

## V-Series

Oil Lubricated Rotary Vane  
Vacuum Pumps



# Oil Lubricated Rotary Vane Vacuum Pumps

## Once Through Oil Lubricated

### V-VL, V-VLB, V-VLV-2, V-VWZ

Our latest generation of once through oil lubricated vacuum pumps provide a cost-effective way to handle process streams containing aggressive gases, high vapor loads and sticky residue. This reliable design offers excellent flexibility, control and low temperature operation. Pump designs are modular, making them easy to service. Air or water cooling options are offered, depending on one's application. Fully packaged systems are engineered to meet exact process and control requirements.

### Advantages at a glance

- Process safe (no reverse contamination)
- Can handle aggressive gases and high vapor loads
- Vertical and horizontal designs
- Modular 1 and 2 stage designs
- Air or water cooling
- Reduced polymerization and plugging
- Continuous duty
- Low maintenance
- Also available as customized pump system solutions



V-VL



V-VLB



V-VLV-2



V-VWZ



# Product Overview

## V-VL

**Once through oil lubricated rotary vane vacuum pump with capacities ranging from 6 to 71 cfm** and an ultimate vacuum of 29 in. HgV. Bearings on both sides of the rotor. Shaft sealing for bearing protection from corrosive vapors. Air cooling, low operating temperature.

## V-VLB

**Once through oil lubricated rotary vane vacuum pump with capacities ranging from 6 to 71 cfm** and an ultimate vacuum of 29 in. HgV. Fitted as standard with waste oil and condensate tank. Bearings on both sides of the rotor. Shaft sealing for bearing protection from corrosive vapors. Air cooling, low operating temperature.

## V-VLV-2

**Two-stage rotary vane vacuum pump in vertical design. Capacities ranging from 16 to 71 cfm.** Ultimate vacuum 29.9 in. HgV. The once through oil lubrication protects the pump chamber from corrosive vapor. Can be used in combination with a rotary lobe vacuum booster.

## V-VWZ

**Two stage rotary vane vacuum pump with internal water cooling. Capacities ranging from 59 to 848 cfm.** Ultimate vacuum 29.9 in. HgV. Thanks to its once through oil lubrication it is suitable for handling aggressive gases. Easy stage exchange due to modular design. Operating temperature thermostat and integrated cooling water regulation valve included. Large range of accessories.





# Oil Lubricated Rotary Vane Vacuum Pumps

## Oil Lubricated / Oil Flooded

### V-VGD, V-VCB, V-VCA, V-VCE and V-VC

Our oil lubricated rotary vane vacuum pumps are used in a wide variety of industrial applications. We offer the largest range of oil flooded vacuum pumps for industrial vacuum operation.

#### Advantages at a glance

- Long vane life, five year warranty
- Low noise level
- Easy to service
- High water vapor tolerance
- Long service intervals
- For many industrial applications
- Oxygen conveying pumps available



V-VGD



V-VCB



V-VCA / V-VCE



V-VC



# Product Overview

## V-VGD

**Oil flooded rotary vane vacuum pump with capacities from 6 to 11 cfm.** The ultimate vacuum can be selected by user at either 29.86 in. HgV for fine vacuum or 29.63 in. HgV for coarse vacuum. Needs little space thanks to overhung rotor design and integral motor. Fitted as standard with fine mesh filter, vacuum non return valve and oil separator. Very quiet running.

## V-VCA / V-VCE

**Oil flooded rotary vane vacuum pumps with capacities ranging from 15 to 29 cfm.** Ultimate vacuum 29.91 in. HgV. Flange mounted motor, bearings on both sides of the rotor, air cooling. Fitted as standard with fine mesh filter, vacuum non return valve, gas ballast valve and oil separator.

