Orion Motor Tech MPN1VPHAN01-LB

Orion Motor Tech 3.5 CFM Single Stage Vacuum Pump User Manual

Model: MPN1VPHAN01-LB

Product Overview

The Orion Motor Tech 3.5 CFM Single Stage Vacuum Pump is designed for efficient HVAC servicing and various industrial applications. It features a robust 1/4 hp all-copper motor capable of drawing systems down to 37.5 microns (5 Pa), making it suitable for refrigerants such as R12, R22, R134a, R410a, and R502.
Its durable construction includes a reinforced aluminum alloy casing for heat dissipation and corrosion resistance, an intake filter to protect against impurities, and a convenient oil sight glass for easy monitoring. The compact design and nonslip handle ensure portability and ease of use.

Image: The Orion Motor Tech 3.5 CFM Single Stage Vacuum Pump, showcasing its compact design and key components.

What's in the Box

- 1x 3.5 CFM Vacuum Pump
- 1x 1/4" to 3/8" Adapter
- 1x Vacuum Pump Oil (0.26qt)
- 1x Teflon Tape
- 1x Pair of Gloves
- 1x Instructions Manual (this document)

Specifications

Attribute	Value
Brand	Orion Motor Tech
Model Number	MPN1VPHAN01-LB
Flow Rate	3.5 CFM
Motor Power	1/4 hp (186W)
Ultimate Vacuum	37.5 Microns (5 Pa)
Voltage	115 Volts
Oil Capacity	0.24 qt (225 mL)
Item Weight	10.78 pounds
Product Dimensions	10.8 x 4.3 x 8.5 inches

Image: Detailed specifications and dimensions of the vacuum pump.

Setup

1. **Unpacking and Inspection**

   Carefully remove all components from the packaging. Inspect the vacuum pump and accessories for any signs of damage during transit. Ensure all items listed in the "What's in the Box" section are present.

2. **Adding Vacuum Pump Oil**

Before first use, or if the oil level is low, add the provided vacuum pump oil. Locate the oil inlet cap (often labeled "OIL" or with an oil can icon) and unscrew it. Slowly pour the vacuum pump oil into the reservoir until the level is between the MIN and MAX marks on the sight glass. Do not overfill. Replace the cap securely.

Image: Close-up view of the multipurpose oil cap and the oil inlet for easy refilling.

3. **Connecting Hoses**

The vacuum pump is compatible with 1/4", 1/2", and 3/8" hoses. Select the appropriate hose for your application. If

needed, use the provided 1/4" to 3/8" adapter. Ensure all connections are tight and sealed, using Teflon tape on threaded connections if necessary, to prevent leaks and maintain vacuum integrity.

