



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Miniature Multimedia Valves

Precision Fluidics



ENGINEERING YOUR SUCCESS.



ENGINEERING **YOUR** SUCCESS.

When you partner with the global leader in motion and control technologies, expect to move your business and the world forward. From miniature multimedia valves to highly integrated automation systems, our innovations are critical to life-saving medical devices and scientific instruments used for drug discovery and pathogen detection. Not to mention, critical to decreasing time to market and lowering your overall cost of ownership. So partner with Parker, and get ready to move, well, anything.



www.parker.com/precisionfluidics 1 800 525-2857

Table of Contents

	product	page
	Series 1 3-Way Inert Isolation PTFE Valve	4
	Series 2 2-Way Inert Isolation PTFE Valve	6
	Series 3 2-Way & 3-Way General Purpose Valve	8
	Series 9 2-Way & 3-Way Extreme Performance Valve	10
	Series 99 Ultra Low Leak Extreme Performance Valve	12
	Pulse Valves Ultra Low Leak Extreme Performance Valve	14
	Series 18 <small>Isolation Manifold</small> Chemically Inert Manifold Valve	16
	Series 27 <small>Isolation Manifold</small> Chemically Inert Ultra High Speed Manifold Valve	17
	LQX12 2-Way & 3-Way Isolation Valve	18
	Value Added Application-Specific Solutions	20
	Offer of Sale	22

PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Inert Isolation PTFE Series 1

3-Way Solenoid Valve



The 3 way inert Series 1 valve has been designed for systems where chemical compatibility is most important. The wetted path is isolated from the solenoid, and only PTFE and borosilicate glass are in contact with the media passing through the valve. Low internal volume and fast response time ensure repeatable, accurate volumes. Valves will operate without any pressure or vacuum.

- Features**
- Provides unsurpassed chemical compatibility for a wide range of media with wetted parts of only PTFE and borosilicate glass.
 - 100% continuous duty rating in ambient temperatures up to 66C
 - Low power for reduced heat and power consumption
 - Fast response times for accurate, repeatable results
 - Direct acting does not require pressure or vacuum to operate
 - 100% tested tight leak rate provides assurance of a quality seal
 - Provides reliable operation for the life of your instrument

Physical Properties

Valve Type:
3-Way diaphragm
Media:
Liquids and gases
Operating Environment:
40 to 150°F (4 to 66°C)
Size: <i>See Dimensions</i>
Porting:
1/4-28 Threaded Ports
Weight:
2.7 oz
Internal Volume:
68 µL

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
2.5 Watts	12 VDC	211 ma	57 Ω
4.2 Watts	24 VDC	173 ma	139 Ω
12" Lead Wires Standard			

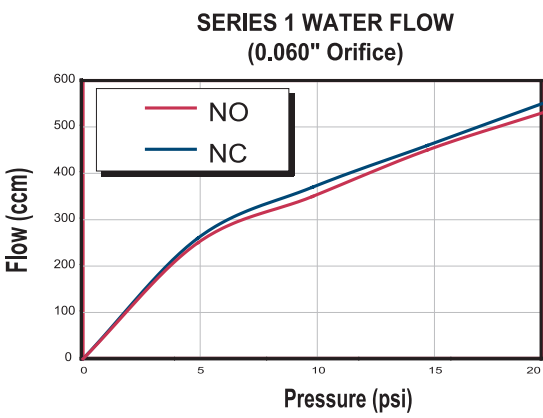
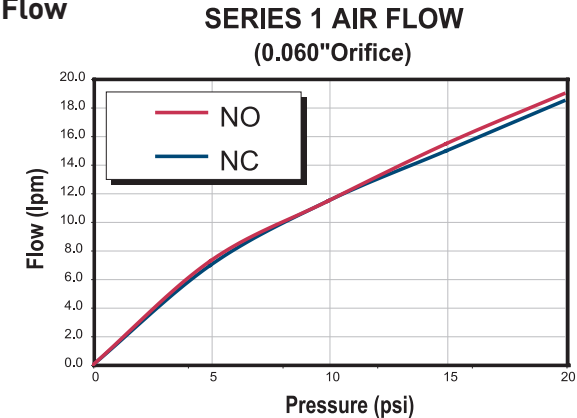
Wetted Materials

Materials Contacting Media:
PTFE, Borosilicate Glass
Body Options:
PTFE, <i>Consult factory for custom options</i>

Performance Characteristics

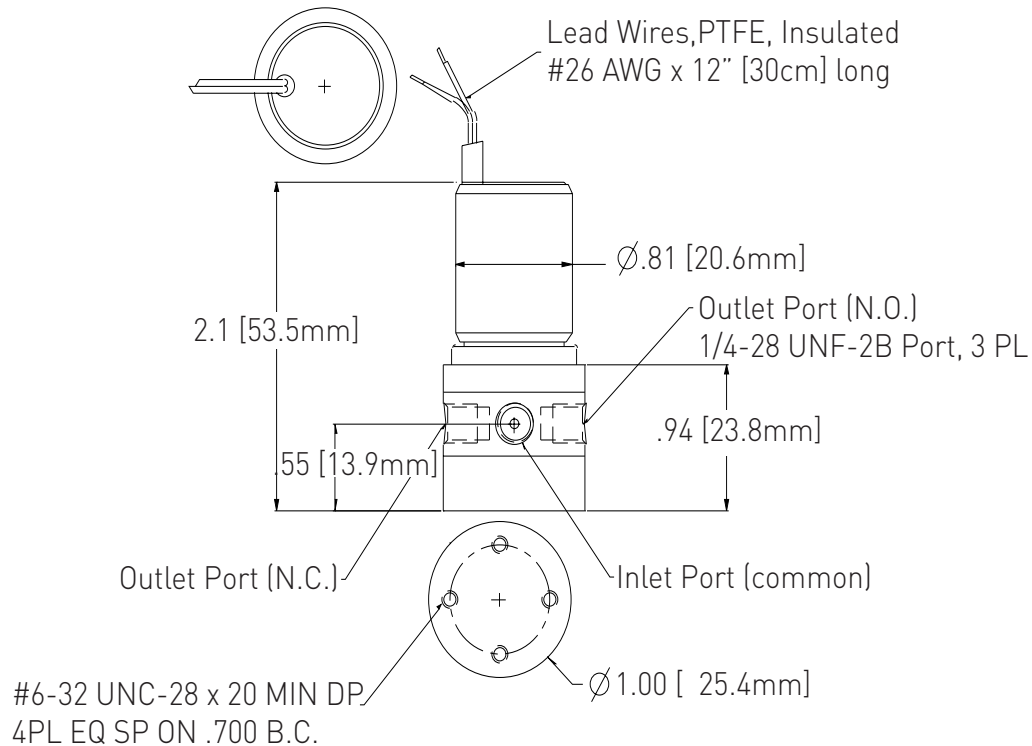
Operating Pressure:
24" Hg - 20 psi (1.38 BAR)
Proof Pressure: 60 psi
Response Time:
<12 milliseconds cycling
Orifice Diameters: 0.060" (1.52 mm)
Leak Rate: Bubble Tight
Recommended Filtration: 10 µ max

Flow



Inert Isolation PTFE Series 1

Dimensions



Ordering Information

	part number	
	001-0017-900	001-0028-900
part description		
Valve Type	3-Way	3-Way
Media	Liquids & Gases	Liquids & Gases
Operating Pressure	24" Hg - 20 psi	24" Hg - 20 psi
Orifice	0.060"	0.060"
Valve Body Material	PTFE	PTFE
Voltage	12 VDC	24 VDC
Porting	1/4 - 28	1/4 - 28
Operating Environment	50 - 150 deg F	50 - 150 deg F
Material Contact Media	PTFE	PTFE



PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Inert Isolation PTFE Series 2

2-Way Solenoid Valve



The 2 way NC inert Series 2 valve has been designed for systems where chemical compatibility is most important. The wetted path is isolated from the solenoid, and only PTFE is in contact with the media passing through the valve. Low internal volume and fast response time ensure repeatable, accurate volumes. Valves will operate without any pressure or vacuum.

