

Features

- Functions as a diverter or selector valve
- All materials comply with FDA and USDA requirements
- Dyneon® TF-1641 (PTFE) FDA approved ball seats and cavity fillers
- Triple PTFE/Viton® high cycle live loaded stem seal packing
- Highly polished internals and end caps with 8-12 Ra finish
- Tri-Clamp ends for hygienic connections
- Visual valve position indicator
- Rugged aluminum Type 4X weatherproof enclosure
- Heavy duty motors with overload protection
- Thermostatically controlled anti-condensation heater
- Manual override with end of travel mechanical stops
- Two auxiliary position confirmation limit switches
- Actuators CSA Listed per UL429 and CSA C22.2

Applications

Sanitary 3-way ball valves are typically used for food, beverage, pharmaceutical, personal care, and pet care applications where sanitary construction is required, as well as for utility, process, and corrosive environment applications where quick clamp connections are beneficial. Often used as a diverter, selector or mixing valve with a variety of flow path options through the valve. Actuator designed for 70% duty cycle.

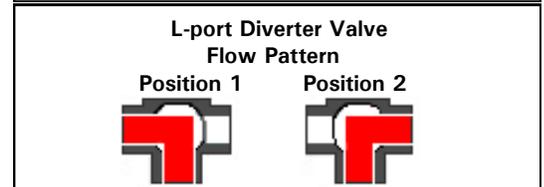
Flow pattern is highly-non-linear. Refer to page 3 for flow vs position.

Operation

Electric actuated valves with EPS- Electronic Positioning System provide an accurate valve positioning function whereby the movement of the actuator is controlled by 4-20mA input control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator (valve disc). Flow is adjustable anywhere between 0-100%. Unique electronic positioning module is fully potted to help protect the electronics from vibration/moisture resistance.

Construction

Valve Body	ASTM 316 stainless steel
Ball/Stem/ End Caps	ASTM 316 stainless steel
Ball Seats/ Cavity Filler	Dyneon® PTFE
Stem Seals	PTFE / Viton®
Gear Drive	Heavy duty steel and aluminium bronze, self locking
Actuator Enclosure	Aluminium, polyester powder painted, Type 4X, IP67
Visual Valve Position Indicator	Clear polycarbonate cover, red/yellow open-closed
Fasteners	ASTM 304 Stainless Steel
Auxiliary Limit Switches	2 x SPDT 3A@125/250VAC, 30VDC resistive load



Description

Electrically operated sanitary 3-way L-type flow pattern ball valve has four Dyneon® PTFE ball seats, allowing for full pressure at any port. Adjustable live loaded stem seal packing helps compensate for wear, pressure and temperature fluctuations, extending the cycle life of the valve. Rugged corrosion resistant electric actuator includes a manual override, 4-20mA servo controller, thermostatically controlled anti-condensation heater, and over-torque protection.

Approvals- Actuators

- CSA Listed:
 - UL429 and CSA C22.2 No. 139
 - Type 4X, IP67 weatherproof enclosure
- CE conformance
 - ISO5211 mounting



Standards- Valves

- Construction:
 - ANSI B16/B2/B18
 - FDA 21 CFR 177.1550
 - ANSI B16.34
- Pressure Testing:
 - API 598
- Marking
 - MSS-SP-25

Construction Features

4-20mA servo controller

Heavy duty integral motor design significantly reduces physical size of actuator

Rugged polyester powder coated aluminum Type 4X weatherproof enclosure.

Live -loaded triple PTFE stem seal

Encapsulated Dyneon® PTFE cavity filler

Internals polished to 8-12 Ra

ASTM 304 stainless steel fasteners

Anti-Condensation Heater

Terminal Box, wire directly to terminal strip via included cable connector, or optional 1/2" NPT Conduit adapters.

