

CR8 3-Way Series Pneumatically Operated Valves

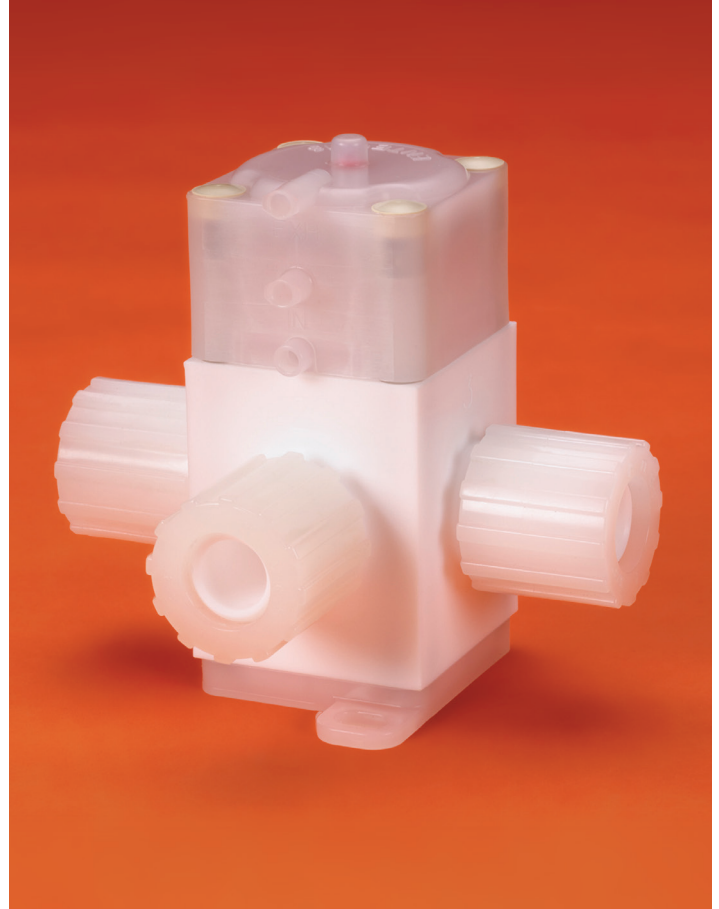
For corrosive environments in wet etch and clean applications

CR8 3-way series valves are designed to divert one media stream into two directions or alternate two media streams into one, minimizing the footprint. The compact, CR8 valve effectively handles temperatures up to 130°C (266°F) in corrosive environments for wet etch and clean applications. At this temperature, the CR8 3-way valve is rated to 276 kPa (40 psig) media.

Users will have a variety of connection options available in ½" and ¾" port sizes. Without exposed metal hardware, the valve is completely sealed and protected from harsh chemical environments. The end result is a highly effective valve that simplifies your system design and increases product longevity.

APPLICATIONS

- High-purity corrosive chemical handling for chemical line size in ½" and ¾"
- Transporting and protecting your high-purity chemicals
- All semiconductor wet clean process chemicals



FEATURES & BENEFITS

Three-ported directional valve design	Enables simplification of piping system design while minimizing footprint
Compact 3-way design	Reduced footprint saving valuable space
Sealed actuator with vent port	Eliminates chemical exposure of the valve spring
Valves withstand corrosive and harsh chemical environments	Product longevity and reliability
Valve offered in connection options: PrimeLock®, Flaretek®, and Super 300 Type Pillar®	Versatility and flexibility in system design

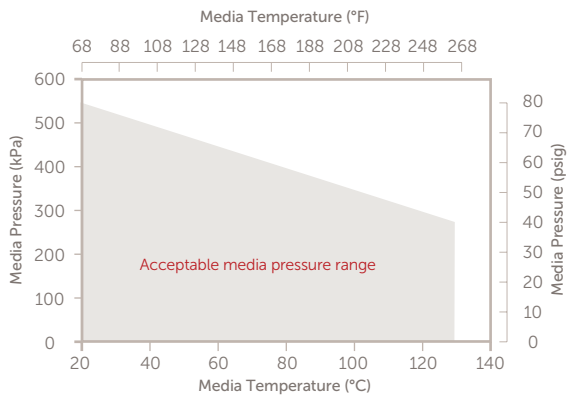
SPECIFICATIONS

Materials	All-wetted parts	PTFE, PFA
	Exterior actuator parts	PVDF, Viton®
	Interior actuator parts	PVDF, SST, Viton
	Mounting base	PVDF
Operating conditions	Media pressure (all ports): 552 kPa (80 psig) @ 21°C (70°F)* 276 kPa (40 psig) @ 130°C (266°F)* Actuation pressure: 414–552 kPa (60–80 psig) @ 21°C (70°F) 414–483 kPa (60–70 psig) @ 130°C (266°F) Temperature range: Ambient: 21–50°C (70–122°F)* Fluid: 21–130°C (70–266°F)*	
Pneumatic supply port	¼" tube stub; accepts one-touch (push to connect) type fittings or molded female Luer lug style	
Environmental compliance	RoHs, WEE	