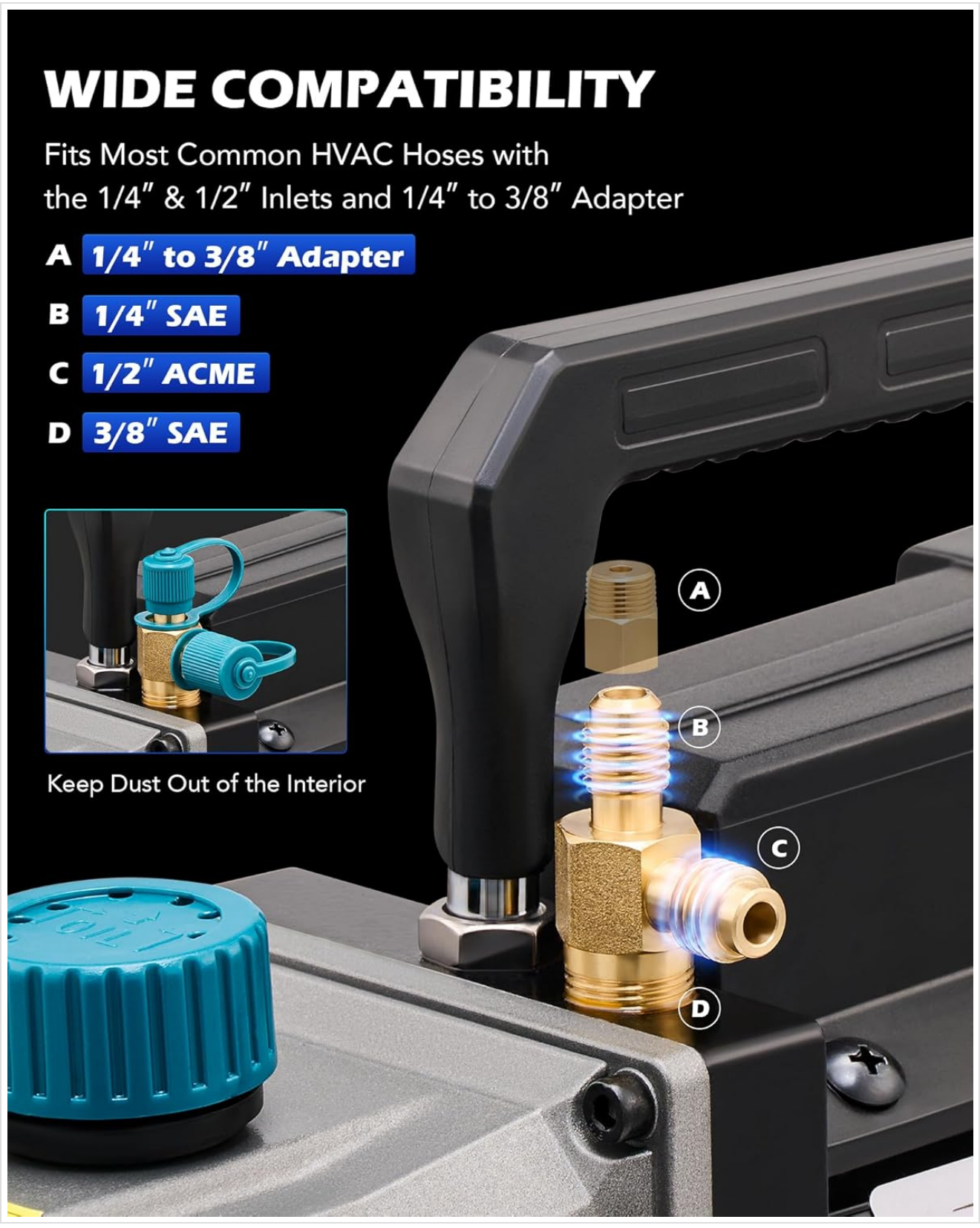


Image: Illustration of the vacuum pump's wide compatibility with different hose sizes and the included adapter.

4. **Placement**

Place the vacuum pump on a stable, level surface. Ensure adequate ventilation around the unit to allow for proper heat dissipation. The shockproof base helps maintain stability during operation.

Image: Visual representation of the transparent oil window, nonslip handle, built-in fan, and shockproof base.

Operating Instructions

1. **Initial Start-up**

   Ensure the oil level is correct. Connect the power cord to a grounded 115V AC outlet. Turn on the power switch. The pump should start smoothly. Allow it to run for a few minutes to circulate the oil and warm up.

Image: Internal view highlighting the powerful all-copper motor, designed for efficient and dependable service.

2. **Vacuuming a System**

   Connect the vacuum pump to the system requiring evacuation using appropriate manifold gauges and hoses. Open the system valves to allow the pump to draw a vacuum. Monitor the vacuum level using a micron gauge (recommended for precise readings). The pump is designed to reach an ultimate vacuum of 37.5 microns (5 Pa).

3. **Typical Applications**

   - **Automotive HVAC Servicing:** Evacuate air and moisture from vehicle air conditioning systems before

recharging.

- **Vacuum Packaging:** Remove air from packaging to preserve food or other items.
- **Wine Degassing:** Remove dissolved gases from wine to improve flavor and stability.
- **Thermoforming:** Create a vacuum to form plastic sheets over molds.
- **Laboratory Settings:** Various vacuum-dependent experiments and processes.

Image: Examples of the vacuum pump's diverse applications across different industries.

4. **Shutting Down**

Once the desired vacuum level is achieved and held, close the system valves. Turn off the vacuum pump's power switch. Disconnect the power cord and hoses. Store the pump in a clean, dry place.

Maintenance

- **Oil Level Check**

  Regularly check the oil level using the sight glass. Maintain the oil level between the MIN and MAX indicators. Low oil levels can damage the pump, while excessive oil can lead to poor performance.