Features

- Provides unsurpassed chemical compatibility for a wide range of media with PTFE wetted parts
- 100% continuous duty rating in ambient temperatures up to 66°C
- Low power for reduced heat and power consumption
- Fast response times for accurate, repeatable results
- Direct acting does not require pressure or vacuum to operate
- 100% tested tight leak rate provides assurance of a quality seal
- Provides reliable operation for the life of your instrument

Physical Properties

Valve Type:
2-Way diaphragm
Media:
Liquids and gases
Operating Environment:
40 to 150°F (4 to 66°C)
Size: See Dimensions
Porting:
1/4-28 Threaded Ports
Weight:
2.5 oz
Internal Volume:
49 µL

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
2.5 Watts	12 VDC	211 ma	57 Ω
4.2 Watts	24 VDC	173 ma	139 Ω
12" Lead Wires Standard			

Wetted Materials

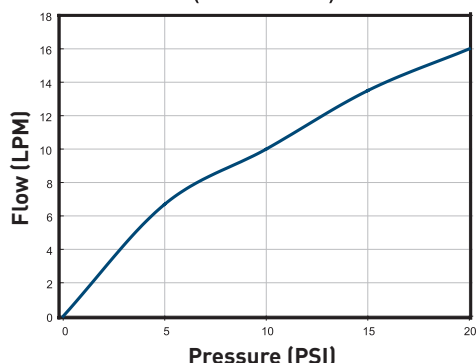
Materials Contacting Media:
PTFE, Body
Body Options:
PTFE, Consult factory for custom options

Performance Characteristics

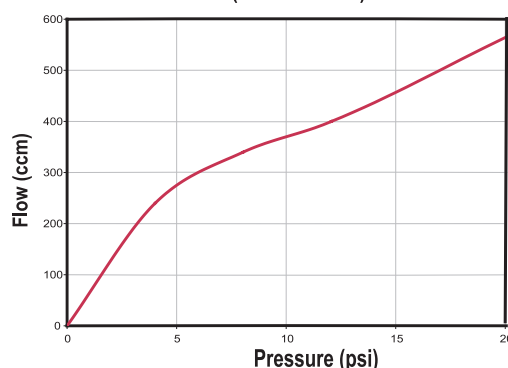
Operating Pressure:
24"Hg - 20 psi (1.38 BAR)
Proof Pressure: 30 psi
Response Time:
<20 milliseconds cycling
Orifice Diameters: 0.060" (1.52 mm)
Leak Rate: 1 X 10 ⁻⁵ cc/sec. HE
Recommended Filtration: 10 µ max

Flow

Series 2 AIR FLOW
(0.06" Orifice)



SERIES 2 WATER FLOW
(0.06 inch Orifice)



Dimensions



PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppinfo@parker.com
Visit www.parker.com/precisionfluidics



General Purpose Series 3

2-Way and 3-Way Solenoid Valve



The Series 3 solenoid valve is suitable for both liquids and gases, including bleach and saline, for applications including clinical chemistry, blood chemistry, and ink jet printing. These 2-way and 3-way valves provide high flow in a small valve with pressures up to 100 PSI, they feature barbs for soft tubing and no metal to metal sliding surfaces, ensuring long, trouble free operation. These valves are an excellent alternative to pinch valves, since there is no pinched tubing to wear out.

Features

- Wetted parts are engineered plastic (PEEK), magnetic stainless steel, and elastomer (FKM or EPDM)
- Chemically resistant to moderate acids, bases, dilute bleach, saline
- Integral molded and machined barbs for soft tubing eliminate potential leaks at connection
- High flow in small package provides fast cycle times and low pressure losses
- No sliding metal to metal surfaces minimize wear of moving parts
- Direct acting design does not require pressure or vacuum to operate

Physical Properties

Valve Type:
2-Way Normally Closed, 3-Way
Media:
Liquids and gases
Operating Environment:
40 to 150°F (4 to 66°C)
Size: See Dimensions
Porting:
Barbs: 1/16", 1/8", 3/16"
Weight:
1.8 to 2.0 oz (Material and Configuration Dependent)
Internal Volume:
238 µL (1/16" Barb Option)
326 µL (1/8" Barb Option)
516 µL (3/16" Barb Option)

Performance Characteristics

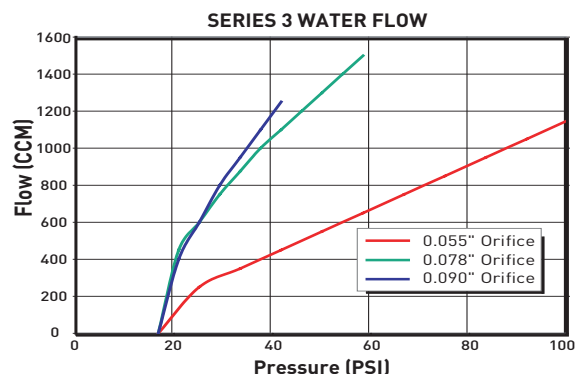
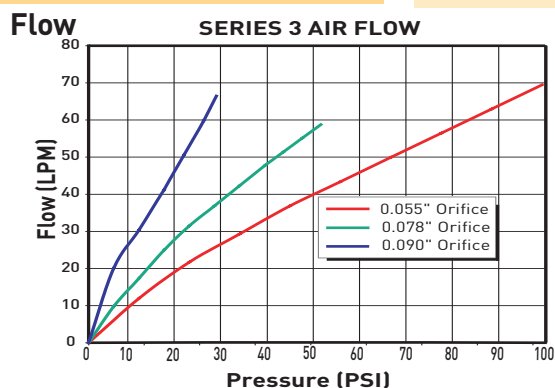
Operating Pressure:	Orifice Diameters:	Fitting Type:
24" Hg - 100 psig	0.055" (1.40 mm)	1/16" Barb
24" Hg - 50 psig	0.078" (1.98 mm)	1/8" Barb
24" Hg - 20 psig	0.090" (2.29 mm)	3/16" Barb
Diaphragm Version		
0 - 25 psig	0.078" (1.98 mm)	1/8" Barb
Leak Rate:	Response Time:	
1 X 10 ⁻⁵ cc/sec. He	<12 milliseconds cycling	
Recommended Filtration: 10 µ max		Proof Pressure: 1.5X rated pressure

Wetted Materials

Materials Contacting Media:
PTFE, Stainless Steel, Seal, Body
<i>Diaphragm Version:</i> EPDM & Ryton
Seal Options: FKM, EPDM
Body Options:
<i>Standard:</i> PEEK <i>Diaphragm:</i> Ryton

Electrical

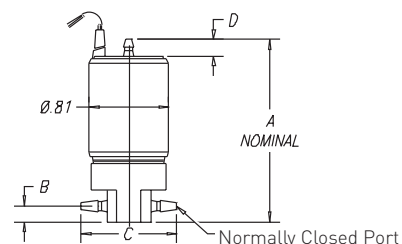
Power:	Voltage:
2.5 Watts	12 VDC
4.2 Watts	24 VDC
12" Lead Wires Standard	



General Purpose Series 3

Dimensions

DIMENSIONS, 0.60" ORFICE								
	THREE - WAY					TWO - WAY		
PORTS	A	B	C	D		A	B	C
1/16 BARBS	1.86	0.16	0.98	0.17		1.69	0.16	0.98
1/8 BARBS	2.03	0.16	1.02	0.35		1.69	0.16	1.02
3/16 BARBS	2.13	0.16	1.32	0.44		1.69	0.16	1.32
10 - 32	1.68	0.22	0.81	N/A		1.68	0.22	0.81



