• Less Outgassing Than Stainless, See Page 39
• Simple End Operated Air Cylinder
• Over 100,000 Cycles Without Maintenance
• Helium Tested to 5 X 10^{-10} scc/s
• All Valves (RoHS) 2015/863/EU Compliant
• Flanges to Match Diffusion & Cryo Pumps
• Closing Speeds as Fast as 75 mSec. Available
• Optional Operation to 10 Bar, 147 PSIG; $260.
• Optional Remote Position Indicators
• NW & Compression Gauge & Roughing Ports
• Automatic Closure on Power Failure

Stainless Steel Gates in Aluminum Valves: To specify a stainless steel gate in an aluminum valve add a suffix to the model number “SS Gate”. Refer to “Optional Features and Accessories” pages in this catalog for pricing information.
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
- **LPWA**: Bonnet Style, Large Port Aluminum
- **TBWA**: Thick Body Valves for Dirty Environments
- **X-LPWA**: Bonnet Style, Extra Large Port Aluminum
- **LPSS**: Bonnet Style, Large Port Stainless Steel
- **X-LPSS**: Bonnet Style, Extra Large Port Stainless Steel
- **BEL**: Bellows Seal, Welded Aluminum
- **END STD**: Standard Port Aluminum Gate Valves
- **END LP**: Oversize Large Port Aluminum Gate Valves
- **AVAL**: Aluminum Poppet Style Valves
- **AVMS**: Mild Steel Poppet Valves
- **REB**: Rectangular Port, Bellows Seal
- **REQ**: Rectangular Port, Quad Ring Seal

### Flange Bolt Pattern
- **ASA**: ANSI Bolt Pattern
- **CF**: Conflat Flanges
- **CF-MET**: Metric Conflat
- **JIS**: Japan Industrial Std.
- **DEP**: Dependex Flanges
- **ISO**: ISO Bolt Pattern
- **SPEC**: Customer Special Flange
- **BLANK**: No Holes or O-Ring

### Flange O-Rings
- **2O**: O-Rings both flanges
- **NO**: No flange O-Rings
- **1O**: O-Ring Open Side
- **1S**: O-Ring Seal Side

### Nominal Valve Port Size
- **Inches**: 2, 3, 4, 6, 8, 10, 12, 16, 20, 24, 32
- **ISO**: 63 mm to 630 mm
- **JIS**: 63 mm to 630 mm
- **Conflat**: 2.75, 4.5, 6, 8, 10, 12 Inch OD

### Port Flange Neck Style
- **N1**: Tapped Holes Both Sides
- **N5**: Neck Flange on Both Sides
- **N6**: Neck Flange on Seal Side
- **N8**: Neck Flange on Open Side
- **TAP**: 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.

### O-Ring Material
- **B (Buna-N)**
- **V (Viton®)**
- **S (Silicone)**
- **K (Kalrez®)**
- **C (Chemraz®)**

### Type of Operator
- **EP**: Electro-Pneumatic
  - **A**: Air Pilot
  - **3 POS**: 3 Position Electro-Pneumatic
  - **P**: Pneumatic only (no solenoid)
  - **M**: Manual Lever
  - **T**: Manual Throttle
  - **MO**: Motor Actuator

### Solenoid Voltage
- **115 EX**: Expl. Proof 115V, 50/60 Hz
- **220 EX**: Expl. Proof 220V, 50 Hz
- **24EX**: Expl. Proof 24 VDC

### 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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**Model Numbering System**

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

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**Port Flange Neck Style**

**O-Ring Material**

**Type of Operator**

**Solenoid Voltage** Only Used With EP Operator

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