Manual Override with protective cover

Self-locking all metal gear drive, no additional brake required

ASTM 316 (CF8M) investment grade casting (body & end caps)

Dyneon® PTFE ball seats

Standard Tri-Clamp end caps for sanitary connections*

* Refer to specifications table for Tri-Clamp size

* Note: Tri-Clamp size is **NOT** determined by the OD of the end cap



Visual Valve Position Indicator

Pressure-Temperature

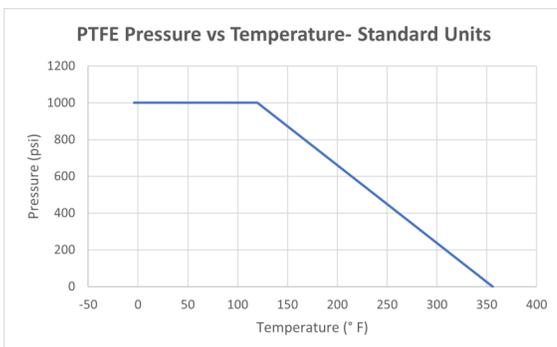
Shell Pressure Rating (Max)*: 1000 PSI @ 120°F (1/2" to 2"),
600 PSI (2 1/2" to 3")

Temperature Rating: -4° to 356° F (-20 to 180°C)

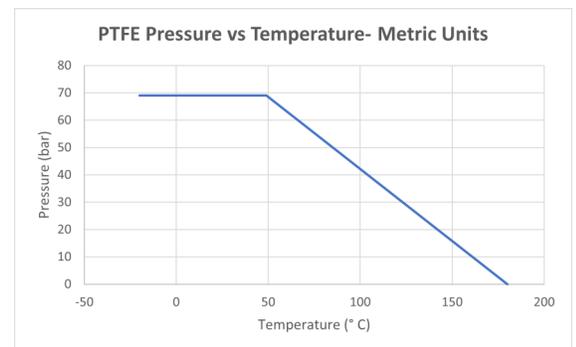
*See P/T Chart

Actuator Temperature Rating: -13 to 131° F (-25 to 55° C)

Pressure/Temperature Chart (PSI/°F)

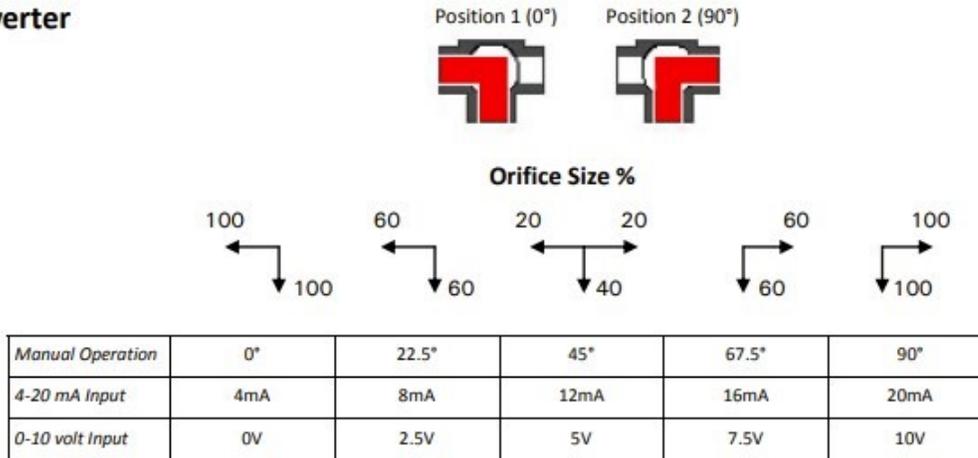


Pressure/Temperature Chart (Bar/°C)