Ordering Information

part description	part number							
	003-0137-900	003-0218-900	003-0130-900	003-0214-900	003-0096-900	003-0264-900	003-0194-900	
	Valve Type	2-Way NC	2-Way NC	3-Way	3-Way	2-Way NC	2-Way NC	3-Way
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
	Operating Pressure	24" Hg - 100 psi	24" Hg - 100 psi	24" Hg - 100 psi	24" Hg - 100 psi	24" Hg - 100 psi	24" Hg - 100 psi	24" Hg - 100 psi
	Orifice	0.055"	0.055"	0.055"	0.055"	0.055"	0.055"	0.055"
	Valve Body Material	PEEK	PEEK	PEEK	PEEK	PEEK	PEEK	PEEK
	Voltage	12 VDC	12 VDC	12 VDC	12 VDC	24 VDC	24 VDC	24 VDC
	Porting	1/16" Barb	1/16" Barb	1/16" Barb	1/16" Barb	1/16" Barb	1/16" Barb	1/16" Barb
	Operating Environment	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F
	Material Contact Media	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body
	Seals	FKM	EPDM	FKM	EPDM	FKM	EPDM	FKM

part description	part number							
	003-0241-900	003-0141-900	003-0260-900	003-0120-900	003-0356-900	003-0111-900	003-0257-900	
	Valve Type	3-Way	2-Way NC	2-Way NC	3-Way	2-Way NC	2-Way NC	
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	
	Operating Pressure	24" Hg - 100 psi	24" Hg - 50 psi	24" Hg - 50 psi	24" Hg - 50 psi	24" Hg - 50 psi	24" Hg - 50 psi	
	Orifice	0.055"	0.078"	0.078"	0.078"	0.078"	0.078"	
	Valve Body Material	PEEK	PEEK	PEEK	PEEK	PEEK	PEEK	
	Voltage	24 VDC	12 VDC	12 VDC	12 VDC	12 VDC	24 VDC	
	Porting	1/16" Barb	1/8" Barb	1/8" Barb	1/8" Barb	1/8" Barb	1/8" Barb	
	Operating Environment	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	
	Material Contact Media	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	
	Seals	EPDM	FKM	EPDM	FKM	EPDM	FKM	

part description	part number						
	003-0165-900	003-0258-900	003-0178-900	003-0496-900	003-0175-900	003-0189-900	
	Valve Type	3-Way	3-Way	2-Way NC	2-Way NC	2-Way NC	2-Way NC
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
	Operating Pressure	24" Hg - 50 psi	24" Hg - 50 psi	24" Hg - 25 psi	24" Hg - 25 psi	24" Hg - 20 psi	24" Hg - 20 psi
	Orifice	0.078"	0.078"	0.078"	0.078"	0.090"	0.090"
	Valve Body Material	PEEK	PEEK	Ryton	Ryton	PEEK	PEEK
	Voltage	24 VDC	24 VDC	12 VDC	24 VDC	12 VDC	12 VDC
	Porting	1/8" Barb	1/8" Barb	1/8" Barb	1/8" Barb	3/16" Barb	3/16" Barb
	Operating Environment	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F
	Material Contact Media	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	EPDM, Ryton	EPDM, Ryton	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body
	Seals	FKM	EPDM	EPDM Diaphragm	EPDM Diaphragm	FKM	EPDM

part description	part number						
	003-0328-900	003-0347-900	003-0359-900	003-0376-900	003-0421-900	003-0461-900	
	Valve Type	3-Way	3-Way	2-Way NC	2-Way NC	3-Way	3-Way
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
	Operating Pressure	24" Hg - 20 psi	24" Hg - 20 psi	24" Hg - 20 psi	24" Hg - 20 psi	24" Hg - 20 psi	24" Hg - 20 psi
	Orifice	0.090"	0.090"	0.090"	0.090"	0.090"	0.090"
	Valve Body Material	PEEK	PEEK	PEEK	PEEK	PEEK	PEEK
	Voltage	12 VDC	12 VDC	24 VDC	24 VDC	24 VDC	24 VDC
	Porting	3/16" Barb	3/16" Barb	3/16" Barb	3/16" Barb	3/16" Barb	3/16" Barb
	Operating Environment	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F	40 - 150 deg F
	Material Contact Media	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body	PTFE, Stainless Steel, Seals, Body
	Seals	FKM	EPDM	FKM	EPDM	FKM	EPDM

PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Extreme Performance Series 9

2-Way and 3-Way Valve



Series 9 valves offer outstanding precision control in liquid and gas analysis. Combining high speed and high flow in a small size, this rugged valve operates with extreme repeatability. The valves are constructed of non-corroding, passivated stainless steel. Ideal for analytical analysis equipment.

Features

- Smallest footprint in its class
- High speed response times of less than 5 ms eliminate delays in the system
- 100% tested to leak-tight 1 x 10⁻⁷ cc/sec/atm Helium
- Pressures up to 1250 PSI
- Available with a variety of fittings, orifices, seals, and voltages to match your application

Physical Properties

Valve Type:
2-Way and 3-Way Configurations
Media:
Liquids and gases
Operating Environment:
40 to 221°F (4 to 105°C)
Size: See Dimensions
Porting:
1/4-28 Threaded Ports; 1/8" NPT (Female); A-Lok compression fittings
Weight:
3.1 oz (3-Way, 1/8" NPT Body Option)
Internal Volume:
(Contact factory for details)

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
12 Watts	12 VDC	1000 ma	12 Ω
12 Watts	24 VDC	500 ma	48 Ω
12" Lead Wires Standard			

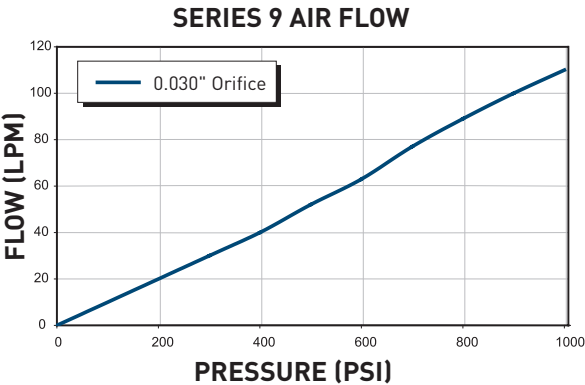
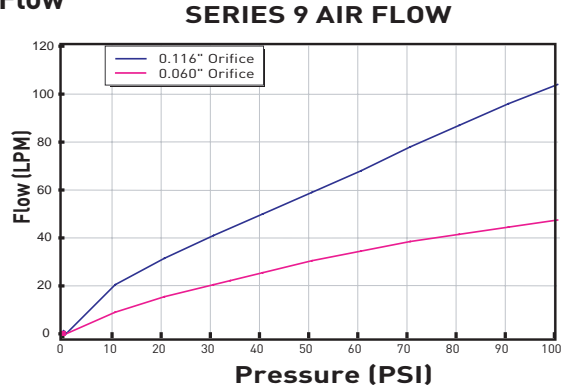
Wetted Materials

Materials Contacting Media:
PTFE, Stainless Steel, Body, Seals
Body:
316L Stainless Steel
Seals Options:
FKM & Vespel, FKM

Performance Characteristics

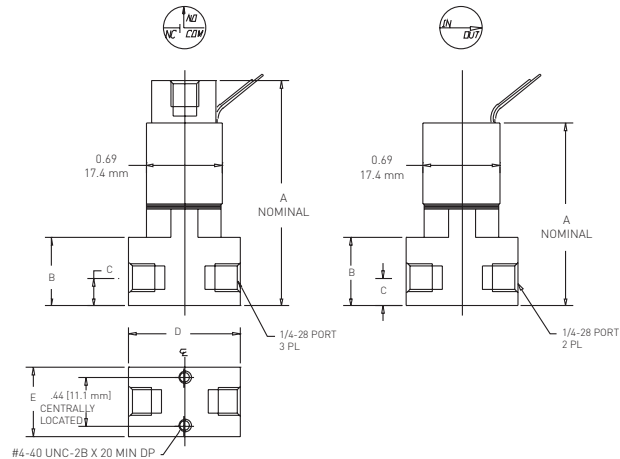
Operating Pressure:
24"Hg - 1250 psig (0.030 in orifice)
24"Hg - 250 psig (0.060 in orifice)
24"Hg - 100 psig (0.116 in orifice)
Orifice Diameters:
0.030" (0.76 mm), 0.060" (1.52 mm)
0.116" (2.99 mm)
Response Time: <5 ms cycling
Leak Rate:
1 x 10 ⁻⁷ cc/sec/atm Helium

