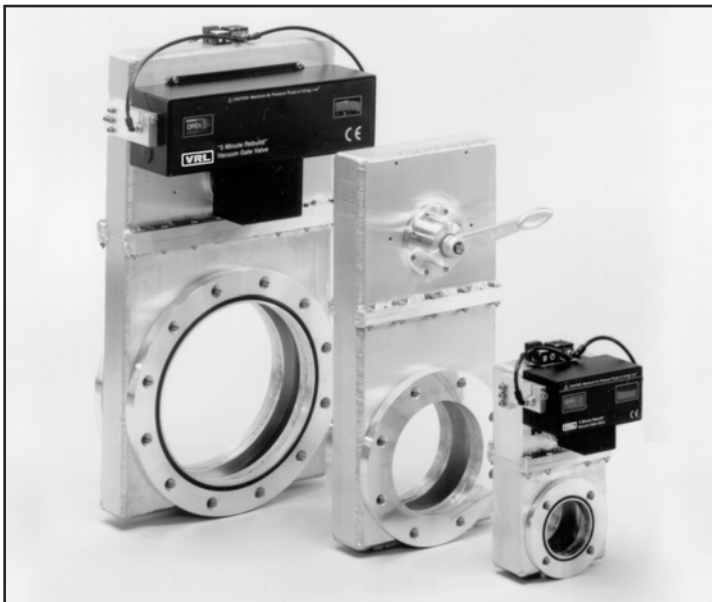




# Stainless and Aluminum Gate Valves



Aluminum valves with (left to right): Electro Pneumatic, Manual, and Motor Actuators. Stainless Steel valves also available.

## 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). See page 39 for more information

## Vacuum & Pressure

Vacuum Research valves stay sealed with vacuum or atmosphere on either side.

## 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.

## No Leaks

All Vacuum Research valves have total leak rates of less than  $5 \times 10^{-10}$  std cc/sec. By total leak we mean that each completed valve is tested in a He filled bag.

## RoHS Compliant

All Valves are (RoHS) 2002/95/EC Compliant.

## Electric Motor, Air or Manual Actuators

All Vacuum Research gate valves are available with 3 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. CE Mark included.

## Roughing and Gauge Ports

There are six locations for optional gauge and roughing ports described on page 42.

## Position Indicators, Limit Switches

Visual position indication of valve position is included on all valves. Limit switches for remote indication are described on the Optional Features pages in the Accessories & Parts section.

## ANSI, ISO, JIS, or Special Flanges

These Vacuum Research 5 minute rebuild valves are available with virtually any flange or combination of flanges at no extra charge. Combinations of ISO on one flange and ANSI on the other are easily accommodated. Even different sizes such as 4 inch on one flange and 6 inch on the other.

## Insertable "Flangeless" Valves

It is sometimes helpful to keep the flange to flange dimension ("A" dimension on the dimensions pages) as short as possible. In such cases your valves can be provided with no port flanges at all and with either O-Ring grooves machined into the valve body or with a precision machined surface on the body to seal against the O-rings on your pump or chamber. Contact the factory for prices.

## Aluminum or Stainless Steel

Vacuum Research Bonnet Style valves are available in stainless steel or 6061 aluminum. Smooth surface finish gives low outgassing and fast pump down.

## High Conductance

In addition to the oversize ports used in the LPWA Series for the last 40 years, we now offer the X-LPWA Series where a 4 inch valve has a 6 inch port, an 8 inch valve has a 10 inch port, etc. Conductance values are shown on page 39.

## Fail Safe

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

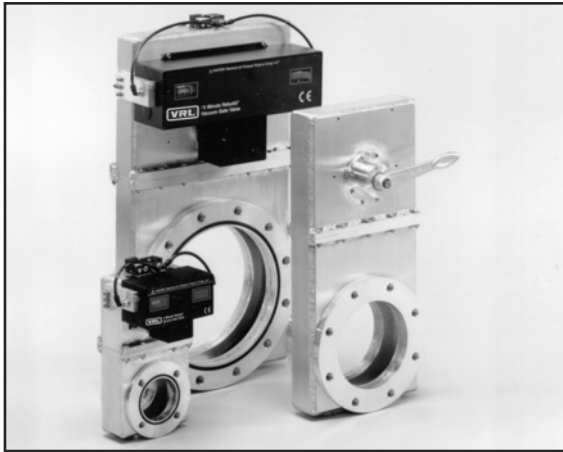
## Long Life

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

## Complete Rebuild

**in 5 Minutes!**

With no special tools or training you can replace every moving part in your Vacuum Research Bonnet Style Valve in 5 minutes. (Our best guys can do it in less time, but they practice.)