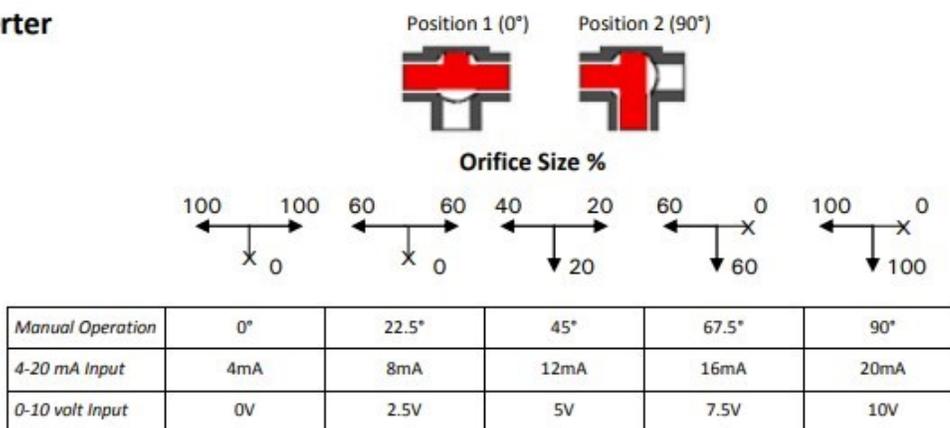


Flow Path Features

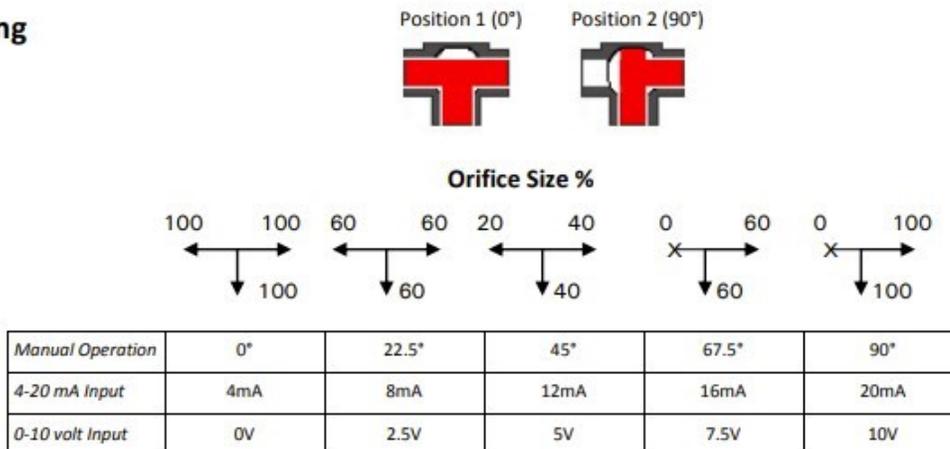
L-Port Diverter



T-Port Diverter



T-Port Mixing



Note: A) Orifice Size % is the approximate orifice size of each port shown as a percent of full open. B) Examples shown are 3-way quarter turn (90°) ball valves with full port design. Actuator at 0° is considered position 1 and 90° position 2.

Specifications (English units)

Stock Number	Pipe Size (inch)	Tri-Clamp Size (inch)	Cv Flow Factor	Shell Pressure Max.(PSI)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input									
576600	1/2	3/4	4.3	1000	20/17	110 VAC, 50/60Hz	0.27	70%	E
576601	3/4	3/4	10.4	1000	20/17	110 VAC, 50/60Hz	0.27	70%	E
576602	1	1-1/2	17.3	1000	20/17	110 VAC, 50/60Hz	0.27	70%	E
576603	1-1/2	1-1/2	43.3	1000	20/17	110 VAC, 50/60Hz	0.27	70%	E
576604	2	2	77.9	1000	20/17	110 VAC, 50/60Hz	0.27	70%	E
576605	2-1/2	2-1/2	115.9	600	30/25	110 VAC, 50/60Hz	0.73	70%	E
576606	3	3	210.2	600	30/25	110 VAC, 50/60Hz	0.73	70%	E
24 VDC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input									
576800	1/2	3/4	4.3	1000	20	DC24	1.28	70%	GEY
576801	3/4	3/4	10.4	1000	20	DC24	1.28	70%	GEY
576802	1	1-1/2	17.3	1000	20	DC24	1.28	70%	GEY
576803	1-1/2	1-1/2	43.3	1000	20	DC24	1.28	70%	GEY
576804	2	2	77.9	1000	20	DC24	1.28	70%	GEY
576805	2-1/2	2-1/2	115.9	600	30	DC24	3.57	70%	GEY
576806	3	3	210.2	600	30	DC24	3.57	70%	GEY