Flow

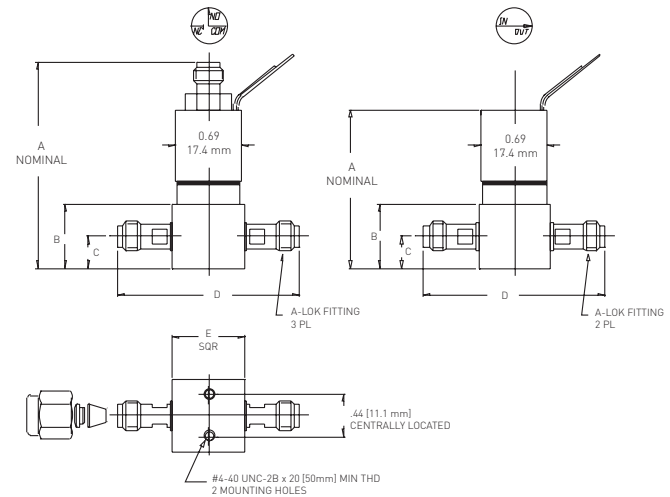


Extreme Performance Series 9

Dimensions



DIMENSIONS (INCHES)					
THREE-WAY					
PORTS	A	B	C	D	E
1/8 NPT	2.18	0.60	0.30	1.00	0.63
TWO-WAY					
PORTS	A	B	C	D	E
1/4 - 28	1.64	0.61	0.25	1.00	0.63
1/8 NPT	1.76	0.60	0.30	1.00	0.63



DIMENSIONS (INCHES)										
THREE-WAY						TWO-WAY				
PORTS	A	B	C	D	E	A	B	C	D	E
1/16 A-LOK	--	--	--	--	--	1.64	0.66	0.33	1.63	0.75
1/8 A-LOK	2.18	0.66	0.33	1.91	0.75	1.64	0.66	0.33	1.91	0.75

Ordering Information

part description	part number					
	009-0100-900	009-0172-900	009-0272-900	009-0270-900	009-0631-900	
	Valve Type	2-Way NC	2-Way NC	2-Way NC	2-Way NC	2-Way NC
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
	Operating Pressure	24" Hg - 1250 psi	24" Hg to 1250 psi	24" Hg to 1250 psi	24" Hg to 250 psi	24" Hg to 250 psi
	Orifice	0.030"	0.030"	0.030"	0.060"	0.060"
	Valve Body Material	316L Stainless	316L Stainless	316L Stainless	316L Stainless	316L Stainless
	Voltage	12 VDC	24 VDC	24 VDC	24 VDC	24 VDC
	Porting	1/16" A-Lok	1/16" A-Lok	1/4" - 28	1/8" A-Lok	1/8" FNPT
	Operating Environment	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F
Material Contact Media	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals
	Seals	Vespel, FKM	Vespel, FKM	Vespel, FKM	FKM	FKM



part description	part number						
	009-0269-900	091-0094-900	009-0933-900	009-0089-900	009-0207-900	009-0143-900	
	Valve Type	3-Way	3-Way	3-Way	2-Way NC	3-Way	3-Way
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
	Operating Pressure	24" Hg to 100 psi	24" Hg to 100 psi	24" Hg to 100 psi	24" Hg to 100 psi	24" Hg to 100 psi	24" Hg to 100 psi
	Orifice	0.060"	0.060"	0.060"	0.116"	0.116"	0.116"
	Valve Body Material	316L Stainless	316L Stainless	316L Stainless	316L Stainless	316L Stainless	316L Stainless
	Voltage	24 VDC	12 VDC	24 VDC	24 VDC	12 VDC	24 VDC
	Porting	1/8" A-Lok	1/8" FNPT	1/8" FNPT	1/8" FNPT	1/8" FNPT	1/8" FNPT
	Operating Environment	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F
Material Contact Media	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals
	Seals	FKM	FKM	FKM	FKM	FKM	FKM

PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Extreme Performance Series 99

Ultra Low Leak Extreme Performance Valve



The Series 99 offers ultra-high vacuum valve technology in a reliable, compact design. Using the unique metal Gen-Lock™ seal, the Series 99 delivers low leak rates, high speed, and high flow and operates well in both low and high temperature applications. The Vespel poppet option provides a non-elastomer flowpath, eliminating the possibility of elastomer outgassing. Ideal for analytical analysis equipment.

Features

- Smallest footprint in its class
- Standard non-elastomer flow path minimizes outgassing of materials
- High speed response times of less than 5 ms eliminate delays in the system
- 100% tested to leak-tight 1 x 10⁻⁸ cc/sec/atm Helium
- Pressures up to 1250 PSI
- Available with a variety of fittings, orifices, seals, and voltages to match your application

Physical Properties

Valve Type:
2-Way and 3-Way Configurations
Media:
Liquids and gases
Operating Environment:
40 to 221°F (4 to 105°C)
Size: See Dimensions
Porting:
Vacuum fittings; A-Lok compression fittings
Weight:
3.1 oz (3-Way, 1/8" Body Option)
Internal Volume:
(Contact factory for details)

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
12 Watts	12 VDC	1000 ma	12 Ω
12 Watts	24 VDC	500 ma	48 Ω
12" Lead Wires Standard			

Wetted Materials

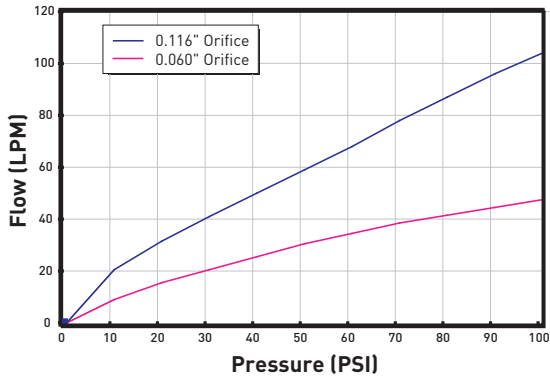
Materials Contacting Media:
PTFE, Stainless Steel, Body, Seals
Body Options:
316L Stainless Steel
Seals Options:
Vespel & Silver-Plated Nickel, FKM & Silver-Plated Nickel Gasket

Performance Characteristics

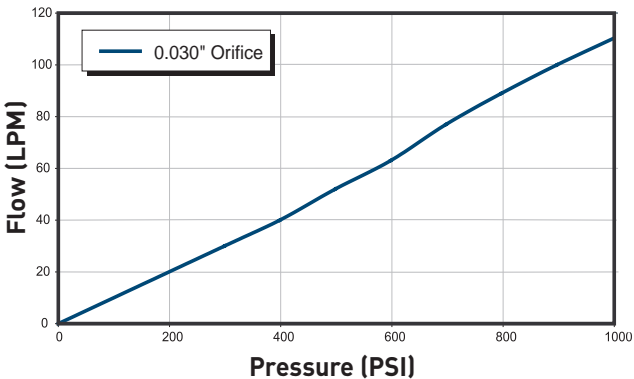
Operating Pressure:
24"Hg - 1250 psig (0.030 in orifice)
24"Hg - 250 psig (0.060 in orifice)
24"Hg - 100 psig (0.116 in orifice)
Orifice Diameters:
0.030" (0.76 mm)
0.060" (1.52 mm), 0.116" (2.99 mm)
Response Time: <5 ms cycling
Leak Rate:
1 x 10 ⁻⁸ cc/sec/atm Helium