## V-VCB

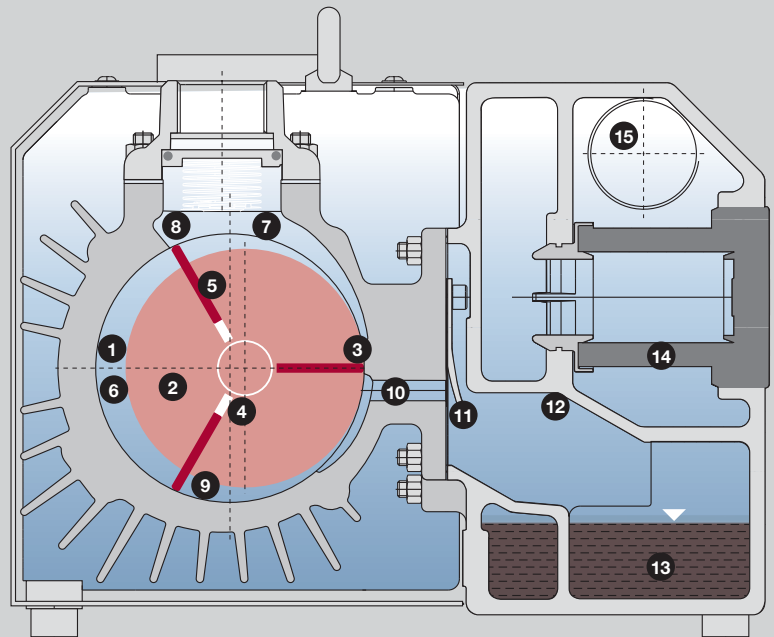
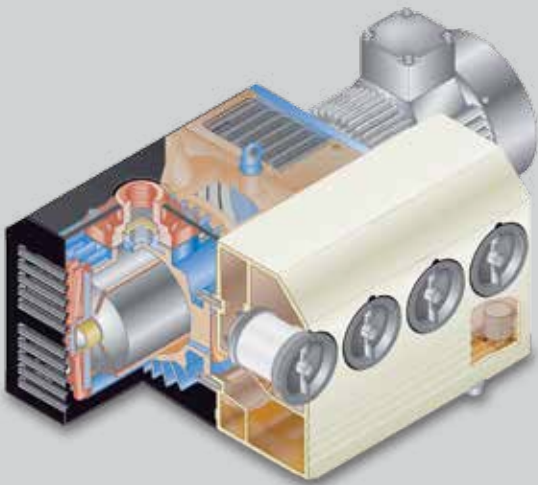
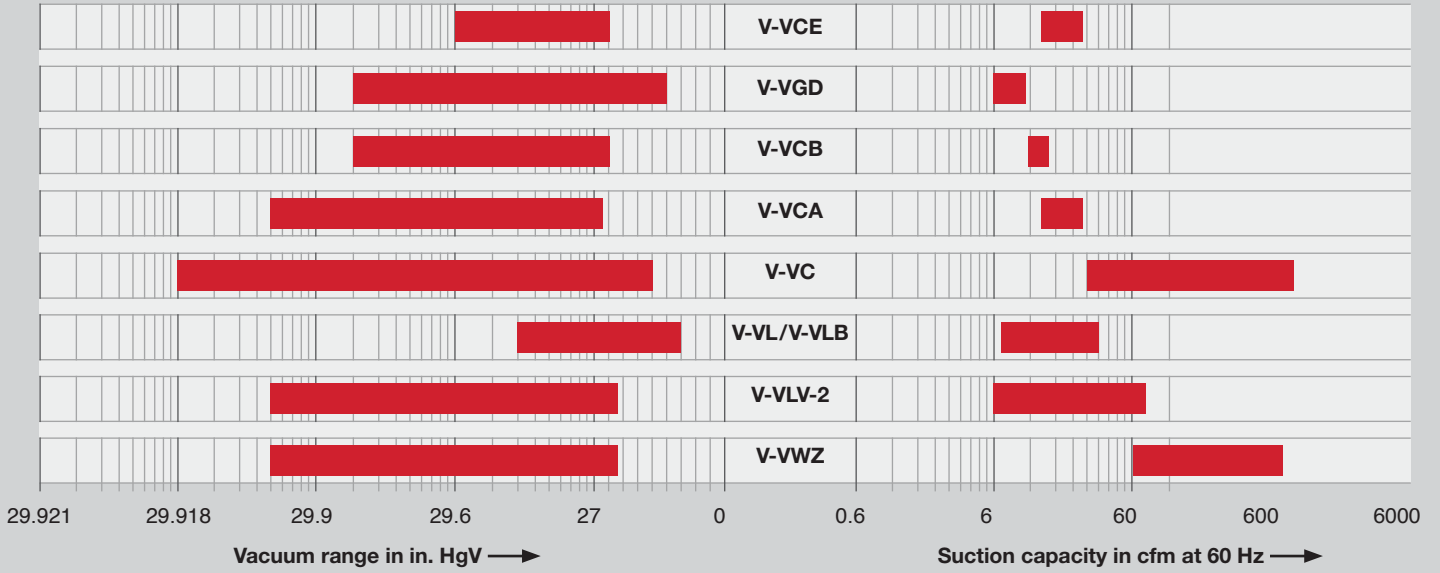
**Oil flooded rotary vane vacuum pump with capacities ranging from 12 to 16 cfm** and an ultimate vacuum of 29.86 in. HgV. Designed especially for installation into small vacuum packaging machines. Flange mounted motor, bearings on both sides of the rotor, air cooling. Fitted with fine mesh filter, vacuum non return valve and oil separator.