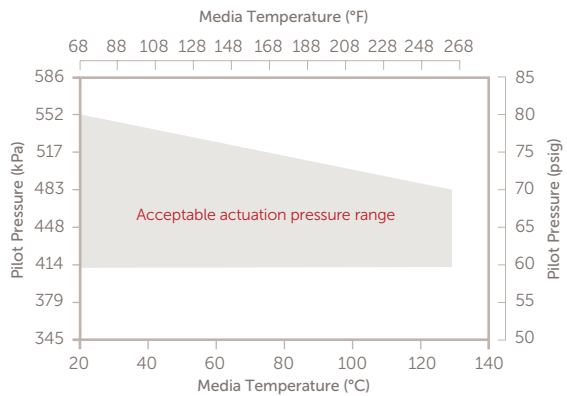
*Actual valve performance varies with pressure and temperature; refer to actual ratings in performance data.

PERFORMANCE

Media Temperature vs. Media Pressure



Media Temperature vs. Actuator Pilot Pressure



VALVE RELIABILITY TEST RESULTS

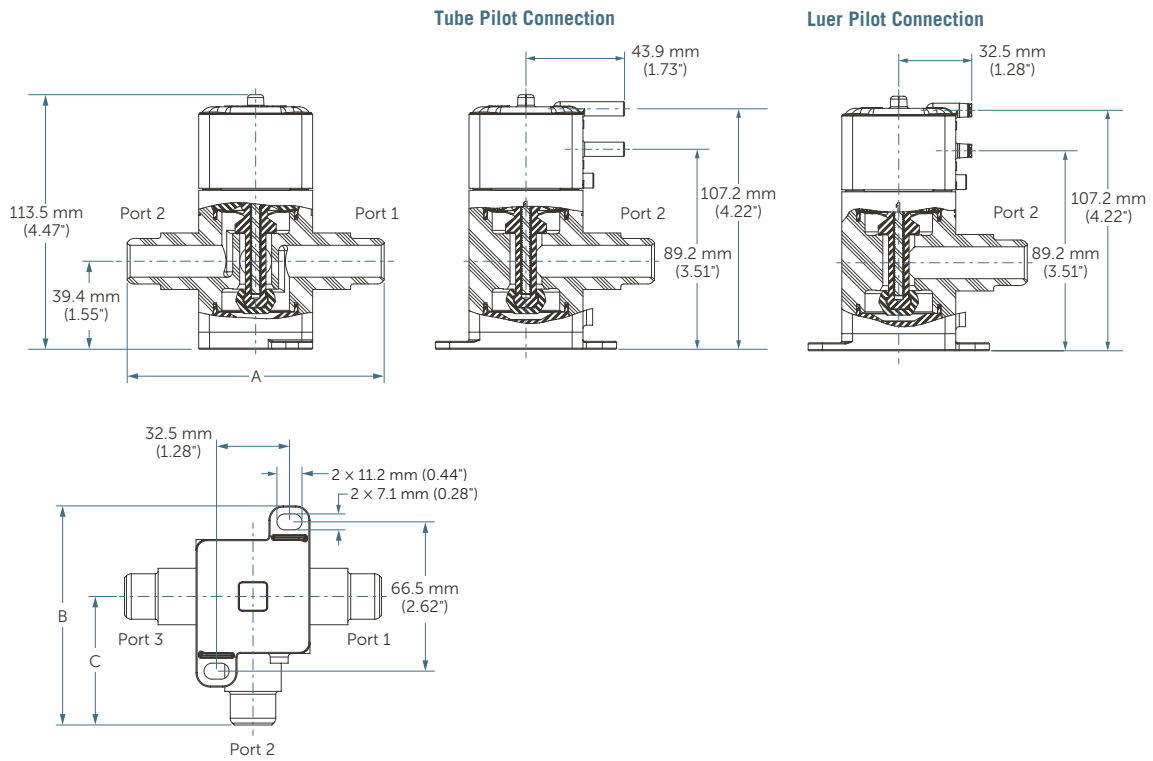
Valve qualification testing

Test type	Test conditions	Acceptance criteria	Test results
Burst pressure	Hydraulic oil pressure increased until leakage detected	Burst pressure must be >2 times rated pressure @ 23°C (73°F) and @ 130°C (266°F)	PASS
Pressure envelope	827 kPa (120 psig) water @ 23°C (73°F)	No external leakage failures for 1 million cycles @ 1.5 times rated pressure	PASS No external leakage
	414 kPa (60 psig) hydraulic oil @ 130°C (266°F)	No external leakage failures for 1 million cycles @ 1.5 times rated pressure	PASS No external leakage
Actuation cycle testing	552 kPa (80 psig) water @ 23°C (73°F) for 2 million cycles	No leakage in functional performance for up to 2.1 million cycles	PASS No external or port-to-port leakage <0.050 CC H ₂ O/hr
	276 kPa (40 psig) hydraulic oil @ 130°C (266°F) for 1 million cycles	No leakage in functional performance for up to 1 million cycles	PASS No external or port-to-port leakage <0.050 CC H ₂ O/hr

100% Valve test procedure in production

Test type	Test conditions	Acceptance criteria
External media leak	552 kPa (80 psig) CDA	Zero bubbles per minute through 1/32" ID tube immersed in DI water
Port-to-port valve test	552 kPa (80 psig) CDA to common port. Tested at normally closed port and normally open port in actuated position.	Less than 4 bubbles per minute through 1/32" ID tube immersed in DI water
Valve actuation	Pressure decay 552 kPa (80 psig) CDA	Less than 7 kPa (1 psig/min) pressure drop

DIMENSIONS



Port connection	Flow factor C_v	Flow factor K_v	DIMENSIONS		
