

## Pneumatic Conveying

The use of positive displacement blowers in pneumatic conveying provides efficient transfer of dry bulk material from point to point at varying pressures and vacuum levels. Dry bulk material is transferred through an enclosed pipeline and could include products such as flour, corn meal, spices, whole grains, soy meal or meat by-products within the food industry.

Ask a Tuthill representative for assistance in selecting the blower that is best suited for your specific pneumatic conveying application.

## Packaging and Handling

Blowers can be used as an alternative solution in low vacuum applications for packaging and handling. A Tuthill representative can review a comparison of blowers versus vacuum pumps with you to select a solution offering the highest level of reliability and efficiency for your application.

## Dairy Milking

Milking is a complex process that requires an assembly of components that may handle as many as 200 cows an hour. A blower or vacuum pump may be used in this application to help draw and transfer the milk from the cows to a receiving tank.

Ask a Tuthill representative for more information on blowers recommended for your specific system.



Rotary Positive Displacement Blower: CP Series

- Timed with precision helical gears, keyed to the rotor shafts
- Include double-row ball bearings at the gear end
- Rotors with integral shafts
- Reduced noise versions available with tri-lobe rotors
- Bi-directional rotation

CP Series rotary blowers are designed to be interchangeable with equivalent sizes of competitive models. They are rated up to 18 PSIG discharge pressure or 16" Hg dry vacuum.



High Pressure Industrial Blower: PD Plus

- Known for quality, dependability, and outstanding performance
- Models ranging from 3.25" to 12" gear diameter and 2.5" to 48" rotor length
- Standard construction materials: cast iron housing, end plates and port fitting with ductile iron rotors and shafts (special materials offered)
- Single and double envelope gas service available with mechanical seals

## Tuthill Vacuum & Blower Systems

### Vacuum Packaging

The use of vacuum pumps in the packaging process is key to extending shelf life of food products. Vacuum pumps evacuate air typically, but are also used to remove water vapor, fat and granular materials like seasonings.

In the chamber packaging process, food is placed inside a vacuum bag and loaded into a packaging chamber. Air is evacuated and the bag is heat-sealed.

### Thermoforming

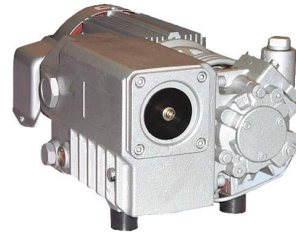
The thermoforming process is used to package various types of products between plastic films or into preformed trays. Heated plastic sheets are placed over a forming die to create a container. Once cooled, product is placed into these containers and evacuation is used as the top film is heated and sealed to the container. Thermoforming greatly increases packaging production speed.

### Bottling

Vacuum is used to equalize pressure and fluid movement in the bottling process. In the case of bottling consumable beverages, contaminants will also need to be removed through the use of vacuum pumps. In the beer bottling process, bottles have carbon dioxide injected into them to reduce the level of oxygen inside the bottle. As the bottle is filled with beer, the filler may also inject a small amount of inert gas on top of the beer, dispersing the oxygen.

### Pharmaceutical Packaging

Vacuum pumps are used in the process of packaging pills in blister packs or Push-Through-Packs. These packs are produced by a form-fill-seal process.



Rotary Vane Pump: KVA

- Typically Applications:
- Vacuum Packaging
- Meat Packing
- Plastic Thermoforming
- Food Processing
- Ideally suited for clean or moderately contaminated applications when suction filters are fitted to the pump
- Oil-flooded, multi-vane vacuum pumps are single stage, air cooled and direct driven
- Compact design for easy installation
- Carbon composite vane material for long life
- TEFC high efficiency tri-voltage motor (208-230/460V 50/60)
- Models KVA 25-630C include spin-on oil filter and exhaust pressure gauge

This simple design ensures the reliability and the durability that is required in the vacuum industry. The design features oil level sight glass and vibration isolators.



Liquid Ring: A Series

- Typically Applications:
- Sterilization
- Extruders
- Deaeration
- Evaporators
- Filtration
- Simplistic in design, rugged in construction
- Built to run in the most severe of industrial conditions
- Unique design allows pump to operate flooded, without damage
- Flat power curve over entire vacuum range prevents motor overload
- No contact between operating components in the casing
- Pull down to 29" Hg - 25 Torr (33 mbar a)
- Increased water handling capability prevents heat build-up, extends life of single mechanical seal
- Available in stainless steel, bronze, or cast iron
- Compact, close-coupled design eliminates need for inter-stage manifold or motor alignment