Flow

SERIES 99 AIR FLOW

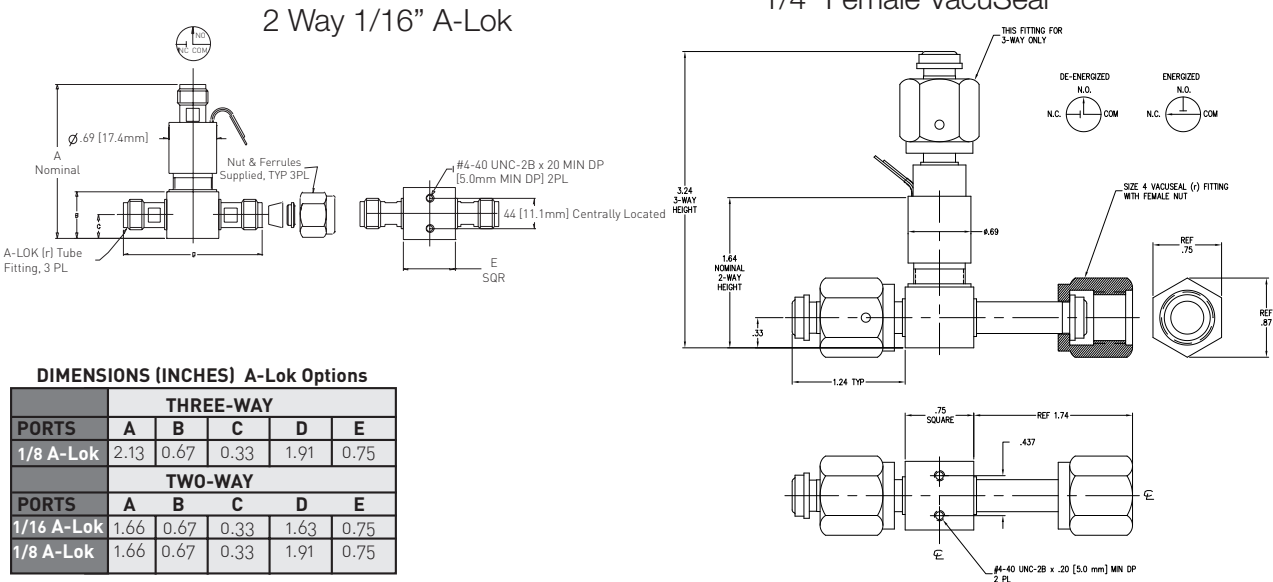


Series 99 AIR FLOW



Extreme Performance Series 99

Dimensions



Ordering Information

part description	part number					
	099-0051-900	099-0340-900	099-0080-900	099-0135-900	099-0075-900	
	Valve Type	2-Way NC	2-Way NC	2-Way NC	3-Way	3-Way
	Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
	Operating Pressure	24" Hg to 1250 psi	24" Hg to 1250 psi	24" Hg to 250 psi	24" Hg to 100 psi	24" Hg to 100 psi
	Orifice	0.030"	0.030"	0.060"	0.060"	0.060"
	Valve Body Material	316L Stainless	316L Stainless	316L Stainless	316L Stainless	316L Stainless
	Voltage	12 VDC	24 VDC	24 VDC	24 VDC	12 VDC
	Porting	1/16" A-Lok	1/16" A-Lok	1/8" A-Lok	1/8" A-Lok	1/8" A-Lok
	Operating Environment	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F
Material Contact Media	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals	
	Seals	Vespel and Gasket	Vespel and Gasket	FKM and Gasket	FKM and Gasket	FKM and Gasket
	Gasket	Silver Plated Nickel	Silver Plated Nickel	Silver Plated Nickel	Silver Plated Nickel	Silver Plated Nickel

part description	part number	
	099-0167-900	099-0107-900
	Valve Type	2-Way NC
	Media	Liquids & Gases
	Operating Pressure	24" Hg to 100 psi
	Orifice	0.116"
	Valve Body Material	316L Stainless
	Voltage	24 VDC
	Porting	1/4" Female VacuSeal
	Operating Environment	40 - 221 deg F
Material Contact Media	PTFE, Stainless Steel, Body, Seals	PTFE, Stainless Steel, Body, Seals
	Seals	FKM and Gasket
	Gasket	Silver Plated Nickel



For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Pulse Valves Series 9

Ultra Low Leak Extreme Performance Valve



Pulse Valves are available in flange mount, axial flow, and 2-Way Normally Closed versions. Constructed of corrosion resistant materials, these field-proven units provide extreme repeatability and operate as fast as 160 microseconds. They are capable of operating at pressures up to 85 atmospheres and speeds of 120 Hz. Supersonic gas pulses can be delivered with “First Shot” accuracy.

Features

- Performs at ultra-high speed as fast as 160 microseconds
- Delivers repeatable pulses and high repetition rates for small volume gas control
- Direct acting design requires no pressure or vacuum to operate
- Built with robust stainless steel construction
- Rated for continuous duty at room temperature

Physical Properties

Valve Type:
Flange Mount, Axial Flow, 2-Way Normally Closed version
Media:
Liquids and gases
Operating Environment:
4 to 105°C (40 to 221°F)
Size:
Configuration and fitting dependent (Contact factory for details)
Weight:
2.8 oz (9-181-900)
Porting:
A-Lok, VacuSeal
Internal Volume:
(Contact factory for details)

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
12 Watts	20 VDC	594 ma	33 Ω
11.2 Watts	28 VDC	400 ma	70 Ω
12" Lead Wires Standard			

Wetted Materials

Poppet Materials:	
Series 9 PTFE, PEEK, PCTFE, PI (Vespel®*), CTFE (Kel-F®*) <i>Two spare poppets ship with valve assembly</i>	
O-Ring:	
Series 9 FFKM (Kalrez®*)	
<i>*NOTE: Vespel and Kalrez are trademarks of Dupont. Kel-F is a trademark of 3M Company.</i>	

Performance Characteristics

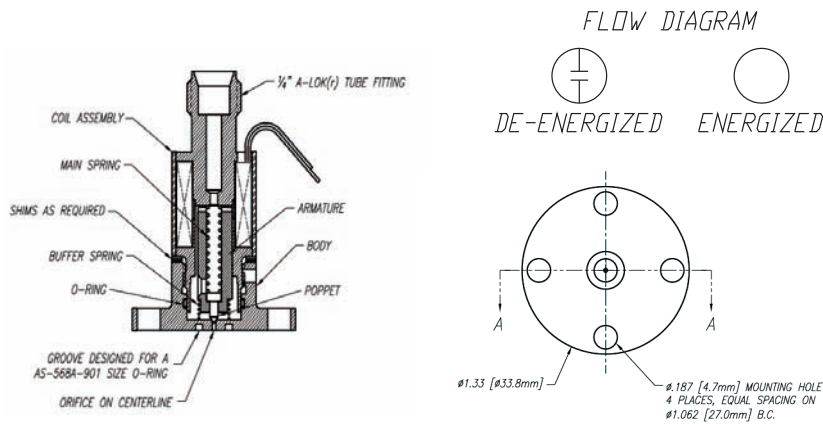
Operating Pressure:
24"Hg -1250 psig (0.004", 0.020", 0.031" orifice) 24"Hg - 750 psig (0.039" orifice)
Orifice Diameters:
0.004" (0.10 mm) 0.020" (0.51 mm) 0.031" (0.79 mm) 0.039" (1.00 mm)
Response Time:
160 uS to < 5ms
Leak Rate:
1 x 10 ⁻⁷ cc/sec/atm Helium



