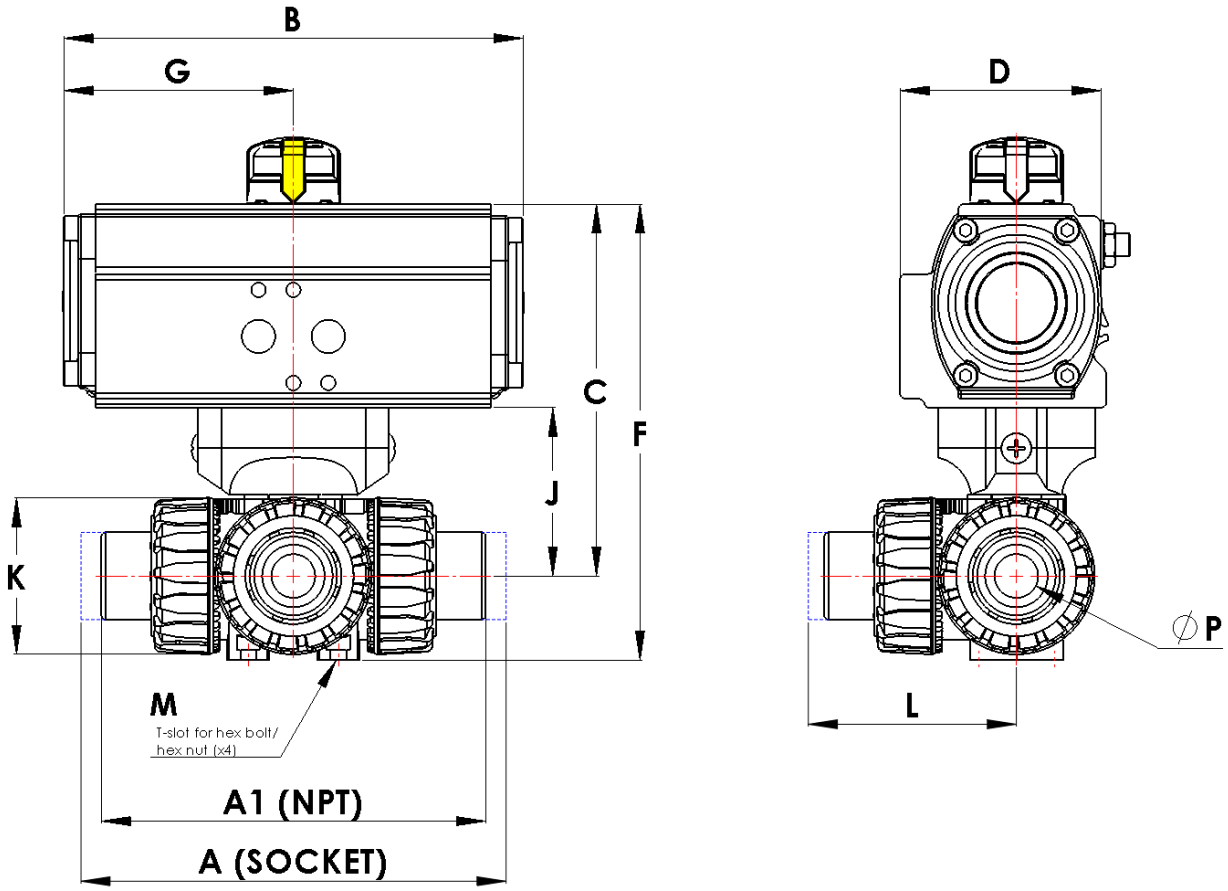
B*- Spring Return Actuator





Stock Number	Pipe Size (NPT)		A	A1	B* (SR)	C	D	F	G	J	K	L	M	P	A & B Ports (NPT)	Weight
546304	1/2	inch	5.2	5.0	10.1	5.5	2.9	6.7	5.1	2.5	2.1	2.6	-	0.8	1/4	4.2 lb
		mm	132.1	127.0	256.5	139.7	73.7	170.2	129.5	63.5	53.3	66.0	M5	20.3	-	1.9 kg
546306	3/4	inch	6.3	5.8	10.1	6.0	2.9	7.3	5.1	2.8	2.6	3.1	-	1.1	1/4	4.7 lb
		mm	160.0	147.3	256.5	152.4	73.7	185.4	129.5	71.1	66.0	78.4	M5	27.9	-	2.1 kg
546308	1	inch	6.9	6.6	10.1	6.1	2.9	7.7	5.1	2.9	2.9	3.4	-	1.3	1/4	5.2 lb
		mm	175.3	167.6	256.5	154.9	73.7	195.6	129.5	73.7	73.7	86.4	M5	33.0	-	2.4 kg
546310	1-1/4	inch	8.1	7.7	12.3	7.4	3.5	9.2	6.2	3.6	3.4	4.0	-	1.7	1/4	9.4 lb
		mm	205.7	195.6	312.4	188.0	88.9	233.7	157.5	91.4	86.4	101.6	M6	43.2	-	4.3 kg
546312	1-1/2	inch	9.0	8.3	12.3	7.6	3.5	9.7	6.2	3.8	3.7	4.5	-	1.9	1/4	10.3 lb
		mm	228.6	210.8	312.4	193.0	88.9	246.4	157.5	96.5	94.0	114.3	M6	48.3	-	4.7 kg
546314	2	inch	10.5	10.0	12.3	8.4	3.5	10.8	6.2	4.4	4.8	5.3	-	2.4	1/4	12.8 lb
		mm	266.7	254.0	312.4	213.4	88.9	274.3	157.5	111.8	121.9	134.6	M6	61.0	-	5.8 kg

