

Aluminum Valves with Aluminum Conflat® Flanges

Electro-pneumatic, Electric Motor or Manual Actuators



Let us put our experience to work for you.
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**VACUUM
RESEARCH**



Aluminum Gate Valves with Conflat® Flanges



Aluminum valves with pneumatic actuators and 14 inch OD and 2.75 inch OD aluminum CF flanges.

Aluminum Conflat® Flanges

The VRC Aluminum Conflat® Flanges use a tempered 6061 aluminum knife edge and dead soft aluminum gaskets to give a leak tight seal for hundreds of closures.

Less Outgassing Than Stainless Steel

Up to 2 orders of magnitude less outgassing from aluminum compared to stainless steel. A bibliography of 70 peer reviewed papers about outgassing compiled by M. Wong at Fermi Labs can be found at: http://home.fnal.gov/~mlwong/outgas_rev.htm

Mate Directly to Stainless Steel Conflat® Flanges

The bolt circle, number of holes, threads, flange diameter, etc. are the same as stainless steel flanges, and mate directly to stainless steel flanges using aluminum gaskets.

Metal Bonnet Seals

Our standard bonnet & hub seal is Viton® but metal seals are available. Kalrez® is also 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.

No Hydrogen Outgassing

Aluminum valves and flanges are not saturated with hydrogen as stainless steel is and therefore do not add hard to pump H₂ background to your system.

Fast Pumpdown

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

Maximum Temperature

All VRC valves use Viton® for the gate seal which can operate up to 200 °C (400 °F). However, the standard actuator piston is Buna-N which has a top temperature of 104 °C (225 °F). Optional Viton® pistons are shown in the "Ordering Information" section.

Fail Safe

All Vacuum Research air operated valves can be installed for fast close on power failure and can be manually positioned without air or electricity.

No Leaks

All VRC valves have total leak rates of less than 5 X 10⁻¹⁰ std. cc/sec. By total leak we mean that each completed valve is tested in a He filled bag.

Long Life

More than 250,000 cycles for standard valves. That's one cycle every 2 minutes, 24 hours/day for a year. An optional million cycle design is available.

Satisfaction Guaranteed

Vacuum Research has been building high vacuum valves for almost 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.

Quick & Easy to Repair

In under 5 minutes you can replace every moving part in a Vacuum Research Bonnet Style valve with no special tools or training. The valve port stays in your system to support the pump and vacuum lines.

Vacuum & Pressure

Vacuum Research Valves stay sealed against positive pressure in either direction. Guaranteed to stay sealed during Cryo pump regeneration.

Electric Motor, Air or Manual Actuators

All VRC gate valves are available with three types of actuators. Manual actuators are the least expensive. Electro-pneumatic actuators use 70 psi (4.9 kg/cm) compressed air and include the solenoid (specify the solenoid voltage that is most convenient for you.) Electric motor actuators use high torque servo motors and operate from 115V or 230V, 1Ø, 50 or 60 Hz.

RoHS Compliant and CE Mark

All Valves (RoHS) 2002/95/EC Compliant, and carry the CE Mark.

Roughing and Gauge Ports

See the back page of this brochure for optional gauge and roughing port locations.

Position Indicators, Limit Switches

Visual indication of valve position is included on all valves. Limit switches for remote electrical indication are described in the "Ordering Information" of this brochure.



Throttle Actuators

Manual and electronic positioners for 3 position or downstream control for valves up to 20 inch (500 mm). The electronic throttle valves can be driven by your PLC or PID controller or from the front panel set-point.