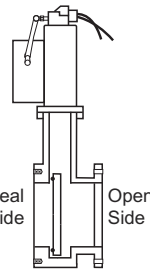
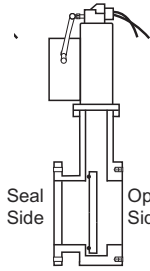
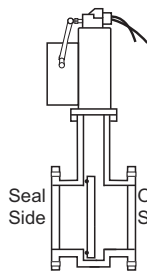
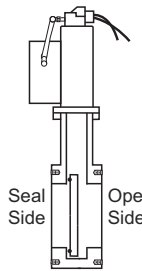
- Less Outgassing Than Stainless, See Page 39
- 250,000 Cycle Rotary Shaft Seal
- Million Cycle Valves Also Available
- Large Port, Mates With JIS Flanges
- 6 Optional Roughing Port Locations
- Helium Leak Less Than  $5 \times 10^{-10}$  scc/sec
- All Valves (RoHS) 2002/95/EC Compliant
- Fail Safe Design, Close On Power Loss
- Vacuum & Pressure; Optional Seal to 3 ATM.
- Optional Operation to 10 Bar, 147 PSIG

**N1** Tapped Holes Both Sides

**N5** Neck on Both Sides

**N6** Neck on Seal Side

**N8** Neck Opposite Seal Side



The gate seal O-ring is on the actuator side (to left) in aluminum valve sizes from 80 through 200 mm. The gate seal is on the side opposite the actuator on 250 & 300 mm aluminum and stainless steel valves.

**ORDERING INFORMATION**

**Model Number:** Refer to page 2 for instructions on how to specify the features you need.

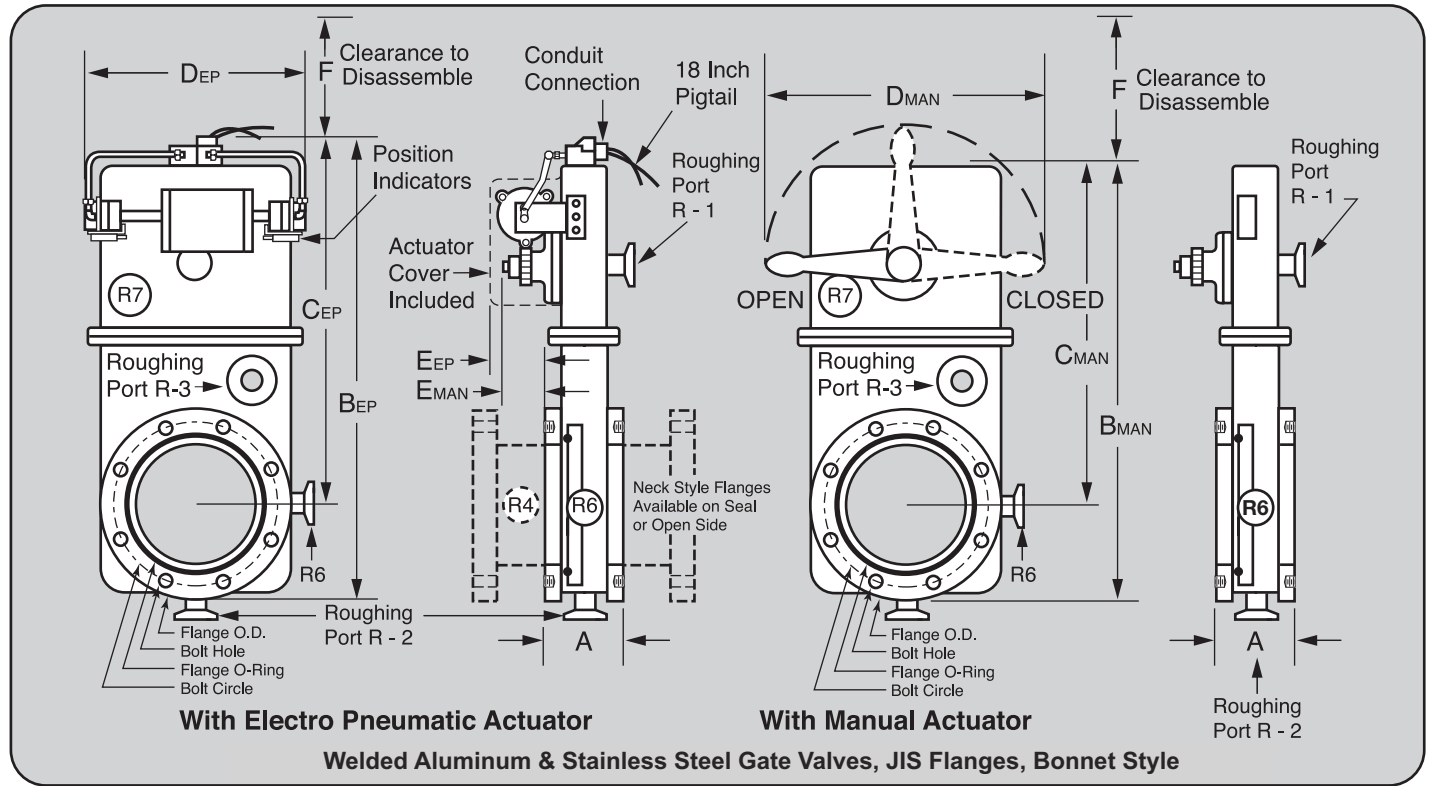
**Electric Motor Actuators:** Any Vacuum Research valve can be supplied with a high torque electric motor actuator. Refer to "Electric Motor Actuator" Page in the Accessories and Parts section.

