



**Technologies**

# TECHNOLOGIES

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## *Tools for better living.*

It is the invention that translates into action, the intuition that becomes application, the individual that multiplies.  
With a new perspective, technology becomes the projection of the machine, - the object, the tool in the life of humankind.

Here in DVP we believe that technology represents an unique opportunity to promote the growth of the individual and the community.

For us, the whole production process for which we give our enthusiasm and energy on a daily basis, is the way that we are able to make the wheels turn, and transform mechanisms, skills, passions and specificity into thousands and thousands of applications that make life better for individuals and contribute to the progress of society as a whole.

Our products provide benefits to the environment, food, health, agriculture, housing, communications, electronics and many other fields.  
This makes us proud but also aware of the responsibility that each day translates into research, commitment, professionalism, caring.

The technology is the way that man has invented to improve life; we all have a space, a dimension, a profile.  
We reside there with the aim of giving back in return the contribution of our values.

# 1. DRY VACUUM PUMPS

Oil free rotary vane pumps

Claw pumps and compressors

Blowers

Piston pumps

Lobe pumps

Dry Vacuum Pumps can run continuously exclusively with clean, dry air. Unlike other kinds of pumps, the dry rotary vane pumps can run at any pressure.

Maintenance is very easy and consists of replacing the vanes and cleaning the filters.

The main application fields include: suction cup movements, automatic machines, packing machines, woodworking machines, vacuum presses for wood or plastic, money counting machines. In the field of construction these pumps are used for plaster mixing, painting systems and pneumatic conveying.

Dry vane vacuum compressors have no particular restrictions on their use, except for the maximum operating pressure which should not exceed the rated value. For this reason it is always recommended that a safety valve be used.

## DRY VACUUM PUMPS



### Oil Free Rotary Vane Pumps

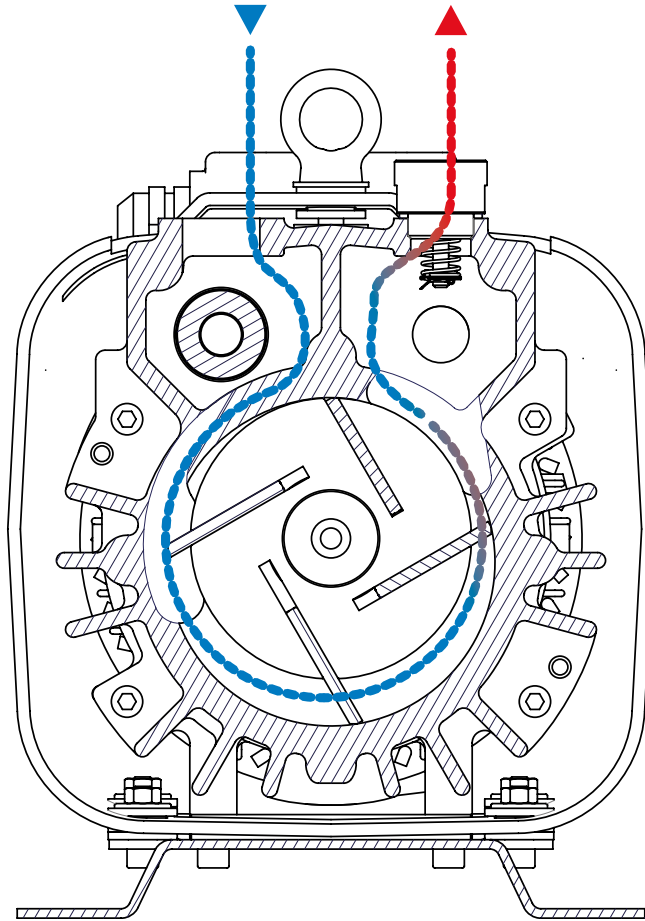
These pumps consist of a rotor in an eccentric position rotating inside a cylindrical body. This rotor is equipped with grooves in which the vanes are inserted.