Aluminum Gate Valves with Aluminum Conflat® Flanges



New Aluminum Conflat® Flange



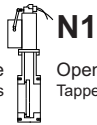
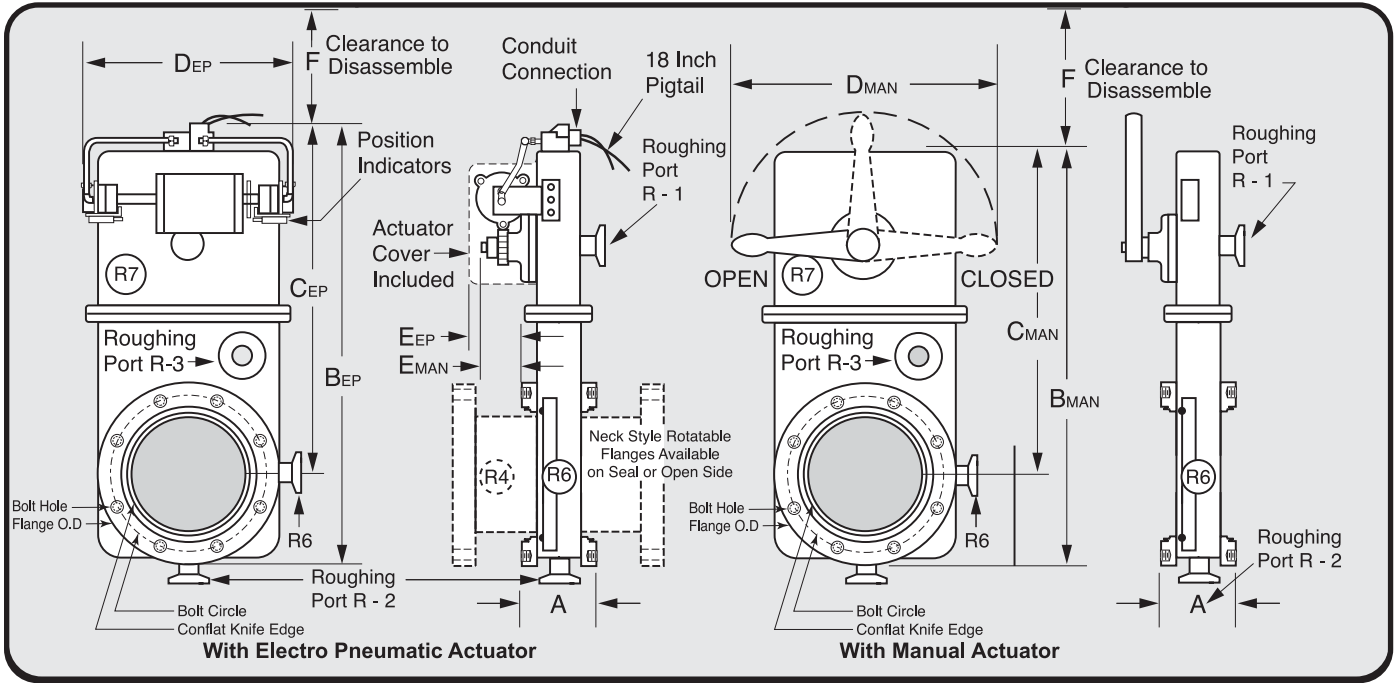
Aluminum CF Flange After 100 Closures

