

# **VEVOR<sup>®</sup>**

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## **VACUUM PUMP OPERATING MANUAL**

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# VEVOR®

TOUGH TOOLS, HALF PRICE

## VACUUM PUMP

MODEL: KQ-1K



CE

### NEED HELP? CONTACT US!

Have product questions? Need technical support? Please feel free to contact us:

✉ [CustomerService@vevor.com](mailto:CustomerService@vevor.com)

This is the original instruction, please read all manual instructions carefully before operating. VEVOR reserves a clear interpretation of our user manual. The appearance of the product shall be subject to the product you received. Please forgive us that we won't inform you again if there are any technology or software updates on our product.



This product is subject to the provision of European Directive 2012/19/EU. The symbol showing a wheellie bin crossed through indicates that the product requires separate refuse collection in the European Union. This applies to the product and all accessories marked with this symbol. Products marked as such may not be discarded with normal domestic waste, but must be taken to a collection point for recycling electrical and electronic devices.

## INTRODUCTION

Welcome to the user manual for your vacuum pump. This vacuum pump is a versatile tool that can be used in a wide range of applications. It's particularly well-suited for tasks like HVAC vacuuming, epoxy and silicone degassing, wood stabilization, and creating milking machines. Additionally, this pump is also commonly used in medical appliances, printing machinery, vacuum packing, gas analysis, and hot-forming plastics. Its powerful and reliable performance makes it a valuable tool for professionals and DIY enthusiasts alike.

The vacuum pump works by creating a vacuum or negative pressure, which is used to remove air and other gases from an enclosed space. This process can be used for a range of purposes, including reducing air bubbles in resins or other liquids, evacuating HVAC systems, stabilizing wood by removing air from its cells, and many others.

This user manual is designed to help you understand how to operate and maintain your vacuum pump effectively and safely. We will explain the key features and components of the pump. Additionally, we will provide important safety guidelines to help you avoid potential hazards and ensure the proper handling of your vacuum pump.

Please read this user manual carefully before operating your vacuum pump. With proper use and maintenance, your vacuum pump can provide

you with years of reliable service and help you achieve your desired results. If you have any questions or concerns about the operation of your vacuum pump, please consult this manual or contact our customer support team for assistance.

## **SAFETY PRECAUTIONS**

### **Warning about potential hazards and how to avoid them**

Your vacuum pump can pose potential hazards if it is not used properly. The most common hazards include electrical shock, fire, or explosion due to pumping flammable, explosive, or poisonous gases, or gases that can corrode metals and exert chemical charges. To avoid these hazards, always read and follow the instructions in this manual carefully before using your vacuum pump.

### **Instructions on how to handle the vacuum pump safely**

To ensure the safe handling of your vacuum pump, please follow these guidelines:

- ◆ Never operate the pump without oil, as this can damage the pump and create potential hazards.
- ◆ The temperature of the pumped gas should not exceed 80°C, and the environment temperature should be around 5°C to 60°C. This will help prevent damage to the pump and ensure safe operation.
- ◆ Do not use the vacuum pump as a compression pump or conveyer pump, as this can cause damage to the pump and create potential hazards.
- ◆ The operating voltage for the pump is between 192 to 248V, 50HZ. Use a grounded outlet to prevent electrical shock.
- ◆ When unplugging the pump, pull the plug. Do not unplug the unit by pulling on the wire, as this can cause damage to the cord and create potential hazards.
- ◆ Keep the electrical cord free from all shop equipment, and do not let the pump hang by the power cord to avoid damage to the cord and

prevent potential hazards.

- ◆ Do not use a damaged plug or outlet, as this can cause electrical shock or fire.
- ◆ Do not plug or unplug the unit with wet hands, as this can cause electrical shock.
- ◆ Do not plug the unit in, unplug it, or use the switch if there are any flammable or explosive gases present. Always unplug the unit before disassembling it to avoid potential hazards.

### **Guidelines for handling hazardous materials**

Your vacuum pump should not be used to pump flammable, explosive, or poisonous gases, or gases that can corrode metals and exert chemical charges. Additionally, do not pump gas containing any dust or moisture. If you need to handle hazardous materials, use proper personal protective equipment and follow all guidelines for safe handling and disposal of these materials.