As a consequence of the centrifugal force, during the rotation the vanes are pushed into contact with the body, creating close spaces that increase their volume drawing air from the container to be emptied and expelling it from the "outlet duct". If used as a compressor, the aspirated air is channelled to the drain.

Oil-free rotary vane pumps can run continuously both at atmospheric pressure and at the highest vacuum. However, they cannot be used when the aspirated air contains moisture, oil or other traces of liquid. The advantage of rotary compressors is that at a certain pressure they supply air without pulsations. Thus, they don't need a storage tank.

The oil free rotary pumps SC.60 140 can be accessorised with a FBX-S noise reduction box upon request.

## [Rotary vane pumps]



## DRY VACUUM PUMPS



### Claw Pumps and Compressors

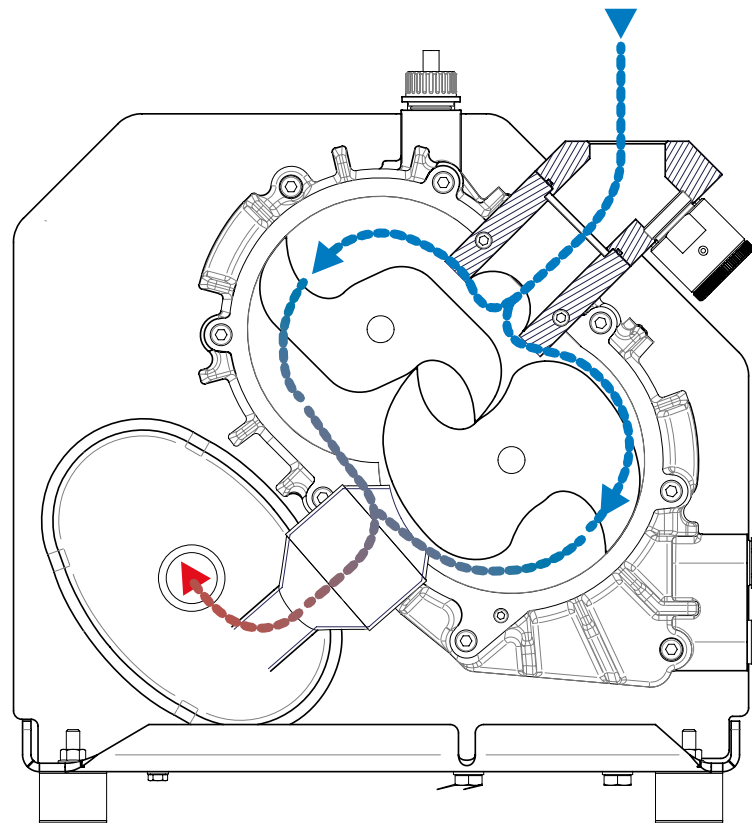
The new PA.155 Claw pumps create air volume and transfer it through the intake duct to the outlet duct by means of the rotation of two claw shaped rotors in a moulded chamber.

The dry running contactless rotation of the rotors is synchronized by gears without any lubricant present, thus avoiding any residue generated by friction or rubbing during rotation.

The gear wheels themselves are lubricated with oil and are enclosed in two compartments separated from the rotation chamber by gaskets.

PA.155 Claw pumps guarantee low operating costs thanks to moderate energy consumption and high efficiency. Maintenance is minimized and the level of performance is maintained for longer by virtue of the lack of friction between the moving rotors. The standard equipment of our new PA.155 Claw pumps includes shock mounts and a vacuum control valve.

## [Claw pumps]



## DRY VACUUM PUMPS



## Blowers

The operating principle of the blowers is pretty simple: a rotor equipped with small wings rotates inside a stator.