Conflat® Outside Diameter	Aluminum Conflat® Valves, Electro-Pneumatic Operator				Aluminum Conflat® Valves, Manual Operator			
	Viton® Gate & Bonnet Seal	Price	Viton® Gate Seal, Metal Bonnet Seal Insert "Metal" in Model No.	Price	Viton® Gate & Bonnet Seal	Price	Viton® Gate Seal, Metal Bonnet Seal Insert "Metal" in Model No.	Price
2.75 in. Outside Diameter Conflat® Flange (1.6 in. Port)	OPWA-2.75-CF-N1-EP	\$1100.	OPWA-2.75-CF-N1-METAL-EP	\$1180.	OPWA-2.75-CF-N1-M	\$980.	OPWA-2.75-CF-N1-METAL-M	\$1060.
	OPWA-2.75-CF-N5-EP	\$1225.	OPWA-2.75-CF-N5-METAL-EP	\$1305.	OPWA-2.75-CF-N5-M	\$1105.	OPWA-2.75-CF-N5-METAL-M	\$1185.
	OPWA-2.75-CF-N6-EP	\$1165.	OPWA-2.75-CF-N6-METAL-EP	\$1245.	OPWA-2.75-CF-N6-M	\$1045.	OPWA-2.75-CF-N6-METAL-M	\$1125.
	OPWA-2.75-CF-N8-EP	\$1165.	OPWA-2.75-CF-N8-METAL-EP	\$1245.	OPWA-2.75-CF-N8-M	\$1045.	OPWA-2.75-CF-N8-METAL-M	\$1125.
3.375 in. Outside Diameter Conflat® Flange (2 in. Port)	OPWA-3.375-CF-N1-EP	\$1415.	OPWA-3.375-CF-N1-METAL-EP	\$1505.	OPWA-3.375-CF-N1-M	\$1295.	OPWA-3.375-CF-N1-METAL-M	\$1385.
	OPWA-3.375-CF-N5-EP	\$1615.	OPWA-3.375-CF-N5-METAL-EP	\$1705.	OPWA-3.375-CF-N5-M	\$1495.	OPWA-3.375-CF-N5-METAL-M	\$1585.
	OPWA-3.375-CF-N6-EP	\$1600.	OPWA-3.375-CF-N6-METAL-EP	\$1690.	OPWA-3.375-CF-N6-M	\$1480.	OPWA-3.375-CF-N6-METAL-M	\$1570.
	OPWA-3.375-CF-N8-EP	\$1600.	OPWA-3.375-CF-N8-METAL-EP	\$1690.	OPWA-3.375-CF-N8-M	\$1480.	OPWA-3.375-CF-N8-METAL-M	\$1570.
4.50 in. Outside Diameter Conflat® Flange (2.5 in. Port)	OPWA-4.50-CF-N1-EP	\$1514.	OPWA-4.50-CF-N1-METAL-EP	\$1619.	OPWA-4.50-CF-N1-M	\$1386.	OPWA-4.50-CF-N1-METAL-M	\$1491.
	OPWA-4.50-CF-N5-EP	\$1916.	OPWA-4.50-CF-N5-METAL-EP	\$2021.	OPWA-4.50-CF-N5-M	\$1793.	OPWA-4.50-CF-N5-METAL-M	\$1898.
	OPWA-4.50-CF-N6-EP	\$1868.	OPWA-4.50-CF-N6-METAL-EP	\$1973.	OPWA-4.50-CF-N6-M	\$1739.	OPWA-4.50-CF-N6-METAL-M	\$1844.
	OPWA-4.50-CF-N8-EP	\$1868.	OPWA-4.50-CF-N8-METAL-EP	\$1973.	OPWA-4.50-CF-N8-M	\$1739.	OPWA-4.50-CF-N8-METAL-M	\$1844.