**Special Features:** Refer to pages 40-43 for specifications for roughing and gauge ports, position indicators & other special features.

**Viton® or Kalrez® or Silicone O-Rings** Our standard Valves use a Viton® O-Ring for the gate seal and Buna-N O-Rings for all other locations. You may specify Viton® or other materials throughout the valve with a "V", "S", or "K" in the model number. For Viton® add the following to the price. (For Silicone or Kalrez® contact the factory for prices.)

65 or 80 mm valves . . . \$55.	200 mm valves . . . \$164.
100 mm valves . . . . \$83.	250 mm valves . . . \$214.
150 mm valves . . . . \$103.	300 mm valves . . . \$275.

Nominal Size	Electro-Pneumatic Operator "EP" Suffix				Manual Operator "M" Suffix			
	Aluminum Model & Neck Style	Price	Stainless Steel Model & Neck Style	Price	Aluminum Model & Neck Style	Price	Stainless Steel Model & Neck Style	Price
<b>65 mm</b> One piece style	OP-65-JIS-N1-EP	\$1239.	OPSS-65-JIS-N1-EP	\$4250.	OP-65-JIS-N1-M	\$1030.	OPSS-65-JIS-N1-M	\$3995.
	OP-65-JIS-N5-EP	\$1837.	OPSS-65-JIS-N5-EP	\$4450.	OP-65-JIS-N5-M	\$1249.	OPSS-65-JIS-N5-M	\$4195.
	OP-65-JIS-N6-EP	\$1349.	OPSS-65-JIS-N6-EP	\$4350.	OP-65-JIS-N6-M	\$1141.	OPSS-65-JIS-N6-M	\$4095.
	OP-65-JIS-N8-EP	\$1349.	OPSS-65-JIS-N8-EP	\$4350.	OP-65-JIS-N8-M	\$1141.	OPSS-65-JIS-N8-M	\$4095.
<b>80 mm</b>	LPWA-80-JIS-N1-EP	\$1638.	LPSS-80-JIS-N1-EP	\$4890.	LPWA-80-JIS-N1-M	\$1454.	LPSS-80-JIS-N1-M	\$4935.
	LPWA-80-JIS-N5-EP	\$1813.	LPSS-80-JIS-N5-EP	\$5140.	LPWA-80-JIS-N5-M	\$1694.	LPSS-80-JIS-N5-M	\$4885.
	LPWA-80-JIS-N6-EP	\$1764.	LPSS-80-JIS-N6-EP	\$5015.	LPWA-80-JIS-N6-M	\$1579.	LPSS-80-JIS-N6-M	\$4760.
	LPWA-80-JIS-N8-EP	\$1764.	LPSS-80-JIS-N8-EP	\$5015.	LPWA-80-JIS-N8-M	\$1579.	LPSS-80-JIS-N8-M	\$4760.
<b>100 mm</b>	LPWA-100-JIS-N1-EP	\$1693.	LPSS-100-JIS-N1-EP	\$4950.	LPWA-100-JIS-N1-M	\$1512.	LPSS-100-JIS-N1-M	\$4695.
	LPWA-100-JIS-N5-EP	\$1872.	LPSS-100-JIS-N5-EP	\$5120.	LPWA-100-JIS-N5-M	\$1689.	LPSS-100-JIS-N5-M	\$4865.