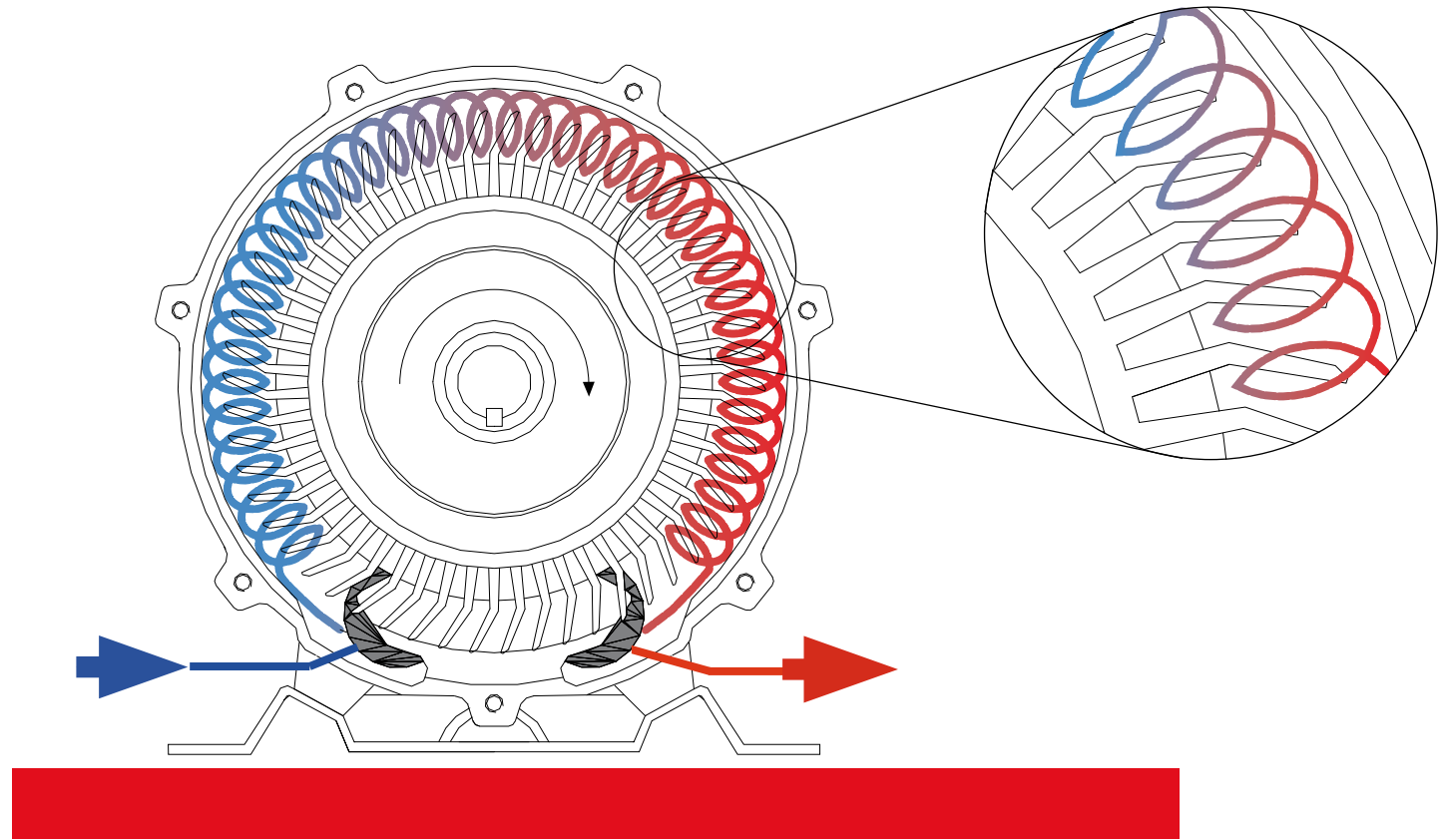
Small vortexes of air created by the centrifugal force and the rotation are dragged by the vanes from the aspiration toward the drain. There are no parts in contact, thus the blowers do not require routine maintenance but, since the intake air is also used as cooling fluid, they can only operate continuously within certain ranges of pressure.