6.00 in. Outside Diameter Conflat® Flange (4 in. Port)	LPWA-6-CF-N1-EP	\$1793.	LPWA-6-CF-N1-METAL-EP	\$1903.	LPWA-6-CF-N1-M	\$1664.	LPWA-6-CF-N1-METAL-M	\$1774.
	LPWA-6-CF-N5-EP	\$1958.	LPWA-6-CF-N5-METAL-EP	\$2068.	LPWA-6-CF-N5-M	\$1830.	LPWA-6-CF-N5-METAL-M	\$1940.
	LPWA-6-CF-N6-EP	\$1803.	LPWA-6-CF-N6-METAL-EP	\$1913.	LPWA-6-CF-N6-M	\$1739.	LPWA-6-CF-N6-METAL-M	\$1849.
	LPWA-6-CF-N8-EP	\$1803.	LPWA-6-CF-N8-METAL-EP	\$1913.	LPWA-6-CF-N8-M	\$1739.	LPWA-6-CF-N8-METAL-M	\$1849.
8.00 in. Outside Diameter Conflat® Flange (6 in. Port)	LPWA-8-CF-N1-EP	\$2025.	LPWA-8-CF-N1-METAL-EP	\$2145.	LPWA-8-CF-N1-M	\$1868.	LPWA-8-CF-N1-METAL-M	\$1988.
	LPWA-8-CF-N5-EP	\$2306.	LPWA-8-CF-N5-METAL-EP	\$2426.	LPWA-8-CF-N5-M	\$2130.	LPWA-8-CF-N5-METAL-M	\$2250.
	LPWA-8-CF-N6-EP	\$2130.	LPWA-8-CF-N6-METAL-EP	\$2250.	LPWA-8-CF-N6-M	\$1996.	LPWA-8-CF-N6-METAL-M	\$2116.
	LPWA-8-CF-N8-EP	\$2130.	LPWA-8-CF-N8-METAL-EP	\$2250.	LPWA-8-CF-N8-M	\$1996.	LPWA-8-CF-N8-METAL-M	\$2116.
10.00 in. Outside Diameter Conflat® Flange (8 in. Port)	LPWA-10-CF-N1-EP	\$3382.	LPWA-10-CF-N1-METAL-EP	\$3502.	LPWA-10-CF-N1-M	\$3028.	LPWA-10-CF-N1-METAL-M	\$3148.
	LPWA-10-CF-N5-EP	\$3644.	LPWA-10-CF-N5-METAL-EP	\$3764.	LPWA-10-CF-N5-M	\$3285.	LPWA-10-CF-N5-METAL-M	\$3405.
	LPWA-10-CF-N6-EP	\$3547.	LPWA-10-CF-N6-METAL-EP	\$3667.	LPWA-10-CF-N6-M	\$3157.	LPWA-10-CF-N6-METAL-M	\$3277.
	LPWA-10-CF-N8-EP	\$3547.	LPWA-10-CF-N8-METAL-EP	\$3667.	LPWA-10-CF-N8-M	\$3157.	LPWA-10-CF-N8-METAL-M	\$3277.
12.00 in. Outside Diameter Conflat® Flange (10 in. Port)	LPWA-12-CF-N1-EP	\$4510.	LPWA-12-CF-N1-METAL-EP	\$4630.	LPWA-12-CF-N1-M	\$4254.	LPWA-12-CF-N1-METAL-M	\$4374.
	LPWA-12-CF-N5-EP	\$4837.	LPWA-12-CF-N5-METAL-EP	\$4957.	LPWA-12-CF-N5-M	\$4575.	LPWA-12-CF-N5-METAL-M	\$4695.
	LPWA-12-CF-N6-EP	\$4639.	LPWA-12-CF-N6-METAL-EP	\$4759.	LPWA-12-CF-N6-M	\$4446.	LPWA-12-CF-N6-METAL-M	\$4566.
	LPWA-12-CF-N8-EP	\$4639.	LPWA-12-CF-N8-METAL-EP	\$4759.	LPWA-12-CF-N8-M	\$4446.	LPWA-12-CF-N8-METAL-M	\$4566.