Pulse Valves Series 9

Dimensions

Series 9



Ordering Information

part number							
Valve Type	009-1668-900	009-0582-900	009-0381-900	009-1669-900	009-0442-900	009-0181-900	009-1670-900
Media	2-Way NC	2-Way NC	2-Way NC	2-Way NC	2-Way NC	2-Way NC	2-Way NC
Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
Operating Pressure	Vacuum - 1250 psi	Vacuum - 1250 psi	Vacuum - 1250 psi	Vacuum - 750 psi	Vacuum - 1250 psi	Vacuum - 1250 psi	Vacuum - 1250 psi
Orifice	0.004"	0.020"	0.031"	0.039"	0.020"	0.031"	0.004"
Inlet Porting	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK
Voltage	28 VDC	28 VDC	28 VDC	28 VDC	28 VDC	28 VDC	20 VDC
Outlet Porting	Flange, No Cone	Flange, No Cone	Flange, No Cone	Flange, No Cone	Flange, Exit Cone	Flange, Exit Cone	Flange, No Cone
Operating Environment	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 150 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F
Material Contact Media	PTFE, Stainless Steel, Seals	PTFE, Stainless Steel, Seals	PTFE, Stainless Steel, Seals	PTFE, Stainless Steel, Seals	PTFE, Stainless Steel, Seals	PTFE, Stainless Steel, Seals	Vespel, Stainless Steel, Seals
Seals	PTFE, FFKM	PTFE, FFKM	PTFE, FFKM	PTFE, FFKM	PTFE, FFKM	PTFE, FFKM	Vespel, FFKM

part number					
Valve Type	009-1421-900	009-1671-900	009-1643-900	009-0347-900	009-0279-900
Media	2-Way NC	2-Way NC	2-Way NC	2-Way NC	2-Way NC
Media	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases	Liquids & Gases
Operating Pressure	Vacuum - 1250 psi	Vacuum - 1250 psi	Vacuum - 750 psi	Vacuum - 1250 psi	Vacuum - 1250 psi
Orifice	0.020"	0.031"	0.039"	0.020"	0.031"
Inlet Porting	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK	1/4" A-LOK
Voltage	20 VDC	20 VDC	20 VDC	20 VDC	20 VDC
Outlet Porting	Flange, No Cone	Flange, No Cone	Flange, No Cone	Flange, No Cone	Flange, No Cone
Operating Environment	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F	40 - 221 deg F
Material Contact Media	Vespel, Stainless Steel, Seals	Vespel, Stainless Steel, Seals	Vespel, Stainless Steel, Seals	Vespel, Stainless Steel, Seals	Vespel, Stainless Steel, Seals
Seals	Vespel, FFKM	Vespel, FFKM	Vespel, FFKM	Vespel, FFKM	Vespel, FFKM

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Isolation Manifold Series 18

Chemically Inert Manifold Valve



The Series 18 is designed for compact installation in multi-liquid or gas control systems. Available with multiple inlets and one outlet (or vice versa), the Series 18 features all wetted parts of Teflon®. Tubing and connections between discrete valves are eliminated and dead volume is reduced. Repeatability and high speed of opening and closing make the Series 18 ideally suited for controlling small percentages of low flow liquids and gases.

Features

- Low power
- Low internal volume
- High cycle life
- High Speed
- Requires no pressure to operate

Physical Properties

Valve Type:
2-Way Teflon® valve
Media:
Liquids and gases
Operating Environment:
4 to 66°C (40 to 150°F)
Size:
Configuration and fitting dependent (Contact factory for details)
Weight:
(Contact factory for details)
Porting:
1/4-28 Threaded ports
Internal Volume:
(Contact factory for details)

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
2.5 Watts	12 VDC	211 ma	57 Ω
4.2 Watts	24 VDC	173 ma	139 Ω
12" 26 AWG Teflon insulated Lead Wires Standard			

Wetted Materials

Materials Contacting Media:
Teflon®
Seals:
Teflon®
<i>Recommended filtration level is 10 microns</i>

Performance Characteristics

Operating Pressure:
24"Hg - 20 psig (1.38 BAR)
Orifice Diameters:
0.031" (0.8 mm)
0.062" (1.6 mm)
Response Time:
12 ms maximum
Leak Rate:
Bubble Tight

Ordering Information:

	part number	
	018-0048-900	018-0074-900
Valve Type	2-Way NC, 4 Station	2-Way NC, 4 Station
Media	Liquids & Gases	Liquids & Gases
Operating Pressure	Vacuum - 20 psi	Vacuum - 20 psi
Orifice	0.060"	0.060"
Valve Body Material	PTFE	PTFE
Voltage	24 VDC	12 VDC
Porting	1/4 - 28	1/4 - 28
Operating Environment	40 - 150 deg F	40 - 150 deg F
Material Contact Media	PTFE	PTFE
Seals	PTFE	PTFE

PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Isolation Manifold Series 27

Chemically Inert Ultra Speed Manifold Valve



Series 27 valves combine the high speed and small size of the Series 9 valves with the chemical inertness of the Series 18 (the media contacts only PTFE or PEEK). Available on 2,3,4, and 6 solenoid manifolds. Series 27 valves offer a variety of styles and constructions, including an inline manifold and Fast-Washout™ design

Features

- Provides a compact package to meet a range of operating needs
- Offers low internal volume and high cycle life
- Constructed of PTFE wetted parts
- Performs at ultra high speeds
- Requires no pressure to operate

Physical Properties

Valve Type:
Valve Manifold
Media:
Liquids and gases
Operating Environment:
4 to 66°C (40 to 150°F)
Size:
Configuration and fitting dependent (Contact factory for details)
Weight:
14.0 oz (6 Posotion, PTFE Body)
Porting:
1/4-28 Threaded ports
Internal Volume:
104 µL (2 Solenoid, 1/4-28, 0.31/0.043" Option)

Electrical

Power:	Voltage:	Current:	Resistance:
			(Ω+5% @ 70°F)
5.3 Watts	12 VDC	411 ma	27 Ω
7.0 Watts	24 VDC	292 ma	82 Ω
12"24 AWG Teflon insulated Lead Wires Standard			

Wetted Materials

Materials Contacting Media:
PTFE, Body
Body Options:
PTFE, 316L Stainless Steel, PEEK
Seals:
Teflon®
<i>Recommended filtration level is 10 microns</i>

Performance Characteristics

Operating Pressure:
Vacuum - 20 psig (1.38 BAR)
Orifice Diameters:
0.030" (0.76 mm)
0.062" (1.6 mm)
Response Time:
8 ms maximum
Leak Rate:
Bubble Tight

PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



Manifold Mount Isolation LQX12

2-Way and 3-Way Solenoid Valve



LQX12 is a high performance 2-way and 3-way isolated diaphragm valve. Designed to be highly flexible, the 12mm wide design allows easy manifold mounting. Multiple options for elastomers, voltages, and electrical connections ensure the right valve is available for your application. Ideal for analytical, diagnostic, and life science applications where reliability is critical in a small package.

Features

- EPDM or FFKM elastomers for particulate tolerance and reliability in a wide range of liquid and gas media
- 100% tested leakrate of .016 sccm air at 50 PSI ensures a tight seal on every valve
- Reduced system size with efficient packaging and 12 mm width
- Designed to be manifold mounted side to side on 12 mm centers
- Low internal unswept volume for minimal carryover or cross-contamination
- Secure electrical termination to standard female connectors with friction locked (latching) electrical connection
- Optional 1/4-28 ported sub-base for stand alone operation or testing

Physical Properties

Valve Type:
3-Way Universal 2-Way Normally Closed
Media:
Liquids and Gases
Operating Environment:
0 to 55°C (32 to 131°F)
Storage Temperature:
-40 to 70°C (-40 to 158°F)
Length: 1.16" (29.46 mm)
Width: .47" (11.94 mm)
Height: 1.57" (39.88 mm)
Porting:
Manifold mount with gasket
Manifold Options:
Face seal, 1/4-28 sub-base
Weight: 0.86 oz (24.66 grams)
Internal Volume:
32 µL (to manifold interface)