To prevent damage to the motor it is necessary to install vacuum and pressure limiting valves. This product is very versatile and is not particularly delicate. If used as a compressor, the output flow is clean and free of pulsations.

The main application fields include: pneumatic conveying, suction cups conveyors, purification or water oxygenation.



## [Blowers]



## DRY VACUUM PUMPS



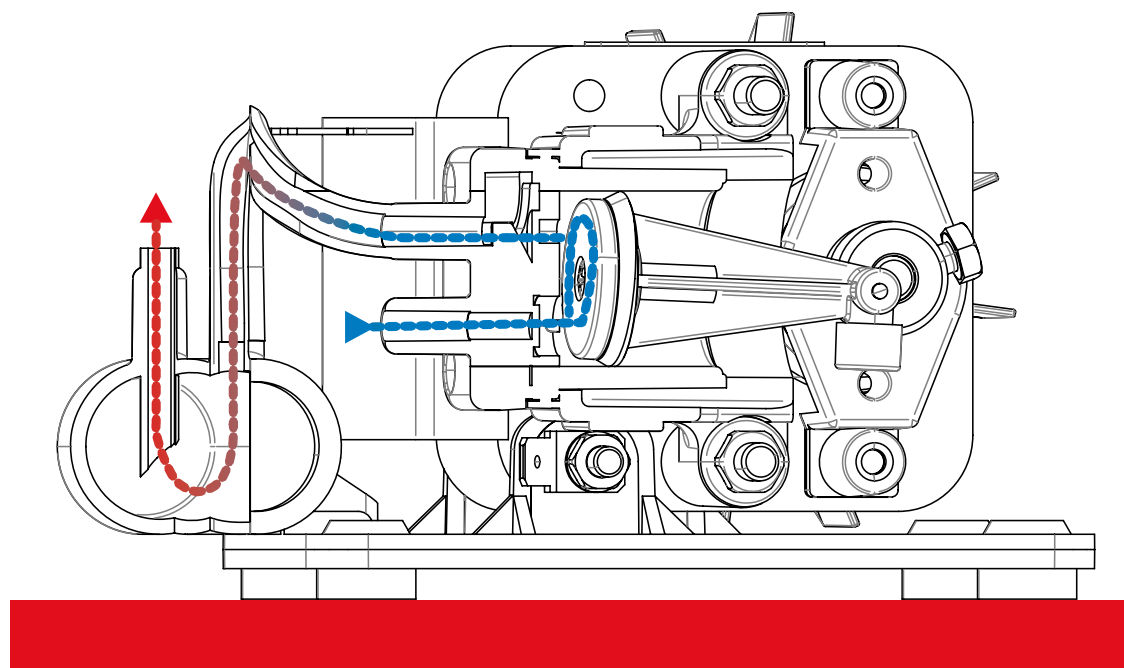
### Piston Pumps and Compressors

Piston pumps may be used in presence of moisture and have no particular restrictions on use. Versions (series ZA box) are also available with a safety guard and intake filter for use as mobile units.

The operating principle of piston pumps and compressors is based on a piston that moves alternately in a cylinder. The cylinder is equipped with valves that inhale air (when the piston goes down) and exhale it outside (when the piston rises). When its head is integral with the piston rod the piston is defined oscillating. Unlike membrane pumps, the piston pump chamber is not completely sealed and does not guarantee a perfect airtight circuit.

If used as compressors, these pumps create a pulsating flow that requires the presence of a reservoir.