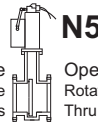


Aluminum Gate Valves with Conflat® Flanges

Bonnet Style Aluminum Gate Valves with Conflat® Flanges



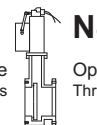
N1
Seal Side Tapped Holes
Open Side Tapped Holes



N5
Seal Side Rotatable Flange Thru Holes
Open Side Rotatable Flange Thru Holes



N6
Seal Side Rotatable Flange Thru Holes
Open Side Tapped Holes



N8
Seal Side Tapped Holes
Open Side Thru Holes

Nominal CF Flange Outside Diameter	Model No. Conflat® Flange All dimensions in Inches	Port Diameter	Flange Outside Diameter	Flange Thickness	Bolt Circle	(no. of bolts) x bolt size (metric threads optional)	A Flange to Flange	Knife Edge Diameter	B _{MAN} Manual Overall Height	B _{EP} EP Overall Height	DEP EP Overall Width	F Disassy. Clearance	Weight lbs. Aluminum Net	Ship
2.75 inch	OPWA 2.75 CF N1	1.5	2.75	0.500	2.312	(6) 1/4 - 28	3.88	1.65 (42)	10.41	11.13	6.75	2.63	8	13
2.75 inch	OPWA 2.75 CF N5	1.5	2.75	0.500	2.312	.26 thru holes on rotatable flanges	6.63		10.41	11.13	6.75	2.63	8	13
2.75 inch	OPWA 2.75 CF N6 & 8	1.5	2.75	0.500	2.312		5.25		10.41	11.13	6.75	2.63	8	13
3.375 inch	OPWA 3.375 CF N1	2.0	3.38	0.625	2.85	(8) 5/16 - 24	3.88	2.20 (56)	10.41	11.13	6.75	2.63	8	13
3.375 inch	OPWA 3.375 CF N5	2.0	3.38	0.625	2.85	.33 thru holes on rotatable flanges	7.13		10.41	11.13	6.75	2.63	8	13
3.375 inch	OPWA 3.375 CF N6 & 8	2.0	3.38	0.625	2.85		5.51		10.41	11.13	6.75	2.63	8	13
4.50 inch	OPWA 4.50 CF N1	2.5	4.5	0.680	3.628	(8) 5/16 - 24	3.88	3.03 (77)	10.75	11.5	6.75	2.63	8	13
4.50 inch	OPWA 4.50 CF N5	2.5	4.5	0.680	3.628	.33 thru holes on rotatable flanges	7.35		10.75	11.5	6.75	2.63	8	13
4.50 inch	OPWA 4.50 CF N6 & 8	2.5	4.5	0.680	3.628		5.62		10.75	11.5	6.75	2.63	8	13
6.00 inch	LPWA 6 CF N1	4.0	6.0	0.780	5.128	(16) 5/16 - 24	4.43	4.53 (115)	14.18	14.93	7.8	4.0	10	15
6.00 inch	LPWA 6 CF N5	4.0	6.0	0.780	5.128	.33 thru holes on rotatable flanges	8.30		14.18	14.93	7.8	4.0	10	15
6.00 inch	LPWA 6 CF N6 & 8	4.0	6.0	0.780	5.128		6.37		14.18	14.93	7.8	4.0	10	15
8.00 inch	LPWA 8 CF N1	6.0	8.0	0.880	7.128	(20) 5/16 - 24	4.63	6.54 (166)	19.75	20.5	10.5	4.48	14	21
8.00 inch	LPWA 8 CF N5	6.0	8.0	0.880	7.128	.33 thru holes on rotatable flanges	8.90		19.75	20.5	10.5	4.48	14	21
8.00 inch	LPWA 8 CF N6 & 8	6.0	8.0	0.880	7.128		6.77		19.75	20.5	10.5	4.48	14	21
10.00 inch	LPWA 10 CF N1	8.0	10.0	0.970	9.128	(24) 5/16 - 24	4.81	8.54 (217)	25.81	26.6	12.0	5.51	25	30
10.00 inch	LPWA 10 CF N5	8.0	10.0	0.970	9.128	.33 thru holes on rotatable flanges	9.44		25.81	26.6	12.0	5.51	25	30
10.00 inch	LPWA 10 CF N6 & 8	8.0	10.0	0.970	9.128		7.12		25.81	26.6	12.0	5.51	25	30
12.00 inch	LPWA 12 CF N1	10.0	12.0	1.020	11.18	(32) 5/16 - 24	4.91	10.51 (267)	25.75	26.5	16.5	5.51	50	59
12.00 inch	LPWA 12 CF N5	10.0	12.0	1.020	11.18	.33 thru holes on rotatable flanges	9.74		25.75	26.5	16.5	5.51	50	59
12.00 inch	LPWA 12 CF N6 & 8	10.0	12.0	1.020	11.18		7.32		25.75	26.5	16.5	5.51	50	59