## **GETTING STARTED**

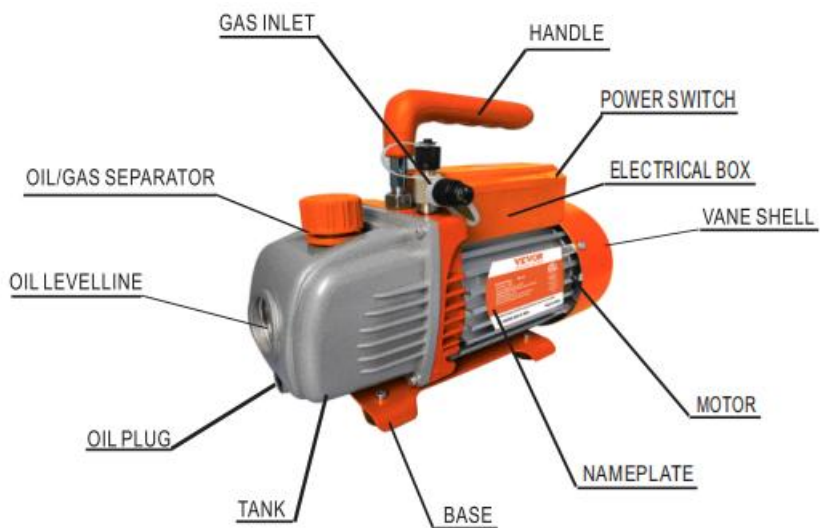
### **Introducing the key features of the pump**

- ◆ Anti-flow design: The vacuum pump is designed with a gas inlet passage that prevents oil from flowing back, which helps prevent contamination of the container and hoses.
- ◆ Integrated body structure: The pump body is constructed with an integral cylinder block, which helps achieve a limiting vacuum and makes the pump more durable.
- ◆ Integral handle: The handle is designed to be firm and comfortable, with high-pressure rubber and a metal insert for improved grip and control.
- ◆ Large starting torque: The pump is able to start normally even in low temperatures (5°C) and low voltage (180V), making it a reliable choice for use in various conditions.

## Explanation of the vacuum pump's components

Model		KQ-1K	
Voltage		120V/60Hz	220-240V/50Hz
Free Air Displacement	CFM	3.5	3.5
Ultimate Vacuum	Pa	8	8
Motor	HP	1/5	1/5
Intake Fitting		1/4"SAE male; 1/2"ACME male;	1/4"SAE male; 3/8"SAE male;
Oil Capacity	ml	250	250
Dimensions	mm	290*120*220	290*120*220
Net Weight	Kg	5.5	5.4
Applicable Refrigerant		R134a, R22, R410A, and any other A1 refrigerants	

## Package contents and specification



### Package list

3.5 CFM vacuum pump x 1

250ml oil bottle x 1

User manual x 1

## Steps for setting up the vacuum pump

Following these steps will help you set up your vacuum pump correctly and ensure its safe and efficient operation.

- ◆ Before use, remove the oil filling port/oil gas separator and fill it with the recommended vacuum pump oil. Check the oil level before use to ensure it's not lower than the oil-level line. Do not run the pump with a low oil level.
- ◆ Connect the container to be pumped to the gas inlet using a short, sealed hose that's free of dust, dirt, and heavy condensation. Check for leaks before operating the pump.
- ◆ If your vacuum pump comes with an exhaust cap, remove it.
- ◆ Plug in the power supply and turn on the switch.
- ◆ After use, unplug the vacuum pump, remove the connecting hoses, and cover the exhaust cap (if it has one) to prevent oil spills. Also, cover the oil plug to keep the oil clean and prevent dirt from entering the vacuum pump.

## INSTALLATION AND MAINTENANCE OF VACUUM PUMP

### Installation

To ensure the proper functioning of the vacuum pump, follow these installation guidelines:

- ◆ The pump should be positioned horizontally and in a dry, ventilated area free of dust and other contaminants.
- ◆ Maintain a clearance of at least 10cm (4 inches) around the pump to ensure proper airflow.
- ◆ If you are permanently mounting the pump, remove the rubber pads from the bottom of the base, and use the existing threaded holes to mount the unit with ST4.2 screws.
- ◆ When permanently mounting the pump, be sure to maintain proper clearances, especially at the air intake at the end of the vane shell.



- ◆ If a special electromagnetic valve is needed, it can be installed on the gas inlet.

### **Connecting the vacuum pump to the system being evacuated**

By following these guidelines and steps, you can effectively control the vacuum pressure and safely connect the vacuum pump to the system being evacuated.

- ◆ Identify the gas inlet on the vacuum pump and the gas outlet on the system being evacuated.
- ◆ Use a short, sealed hose to connect the gas inlet on the vacuum pump to the gas outlet on the system being evacuated. Make sure the hose is free of dust, dirt, and heavy condensation.
- ◆ Check for any leaks in the connection before starting the pump.