Electrical

Power: 2.0 Watts max.
Voltage:
12 and 24 VDC + 5.0% (Other options available)
Electrical Connections:
2.54 mm pitch male pins Friction-locked design receives standard female connector <i>Options:</i> 18" lead assembly, splash guard for wet environment

Wetted Materials

Elastomer:
EPDM or FFKM (perfluoroelastomer)
Body/Manifold
PEEK (polyetheretherketone)

Performance Characteristics

Operating Pressure:
24" Hg - 50 psig
Orifice Diameters:
0.040" (1.02mm)
Response Time:
20 ms maximum
Leak Rate:
0.016 sccm (at 50 psi air)

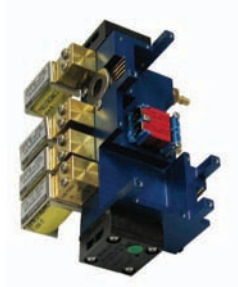


Ordering Information

Sample Part ID	LQX12	3W	12	FF	FS	-	001
Description	Series	Configuration	Voltage	Seal/Gasket	Mounting Style	-	Custom Accessories
Options		2W: 2-Way, Normally Closed	12: 12 VDC 24: 24 VDC	FF: FFKM EP: EPDM	FS: Face Seal 48: 1/4-28 Ports		000: Standard Product 001: Flying Leads, 18"
		3W: 3-Way					

Value Added Application-Specific Solutions

Gassing Control System



- Mixed gassing logic design includes VSO® proportional valves, X-Valve®, pressure switch, pressure sensors, and PCB interface

Pneumatic Module



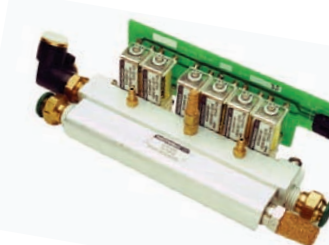
- Integrated valve manifold
- Compact design
- Single electrical connection
- Valves configured per specifications

Vacuum Gas Control Module



- Tested to 1×10^{-7} cc/sec/atm Helium
- Assembly tested on mass spectrometer

6 Position VSO® Proportional Valve Pneumatic Manifold Assembly



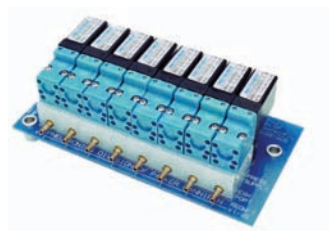
- Quick connect fittings
- Circuit board with mass electrical termination

Magnum Manifold Assembly



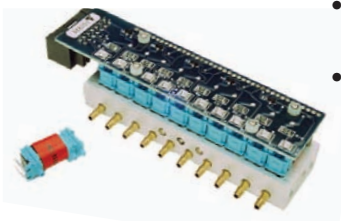
- Integrated circuit board with single connection
- Compact design
- Easily adaptable
- 2 way and 3 way designs

8 Position SRS Model Pneumatic Manifold



- Integrated circuit board mounting
- Mass electrical termination

10 Position X-Valve® Pneumatic Manifold



- Mixed pneumatic logic design
- Ultra-miniature design with PCB for mass termination

10 Position SRS Model Pneumatic Manifold



- Circuit board with transducers
- Pressed in barbed fittings

For more information call 1.800.525.2857 or email ppinfo@parker.com
Visit www.parker.com/precisionfluidics



NOTES

PPF-MMV-002/US Sept 2009

For more information call 1.800.525.2857 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics



PARKER-HANNIFIN CORP., PRECISION FLUIDICS TERMS AND CONDITIONS OF SALE, ORDER POLICIES & PRODUCT WARRANTY INFORMATION

1. APPLICABLE LAW: This order shall be only subject to the terms and conditions set forth herein, notwithstanding any terms and conditions that may be contained in any order acknowledgement or other form of Buyer. Such terms and conditions of Buyer shall not bind the Seller unless accepted by it in writing whether or not they materially alter this order. This order shall be governed in all respects by the laws of the State of New Hampshire.

2. TAXES: Prices do not include Federal, State or local taxes, including without limitation, which taxes may at Seller's discretion be added to sales price or may be billed separately and which taxes will, in any event, be paid by Buyer unless Buyer provides Seller with a proper tax exemption certificate.

3. TERMS OF PAYMENT: Unless otherwise stated on Seller's invoices, terms of payment shall be Net 30 days from date of invoice. If at any time Seller in its sole discretion determines an alternative payment arrangement would be prudent, Seller may require Letter of Credit, Cash on Delivery, advance or other acceptable means of payment. If requirements of Seller are not met, Seller may cancel the order or any part thereof and receive reasonable cancellation fees.

4. DELIVERY: Seller shall not be liable for any delays in or failure of delivery due to acts of God or public authority, labor disturbances, accidents, fires, floods, extreme weather conditions, failure of any delays by carriers, shortages of material, delays of a supplier or any other cause beyond Seller's control. In no event shall the Seller be liable for consequential or special damages arising out of a delay in or failure of delivery. Buyer's requested delivery date or schedule shall be approximate and subject to Seller's acceptance.

5. TERMINATION OF CONTRACT: Orders accepted by the Seller may be cancelled by Buyer only with the consent of Seller and upon payment of reasonable cancellation charges, determined by Seller in its sole discretion. Seller shall have the right without penalty or payment to cancel any order accepted or to refuse or delay the shipment thereof if (1) Buyer fails to make promptly any payment due, or to meet any other reasonable requirements established by Seller, (2) Buyer's act or omission to act delays Seller's performance, or (3) Buyer's credit becomes impaired, in the Seller's sole judgement. In such event, Seller shall be entitled to receive reimbursement for reasonable and proper cancellation charges.

6. CHANGES IN SPECIFICATIONS OR DESIGN: If Buyer requests changes in specifications or designs relating to any goods, delivery schedules shall be revised if necessary, and an equitable adjustment upward or downward shall be made in price if warranted.

7. FREIGHT: Carriers will be selected by the Seller unless the Buyer instructs otherwise in writing. All shipments will be F. O. B. Seller's plant. Standard freight charges for equipment repaired under warranty will be paid by Parker Precision Fluidics. Buyers request for alternatives means will be charged additional freight as required.

8. CONSEQUENTIAL DAMAGES: In no event shall Seller be liable for consequential or special damages arising out of delay in or failure of delivery, defects in material, or workmanship or arising out of a breach by Seller of any other term or obligation of the Seller under this contract.

9. GOVERNMENT CONTRACTS: If the products to be furnished under this contract are to be used in the performance of a United States Government Contract or sub-contract, the government contract number, priority rating and a statement to that effect shall appear on the Buyer's purchase order. If the Buyer's purchase order includes all of said information and if said order is accepted in writing by an authorized officer of Seller with knowledge of said information, then those clauses of the applicable government procurement regulations which are mandatorily required by Federal Statute or regulation to be included in this contract shall be incorporated herein by reference; in all other events said clauses shall not be incorporated herein by reference.

10. PROPRIETARY INFORMATION: Buyer represents that it has adopted reasonable procedures to protect proprietary information as defined hereafter including binding agreements with employees and consultants to prevent unauthorized publication, disclosure, or use of such information during or after the term of their employment by or services for Buyer. Buyer shall not use proprietary information except as expressly permitted hereunder, shall not disclose proprietary information of Seller to any third party and shall not transmit any documents or copies thereof containing proprietary information to any third party except as may be authorized in writing by Seller.

11. PATENT INDEMNITY: Seller shall have no liability for patent infringement unless the goods furnished hereunder, in an of themselves, constitute the infringement. If they do, and Seller is notified of the class of infringement within ten days after such claim is received by the Buyer and is permitted to settle or defend such claim, Seller will indemnify the Buyer against reasonable expense of defending suit and against any judgement or settlement to which Seller agrees. However, such indemnity will be limited to an amount not exceeding the price paid by Buyer to Seller for the infringing goods. If an injunction is issued against the further use of the goods, Seller will have the option of either procuring for the Buyer the right to use the goods, replacing them with non-infringing goods, modify them so that they become non-infringing, or refunding the purchase price. The foregoing constitutes Seller's entire warranty and liability as to patents. If the goods furnished hereunder are in accordance with a design furnished by the Buyer, the Buyer will defend and hold harmless Seller from all cost, expenses and judgements on accounts of any claim of infringement of any patent.