Ordering Information



How to Contact Us: Call our toll free number (800) 426-9340 or (412) 261-7630 to place orders, or for customer service. Our email address is vrc@vacuumresearch.com. Our FAX number is (412) 261-7220. Address orders by mail to Vacuum Research Corporation, 2419 Smallman Street, Pittsburgh, PA 15222 USA. Prices in this catalog are FOB factory. CIF or C&F prices available. Contact factory for pro forma invoice or price quotation. Major credit cards accepted.

Model Number: Refer to the back page for instructions to specify the features you need.

Special Features: Refer to our complete Vacuum Valves catalog for specifications on roughing and gauge ports, position indicators & other special features. Roughing and gauge port information also shown on the back page.

Electric Motor Actuators: Vacuum Research valves can be supplied with a high torque electric motor actuator. Refer to the "Electric Motor Actuator" page in the Accessories and Parts section of our complete Vacuum Valves catalog for pricing.

Kalrez® or Silicone O-Rings: Our standard Valves use Viton® O-Rings. You may specify other materials throughout the valve by inserting the appropriate letter in the Model No. (e.g. "S" for Silicone, "K" for Kalrez®).

Optional 200°C (400 °F) Actuator: This option provides Viton® piston and O-Rings in the actuator instead of the standard Buna-N. Specify Operator "EPV" and add to the Valve price:

2.75 & 4.5 inch Valves \$22. 6, 8 & 10 inch Valves \$45. 12, 13.25 & 14 inch Valves \$70.

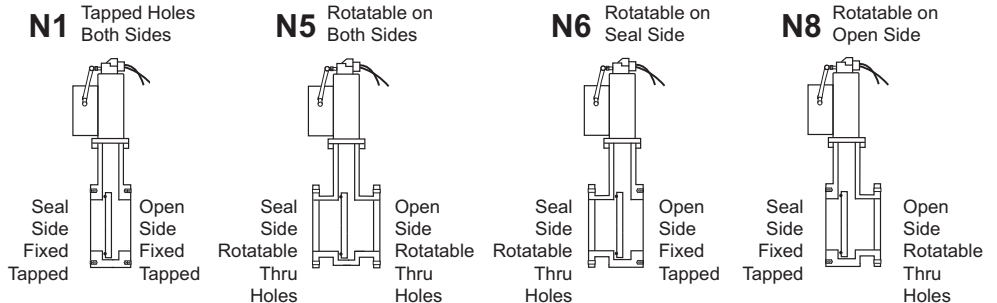
CF Flanges with Metric Threads:

No extra charge for Conflat® flanges with metric threads. Bolt circle, gasket size, and other dimensions remain unchanged. Specify "CF MET" in the model number.

Valve Flange Size	Valve Port Diameter	Number of Bolts	Thread & Pitch
70 mm O.D.	38 mm	6	M-6 X 1.0
114 mm O.D.	63 mm	8	M-8 X 1.25
152 mm O.D.	100 mm	16	M-8 X 1.25
203 mm O.D.	150 mm	20	M-8 X 1.25
254 mm O.D.	200 mm	24	M-8 X 1.25
304 mm O.D.	250 mm	32	M-8 X 1.25

Seal Side & Open Side of Valves:

The gate seal is on the same side as the actuator on valves with port flanges from CF 2.75 inch O.D. to CF 10.0 inch O.D. Valves with port flanges from CF 12.0 inch O.D. to CF 14.0 inch O.D. have the gate seal on the side opposite the actuator.

