

WÖHLER

**Wöhler VP 400
Vacuum pump**



Best.-Nr. 25611- 2025-01-10

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1 General information

- 1.1 Information on the operating instructions** These operating instructions enable you to operate the Wöhler VP 400 vacuum pump safely. Keep these operating instructions in a safe place for future reference.

We accept no liability for damage caused by failure to observe these operating instructions.

- 1.2 User group** The Wöhler VP 400 vacuum pump may only be used for its intended purpose by qualified refrigerant service technicians. These persons must be trained in the handling of refrigerants and personal protective equipment, as well as in the handling of disposal containers, filling of systems, leak detection and proper disposal. All work on pressurized appliances must be carried out by persons who have sufficient knowledge and experience in handling these appliances and who are aware of the risks and requirements associated with the use of pressurized appliances.

- 1.3 Notes in the operating instructions**



WARNING!

Indicates instructions which, if ignored, could result in injury or death.



ATTENTION!

Indicates dangers which could result in damage to the appliance or objects.



NOTE!

Highlights tips and other useful information.

1.4 Intended use The Wöhler VP 400 vacuum pump is intended for use in refrigeration technology with common refrigerants. The Wöhler VP 400 vacuum pump may only be used for evacuating refrigerant systems after the refrigerant has been removed from the system.

An additional installation aid (e.g. Wöhler MR 400) is required for evacuation.

1.5 Basic equipment

Device	Scope of delivery
Wöhler VP 400 vacuum pump	Wöhler VP 400 vacuum pump
	3 connection hoses (1/4" SAE thread)
	330 ml vacuum pump oil

1.6 Waste disposal



Electronic devices must not be disposed of with household waste, but must be disposed of in accordance with the applicable environmental regulations.

Damaged batteries are considered hazardous waste and must be taken to the designated collection points for disposal.

1.7 Address

Wöhler Technik GmbH

Wöhler-Platz 1

33181 Bad Wünnenberg

Phone: +49 2953 73-100

E-mail: info@woehler.de

2 Warnings



WARNING!

Connections:

The connections to the refrigeration system and to the vacuum pump can only be shown here as examples. They depend on the type of system and the conditions on site, so the specialist personnel must decide on site.

Area of application:

Never use the Wöhler VP 400 vacuum pump in environments where there is a risk of explosion. The working environment should always be well ventilated:

- Do not use in the vicinity of sewage pipes.
- Do not use in poorly ventilated, enclosed areas.
- Do not use near gasoline, acetylene or other flammable gases.
- Do not use for pumping hydrocarbons or flammable substances.
- Do not use near flames or sparks.

Only use the Wöhler VP 400 vacuum pump within the specified temperature range (+5-40°C).

Personal protective equipment:

Do not allow refrigerant to come into contact with the skin. The low boiling point of some refrigerants can cause frostbite. In the event of contact with the skin, remove affected clothing immediately and rinse the wet skin area with plenty of water. Then consult a doctor.

Wear safety goggles and protective gloves. Wear hearing protection for long periods of work.

Do not touch the housing of the vacuum pump during operation.

Use of accessories:

There is a risk of fire due to overheating if an extension cable is used. If an extension cable must be used, the wire cross-section should be at least 1.5 mm² and the cable length should not exceed 20 m.



ATTENTION!

Set up the Wöhler VP 400 vacuum pump horizontally during work, otherwise the compressor may vibrate, noise may increase and parts may wear.

3 Specification

Description	Specification
Power supply	230 V / 50 Hz
Rated current	3 A
Maximum current	6 A
Performance	750 W
Operating temperature	+5 to 40 °C
Flow rate	8.5 CFM 241 l/min
Final vacuum	15 micron / 2 Pa
Max. oil quantity	600 ml
Weight	11 kg
Connection thread	1/4" SAE, 3/8" SAE, 1/2" SAE
Dimensions	349 x 139 x 333 mm
Approved refrigerants	R220 <u>Cat. A1:</u> R22, R134A, R410A <u>Cat. A2L:</u> R1234yf, R1234ze, R32 <u>Cat. A3:</u> R1270 (Pro- pane), R290 (Pro- pane)

4 Device parts and function

Wöhler VP 400 vacuum pump



Part	Function
1	Handle
2	Power connection with on/off switch
3	Vacuum meter
4	Housing
5	Connection thread 3/8" SAE, 1/2" SAE and 1/4" SAE
6	Base
7	Oil drain plug
8	Oil level indicator

Part	Function
9	Oil tank
10	Oil filler cap (with air outlet function and oil vapor separator)
11	Gas ballast valve

5 First steps

5.1 Before switching on



ATTENTION!

