VacuumChambers.eu

Vacuum set operating manual

BEFORE USING, PLEASE READ THIS OPERATING MANUAL. Keep the manual for possible future use, as it may always be necessary to remember the information contained in the manual, and it must be provided with the device in the event of reselling the machine or changing the user.

WARNING! In order to avoid the risk of injuries and accidents, as well as to increase work efficiency and prevent premature failure of the device, read all warnings, safety instructions and paragraphs marked with the symbol: ⚠

Range of applications

The vacuum chamber is a sealed tank inside of which it is possible to create a low pressure environment by the suction of contained gases by the vacuum pump.

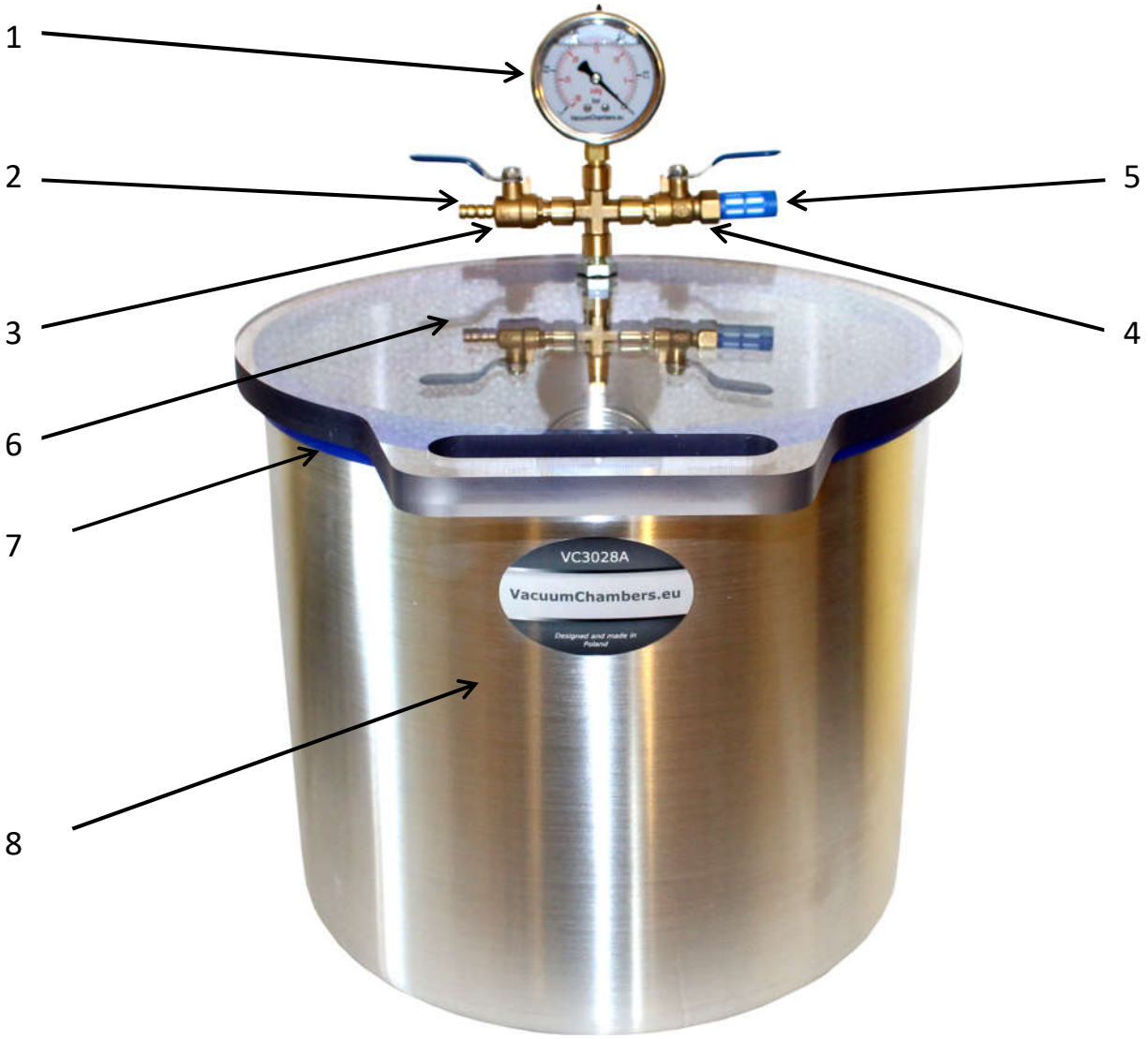
Vacuum sets are used in the process of degassing casting materials such as silicone, resin, gypsum and the process of impregnation of wood and other porous materials.