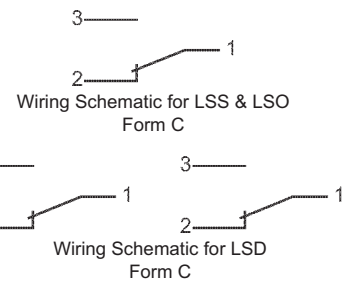


Position indicators (Limit Switches): Position indicators are available for manual or pneumatic valves to provide electrical feedback of valve position to your PLC or data system. The fully enclosed switches have 1/2-14 NPT conduit connections. Form C contacts are unpowered.

LSS - Fully Enclosed Limit Switches, SPDT. Contact rating is 15 A@115 or 230 VAC, 0.5 A@115 VDC. Kit P/N: X706901 \$146./pair

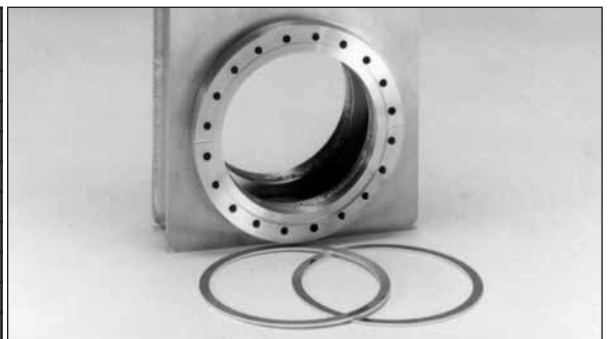
LSD - Fully enclosed Limit Switches, DPDT. Contact rating is 10 A @ 125 or 250 VAC, 0.3 A@125 VDC, 0.15A@250 VDC., Kit P/N: X706900 \$403./pair

LSO - Open Style Limit Switches, SPDT. Contacts: non inductive 15A, 125-277 VAC; 5A, 125-250 VDC. Inductive 5A, 125 AC; 0.2A, 250 VDC. Kit P/N: X706907 \$42./pair



Aluminum Conflat Gaskets®

Flange O.D.	Gasket O.D.	Part No.	Price (pack of 10)
1.33 in.	0.84 in. (21.3)	X701G01.33A	\$26.
2.75 in.	1.89 in. (48.1)	X701G02.75A	\$60.
3.38 in.	2.42 in. (61.5)	X701G03.37A	\$75.
4.50 in.	3.24 in. (82.4)	X701G04.50A	\$100.
6.00 in.	4.74 in. (120.5)	X701G06.00A	\$140.
8.00 in.	6.74 in. (171.3)	X701G08.00A	\$200.
10.00 in.	8.74 in. (222.1)	X701G10.00A	\$240.
12.00 in.	10.74 in. (272.7)	X701G12.00A	\$32. each
13.25 in.	11.58 in. (294.1)	X701G13.25A	\$39. each
14.00 in.	12.31 in. (312.7)	X701G14.00A	contact factory





Model Numbering System Aluminum Valves with Aluminum CF Flanges

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) 2002/95/EC Compliant.

Nominal Conflat® Flange Size For Metric Threads Specify CF-MET				Bonnet Seal Material (Viton® Std.) V Viton® K Kalrez® METAL Metal	Gate Seal Material (Viton® Std.) V Viton® B Buna-N S Silicone K Kalrez® C Chemraz®	Limit Switches (Position Indicators) Visual position indication is included on all LPWA & OPWA Gate Valves. Add these switches for an electrical output to your data system. Sold by the pair, 1 for open, 1 for closed.	
OPWA	2.75 X 1.5	CF (or CF-MET)				LSS	Enclosed Limit Switch (SPDT)
OPWA	3.38 X 2.0	CF (or CF-MET)		LSD	Enclosed Limit Switch (DPDT)		
OPWA	4.5 X 2.38	CF (or CF-MET)		LSO	Open Type Limit Switch (SPDT)		
LPWA	6.0 X 4.0	CF (or CF-MET)		LSX-C	Explosion Proof, Grps. C, D (SPDT)		
LPWA	8.0 X 6.0	CF (or CF-MET)		LSX-B	Explosion Proof, Grp. B (SPDT)		
LPWA	10.0 X 8.0	CF (or CF-MET)					
LPWA	12.0 X 10.0	CF (or CF-MET)					
LPWA	13.25 X 10.6	CF (or CF-MET)					
LPWA	14.0 X 11.75	CF (or CF-MET)					
LPWA	16.5 X 13.75	CF (or CF-MET)					