The vacuum pump must not be put into operation without vacuum pump oil, as this could damage the vacuum pump. Before commissioning, first fill the vacuum pump with the vacuum pump oil supplied.

- Check that the power supply matches the voltage and frequency specified on the vacuum pump's rating plate.
- Make sure that the switch is turned off before connecting the vacuum pump to a power source.
- Check the oil level before using the vacuum pump. Use the oil level indicator (8) for this.

5.2 Selection of the vacuum pump oil

The nature and type of vacuum pump oil used will affect the ultimate vacuum level of the vacuum pump. It is recommended to use the Wöhler high-performance vacuum pump oil supplied.



ATTENTION!

Change the vacuum pump oil in good time if the oil is contaminated or emulsified.

5.3 Filling with oil

- Unscrew the oil filler cap (10) and fill in the vacuum pump oil.
- Pay attention to the oil level line on the oil level indicator (8). The oil level should be half-way between the minimum and maximum mark. The maximum oil quantity is 600 ml.



NOTE!

Fill the vacuum pump oil slowly so that no oil is spilled.

- Screw the oil filler cap (10) back on.

5.4

**Switching on
the vacuum
pump**

- Now connect the power supply by setting the on/off switch to the on position.
- The vacuum pump starts to run.
- One minute after the vacuum pump has started running, check the oil level in the oil level indicator. If the oil level is too low, switch off the pump and top up with vacuum pump oil (see chap. 5.3).

**NOTE!**

When the vacuum pump is running, the oil level should be halfway between the min and max mark. If the oil level is too low, the performance of the pump is reduced. If the oil level is too high, oil mist is ejected.

A brief discharge of oil mist is normal when starting up for the first time.

6 Evacuation

Preparation for evacuation

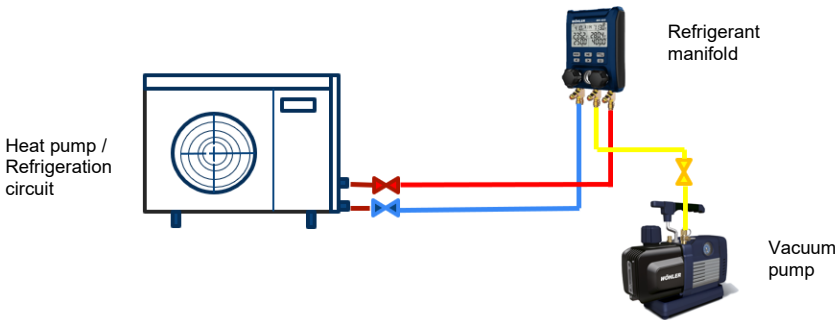


WARNING!

If you use the refrigerant manifold to access an active refrigeration circuit, you must evacuate the hoses before connecting them to a refrigeration system.

Before evacuation with the vacuum pump, the refrigerant must be removed from the system using a suction station.

- Unscrew one of the caps on the connection thread.
- Connect the refrigerant manifold with hoses to the refrigeration circuit and to the Wöhler VP 400 vacuum pump.
- Check the tightness of all connected hoses and check the tightness of the other closed connection thread.



Start evacuation

- Switch on the vacuum pump. The vacuum pump starts working automatically.



WARNING!

The housing can become hot during operation. Do not touch the housing during operation.

- When the pump is put into operation, open the oil filling head to release steam or condensable gas. Close the oil filling head again.

- After the vacuum pump has been running for about a minute, check the oil level in the oil level indicator. The oil level should always be halfway between the max and min markings. Top up the oil if necessary.
- The oil filler cap can drain vapors and condensable gases to clean the pump oil and prevent the vacuum pump from being damaged by water vapor or contaminated condensable vapors.

**ATTENTION!**

To prevent overheating and oil leaking from the oil filter, the oil filler cap must not be exposed to the ambient air for longer than 3 minutes while the pump is running.

