

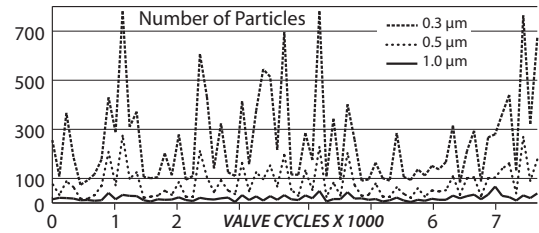


**Aluminum Conflat® Flanges** The Aluminum Conflat® Flanges on the VRC valves provide an all metal reusable seal using low cost solid aluminum gaskets (available from VRC, see catalog page 42).

**Mate Directly to Stainless Steel Conflat® Flanges** The bolt circle, number of holes, threads, flange diameter, etc. are the same as stainless steel CF flanges, and mate directly to stainless steel flanges using aluminum gaskets.

**Less Outgassing Than Stainless Steel** Dozens of papers show the 6000 Series aluminum used in VRC valves outgasses up to 2 orders of magnitude less than 300 Series stainless steel and of course no hydrogen. A bibliography of 70 peer reviewed papers about outgassing compiled by Dr. M. Wong at Fermi Labs can be found at [http://home.fnal.gov/~mlwong/outgas\\_rev.htm](http://home.fnal.gov/~mlwong/outgas_rev.htm).

**Low Particle Generation**



**High Speed** Closing speeds as fast as 75 mSeconds available.

**Fast Pumpdown** VRC valve bodies are not cast. The internal surfaces are smooth extruded or machined 6061 aluminum and pump down at speeds comparable to or faster than stainless steel.

**Satisfaction Guaranteed** Vacuum Research has been building high vacuum valves for more than 50 years and has earned a reputation for world class product quality and customer service. If you are not satisfied with our valve just send it back.

**Metal Bonnet Seals** Our standard bonnet & hub seal is Viton® but metal seals are available. Kalrez® is optional.

**Rotatable Flanges** Rotatable flanges are available on one or both sides of all valve sizes. Our rotatable flanges have through holes. Our fixed flanges have tapped holes.

**Maximum Temperature** All VRC valves use Viton® for the gate seal which can operate up to 190 °C (375 °F). Kalrez® available.

**Fail Safe** All Vacuum Research air operated valves can be installed for fast close on power failure.

**Long Life** More than 250,000 cycles for standard valves.

**No Leaks** All VRC valves have total leak rates of less than 5 X 10<sup>-10</sup> std. cc/sec. By total leak we mean that each completed valve is tested in a He filled bag.

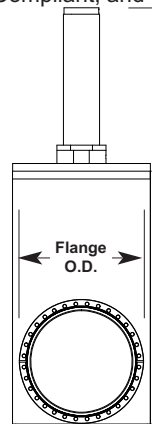
**RoHS Compliant and CE Mark** All Valves (RoHS) 002/95/EC Compliant, and carry the CE Mark.