The vacuum set is operated in the following conditions: ambient temperature between +5°C and +40°C, air humidity up to 80% at 20°C.

Properties of the vacuum chamber

The vacuum chamber body is made of aluminum, steel powder painted or stainless steel depending on its type. The lid of the chamber is made of thick polycarbonate or tempered glass. The tank is provided with a silicone seal which is durable and has a low susceptibility to mechanical deformation. Excellent transparency of lid allows observation of the degassing process. The two ball valves allow you to adjust the degassing process, and the mounted vacuum gauge indicates current vacuum in the chamber. The chamber is equipped with an intake air filter, which effectively prevents dirt getting into a degassing material. The chamber is attached to the pump with a barb, on which is fitted a reinforced hose with an internal diameter of 8 mm and a length of 1.5 m. The whole product is made from materials of the highest quality and a branded thread sealant.

Elements of the vacuum chamber

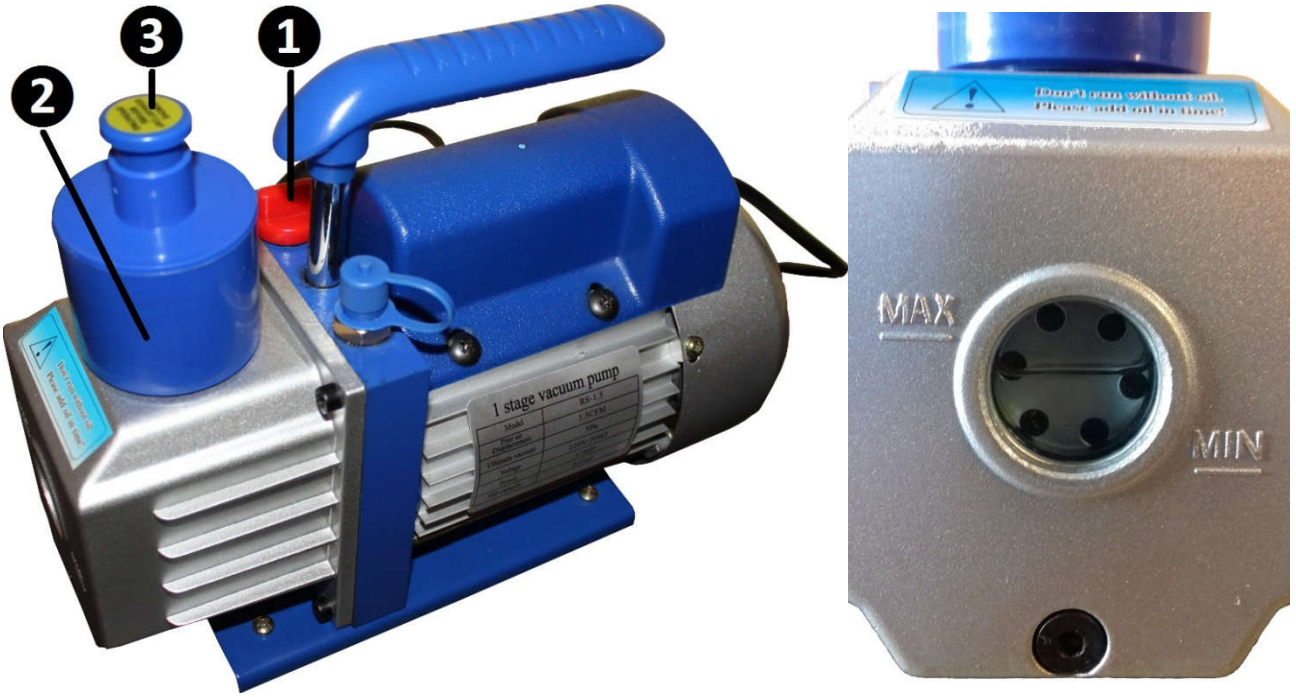


Sample picture

1. Vacuum gauge
2. Barb for 8mm hose
3. Exhaust air valve
4. Intake air valve
5. Air filter
6. Lid
7. Silicone gasket
8. Tank