### **Maintenance**

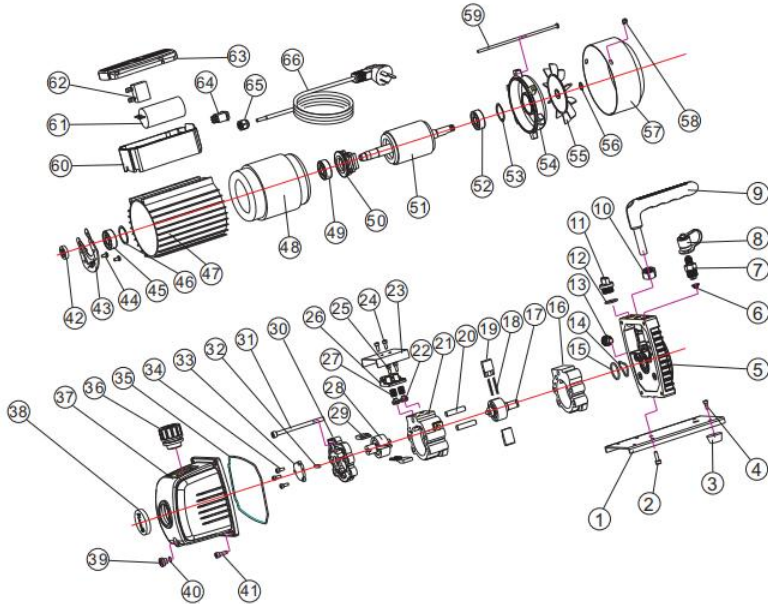
Proper maintenance of the vacuum pump is essential to ensure its optimal performance. Here are some maintenance guidelines:

- ◆ Keep the pump clean and free from foreign matter.
- ◆ Keep the oil filled to the oil level, and never let the pump run without oil.
- ◆ Keep the oil clean. If the oil becomes dirty, muddy, or water or other volatile substances get in, it will affect the performance of the pump, and the oil should be replaced. To replace the oil, start the pump and run it for about 30 minutes to make the oil thin. Then stop the pump and drain the oil from the oil drain plug. Open the gas inlet and run the pump for 1-2 minutes while adding a small quantity of clean oil to the gas inlet. This is to replace the residual oil from the inside of the pump. After ensuring that the pump is clean, put the drain plug back in and fill the clean pump oil from the gas inlet to the oil level.
- ◆ To store the pump when not in use for long periods of time, cover the oil cap and exhaust cap (if applicable) and store it in a dry place.
- ◆ Repair of the pump should only be done by a qualified service technician.

## TROUBLESHOOTING GUIDE

Problem	Possible Cause	Correction
Low Degree Of Vacuum	1. Insufficient oil	1. Add oil up to the oil level line
	2. Dirty oil	2. Replace the oil
	3. Oil intake is blocked	3. Clean the oil intake or filter
	4. Hose or gas inlet is clogged	4. Check the connecting pipes
	5. Pump is unsuitable for the application	5. Get a suitable pump for the application
Oil Leaks	1. Oil seal is damaged	1. Replace the oil seal
	2. Housing gasket is loose or worn out	2. Replace the housing gasket
Oil Spray	1. Too much oil	1. Adjust the oil level to the recommended level
	2. Gas inlet pressure is too high or too much gas has been pumped	2. Use a bigger pump or reduce gas inlet pressure
Starting Difficulty	1. Oil temperature is too low	1. Attempt to start the pump multiple times to warm the oil
	2. Electrical malfunction	2. Check and repair any electrical issues
	3. Foreign matter is in the pump	3. Check and remove any foreign matter from the pump system

## EXPLODED DIAGRAM OF THE PUMP



01	Baseboard	18	Spring	35	O-ring	52	Bearing
02	Screw	19	Front-pump vane	36	Oil gas separator	53	Waveform gasket
03	Rubber feet	20	Straight pin	37	Oil tank	54	Motor back cover
04	Screw	21	Back-pump stator	38	Oil level	55	Fan
05	Bracket	22	Exhaust valve core	39	Oil drain plug	56	Snap ring
06	Stainer	23	Cap board	40	O-ring	57	Fan cover
07	Inlet fitting	24	Screw	41	Screw	58	Screw
08	Inlet fitting cap	25	Screw	42	Oil seal	59	Screw
09	Handle	26	Valve set	43	Centrifugal plate	60	Junction box base
10	Nut	27	Valve core spring	44	Screw	61	Capacitor
11	Oil filling port	28	Back-pump rotor	45	Bearing	62	Thermal protector
12	O-ring	29	Back-pump vane	46	Bearing gasket	63	Junction box cover
13	Gas ballast fitting	30	Back cover	47	Motor cover	64	Switch
14	O-ring	31	Screw	48	Motor stator components	65	ply-yarn drill
15	O-ring	32	Oil pump vane	49	Bearing	66	Power cable
16	Front-pump stator	33	Oil pump cover	50	Centrifugal		
17	Front-pump rotor	34	Screw	51	Motor rotor components		

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