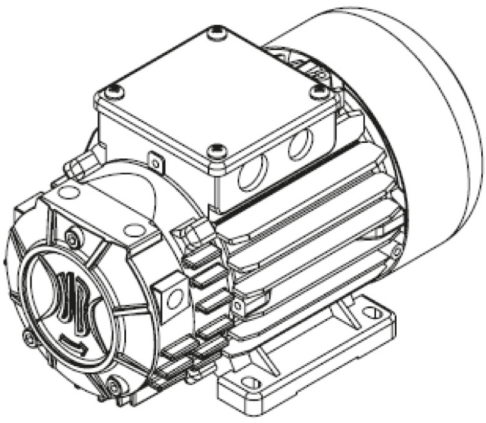
PVR
VACUUMDESIGN

# VD 3
# VD 6
# VD 8

## *Dry Rotary Vane Vacuum Pumps*



## *Operating and maintenance instructions*

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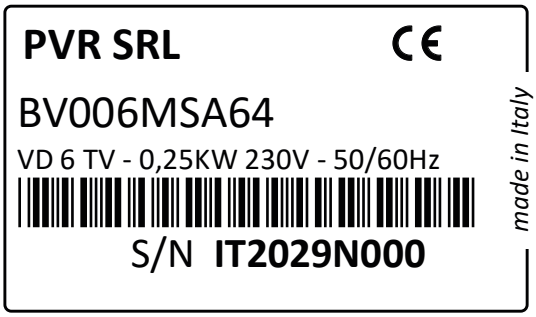
**EN**
**TRANSLATION**

# Index

# 1. General information

This manual contains information necessary for the proper operation of the pump in order to prevent unsuitable use and for the safety of the operators. Do not attempt any other type of operation without having first contacted our **Service Department**. The information provided herewith does not intend to replace, integrate or change any rules, regulations, law by decree, directive or law of specific character in force in the Country where the installation takes place.
The suggestions given to the staff engaged in the installation and servicing assumes that the personnel is expert and prepared in facing any problem of servicing, both mechanical and electrical. For any questions or information not included in this manual, please contact our Service Department, always providing: model (type), serial number, year of manufacture, stated on the pump name plate.




Symbols used:

**WARNING:**
**Instructions that, if not followed, could result in serious personal injuries.**

**ELECTRIC SAFETY**

**NOTE:**
**Instructions that, if not followed, could result in pump damages.**

**HOT SURFACES**

**HARMFUL SUBSTANCES EMISSIONS**

**DO NOT DISPOSE INTO THE ENVIRONMENT**

# 2. Product Specifications

### 2.1 Pump description

The vacuum pumps VD series are dry rotary vane vacuum pumps.

The cooling is assured with a rear fan.

The pump body is flanged and it is connect to the electric motor (single phase or three-phase), having the rotor coaxial to the motor itself.

### 2.2 Expected use

The vacuum pumps VD series have been designed to handle only dry atmospheric air. They are suitable for the operation at an absolute continuous vacuum as specified below:

< 150 mbar standard version pump (00)
< 120 mbar pump version Vacuum Tight - TV (64)

The recommended ambient temperature must be between 5°C and 40°C.

The characteristic data are valid up to the height of 800 m above sea level.

**WARNING:**
Any use in conditions different from the described ones should be authorized by PVR srl and only after proper technical and safety assessment.

### 2.3 Forbidden use

**WARNING:**
This pump or compressor MUST NOT handle:

- Liquid or solid substances;
- Dangerous, explosive or aggressive gases and vapours.
- DO NOT install the equipment in a potentially explosive environment.

# 3. Safety rules

**WARNING:**
Despite all the precautions adopted when designing the equipment, there are some risk elements that arise during operation and servicing.

**WARNING:**
Inside the pump there are some parts, you might get in touch with when servicing the pump, which achieve high temperature.