Dimensions: Double Acting



Stock Number	Pipe Size (NPT)		A	A1	B	C	D	F	G	J	K	L	M	P	A & B Ports (NPT)	Weight
546204	1/2	inch	5.2	5.0	6.3	5.5	2.9	6.7	3.2	2.5	2.1	2.6	-	0.8	1/4	3.8 lb
		mm	132.1	127.0	160.0	139.7	73.7	170.2	81.3	63.5	53.3	66.0	M5	20.3	-	1.7 kg
546206	3/4	inch	6.3	5.8	6.3	6.0	2.9	7.3	3.2	2.8	2.6	3.1	-	1.1	1/4	4.3 lb
		mm	160.0	147.3	160.0	152.4	73.7	185.4	81.3	71.1	66.0	78.4	M5	27.9	-	2.0 kg
546208	1	inch	6.9	6.6	6.3	6.1	2.9	7.7	3.2	2.9	2.9	3.4	-	1.3	1/4	4.8 lb
		mm	175.3	167.6	160.0	154.9	73.7	195.6	81.3	73.7	73.7	86.4	M5	33.0	-	2.2 kg
546210	1-1/4	inch	8.1	7.7	6.3	6.7	2.9	8.5	3.2	3.6	3.4	4.0	-	1.7	1/4	5.9 lb
		mm	205.7	195.6	160.0	170.2	73.7	215.9	81.3	91.4	86.4	101.6	M6	43.2	-	2.7 kg
546212	1-1/2	inch	9.0	8.3	6.3	6.9	2.9	9.0	3.2	3.8	3.7	4.5	-	1.9	1/4	6.8 lb
		mm	228.6	210.8	160.0	175.3	73.7	228.6	81.3	96.5	94.0	114.3	M6	48.3	-	3.1 kg
546214	2	inch	10.5	10.0	6.3	7.7	2.9	10.1	3.2	4.4	4.8	5.3	-	2.4	1/4	9.3 lb
		mm	266.7	254.0	160.0	195.6	73.7	256.5	81.3	111.8	121.9	134.6	M6	61.0	-	4.2 kg