## [Piston pumps]



## DRY VACUUM PUMPS

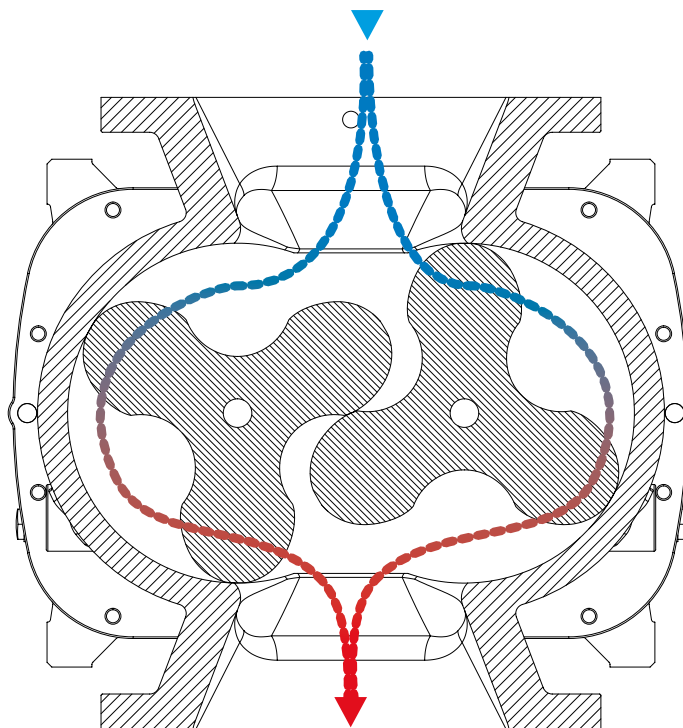


### Lobe Pumps

The volumetric roots pumps Bora - BA series are equipped with three lobe rotors having a singular geometrical shape that emphasizes the positive aspects of this design and cancelling out the negative ones (i.e.: gas recirculation). Moreover, the shaft seal is ensured by a dynamic gasket preventing any leakage.

These pumps should always be used together with a primary pump increasing the total flow rate at low operating pressures and reaching a great improvement of the final pressure.

## [Lobe pumps]





## 2. OIL LUBRICATED VACUUM PUMPS

### Oil Lubricated Rotary Vane Pumps

#### Oil bath vacuum pumps

Lubricated vacuum pumps are used when the intake flow may contain moisture, or when a better final pressure is required.

These pumps may run continuously within certain pressure ranges, or connected to containers to be emptied, whose volume is appropriately sized for the pump flow rate.

Long-term use at atmospheric pressure is not recommended.

We recommend using the WR versions whenever the amount of intake vapour is considerable.

The main application fields include: vacuum sealed packaging, thermoforming machines, glass or marble working machines, medical equipment, food-grade pastes or clay extruders, refrigeration and conditioning appliances for laboratories, freeze-drying, mass spectrometry, spin dryer. Special Pneurop inlet connections are available to connect the different elements that are on the machine.