Fixed or Rotatable Flanges
N1 Fixed Flanges Both Sides
N5 Rotatable Flanges Both Sides
N6 Rotatable Flange on Seal Side
N8 Rotatable Flange on Open Side
 Rotatable flanges have through holes rather than tapped bolt holes. Valves can be built with different flange sizes and styles on each port, e.g. Conflat® on one side and ISO on the other.

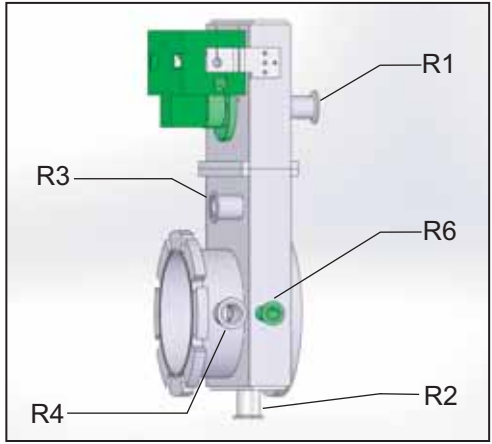
Type of Operator
EP Electro-Pneumatic
 100 °C Buna Piston
APV Air Pilot Valve
EPV Electro-Pneumatic
 200 °C Viton® Piston
3 POS 3 Position Electro-Pneumatic
P Pneumatic only (no solenoid)
M Manual Lever
MO Motor Open/Close
T Manual Throttle
ATM Automatic Throttle

Solenoid Voltage
 EP Operator Only
115 115V, 50/60 Hz
220 220-240V, 50 Hz
24D 24 VDC
115 EX 115V, 50/60 Hz Expl. Proof
220 EX 220V, 50 Hz Expl. Proof
24 EX 24 VDC Expl. Proof

LPWA - 6.0 X 4.0 - CF - N1 - METAL - V - R2 - 2.75 - EP - 115 - LSS

Gauge and Roughing Port Locations

Specify location (R-1, R-2, etc.) and size of port (2.75, NW-25 etc.) Refer to the table for the range of port sizes available in each location for your valve size.



Valve Port Flange Outside Diameter	Maximum Size CF Flange for Roughing/Gauge Port (NW Available)		
	R1 Position	R2 Position	R4 & R6 Position (N5, N6, N8 Only)
2.75	1.33 & 2.75	N/A	N/A
3.375	1.33 & 2.75	N/A	N/A
4.5	1.33 & 2.75	N/A	N/A
6.0	1.33 & 2.75	2.75	2.75
8.0	1.33 to 4.5	2.75	2.75
10.0	1.33 to 4.5	2.75	2.75
12.0	1.33 to 6.0	2.75	2.75
13.3	1.33 to 8.0	2.75	2.75
14.0	1.33 to 8.0	2.75	2.75
16.5	1.33 to 8.0	2.75	2.75

R1 & R2 CF 1.33 & 2.75	\$133.	CF 4.5	\$158.	CF 6.0	\$184.	CF 8.0	\$195.
R1 & R2 NW16	\$122.	NW25	\$134.	NW40	\$158.	NW50	\$171.
R4 & R6 CF 2.75	\$160.						
N5, N6, N8 only NW16	\$130.	NW25	\$141.	NW40	\$163.	NW50	\$174.

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