**ELECTRIC SAFETY**
Some components of the electric equipment are electrically charged during operation. To prevent serious injuries to persons or objects always check the terminal conditions prior to attempting any work on the equipment.
Ensure the pump insulation from the electric energy before any service operations.

**THERMAL SAFETY**
Inside the pump there are some parts, you might get in touch with when servicing the pump, which achieve high temperature.

# 4. Transport - Handling

### 4.1 Unpacking and components checking

When receiving the machine, check that the packing is intact or if it shows obvious signs of damage, occurred during transportation.

If there is no damage, proceed to the unpacking and check the machine.

In case damages or defects are found, inform immediately PVR srl and the carrier. A representative will contact you or it may be dispatched to the site to inspect and file full damage report.

# 5. Commissioning and operation

### 5.1 Location

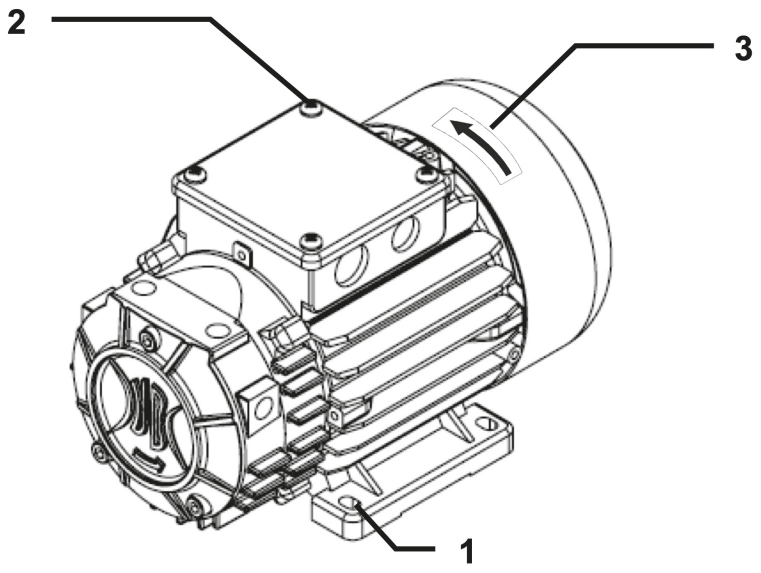
Check that the pipe sizes are suitable. Install the pump at least 10 cm away from the closest walls, in all direc-tions. Fix the pump to the ground through the suitable holes (1).

### 5.2 Electric connection

**WARNING:**
These operations must be carried out by qualified personnel. Power circuit overload protection and electric power disconnect switch must be supplied and installed by the user.

Open the terminal box (2) and connect the current to the motor terminals. Please mind the right voltage and frequency.

Check the right direction of rotation of the motor as shown by the label on the pump (3).