## V-VC

**Oil flooded rotary vane vacuum pump with capacities ranging from 30 to 903 cfm** and an ultimate vacuum of 29.92 in. HgV. Flange mounted motor, bearings on both sides of the rotor, oil/air heat exchanger. All models include aluminum alloy vanes, back pressure gauge, gas ballast valve(s), non return valve and easy access replaceable oil separators. Sizes of 283 cfm (15 HP) and above include 5 micron paper inlet filter(s) and double walled cylinder construction.



# Technical Specifications





## Operating Principle

Pressure increase by volume reduction is the principle behind rotary vane operation. This design offers excellent service for pressure, vacuum or a combination of both.

In a cylindrical housing (1) a rotor (2) is positioned eccentrically so that it is on the top almost touching the cylinder (3). Rotor blades or vanes (5) as they are called, are positioned inside rotor slots (4). When the rotor starts turning, due to centrifugal force the blades are thrown out and slide against the internal surface of the cylinder.

In this way a cell (6) is formed between two blades with a volume that changes constantly during rotation. Air enters from the inlet port (7) into a cell until the rear blade reaches the far end of the inlet port (8). At this point the cell (6) has achieved its maximum air volume.

As the cell then moves away from the port its volume (9) becomes smaller and smaller, the air is thus compressed and the pressure rises.

Some models are fitted with outlet valves (11) next to the outlet port (10) which stop the backflow of discharged air when the maximum pressure has been reached.

### **Oil Separation for once through vacuum pumps**

After its passage through outlet port (10) and outlet valves (11), the oil-gas mixture reaches the oil separator chamber (12) where the oil is separated from the gas in two steps. Larger oil droplets are mechanically separated from the gas and are eventually deposited in the waste oil pump (13).

The remaining oil gas mixture is then taken through fine filter elements (14) which separate even the smallest oil particles. These are then reintroduced through an oil suction pipe into the pump's oil circuit. The virtually oil free gas can be let outside either through the air outlet (15) or through other hose or piping arrangements.



# Applications

## Oil Lubricated

### Environmental engineering

- Remediation
- Vapor extracting

### Food processing

- Bottling and filling machines
- Vacuum tumblers
- Vacuum stuffers

### Industrial applications

- Drying systems
- Industrial furnaces
- Vacuum hold down
- Vacuum lifting

### Food Packaging industry

- Centralized vacuum systems
- Packaging machines

### Pneumatic conveying

- Dense phase conveying

### Woodworking industry

- Vacuum hold down for CNC Routers

## Once Through Oil Lubricated

### Chemical and pharmaceutical processes

- Crystallization
- Degassing
- Distillation
- Drying
- Evaporation
- Fractionation
- Impregnation
- Vacuum cooling
- Vacuum coating (sublimation)
- Vacuum filtration



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