	LPWA-100-JIS-N6-EP	\$1788.	LPSS-100-JIS-N6-EP	\$5085.	LPWA-100-JIS-N6-M	\$1608.	LPSS-100-JIS-N6-M	\$4830.
	LPWA-100-JIS-N8-EP	\$1788.	LPSS-100-JIS-N8-EP	\$5085.	LPWA-100-JIS-N8-M	\$1608.	LPSS-100-JIS-N8-M	\$4830.
<b>150 mm</b>	LPWA-150-JIS-N1-EP	\$1842.	LPSS-150-JIS-N1-EP	\$5750.	LPWA-150-JIS-N1-M	\$1648.	LPSS-150-JIS-N1-M	\$5445.
	LPWA-150-JIS-N5-EP	\$2109.	LPSS-150-JIS-N5-EP	\$6050.	LPWA-150-JIS-N5-M	\$1917.	LPSS-150-JIS-N5-M	\$5745.
	LPWA-150-JIS-N6-EP	\$1978.	LPSS-150-JIS-N6-EP	\$5900.	LPWA-150-JIS-N6-M	\$1785.	LPSS-150-JIS-N6-M	\$5595.
	LPWA-150-JIS-N8-EP	\$1978.	LPSS-150-JIS-N8-EP	\$5900.	LPWA-150-JIS-N8-M	\$1785.	LPSS-150-JIS-N8-M	\$5595.
<b>200 mm</b>	LPWA-200-JIS-N1-EP	\$3575.	LPSS-200-JIS-N1-EP	\$6950.	LPWA-200-JIS-N1-M	\$3321.	LPSS-200-JIS-N1-M	\$6645.
	LPWA-200-JIS-N5-EP	\$3884.	LPSS-200-JIS-N5-EP	\$7270.	LPWA-200-JIS-N5-M	\$3629.	LPSS-200-JIS-N5-M	\$6965.
	LPWA-200-JIS-N6-EP	\$3685.	LPSS-200-JIS-N6-EP	\$7110.	LPWA-200-JIS-N6-M	\$3428.	LPSS-200-JIS-N6-M	\$6805.
	LPWA-200-JIS-N8-EP	\$3685.	LPSS-200-JIS-N8-EP	\$7110.	LPWA-200-JIS-N8-M	\$3428.	LPSS-200-JIS-N8-M	\$6805.
<b>250 mm</b>	LPWA-250-JIS-N1-EP	\$4309.	LPSS-250-JIS-N1-EP	\$10,900.	LPWA-250-JIS-N1-M	\$4014.	LPSS-250-JIS-N1-M	\$10,285.
	LPWA-250-JIS-N5-EP	\$4652.	LPSS-250-JIS-N5-EP	\$11,240.	LPWA-250-JIS-N5-M	\$4358.	LPSS-250-JIS-N5-M	\$10,625.
	LPWA-250-JIS-N6-EP	\$4481.	LPSS-250-JIS-N6-EP	\$11,070.	LPWA-250-JIS-N6-M	\$4187.	LPSS-250-JIS-N6-M	\$10,755.
	LPWA-250-JIS-N8-EP	\$4481.	LPSS-250-JIS-N8-EP	\$11,070.	LPWA-250-JIS-N8-M	\$4187.	LPSS-250-JIS-N8-M	\$10,755.
<b>300 mm</b>	LPWA-300-JIS-N1-EP	\$5354.	LPSS-300-JIS-N1-EP	\$12,850.	LPWA-300-JIS-N1-M	\$5060.	LPSS-300-JIS-N1-M	\$12,535.
	LPWA-300-JIS-N5-EP	\$5683.	LPSS-300-JIS-N5-EP	\$13,210.	LPWA-300-JIS-N5-M	\$5385.	LPSS-300-JIS-N5-M	\$12,895.
	LPWA-300-JIS-N6-EP	\$5505.	LPSS-300-JIS-N6-EP	\$13,030.	LPWA-300-JIS-N6-M	\$5208.	LPSS-300-JIS-N6-M	\$12,715.
	LPWA-300-JIS-N8-EP	\$5505.	LPSS-300-JIS-N8-EP	\$13,030.	LPWA-300-JIS-N8-M	\$5208.	LPSS-300-JIS-N8-M	\$12,715.

