

Portable Vacuum Pump

User Manual



Read Carefully Before Use
Keep for Future Reference

Safety Information

Warning

- Read **ALL** these instructions carefully before use and keep them for future reference.

Provide these instructions to anyone who will use this device.

Provide these instructions with this device if it is ever given or sold to a third party.

Failure to do so may lead to property damage and personal injury.

- This device was designed to remove gas molecules from a sealed volume to create a partial or complete vacuum.

Any other use **NOT** specified herein could potentially pose risks and void **ALL** warranties stated or implied.

- These instructions are **ONLY** an introduction to this device.

For specifics on particular tasks, be sure to have the required knowledge and seek appropriate training as needed.

- **DO NOT** use this device while you are tired or under the influence of drugs, alcohol, or strong medication.
- **DO NOT** allow use by children under the age of **18**, anyone **WITHOUT** specialized training, persons unfamiliar with this device, or people whose physical or mental impairment precludes safe use.
- **ALWAYS** keep children, bystanders, and pets away during use.

Restrict access to your work area as needed.

- **ALWAYS** ensure that your work area is clean, bright, well-ventilated, and free of explosives or heat sources, especially when working on systems that contain refrigerants or other substances that pose the risks of fire, explosion, carbon monoxide poisoning, etc.
- Wear appropriate personal protective equipment (PPE) as needed.

Breathing, eye, and hand protection **ARE** required when you use this device for systems that contain refrigerants or other substances capable of generating harmful gases or causing burns, scalds, frostbite, etc.

Safety Information

- **DO NOT** operate this device if any component is damaged or shows any sign of malfunction.

Repair or replace problematic components before further use.

NEVER replace any components with nonidentical or unauthorized ones.

- For HVAC systems, **ALWAYS** turn it off **BEFORE** performing evacuation with this device.
- **DO NOT** deactivate this device by directly removing the battery, as such an abrupt power cut may damage the components or shorten their lifespans.
- It is recommended **NOT** to leave the battery on this device between uses, as this may result in unauthorized use, posing a series of potential risks.
- **NEVER** place the battery near heat sources or explosive or flammable gases.
- **NEVER** expose the battery to radiation or excessive pressure.
- **NEVER** disassemble or modify the battery.
- **ONLY** use the provided charger with the battery.
- **ONLY** charge the battery in locations with an ambient temperature between 32°F and 113°F (0°C to 45°C).
- If the battery is ever damaged, avoid **ALL** contact with it or any leaking fluid. Remove contaminated clothing and flush with copious amounts of water if contact accidentally occurs with the skin.

If contact accidentally occurs with the eyes, **IMMEDIATELY** flush them with copious amounts of water for at least 15 minutes while seeking medical attention.

- **DO NOT** get this device and its battery wet or operate them with wet hands or in highly humid environments.

DO NOT rinse the entire device or battery with tap water, immerse them completely in water, or expose them to rain or direct pressurized spray.

In the event of any signs indicating that any electrical component inside this device becomes wet, remove the battery **IMMEDIATELY** and wait for this device to completely dry **BEFORE** resuming use.

If the interior of the battery accidentally becomes wet, replace it with a new identical one.

Safety Information

- **ALWAYS** avoid **ALL** direct contact with the vacuum pump oil.

If contact accidentally occurs with the skin, remove contaminated clothing and flush with copious amounts of water.

If contact accidentally occurs with the eyes, **IMMEDIATELY** flush them with copious amounts of water for at least 15 minutes while seeking medical attention.

NEVER swallow the oil, which may cause **FATAL** problems.

- **DO NOT** run this device **WITHOUT** the provided vacuum pump oil or with its oil inlet left open.

ALWAYS maintain the oil level between the **MIN** and **MAX** height marks beside the oil window during use.

- Stay alert, watch what you are doing, and use common sense when using this device.
- If you begin to develop symptoms such as headaches, dizziness, or nausea during use, stop work and get fresh air **IMMEDIATELY**.

DO NOT continue work until better ventilation is provided for your work area.

This is especially important when you work on HVAC systems.