			A	B	C
1/2" Flaretek	1.6	22.8	108.5 mm (4.27")	94.7 mm (3.73")	54.1 mm (2.13")
3/4" Flaretek	2.3	32.8	114.6 mm (4.51")	97.8 mm (3.85")	57.4 mm (2.26")
1/2" Super 300 Type Pillar*	1.6	22.8	85.9 mm (3.38")	83.3 mm (3.28")	42.9 mm (1.69")
3/4" Super 300 Type Pillar*	2.3	32.8	94.7 mm (3.73")	87.9 mm (3.46")	47.5 mm (1.87")
1/2" Primelock	1.6	22.8	96.0 mm (3.78")	88.4 mm (3.48")	48.0 mm (1.89")
3/4" Primelock	2.3	32.8	109.7 mm (4.32")	95.3 mm (3.75")	54.9 mm (2.16")

*Pillar nuts, inserts, and gauge rings supplied separately.

SENSING OPTION DIMENSIONS

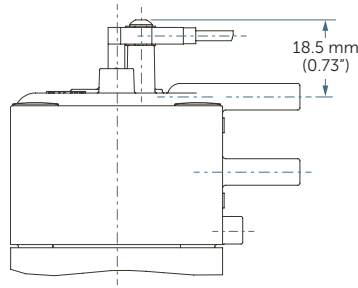
Remote Position Indication Option

Electronic valve position sensing for monitoring valve open and closed positions.

NOTE: To enable the remote position indication option you must special order the Omron® sensor (-OM) on the valve. In addition, order the Omron Position Sensor Indicator (EE-SX771R or EE-SX771A), which is sold separately.

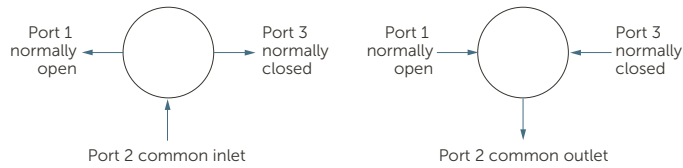
CR8 Valve with Omron Sensor

Omron part number EE-SX771R or EE-SX771A



PORT CONFIGURATIONS

Port 1 is the normally open port
 Port 2 is the common port
 Port 3 is the normally closed port



ORDERING INFORMATION

CR8 3-way Valves: part number

CR8 - - - - -

Port configurations

- 8FFF = 1/2" Flaretek all port
- 12FFF = 3/4" Flaretek all port
- 8WWW = 1/2" Super 300 Type Pillar all port
- 12WWW = 3/4" Super 300 Type Pillar all port
- 8KKK = 1/2" PrimeLock all ports
- 12KKK = 3/4" PrimeLock all ports

Actuator

- 3CT = 3-way tube pilot port
- 3CL = 3-way Luer pilot port

Special order

- 3 = PFA Flaretek nut
- II = FlareLock® II
- N = Pillar nuts, inserts, and gauge rings included*
- OM = Omron sensor

*Available for S300 Type Pillar port connections only.

FOR MORE INFORMATION

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