**Aluminum Conflat® Valves, Electro-Pneumatic Operator**

Conflat® Outside Diameter	Viton® Gate & Bonnet Seal	Price	Viton® Gate Seal, Metal Bonnet Seal Insert "Metal" in Model No.	Price
<b>2.75 in.</b> Outside Diameter <b>Conflat® Flange</b> (1.6 in. Port)	END-2.75-CF-N1-EP	\$1318.	END-2.75-CF-N1-METAL-EP	\$1499.
	END-2.75-CF-N5-EP	\$1469.	END-2.75-CF-N5-METAL-EP	\$1649.
	END-2.75-CF-N6-EP	\$1397.	END-2.75-CF-N6-METAL-EP	\$1577.
	END-2.75-CF-N8-EP	\$1397.	END-2.75-CF-N8-METAL-EP	\$1577.
<b>3.375 in.</b> Outside Diameter <b>Conflat® Flange</b> (2 in. Port)	END-3.375-CF-N1-EP	\$1697.	END-3.375-CF-N1-METAL-EP	\$1878.
	END-3.375-CF-N5-EP	\$1937.	END-3.375-CF-N5-METAL-EP	\$2117.
	END-3.375-CF-N6-EP	\$1919.	END-3.375-CF-N6-METAL-EP	\$2099.
	END-3.375-CF-N8-EP	\$1919.	END-3.375-CF-N8-METAL-EP	\$2099.
<b>4.50 in.</b> Outside Diameter <b>Conflat® Flange</b> (2.5 in. Port)	END-4.50-CF-N1-EP	\$1978.	END-4.50-CF-N1-METAL-EP	\$2158.
	END-4.50-CF-N5-EP	\$2302.	END-4.50-CF-N5-METAL-EP	\$2448.
	END-4.50-CF-N6-EP	\$2129.	END-4.50-CF-N6-METAL-EP	\$2308.
	END-4.50-CF-N8-EP	\$2129.	END-4.50-CF-N8-METAL-EP	\$2308.
<b>6.00 in.</b> Outside Diameter <b>Conflat® Flange</b> (4 in. Port)	END-6-CF-N1-EP	\$2519.	END-6-CF-N1-METAL-EP	\$2818.
	END-6-CF-N5-EP	\$2853.	END-6-CF-N5-METAL-EP	\$3154.
	END-6-CF-N6-EP	\$2717.	END-6-CF-N6-METAL-EP	\$3016.
	END-6-CF-N8-EP	\$2717.	END-6-CF-N8-METAL-EP	\$3016.
<b>8.00 in.</b> Outside Diameter <b>Conflat® Flange</b> (6 in. Port)	END-8-CF-N1-EP	\$3166.	END-8-CF-N1-METAL-EP	\$3556.
	END-8-CF-N5-EP	\$3526.	END-8-CF-N5-METAL-EP	\$3915.
	END-8-CF-N6-EP	\$3377.	END-8-CF-N6-METAL-EP	\$3766.
	END-8-CF-N8-EP	\$3377.	END-8-CF-N8-METAL-EP	\$3766.
<b>10.00 in.</b> Outside Diameter <b>Conflat® Flange</b> (8 in. Port)	END-10-CF-N1-EP	\$4413.	END-10-CF-N1-METAL-EP	\$4922.
	END-10-CF-N5-EP	\$4833.	END-10-CF-N5-METAL-EP	\$5342.
	END-10-CF-N6-EP	\$4682.	END-10-CF-N6-METAL-EP	\$5192.
	END-10-CF-N8-EP	\$4682.	END-10-CF-N8-METAL-EP	\$5192.
<b>12.00 in.</b> Outside Diameter <b>Conflat® Flange</b> (10 in. Port)	END-12-CF-N1-EP	\$5337.	END-12-CF-N1-METAL-EP	\$7555.
	END-12-CF-N5-EP	\$5864.	END-12-CF-N5-METAL-EP	\$8032.
	END-12-CF-N6-EP	\$5756.	END-12-CF-N6-METAL-EP	\$7855.
	END-12-CF-N8-EP	\$5756.	END-12-CF-N8-METAL-EP	\$7855.

Optional Operation to 10 Bar, 147 PSIG; 200 PSI Shaft Seal ..... add \$260.

Aluminum Conflat Gaskets® Packs of 10, except larger sizes ..... See next page



Conflat® Flange O.D.	Flange to Flange	B Port C/L to Top	C Actuator Height	D Body Width	(Number) Bolt Size
<b>2.75 in.</b> (1.6 in. Port)	3.1	6.3	7.4	4.63	(6) 1/4-28
<b>3.375 in.</b> (2 in. Port)	3.4	6.3	7.4	4.63	(8) 5/16-24
<b>4.50 in.</b> (2.5 in. Port)	3.5	8.38	9.4	6.48	(8) 5/16-24
<b>6.00 in.</b> (4 in. Port)	4.3	8.38	9.4	6.48	(16) 5/16-24
<b>8.00 in.</b> (6 in. Port)	4.5	11.38	11.66	9.0	(20) 5/16-24
<b>10.00 in.</b> (8 in. Port)	4.7	14.3	12.72	11.0	(24) 5/16-24
<b>12.00 in.</b> (10 in. Port)	5.0	19.0	16.0	13.63	(32) 5/16-24



# Model Numbering System

VRC Valves are  
Manufactured in  
the USA.



Vacuum Research valves are available with dozens of options to allow you to select exactly the features you need for your vacuum system. The model number system illustrated below will accurately describe most valves, but if you have any questions about the best way to specify what you need, just call or fax our customer service department and we will be happy to help you. All Valves are (RoHS) 2015/863/EU Compliant.