## OIL LUBRICATED VACUUM PUMPS



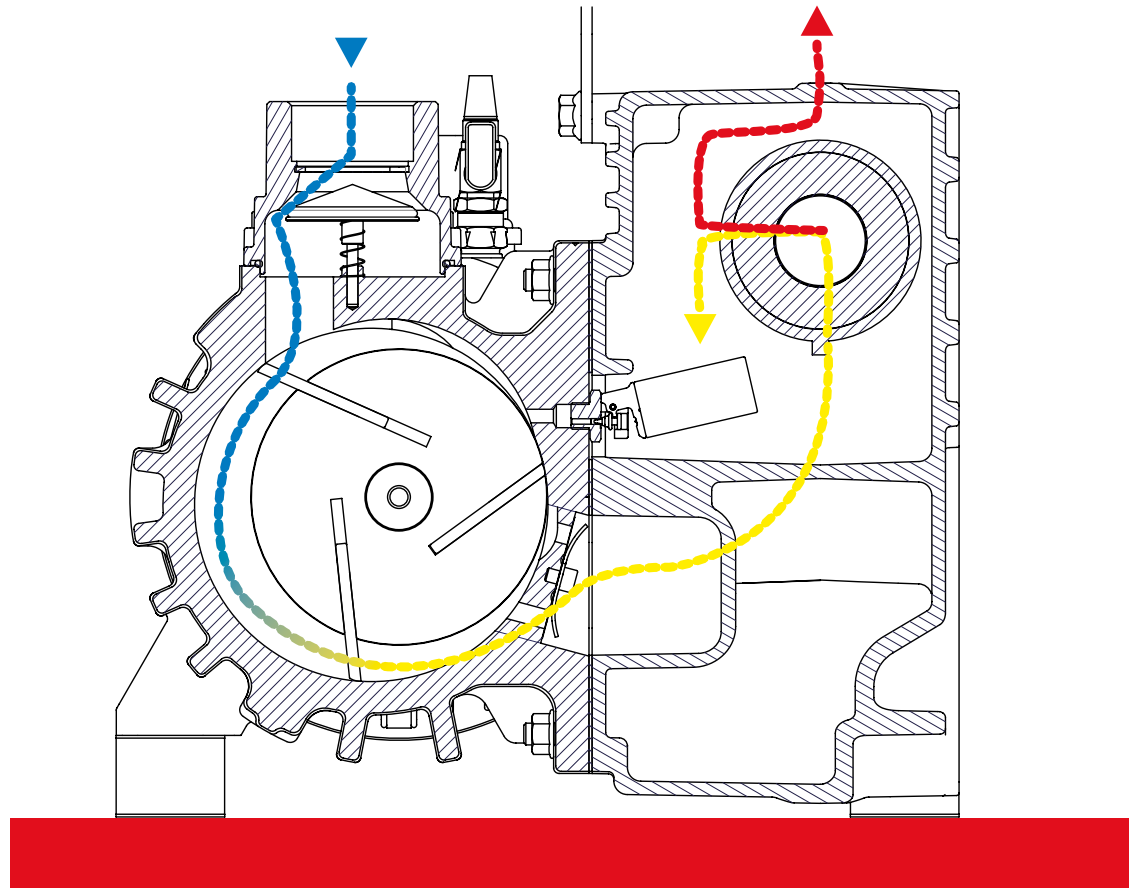
### Oil Lubricated Rotary Vane Vacuum Pumps

The lubrication allows this pumps to intake water vapour. To avoid a condensation of the water vapour, the pumps are equipped with a system called "Gas Ballast" that introduces air in the compression stage and changes the vapour saturation pressure thus avoiding the condensation. D.V.P. developed a WR pump version with an improved and reinforced Gas Ballast system.

The WR version of the L series of the pump has a system that separates oil and water condensate and expells it when the pump is stopped. The characteristics of this series are: Gas Ballast always inserted; external pirex tube to constantly maintain oil level, oil condition and oil viscosity under control; manual water and oil drain valve; switch for the maximum liquid (water-oil) level in the tank.



# [Oil lubricated rotary vane pumps]



## OIL LUBRICATED VACUUM PUMPS



### Oil Bath Vacuum Pumps

R and D series high vacuum pumps are used when the final absolute pressure required is very low. These pumps may run continuously connected to closed containers to be emptied, and may not run continuously, for a long time at atmospheric pressure. The exhaust from these pumps is not filtered, thus, special purifiers are available for fumes.

The operating principle of these pumps is similar to that of the lubricated pumps. However, in this case, the stator is immersed in the lubrication oil which has also the function of sealing the air loss. The pressure levels reached by this type of pump are higher than any other rotary vane pump. These pumps are equipped with a Gas Ballast system to avoid the condensation of the water vapour.

These kind of pumps can be made of a single rotor-stator group and are called Single Stage; or they can be made of two rotor-stator groups connected in series so the first group drain is connected to the second group intake system. The latter are called Double Stage.

## [Oil bath pumps]