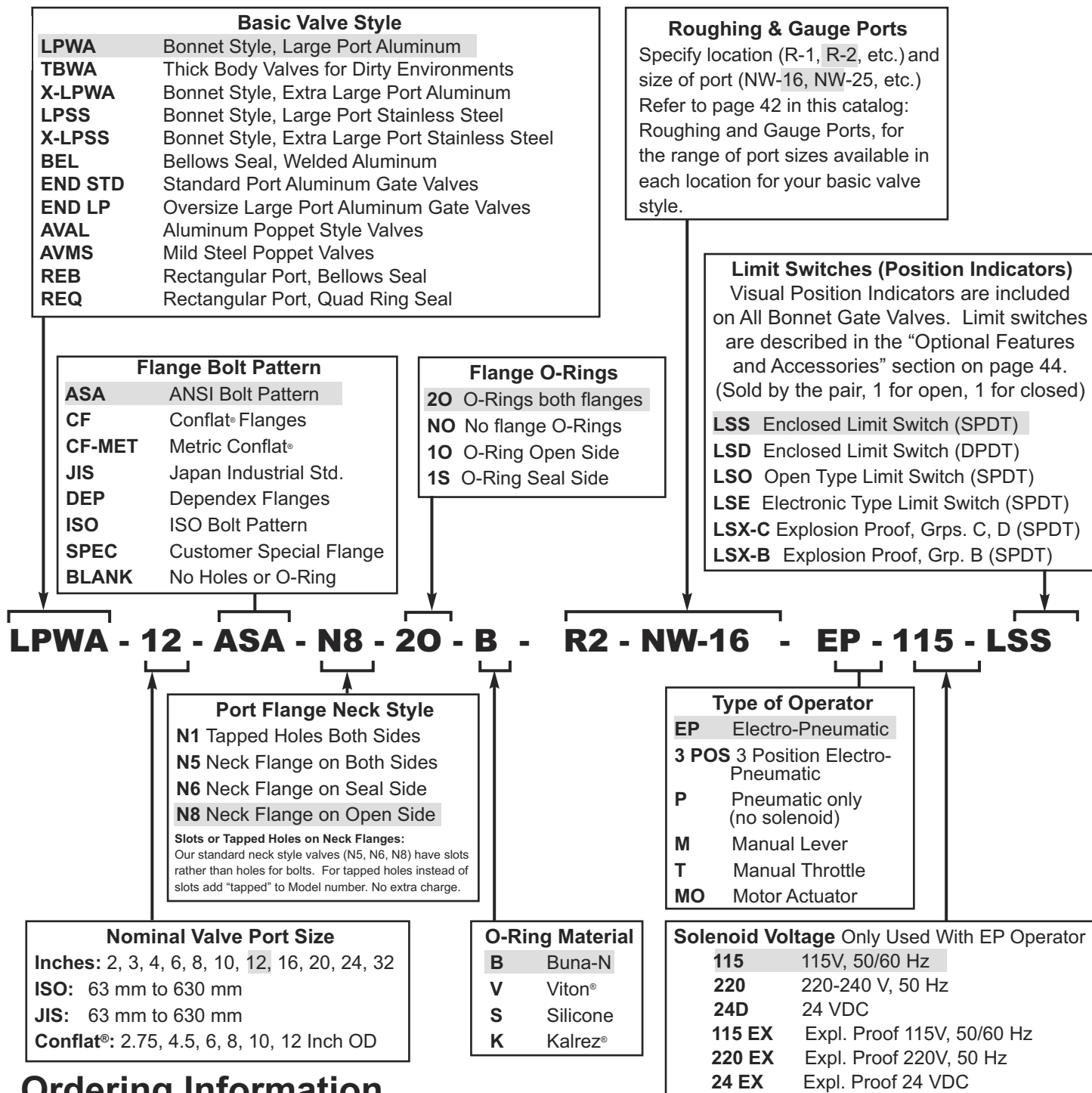


Note: All dimensions in millimeters. Roughing ports and position indicator limit switches optional. Centering rings not included. The gate seal O-ring is on the actuator side (to left) in aluminum valve sizes from 80 through 200 mm. The gate seal is on the side opposite the actuator on 250 & 300 mm aluminum and stainless steel valves.