12. WARRANTIES: A. Equipment: Seller warrants that all equipment manufactured by it shall be free from defects in material or workmanship under normal use for a period of one (1) year from date of shipment to Buyer and upon examination of Seller determines to its satisfaction that such equipment is defective in material or workmanship and such defect was not caused by accident, misuse, neglect, alteration, improper adjustment, improper repair, improper application, or improper testing. Seller shall at its option repair or replace the equipment, shipment to Buyer prepaid. Seller does not recommend it's products for use in life support systems.

B. The foregoing are in lieu of all representations, warranties and covenants, express or implied, with respect to the products and any defects therein of any nature whatever, including without limitation, warranties of merchantability and fitness for a particular purpose. Seller's sole and exclusive liability, and Buyer's sole and exclusive remedy, for any nonconformity or defect in the products in tort (including negligence), contract, or otherwise, shall be as set forth in Section 12A.

Pricing and Lead Time

- Standard Prices and lead times are as indicated on the current published Standard Price List and Discount Schedule.
- Non-standard pricing [other than that contained in the published Price List] must be approved by Parker Precision Fluidics and a formal quotation must be submitted to the customer.
- Quantity discounts for similar product are as noted on the Standard Price List and Discount Schedule.
- All shipments are FCA factory (payable in US dollars).
- The Standard Price List and Discount Schedule are subject to change.
- All price quotations are valid for a period of 90 days.

Payment and Credit Terms

- Payment terms are 1% 10, 25 net 30 as noted below:
 - For invoices dated between the 1st and 15th, payments must be received by the 25th of the month.
 - For invoices dated between the 16th and 31st, payments must be received by the 10th of the following month.
- The above payment terms and discount are available to all customers with established credit. Otherwise, the following special terms exist:
 - COD for non-established domestic customers for orders greater than \$1,000. Cash in Advance for non-established foreign customers for orders greater than \$1,000.
 - Standard payment terms will be established upon corporate credit approval.
 - Credit card sales will be accepted from customers with established credit.

Order Policies

- A hard copy Purchase Order confirmation must be provided for all orders. This copy may be sent via fax or Internet e-mail provided it is signed by the authorized buyer.
- Minimum order/shipment is \$250.00 Net. All sales transactions totaling \$2,500 or less will be processed via credit card only.
- Distributor/Contract Mfg. Orders: All distributors and contract manufacturers are required to report end customer information at the time of order. Orders will not be processed by Parker Precision Fluidics until such information is provided.
- Blanket Orders: Orders consisting of multiple releases must be completed within a twelve (12) month (I.A.R.O.) period unless other terms have been agreed upon prior to acceptance of the order.
- **Blanket Orders are subject to back billing (add billing) as indicated below:**
 - Standard Product: If at the end of the contract period the full quantity has not been released and shipped, the entire order will be re-priced at the applicable discount for quantity shipped.
 - Custom Product: If at the end of the contract period the full quantity has not been released and shipped, a charge will be assessed to cover the cost of any unique material plus an adjustment of discount on the entire order.
- **Order Reschedules:**
 - Standard Product: A 20% reschedule fee will be incurred unless a formal change order is received at least thirty (30) days prior to scheduled shipment.
 - Custom Product: A 20% reschedule fee will be incurred unless a formal change order is received at least sixty (60) days prior to scheduled shipment due to unique component lead time.
- **Order Expedites:**
 - Customers requesting an expedited delivery of two (2) weeks or less of the quoted standard lead time will be subject to a charge equal to 20% of the amount being expedited.
- **Order Cancellations:**
 - Standard Product - A 20% cancellation fee will be incurred unless a formal change order is received at least thirty (30) days prior to scheduled shipment.
 - Custom Product - Cancellations of custom product are subject to a 20% cancellation fee plus the cost of all work in process and the cost of any material unique to that order

Product Returns

- Standard Product: - All returns of standard product are subject to prior approval from Parker Precision Fluidics and will incur a restocking charge of 20%. Credit will be issued based upon original invoice value. No material will be accepted for return without prior authorization from Parker Precision Fluidics. The Return Material Authorization (RMA) number should appear on all packages and accompanying paperwork.
- Custom Product: Return of custom product cannot be accepted.

Warranties

- Parker Precision Fluidics warrants its products against defective materials and workmanship under normal use for a period of one (1) year from the date of shipment to our customer. This warranty does not apply to any product that has been subjected to misuse, accident, improper installation, improper application, or improper operation, nor does it apply to any product that has been repaired or altered by other than an authorized factory representative. There are no warranties that extend beyond those herein specifically given.
- **Miniature Diaphragm Pumps** - Seller warrants to buyer that the products will be free, under normal use and maintenance, from defects in material and workmanship for a period of twelve (12) months from the manufacture date as noted by date code, serial number, or rated hours of operation which ever occurs first, unless otherwise stated.
- **Warranty Repair:** All products will be repaired at the factory, replaced at no charge throughout the warranty period, or a credit will be issued to reconcile the account. The balance of the warranty will remain in effect and no other warranty will be issued.
- Warranty items costing less than \$75 will no longer be repaired - credit will be issued upon receipt of item.
- **Non-Warranty Repair Charges:** Non-warranty repairs are not available. For a fee of \$500, a standard analysis which includes visual inspection, determination of cause, and failure analysis report will be performed. Additional charges may be imposed if the use of an outside lab is necessary.
- **IOTA One Solenoid Valve Controllers and Picospritzer III Pressure Injection Systems** manufactured more than five (5) years prior to the request date will not be accepted for repair. For a fee of \$250.00, an evaluation will be performed on non-warranty units less than five (5) years old and a quote will be prepared detailing the cost of all the repairs.

Return Materials Authorizations

- **Hazardous Material:** All products returned must be free of hazardous materials. Return of any product exposed to bio hazardous material will not be accepted.
 - You must obtain a Return Material Authorization (RMA) number from Parker Precision Fluidics in order that we may process your returned equipment. Material will not be accepted unless an RMA number is assigned and is clearly marked on all incoming packages and associated paperwork. RMA numbers expire 60 days after date of issue. Items returned without authorization or after 60 days of issuance will be returned to the customer freight collect.
 - This policy has been set for our mutual protection in that it greatly reduces the possibility of misplaced returns. Please call our Customer Service Department at 1-800-525-2857 to obtain an RMA number. **Be prepared to provide the following information when calling:**
 - Customer Name, Address & Phone Number
 - Contact Name
 - Ship-To and Bill-To Address
 - Reason for Return & Failure Symptoms if Applicable
 - Part Number, Quantity & Date Code
- Purchase Order Numbers (*Note: A Purchase Order Number is necessary for products returned under warranty. P.O. number to be used as tracking Vehicle only.
- Precision Fluidics Division will contact the customer with date of return shipment.

Shipping: Products that are shipped to the factory for Warranty repair will be shipped at the customer's expense and will be returned to the Customer at no charge via Precision Fluidics Division's standard shipping method. Products that are shipped to the factory on a freight collect basis will not be accepted. Customers may specify preferred method of shipment. Product will then be shipped back to the customer on a freight collect basis.

PARKER-HANNIFIN CORP., PRECISION FLUIDICS DIVISION 8/10/2009
Standard terms and conditions are supplemented by this policy statement,
which each apply to all orders from the division.





WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE.

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or systems in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

PPF-MMV-002/US Sept 2009





Parker Hannifin Corporation
Precision Fluidics Division
26 Clinton Dr., Unit 103
Hollis, NH 03049
phone 603 595 1500
fax 603 595 8080
www.parker.com/precisionfluidics