### Basic Valve Style

<b>LPWA</b>	Bonnet Style, Large Port Aluminum
<b>TBWA</b>	Thick Body Valves for Dirty Environments
<b>X-LPWA</b>	Bonnet Style, Extra Large Port Aluminum
<b>LPSS</b>	Bonnet Style, Large Port Stainless Steel
<b>X-LPSS</b>	Bonnet Style, Extra Large Port Stainless Steel
<b>BEL</b>	Bellows Seal, Welded Aluminum
<b>END STD</b>	Standard Port Aluminum Gate Valves
<b>END LP</b>	Oversize Large Port Aluminum Gate Valves
<b>AVAL</b>	Aluminum Poppet Style Valves
<b>AVMS</b>	Mild Steel Poppet Valves
<b>REB</b>	Rectangular Port, Bellows Seal
<b>REQ</b>	Rectangular Port, Quad Ring Seal

### Roughing & Gauge Ports

Specify location (R-1, R-2, etc.) and size of port (NW-16, NW-25, etc.) Refer to page 42 in this catalog: Roughing and Gauge Ports, for the range of port sizes available in each location for your basic valve style.

### Limit Switches (Position Indicators)

Visual Position Indicators are included on All Bonnet Gate Valves. Limit switches are described in the "Optional Features and Accessories" section on page 41. (Sold by the pair, 1 for open, 1 for closed)

<b>LSS</b>	Enclosed Limit Switch (SPDT)
<b>LSD</b>	Enclosed Limit Switch (DPDT)
<b>LSO</b>	Open Type Limit Switch (SPDT)
<b>LSE</b>	Electronic Type Limit Switch (SPDT)
<b>LSX-C</b>	Explosion Proof, Grps. C, D (SPDT)
<b>LSX-B</b>	Explosion Proof, Grp. B (SPDT)

### Flange Bolt Pattern

<b>ASA</b>	ANSI Bolt Pattern
<b>CF</b>	Conflat® Flanges
<b>CF-MET</b>	Metric Conflat®
<b>JIS</b>	Japan Industrial Std.
<b>DEP</b>	Dependex Flanges
<b>ISO</b>	ISO Bolt Pattern
<b>SPEC</b>	Customer Special Flange
<b>BLANK</b>	No Holes or O-Ring

### Flange O-Rings

<b>20</b>	O-Rings both flanges
<b>NO</b>	No flange O-Rings
<b>10</b>	O-Ring Open Side
<b>1S</b>	O-Ring Seal Side

### Port Flange Neck Style

<b>N1</b>	Tapped Holes Both Sides
<b>N5</b>	Neck Flange on Both Sides
<b>N6</b>	Neck Flange on Seal Side
<b>N8</b>	Neck Flange on Open Side
<b>TAP</b>	Tapped Holes on Neck Flanges

Our standard neck style valves (N5, N6, N8) have slots rather than holes for bolts. For tapped holes instead of slots add "TAP" to Model number. No extra charge.

### Type of Operator

<b>EP</b>	Electro-Pneumatic
<b>A</b>	Air Pilot
<b>3 POS</b>	3 Position Electro-Pneumatic
<b>P</b>	Pneumatic only (no solenoid)
<b>M</b>	Manual Lever
<b>T</b>	Manual Throttle
<b>MO</b>	Motor Actuator

### Nominal Valve Port Size

<b>Inches:</b>	2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 32
<b>ISO:</b>	63 mm to 630 mm
<b>JIS:</b>	63 mm to 630 mm
<b>Conflat®:</b>	2.75, 4.5, 6, 8, 10, 12 Inch OD

### O-Ring Material

<b>B</b>	Buna-N
<b>V</b>	Viton®
<b>S</b>	Silicone
<b>K</b>	Kalrez®
<b>C</b>	Chemraz®

### Solenoid Voltage Only Used With EP Operator

<b>115</b>	115V, 50/60 Hz
<b>220</b>	220-240 V, 50 Hz
<b>24D</b>	24 VDC
<b>115 EX</b>	Expl. Proof 115V, 50/60 Hz
<b>220 EX</b>	Expl. Proof 220V, 50 Hz
<b>24 EX</b>	Expl. Proof 24 VDC

**LPWA - 12 - ASA - N8 - 20 - B - R2 - NW-16 - EP - 115 - LSS**

## Ordering Information



Call our toll free number (800) 426-9340, or (412) 261-7630 to place orders or for customer service. Our FAX number is (412) 261-7220. Address orders by mail to Vacuum Research Corporation, 100 Chapel Harbor Drive, #4, Pittsburgh, PA 15238 USA. Prices in this catalog are FOB factory. CIF or C&F prices available. Contact factory for pro forma invoice or price quotation. Terms are Net 30 days.



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