



## **User Manual**

Vacuum Pump PCE-RVP 180 / PCE-RVP 2200

# A Structure and Technical Data



| Model                    |       | Double Stage Rotary Vane Vacuum Pump |  |
|--------------------------|-------|--------------------------------------|--|
|                          |       | PCE-RVP 2200                         |  |
| Rated power supply       |       | 220V~50Hz/110V~60Hz                  |  |
| Flow Rate                | CFM   | 12/14.4                              |  |
|                          | L/min | 340/407                              |  |
| Ultimate Vacuum (Micron) |       | 15                                   |  |
| Motor Power (HP)         |       | 1 1/2                                |  |
| Intake Fittings          |       | 1/4" & 3/8" Flare                    |  |
| Dimensions (mm)          |       | 383×138×255                          |  |
| Oil Capacity (ml)        |       | 620                                  |  |
| N.W. (kg)                |       | 15.7                                 |  |
|                          |       |                                      |  |

## Technical Data

| Model                    |       | Single Stage Rotary Vane Vacuum Pump |  |  |
|--------------------------|-------|--------------------------------------|--|--|
|                          |       | PCE-RVP 180                          |  |  |
| Rated power supply       |       | 220V~50Hz/110V~60Hz                  |  |  |
| Flow Rate                | CFM   | 8/9.6                                |  |  |
|                          | L/min | 226/270                              |  |  |
| Ultimate Vacuum (Micron) |       | 150                                  |  |  |
| Motor Power (HP)         |       | 3/4                                  |  |  |
| Intake Fittings          |       | 1/4" & 3/8" Flare                    |  |  |
| Dimensions (mm)          |       | 383×138×255                          |  |  |
| Oil Capacity (ml)        |       | 780                                  |  |  |
| N.W.(kg)                 |       | 14                                   |  |  |

# **B**Applications and Features

## Applications

PCE-RVP vacuum pumps are used to create a vacuum by evacuating gas from a sealed vessel. The pumps are applicable for refrigeration maintenance to charge refrigerants of CFC, HCFH and HFC such as R12/R22/R134a and air extraction in printing machines, food processing, gas analysis, thermoplastic molding, etc.. In some cases they can be used as fore pumps for high vacuum equipment.

### Features

#### 1. High ultimate vacuum and high pumping speed

High ultimate vacuum and high pumping speed are achieved by taking integral cylinder construction with high precision.

#### 2. High efficient filtration

High quality filter element is used to reduce oil mist effectively.

#### 3. Comfortable and robust handle

Soft rubber lined handle, comfortable to carry and use.

#### 4. Elegant appearance

Unique and elegant appearance with square-shaped pump casing and fan cover.

## Preparation, Operation and Safety Precautions

## Preparation

1. Make sure the power supply matches the voltage and frequency marked on the pump nameplate.

Make sure the switch is in the OFF position before connecting electrical power to the pump.
Fill oil till the oil level reaches the middle position on oil sight glass. Low oil level will cause pump performance loss while high oil level may result in oil spraying.

## Operation

1. Before using the vacuum pump, remove the inlet cap and connect the pump to the sealed vessel (Check and make sure the thread of the pipe fits that of the inlet port). The length of the connecting pipe shall be as short as possible.

- 2. Check and make sure the air inlet is well sealed without any leakage.
- 3. Switch on the pump to start operation.
- 4. Close the valve between the pump and the sealed vessel when the operation is finished.
- 5. Switch off the pump and remove the power plug.
- 6. Remove the connecting pipe.

## Safety Precautions

#### WARNING!

To avoid personal injury, please carefully read and follow the instructions of this manual.

- Always wear goggles when handling air-conditioning refrigerant.
- ▲ Do not contact the refrigerant directly! Personal injury may occur.
- A Hot surface! Do not touch the oil tank or pump casing during pump operation.
- Risk of electrical shock! Make sure all equipment are properly grounded when connecting the power supply.
- A The pump is not allowed to operate more than 3 minutes while the inlet is exposed to the atmosphere.
- ▲ The ambient temperature for proper operation is 5°C 40°C.
- $\blacktriangle$  The voltage of the pump is 220V±10%/50Hz. The power socket must be grounded.
- A The pump body will be damaged to take out the refrigerant when the pump chamber is pressurized. It is recommended to use special equipment to do this work.

# D Maintenance, Warranty and Troubleshooting

## Maintenance

#### 1. Pump oil selection

It's important to select proper vacuum pump oil to achieve the desired ultimate vacuum. To ensure the best performance of the pump, it is recommended to use vacuum pump oil with low viscosity grade of 32 - 46.

**A** The pump oil must be replaced immediately while it is emulsified or contaminated.

#### 2. Oil changing procedure

1. Operate the pump for about one minute to warm it up before changing the oil;

2. Open the inlet when the pump is running so that the oil in the pump chamber is forced to flow out. Switch off the pump and remove the drain plug to drain the oil. Keep the drained oil in a suitable vessel and dispose of it properly;

3. Tilt the pump body towards the drain plug to completely empty the pump chamber;

4. Tighten the drain plug;

5. Remove the filling plug and add new pump oil;

6. Tighten the inlet cap, operate the pump for one minute and check the oil level. In case the oil level is below MIN position on oil sight glass, fill oil to a level between MAX and MIN position. Install the oil mist trap.

## <u>Troubl</u>eshooting

| Failure    | Possible Reason  | Remedy  |
|------------|--|---|
|            | 1. The air inlet cap is loose                                    | Tighten the air inlet cap   |
|            | 2. The rubber ring inside the air inlet cap is damaged           | Replace rubber ring   |
|            | 3. Oil is insufficient   | Fill oil to the middle line on oil sight glass  |
| Low vacuum | 4. Oil is emulsified or dirty                                    | Replace the oil   |
|            | 5. The oil inlet is blocked or the oil supply is<br>insufficient | Clean the oil inlet and the filter  |
|            | 6. The connecting pipe leaks                                     | Check and fix the pipe  |
|            | 7. The pump is improper  | Check the size of the vessel, recalculate and select a proper model                         |
|            | 8. The service time of the pump is so long that parts are worn   | Check and repair, or replace the pump   |
| Oilleak    | 1. Oil seal is damaged   | Replace the seal  |
| Officar    | 2. Oil tank connections are loose or damaged                     | Check and repair, or replace the pump   |
| 0.1        | 1. Too much oil inside the pump                                  | Drain oil to the middle line on oil sight glass   |
| Oil spray  | 2. Pressure at inlet remains high for a long time                | Choose a pump with higher pumping speed   |
|            | 1. Oil temperature is too low                                    | The air inlet is exposed to the atmosphere, repeatedly start the motor or heat the pump oil |
| Difficult  | 2. Motor or power supply is defective                            | Check and repair  |
| startup    | 3. Foreign objects enter the pump                                | Check and repair  |
|            | 4. Voltage is too low  | Check the voltage   |

#### Note:

1. If the problem is still not fixed, please contact your local dealer or send the pump to a professional repair center to find out a solution.

2. We reserve the right to modify any information including design and technical data in this manual without prior notice.

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### <u>Dispos</u>al

For the disposal of batteries in the EU, the 2006/66/EC directive of the European

Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose.

In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law.

For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations.

If you have any questions, please contact PCE Instruments.





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