JIS Port Size	Model No.	Flange		Bolt Circle	(number of bolts) size - pitch	A Flange to Flange		BMAN Manual Overall Height	BEP EP Overall Height	CEP Port CL to Top of Valve	DMAN Manual Overall Width	DEP EP Overall Width	EMAN Manual	EEP EP	F Disassy. Clearance	Weight kgs. Aluminum	
		Out-side Diam.	O-Ring inside Diam.			Stainless	Alum.									Net	Ship
65 mm one piece style	OP 65 JIS N1, both sides tapped holes	145	85	120	(4) M 8 - 1.25	53	70	246	278	205	100	175	45	60	67	8	13
	OP 65 JIS N5, both sides through holes	145	85	120	thru holes 12 mm	98	140	246	278	205	100	175	45	60	67	8	13
	OP 65 JIS N6 & N8, 1 tapped, 1 through	145	85	120	Neck Side Slotted	83	105	246	278	205	100	175	45	60	67	8	13
80 mm	LPWA JIS 80 N1, both sides tapped holes	160	101	135	(4) M 10 - 1.5	60	95	360	392	312	254	228	52	60	67	10	15
	LPWA JIS 80 N5, both sides through holes	160	101	135	thru holes 12 mm	105	165	360	392	312	254	228	52	60	67	10	15
	LPWA JIS 80 N6 & N8, 1 tapped, 1 through	160	101	135	Neck Side Slotted	80	130	360	392	312	254	228	52	60	67	10	15
100 mm	LPWA JIS 100 N1, both sides tapped holes	185	120	160	(8) M 10 - 1.5	60	95	373	405	312	254	228	52	60	100	10	15
	LPWA JIS 100 N5, both sides through holes	185	120	160	thru holes 12 mm	105	165	373	405	312	254	228	52	60	100	10	15
	LPWA JIS 100 N6 & N8, 1 tapped, 1 through	185	120	160	Neck Side Slotted	80	130	373	405	312	254	228	52	60	100	10	15
150 mm	LPWA JIS 150 N1, both sides tapped holes	235	177	210	(8) M 10 - 1.5	60	105	518	550	432	406	257	57	89	114	14	21
	LPWA JIS 150 N5, both sides through holes	235	177	210	thru holes 12 mm	105	181	518	550	432	406	257	57	89	114	14	21
	LPWA JIS 150 N6 & N8, 1 tapped, 1 through	235	177	210	Neck Side Slotted	80	143	518	550	432	406	257	57	89	114	14	21
200 mm	LPWA JIS 200 N1, both sides tapped holes	300	228	270	(8) M 12 - 1.75	82	111	636	668	518	406	318	67	86	140	25	30
	LPWA JIS 200 N5, both sides through holes	300	228	270	thru holes 12 mm	120	200	636	668	518	406	318	67	86	140	25	30
	LPWA JIS 200 N6 & N8, 1 tapped, 1 through	300	228	270	Neck Side Slotted	104	156	636	668	518	406	318	67	86	140	25	30
250 mm	LPWA JIS 250 N1, both sides tapped holes	350	279	320	(12) M 12 - 1.75	82	117	745	777	602	533	458	50	79	121	50	59
	LPWA JIS 250 N5, both sides through holes	350	279	320	thru holes 12 mm	120	206	745	777	602	533	458	50	79	121	50	59
	LPWA JIS 250 N6 & N8, 1 tapped, 1 through	350	279	320	Neck Side Slotted	104	162	745	777	602	533	458	50	79	121	50	59
300 mm	LPWA JIS 300 N1, both sides tapped holes	400	330	370	(12) M 12 - 1.75	82	117	770	802	602	533	458	50	79	121	58	68
	LPWA JIS 300 N5, both sides through holes	400	330	370	thru holes 12 mm	120	206	770	802	602	533	458	50	79	121	58	68
	LPWA JIS 300 N6 & N8, 1 tapped, 1 through	400	330	370	Neck Side Slotted	104	162	770	802	602	533	458	50	79	121	58	68



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.



## 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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