



OIL-LUBRICATED ROTARY VANE VACUUM PUMPS & SYSTEMS

# NRV SERIES



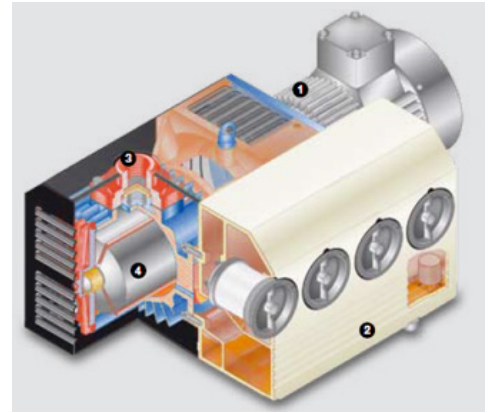


## OPERATING PRINCIPLE

Rotary vane pumps operate by expanding volume at the inlet and compressing that volume at the exhaust. This is accomplished by placing the rotor eccentrically inside of the cylindrical housing, such that it is nearly touching the housing at the top, and is distanced from the bottom, as can be seen in the graphic. This rotor houses the vanes, and when it spins, centrifugal force causes these vanes to be slung out of the grooves they sit in until they contact the cylinder wall.

When the vanes are in this extended position, they create an effective gas barrier that splits the pump cavity into multiple sections. As they rotate, the sections exposed to the inlet port will continually be expanding, and the sections exposed to the exhaust port will continually be contracting. This causes the process gas to be drawn into the inlet, compressed within the pump, and expelled out the exhaust port.

As the vanes are physically in contact with the cylinder wall, lubrication is required. This lubrication also aids sealing between the sections of the cylinder, as well as facilitates heat transfer away from the site of compression. These actions combine in a way that allows oil-lubricated rotary vane pumps to be capable of very low base pressures, and as such, they are suitable for applications requiring vacuum levels as low as 0.375 Torr.



- 1. Drive
- 2. Oil separator
- 3. Suction Side
- 4. Compression

## Industries & Applications

Proven, dependable and efficient performance for a wide range of industrial applications.



# Higher Efficiency

## Lower Power Consumption

### Oil-Lubricated Rotary Vane Vacuum Pumps

Features flanged motor, bearings on both sides of the rotor, and oil/air heat exchanger. Fitted as standard with a fine mesh filter, vacuum non-return valve, gas ballast valve, protection cover and oil separator. Versions for handling of gases with elevated oxygen content as well as versions with high water vapor tolerance for vacuum drying are available.

#### ADVANTAGES AT A GLANCE:

- Quiet Operation
- Easy Maintenance
- Air-Cooled Design
- Long-life Vanes
- Compact Design
- O-ring Sealed Compression Chamber

#### NRV50/75/100/150

**Nominal Capacity from** 35 to 106 acfm  
**Base Pressure** 0.375 Torr  
**Nominal Motor Power from** 2-5 HP



NRV50/75/100/150



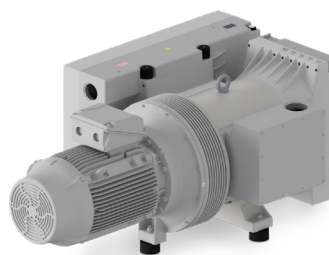
NRV200/300

#### NRV200/300

**Nominal Capacity from** 141-212 acfm  
**Base Pressure** 0.375 Torr  
**Nominal Motor Power from** 7.5 to 10 HP

#### NRV400/500/700/900/1100/1300

**Nominal Capacity from** 283 to 903 acfm  
**Base Pressure from** 0.375 to 0.75 Torr  
**Nominal Motor Power from** 15 to 50 HP



NRV400/500/700/900/1100/1300

# Nash Products & Systems



## NASH® Liquid Ring Vacuum Pumps & Systems

The reliable and durable solution for demanding process applications. Through ongoing commitment to innovation, Nash continues to introduce liquid ring vacuum pumps that meet the rigors of the most demanding applications while improving efficiency and lowering total cost of ownership.



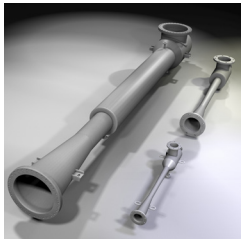
## NASH and GARO® Liquid Ring Compressors & Systems

The rugged, reliable solution for demanding process applications. Designed to handle toxic, explosive and corrosive gases, and backed by a reliable history of performance under the most demanding conditions.



## Dry Vacuum Pumps & Systems

Designed to meet your specific process needs, NASH dry systems are ready for operation, easy to integrate into process automation, help minimize installation & operating costs, and meet the rigors of the most demanding applications.



## ENER-JET™ Ejectors & Systems

Whether on their own, or as part of a NASH ENER-JET Hybrid Vacuum System, NASH steam jet ejectors are engineered for optimum efficiency, reducing steam consumption, while maintaining their ability to handle large volumes at very high vacuum levels.



## Oil-Lubricated Rotary Vane Pumps & Systems

Synonymous with reliability and efficient design, NASH Oil-Lubricated Rotary Vane Pumps are the perfect solution for a wide range of Industrial Vacuum Applications.




Gardner Denver Nash, LLC

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GDN-OLRV-B-1265 1st Ed. 3/21

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