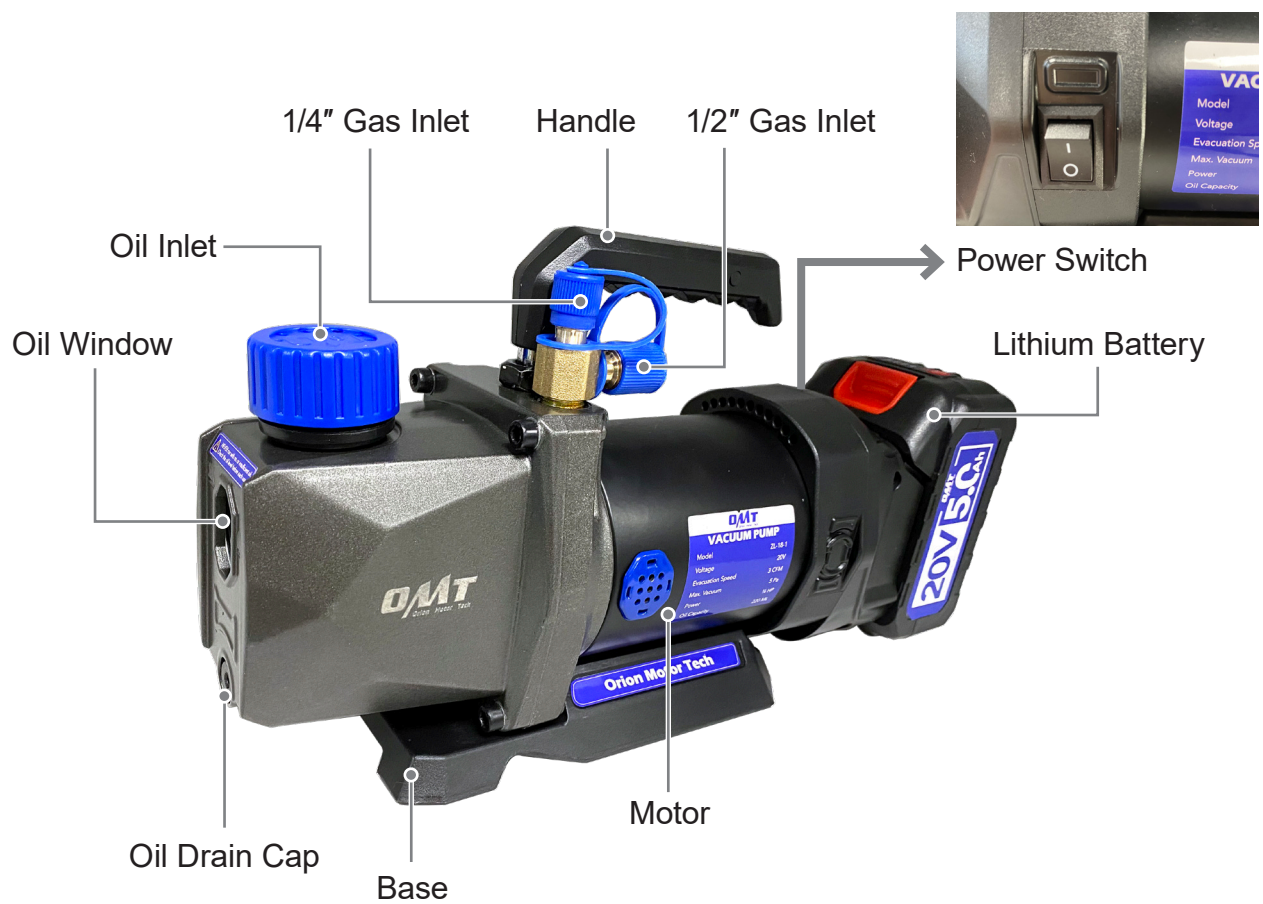
- **DO NOT** leave this device unattended during use.
- When working on refrigerant systems, use **EXTREME** caution when disconnecting hoses after use.

They may still contain some refrigerant under pressure.

- **DO NOT** maintain this device with harsh abrasives or caustic chemicals.
- **NEVER** disassemble this device.

NEVER modify its internal components **WITHOUT** professional guidance.

Product Diagram



Package List



No.	Item	Qty.	No.	Item	Qty.
A	Vacuum Pump	1	C	Vacuum Pump Oil	1
B	Lithium Battery	1	D	Battery Charger	1

Specifications

Model	ZL-18-1	
Charger Input Power	AC 100–240(V) 50/60 (Hz)	
Motor Power	1/4 hp	186 W
Battery Capacity	5000 mAh/90 Wh	
Battery Voltage	20 V	
Extraction Speed	3 cfm	0.09 m ³ /m
Max. Vacuum	5 Pa	
Oil Capacity	7.4 fl. oz.	1 c or 220 mL
Dimensions	13.8×7.9×10.2 (in.)	35×20×26 (cm)
Weight	9.5 lb.	4.28 kg

Installation

Warning

- *Make sure your surroundings **ARE** safe for using this device.*

Avoid operating in crowded, dark, or cluttered areas.