# 6. Maintenance and spare parts

## 6.1 Maintenance

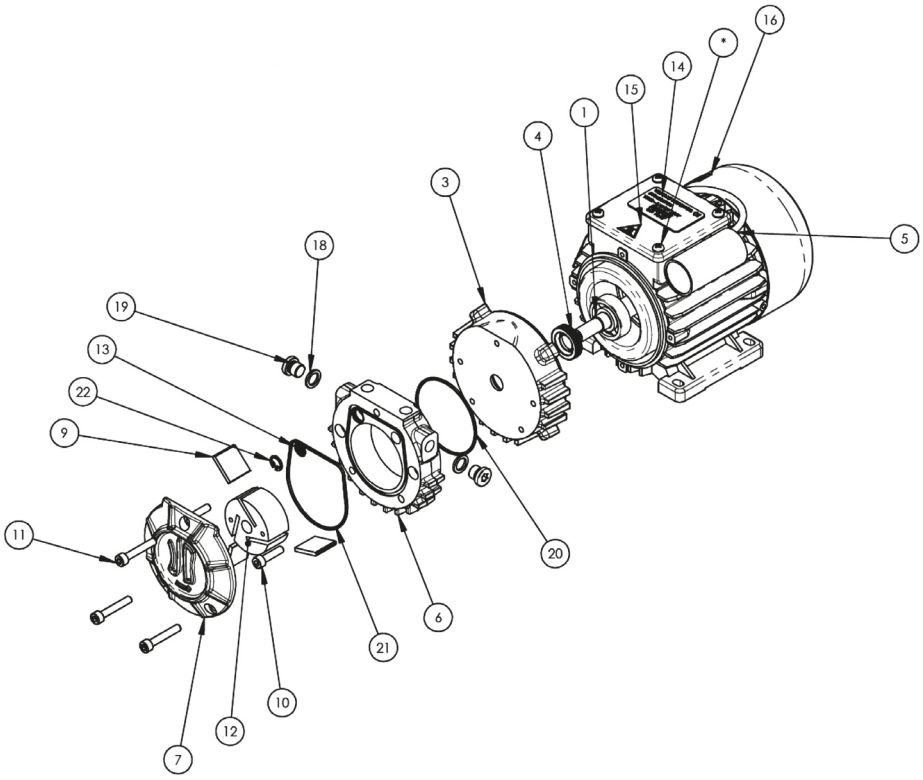
**WARNING:**
**All maintenance operations must be carried out with the pump idle, disconnected from the electrical supply, with the pump cold, vented to atmospheric pressure.**

All the operations must be carried out by suitably trained and authorized personnel.

**INLET FILTER CLEANING / REPLACEMENT (all the vd models)**
Unscrew the screws (11), remove the end plate (7) to get to the filter (13).
Clean the filter with compressed air or change it with a new one (if needed).
If you need to change the filter, remove the elastic ring (22).
Pos. 4, 20 and 21 are valid only for the vacuum tight pump version (TV).

**VANE REPLACEMENT**
The vanes (9) are subject to wear due to their friction inside the compression chamber. Check the vane height after **3000 hours** of operation. If the height goes below the values in the table, the vanes must be changed.

| Type | N. vanes | Minimum vane height [mm] |
|---|---|---|
| **VD 3** | 3 | control every 1000 h – replace when the height is 19mm |
| **VD 6 – VD 8** | 3 | control every 1000 h – replace when the height is 21mm |




## 6.2 Spare parts

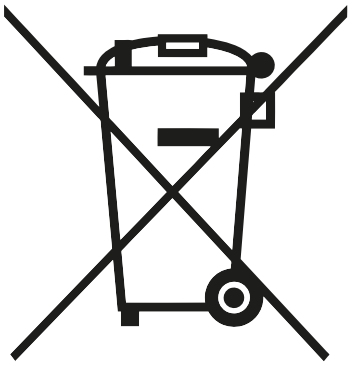
Pump sectional drawing and parts list are available upon request to PVR srl.

# 7. Troubleshooting

| Troubles | Possible Causes | Solution |
|---|---|---|
| Poor vacuum | 1. Dusty filter cartridge may cause drop in performance. | 1. Clean the filter cartridge with a blast of air. If necessary, replace with a new cartridge. |
| | 2. Presence of sucked dust or particles in the pump body. | 2. Disassemble the pump, clean it and replace the vanes if necessary. |
| | 3. Suction of liquid in the pump. | 3. Disassemble the pump and clean it inside. |
| | 4. Worn carbon vanes result in inner leakage. | 4. Replace new set of carbon vanes. |
| Pump blocked | 1. Presence of sucked dust or particles in the pump body. | 1. Disassemble the pump, clean it and replace the vanes if necessary. |
| | 2. Electrical issue. | 2. Check the electrical mains or the electric motor efficiency. |

# 8. De-commissiong and disposal

De-commissioning does not require any specific operation.
In case of disposition, separate the pump parts according to materials and proceed to their disposal respect-ing local regulations.



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