* Pressure @ -4° to 356° F (reduced pressure at higher temperatures—see P/T chart)

• Torque at 1000 PSI and 72°F

Electric Actuated 3-Way L-port Valves

Valworx electric actuators with EPS- Electronic Positioning System provide an accurate valve positioning function whereby the movement of the actuator is controlled by a 4-20mA input control signal. Any change in the control input signal results in a corresponding and proportional change in the position of the actuator (valve).

This is achieved with a unique built in electronic positioning module. The module is fully potted to help protect the electronics from vibration and moisture resistance.

An internal microprocessor on the EPS circuit board continuously monitors the analog input and output signals and compares them to the physical position via a precision potentiometer feedback system, moving the actuator as required to balance the signals.

The EPS system is self-calibrating which virtually eliminates “hunting”. The following functions are standard:

- Position monitoring output signal in same format as input. Ex: 4-20mA input, 4-20mA output
- Adjustable forward or reversing action.
- Deadband adjustment
- Selectable fail mode: fail closed, fail open or stop in place (for loss of input command signal).
- Electric manual control with onboard switches
- Fault LED lights indicate valve jam or signal loss
- Electronic brake function
- Refer to page 3 for signal vs flow characteristics

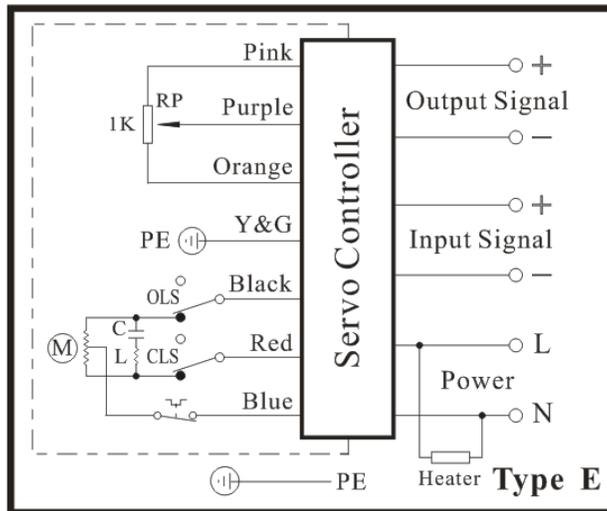
Specifications (Metric units)

Stock Number	Pipe Size (mm)	Tri-Clamp Size (inch)	Kv Flow Factor	Shell Pressure Max.(Bar)*	Cycle Time/90° (seconds)	Voltage	Current (amps)	Duty Cycle	Electrical Dwg.
120 VAC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input									
576600	12.7	3/4	5.0	69	20/17	110 VAC, 50/60Hz	0.27	70%	E
576601	19.1	3/4	12.0	69	20/17	110 VAC, 50/60Hz	0.27	70%	E
576602	25.4	1-1/2	20.0	69	20/17	110 VAC, 50/60Hz	0.27	70%	E
576603	38.1	1-1/2	50.0	69	20/17	110 VAC, 50/60Hz	0.27	70%	E
576604	50.8	2	90.0	69	20/17	110 VAC, 50/60Hz	0.27	70%	E
576605	63.5	2-1/2	134.0	41	30/25	110 VAC, 50/60Hz	0.73	70%	E
576606	76.2	3	243.0	41	30/25	110 VAC, 50/60Hz	0.73	70%	E
24 VDC ELECTRIC ACTUATED 3-WAY L-PORT SANITARY STAINLESS BALL VALVE with EPS POSITIONER 4-20mA input									
576800	12.7	3/4	5.0	69	20	DC24	1.28	70%	GEY
576801	19.1	3/4	12.0	69	20	DC24	1.28	70%	GEY
576802	25.4	1-1/2	20.0	69	20	DC24	1.28	70%	GEY
576803	38.1	1-1/2	50.0	69	20	DC24	1.28	70%	GEY
576804	50.8	2	90.0	69	20	DC24	1.28	70%	GEY
576805	63.5	2-1/2	134.0	41	30	DC24	3.57	70%	GEY
576806	76.2	3	243.0	41	30	DC24	3.57	70%	GEY