Before the first use

- Fill the vacuum pump with the oil provided with the set. To do that, place the pump on the flat, horizontal surface, unscrew ❶ the red plug and pour the oil through the oil feed hole. For some models of pumps (when there is no red cap), the oil should be poured through the hole in the pump housing after ❷ the air filter (blue cylinder) has been unscrewed. Oil pour gradually at the same time control the oil level by observing the oil sight glass.



Elements of the vacuum pump and correct oil level

The pump delivered to the client is never filled with oil. A little amount of oil in the oil sight glass indicates only the fact that the pump was tested before the shipment. The pump must necessarily be filled with oil before use.

- Remove ❸ the plug protecting the air filter placed on the exhaust of the vacuum pump. Not applicable to the VP1RS-0.5 model.

- Screw the connector tighten in the pneumatic hose to the vertical fitting on vacuum pump. Screw the connector gently until the resistance is felt, using wrench.

- Put the spare end of the pneumatic hose on the barb of the ball valve in the chamber. This connection secure using a worm drive hose clip.

- Remove the green plug of the rubber plug on the vacuum gauge.

- The diffuser disperses the airflow getting into the chamber while balancing the vacuum. It prevents casting materials from spilling inside the chamber. This accessory should be screwed manually (not using any tools) onto the valve cluster from the internal side of the lid. The diffuser is not included as a standard accessory to all the vacuum sets.

User manual

- Place degassing material in the additional container into the chamber.
- Place the lid on the chamber. Make sure it's placed centrally on the tank.
- Switch the intake air valve to the OFF position (perpendicular to the valve).
- Switch the exhaust air valve to the ON position (parallel to the valve).
- Turn on the vacuum pump.
- In the first phase of the suction it may be necessary to press the lid to the tank until the increasing vacuum in the chamber is noticed.
- At the time of degassing casting products significantly increase their volume, note that opening the intake air valve prevents leakage of these products when too small container is used.
- Degassing should continue until the degassing material stops increasing its volume and rapidly drops and reduces its volume. The material will have a homogeneous, clear appearance.
- Before turning off the pump, close the exhaust air valve.
- Turn off the vacuum pump.
- Slowly open the intake air valve to balance pressure inside a chamber. After this step, lid can be removed.
- The process above can be repeated for the filled forms in order to obtain the best results

Notes about use

- Proper work of the vacuum chamber can only be guaranteed by using a vacuum pump which allows to achieve a vacuum of at least 0.1mbar (10Pa). It is recommended to use vacuum pumps tested and recommended by VacuumChambers.eu.
- Before starting work, make sure that the oil level in the pump is suitable. The pump can't work without oil (possible seizing of the pump) or with its excessive amount (possible oil splashing at the pump outlet).
- In case of using the vacuum pumps without the protection against oil return (one-way solenoid valve or mechanical valve), disconnect the pump from the chamber after reaching the required vacuum. All VacuumChambers.eu pumps are equipped with one-way valve.
- When operating vacuum pumps that do not come from the VacuumChambers.eu offer, please refer to the operating instructions supplied with the pump by the manufacturer
- Casting products placed in the chamber should be placed in an additional container that is large enough to avoid the spillage inside of the chamber.
- The vacuum gauge with cut rubber plug shouldn't be rotated downwards as it can cause glycerin leaking.
- The chamber lid should only be taken off after the pressure in the chamber is balanced. In the case of a very strong lid suction, waggle the lid from side to side, while the other hand gently hold the gasket Raising the lid quickly can cause ripping off the gasket. Especially in the case of new silicone gaskets there may be a occurrence of its strong adherence to the lid. It is recommended to protect the gasket surface with, for example by technical talc.
- Chambers with polycarbonate lid are not designed for wood stabilization or to work with alcohol, ethanol, acetone and monomers or polymers based on acrylic. For these purposes, we recommend using chambers with tempered glass lid.
- If you use a vacuum chamber for degassing the aggressive resins, additional filter should be placed between the chamber and the pump, in case if degassing exceeds more than 5 minutes. Not using a filter can lead to the pump damage, which is not subject to warranty later.
- The vacuum pump must always be set below the vacuum tank.
- The time of continuous operation of the vacuum pump shouldn't exceed 15 minutes.
- Oil change in the vacuum pump should be carried out every 20 work-hours. One of the symptoms of the need to replace oil is not reaching the maximum vacuum. Turbid and dark color oil should be replaced with a new one.
- In the case of using a vacuum set for processes that cause strong contamination of the oil, for example wood stabilization, it is recommended to pour the oil after each process. The poured oil can be re-used as long as it has returned to its original properties. Failure to adhere to this point may cause corrosion and accelerated wear of pump mechanisms.
- Old oil must be drained entirely from the vacuum pump. To do this, unscrew the drain plug located below oil sight glass.