*Ensure **NO** explosives or ignition sources nearby.*

- *For optimal safety and performance, we recommend you take training **BEFORE** operating this device.*

Injury and failure could happen due to a lack of training.

- *If working on an HVAC system, check that it has been turned off **BEFORE** starting work.*

1. Place the vacuum pump on a level surface and make sure the oil drain is tightly closed by screwing its cap into place with an M4 hex wrench (not included).
2. Remove the pump's oil inlet cap by hand.
3. Add the provided oil until the oil window is covered between its **MIN** and **MAX** height marks.
4. Replace the cap.
5. Connect the 1/2" or 1/4" gas inlet to the system that needs evacuation using a hose and a quick coupler (not included) if needed.
6. (Optional) If your hose does not match the pump's gas inlets, attach suitable adapter to your hose.

Note: *Equip your hose with a vacuum gauge (not included) to measure the vacuum degree.*

Operation

 **Warning**

- Be sure that **ALL** connections **ARE** tightly secured.
- Put on necessary PPE **BEFORE** starting work.
- **DO NOT** leave the pump unattended while it is in operation.

1. Slide the lithium battery along the groove of the vacuum pump and snap it into place.



2. Flip the power switch to **I** to turn on the power.
3. Closely monitor the vacuum level through your micron gauge.
4. When your desired vacuum degree is reached, flip the power switch to **O** to turn off the pump.
5. Disconnect it from the system.

Operation

6. Remove the lithium battery by pressing the red button and sliding it out.



Note: Use power button on the portable power supply to check the battery power level.



If the battery is low, use the provided charger to charge.



Maintenance

- Remove the battery before any cleaning, maintenance, or repair.
- The exterior of the pump can be cleaned with a soft damp cloth. Do not use abrasive cleaners or caustic chemicals.
- When the oil turns turbid or its level falls near the bottom of the reservoir window, replace it using the following procedure:

 **Warning**

Make sure the remaining oil is warm. If you are unsure of your oil's temperature, connect to the power and turn on your pump, running it for about 10 minutes to heat the oil sufficiently. Turn off the pump and disconnect to the power before continuing.

1. Remove the oil drain cap using your M4 hex wrench (not included).
2. Grip the handle of the pump and tilt it down to drain the remaining oil into a suitable container.
3. Screw the cap into place and start filling it as instructed above.

 **Warning**

*Once the initial oil has been used up, **ONLY** use oil of equivalent weight (ISO 100 or SAE 30) as a replacement.*

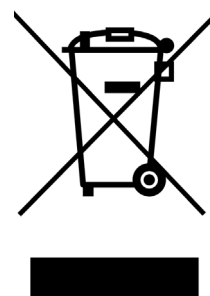
- **NEVER** drop the pump on hard or rough surfaces.
- If any part of the pump is damaged or worn, have it repaired or replaced before further use.
- Remove the lithium battery and store in a cool, dry, and clean place after each use.

Troubleshooting

Problems	Possible Solutions
The vacuum pump cannot be turned on.	Check the power of portable power supply. If it is out of power, charge it. If it is broken out, replace with a suitable new one.
	Move the pump to a warmer location, wait a while, and activate your pump.
The vacuum pump turns off automatically during use.	The thermal protector will deactivate your pump if its motor reaches 160°F (70°C). Wait about 15 minutes to let it cool down and restart your pump.

Disposal

Electrical products should not be disposed of with household products. In the EU and UK, according to the European Directive 2012/19/EU for the disposal of electrical and electronic equipment and its implementation in national laws, used electrical products must be collected separately and disposed of at the collection points provided for this purpose. Locations in Australia, Canada, and the United States may have similar regulations. Contact your local authorities or dealer for disposal and recycling advice.



Contact Us

Thank you for choosing our products! If you have any questions or comments, contact us at support@orionmotortech.com and we'll resolve your issue ASAP!

For a .pdf copy of the latest version of these instructions, use the appropriate app on your smartphone to scan the QR code to the right.