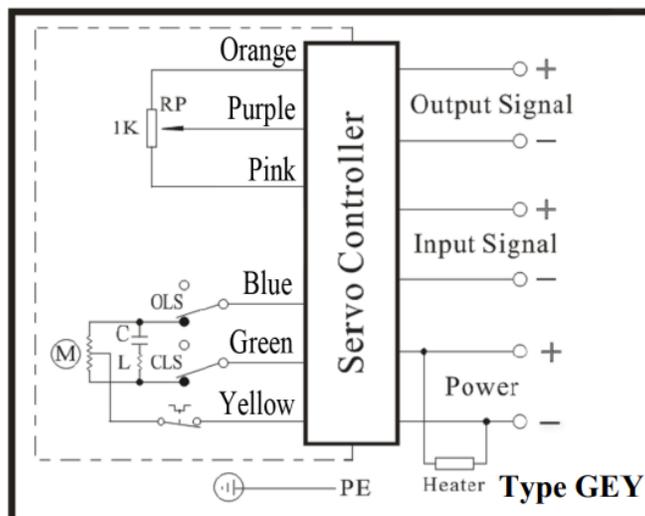
* Pressure range @ -20° to 180° C (reduced pressure for higher temperatures—see P/T chart)

Electrical Wiring

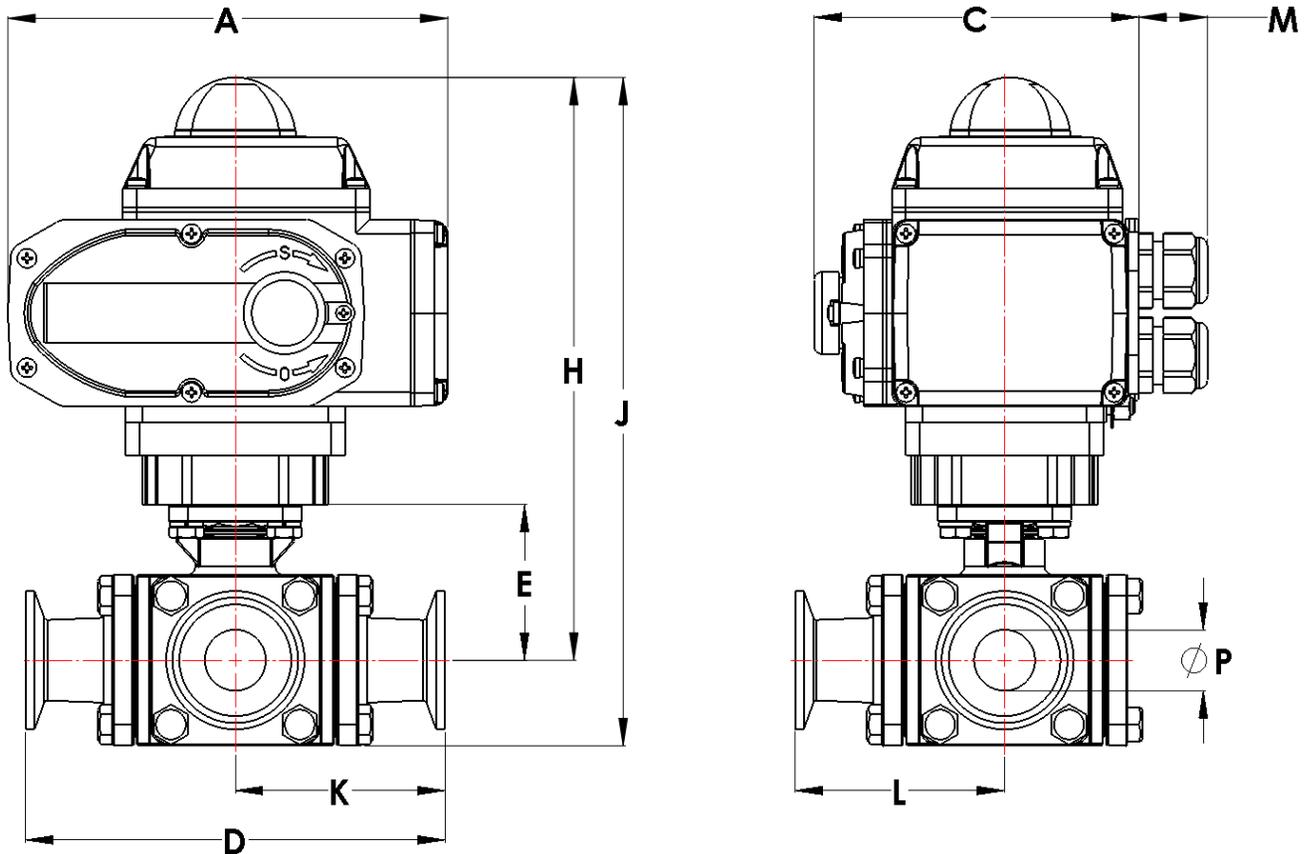
AC Voltages



DC Voltages



Dimensions: (24 VDC & 110 VAC)



Pipe Size		A	C	D	E	H	J	K	L	M	P	Weight
1/2	inch	6.4	4.7	4.6	1.8	8.0	9.0	2.3	2.3	1.0	0.4	9.4 lb
	mm	162.0	118.5	118.0	44.5	203.1	228.6	59.0	59.0	25.0	9.4	4.3 kg
3/4	inch	6.4	4.7	5.0	1.9	8.1	9.1	2.5	2.6	1.0	0.6	10.0 lb
	mm	162.0	118.5	127.0	48.0	205.7	231.1	63.5	64.9	25.0	15.8	4.5 kg
1	inch	6.4	4.7	6.0	2.3	8.5	9.7	3.1	3.0	1.0	0.9	12.3 lb
	mm	162.0	118.5	152.4	59.0	215.9	246.4	77.5	76.2	25.0	22.2	5.6 kg
1-1/2	inch	6.4	4.7	6.9	2.8	9.0	10.6	3.4	3.5	1.0	1.4	18.1 lb
	mm	162.0	118.5	175.0	72.0	228.6	269.1	87.5	88.8	25.0	35.0	8.2 kg
2	inch	6.4	4.7	7.5	3.2	9.4	11.4	3.7	3.8	1.0	1.9	25.3 lb
	mm	162.0	118.5	190.0	82.0	238.8	289.6	95.0	96.3	25.0	47.6	11.5 kg
2-1/2	inch	10.1	6.4	9.0	4.0	12.5	14.9	4.5	4.2	1.0	2.4	43.1 lb
	mm	255.5	161.5	228.0	102.5	317.5	378.5	114.0	107.0	25.0	60.2	19.5 kg
3	inch	10.1	6.4	10.2	4.9	13.4	16.4	5.1	4.2	1.0	2.9	59.0 lb
	mm	255.5	161.5	260.0	125.5	340.4	416.6	130.0	107.0	25.0	72.9	26.8 kg