End evacuation

- When the desired vacuum is reached, close the valve between the vacuum pump and the refrigeration circuit.
- Switch off the vacuum pump.
- Remove the hose from the vacuum pump and close the connection thread with the corresponding cap to prevent dirt from entering the vacuum pump.

7 Maintenance

- 7.1 Cleaning the vacuum pump**
- Clean the housing of the vacuum pump with a damp cloth if it is dirty.
- 7.2 Keeping connections clean**
- Keep the screw connections clean and free of grease. If necessary, clean them with a damp cloth.
- 7.3 Changing vacuum pump oil**
- To ensure that the vacuum pump is in a hot state, the vacuum pump must run for about 1 minute before changing the oil.
 - While the vacuum pump is running, a connection thread (5) should be opened at the same time so that the oil in the pump chamber is pressed outwards. After switching off the pump, open the oil drain plug (7). Pour the used oil into a suitable container.
 - When the oil stops flowing, tilt the pump housing to completely remove the remaining used oil.
 - Tighten the oil drain plug (7).
 - Unscrew the oil filler cap (10) and fill with new pump oil (see Chap. 5.3).
 - Screw the oil filler cap (10) back on.
 - Dispose of used oil in accordance with local regulations.

8 Troubleshooting

Problem	Possible cause	Measure
The pump does not achieve a sufficient vacuum.	The cap of the connection thread is leaking.	Tighten the cap on the connection thread.
	The sealing ring in the cap of the connection thread is damaged.	Replace the sealing ring.
	There is not enough vacuum pump oil in the oil tank.	Top up with oil.
	The vacuum pump oil is emulsified or contaminated.	Change the vacuum pump oil.
	The oil filler/outlet cap is blocked or the oil supply is insufficient.	Clean the oil filler/outlet cap and the filter screen. The filter screen is located in the oil filler cap.
	The pump system is leaking.	Check the pump system for leaks.
	The pump is unsuitable.	Select a suitable pump based on the container to be evacuated.
	The pump spare parts are worn out after long use.	Repair the pump or replace the pump if necessary.
Oil injection	The oil seal is damaged.	Replace the oil seal.
	The oil housing connections are loose or damaged.	Tighten the screws and replace the sealing ring in the oil housing.
Oil leakage	Too much oil has been filled in.	Drain off the excess oil.
	The pressure in the connection thread was very high for a long time.	Select a suitable vacuum pump.
The vacuum pump is difficult to start	The oil temperature is too low.	Move the vacuum pump to a warmer environment.
	The motor or power supply is not working properly.	Check and repair the vacuum pump.
	A foreign object has entered the vacuum pump.	Check and clean the vacuum pump.
	The supply voltage is too low.	Check the supply voltage.

9 Warranty and service

9.1 Warranty

Every Wöhler VP 400 vacuum pump is tested in all its functions and only leaves our factory after a thorough quality check.

If used correctly, the warranty period for the Wöhler VP 400 vacuum pump is twelve months from the date of purchase.

The warranty does not apply if repairs and modifications have been carried out on the appliance by a third party who is not authorized to do so.

9.2 Service

SERVICE is very important to us. That's why we are also there for you after the warranty period.

- You send the vacuum pump to us, we repair it within a few days and send it to you with our parcel service.
- You will receive immediate help from our technicians on the phone.

10 Accessories

Vacuum pump oil for Wöhler VP 400 vacuum pump

Order no. 10305

11 Declaration of conformity

The manufacturer:

WÖHLER Technik GmbH
Wöhler-Platz 1, D-33181 Bad Wünnenberg

declares that the product:

Product name: Wöhler VP 400 vacuum pump

complies with the essential protection requirements laid down in Directives 2006/42/EC Machinery Directive, 2014/35/EU Low Voltage Directive, 2014/30/EU EMC Directive of the European Parliament and of the Council on the harmonization of the laws of the Member States.

The following standards were used to assess the product with regard to the above directives:

EN ISO 12100:2010
EN ISO 1012-2:1996+A1:2009
EN IEC 61000-6-1:2019
EN IEC 61000-6-3:2021
EN 60335-1:2012+A15:2021

Bad Wünnenberg, 10.01.2025



Dr. Michael Poeplau, Managing Director