WARNING! Safety Instructions

- Perform servicing and maintenance of the vacuum kit periodically.
- Before each use of the vacuum set, it is necessary to check its technical condition, in particular the supply cable of the vacuum pump, as well as the technical condition of the tank.
- Don not put any additional weight on the lid of the chamber, do not set any vacuum pumps or other items that are not a part of the vacuum system on it.
- The lid must be properly placed on the tank. It is not permissible for the gasket to extend beyond the outline of the lid at any place. This situation can lead to a sudden unsealing of the chamber.
- In the case of lid cracking immediately exclude it from use.
- In the event of cracking, abrasion or other mechanical damage to the gasket, immediately exclude it from use.
- In the case of deformation or any other mechanical damage of the tank immediately exclude if from use.
- Do not apply additional forces on the chamber wall, for example by setting it on the grips, as this may cause deformation.
- Do not move, do not transport chambers being under vacuum.
- Some parts of the vacuum pump get very hot during operation. To prevent burns, never touch the body and pump motor.
- Never put fingers or other objects inside the pump impeller cover. Keep your hair, clothing and gloves away from moving parts.
- Do not expose the device to rain or excessive moisture.
- Do not place live organisms in vacuum tanks.
- Keep children and animals away from the operating area of the device.
- During work, use personal protective equipment: face shields, protective gloves, clothing and footwear.
- Be foreseeable, watch what you are doing, and be reasonable when using the device. Do not use the device when you are tired or under the influence of drugs, alcohol or medication.

Maintenance

Vacuum chamber must be kept clean and the pneumatic components must be taken care of so that the extraneous objects don't get into them and as a result block and damage the chamber.

The chamber tank can be cleaned with water and a light detergent like the liquid dishwashing detergent. Polycarbonate lid of the chamber should be cleaned only by using a soft cloth moistened with warm water. Using detergents to clean polycarbonate lid may cause fogging or scratching. Glass lid may be cleaned with any detergents, unless they cause it to be scratched.

Do not clean the vacuum system with flammable liquids, solvents or by spraying it with a stream of water.

Warranty

VacuumChambers.eu guarantees that the vacuum set will be operational and free of defects for a period of 12 months from the date of purchase. In the event of a breakdown during this period, VacuumChambers.eu will repair or replace any damaged system element on the terms described in the warranty card included in the kit.

This limited warranty does not cover damage to the system caused by improper use, maintenance or use not in accordance with this manual. Any use of the device which is not in accordance with the intended purpose given above is forbidden and will void the warranty and the manufacturer's liability for any resulting damage. Any modifications of the device made by the user release the manufacturer from liability for damage and damage caused to the user and the environment. Proper use of the device also applies to maintenance, storage, transport and repair.

VacuumChambers.eu is not liable for damages, nor does it cover them under the warranty, for any kind of losses resulting from the breakdown of this product. In the case of a claim, VacuumChambers.eu's sole responsibility is to accept a return or exchange of the product itself.