- **Oil Change**

  Change the vacuum pump oil regularly, especially after prolonged use or if the oil appears discolored or cloudy. Dirty oil reduces the pump's efficiency and lifespan. Refer to the specific instructions for draining old oil and refilling with new, clean vacuum pump oil.

- **Cleaning**

  Keep the exterior of the pump clean. Wipe down the casing with a damp cloth. Ensure the air vents and fan are free from dust and debris to maintain proper cooling and prevent overheating.

- **Storage**

  When not in use for extended periods, ensure the pump is clean and the oil is at the correct level. Store it in a dry, dust-free environment to protect internal components.

Troubleshooting

Problem	Possible Cause	Solution
Pump not starting	No power, faulty switch, motor issue.	Check power connection and outlet. Ensure switch is ON. If problem persists, contact support.
Poor vacuum performance	Low/dirty oil, leaks in system/hoses, clogged intake filter.	Check and refill/change oil. Inspect all connections for leaks and tighten. Clean or replace intake filter.
Excessive smoke from air outlet	Oil vaporization/volatilization, oil insufficiency, exhaust gas release, increased oil viscosity.	A small amount of smoke is normal, especially in cold conditions. Check oil level and quality. Ensure proper ventilation. If excessive, change oil.
Pump overheating	Blocked vents, prolonged operation, low oil.	Ensure vents are clear. Allow pump to cool down. Check oil level.

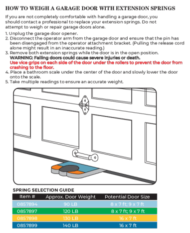
Image: Explanation of common reasons for smoke emission from the air outlet during operation.

Warranty and Support

For warranty information and technical support, please refer to the official Orion Motor Tech website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.
For further assistance, visit the Orion Motor Tech Store on Amazon.

Related Documents - MPN1VPHAN01-LB

	Orion Motor Tech Vacuum Pump User Manual - VPH-E001-00 Comprehensive user manual for the Orion Motor Tech VPH-E001-00 vacuum pump. Includes safety information, specifications, operation, maintenance, and troubleshooting guides for HVAC servicing.
	Blütezeit Sliding Gate Opener User Manual Comprehensive user manual for Blütezeit Sliding Gate Openers (1800/2700/4000/5300 LB models). Covers installation, operation, maintenance, and troubleshooting.
	Husqvarna KLIPPO LB Series Lawn Mower Operator's Manual Comprehensive operator's manual for Husqvarna KLIPPO LB series lawn mowers (models LB 448S, LB 453S, LB 448SQ, LB 453SQ, LB 548SQe), covering safety, assembly, operation, maintenance, and technical specifications.
	Luxpowertek GEN-LB-EU 3-6K Single-Phase Hybrid Inverter Datasheet Technical specifications and features of the Luxpowertek GEN-LB-EU 3-6K series single-phase hybrid solar inverter, including PV input, battery compatibility, grid connection, and protection features.
	Lavazza Blue LB 2300-2312 Series Espresso Machine Maintenance Manual Technical assistance and maintenance guide for Lavazza Blue LB 2300, LB 2301, LB 2302, LB 2311, and LB 2312 espresso machines. Includes troubleshooting, diagrams, safety, and disassembly procedures.



HOW TO WEIGH A GARAGE DOOR WITH EXTENSION SPRINGS

If you are not completely comfortable with handling a garage door, you should contact a professional to replace your extension springs. Do not attempt to weigh or repair garage doors alone.

1. Unplug the garage door opener.
2. Disconnect the operator arm from the garage door and ensure that the pin has been disengaged from the operator attachment bracket. (Pulling the release cord alone might result in an inaccurate reading.)
3. Remove both extension springs while the door is in the open position.
   WARNING: Falling doors could cause severe injuries or death.
   Use vice grips on each side of the door under the rollers to prevent the door from crashing to the floor.
4. Place a bathroom scale under the center of the door and slowly lower the door onto the scale.
5. Take multiple readings to ensure an accurate weight.

SPRING SELECTION GUIDE

Item #	Approx. Door Weight	Potential Door Size
0857894	90 LB	8 x 7 ft; 9 x 7 ft
0857897	120 LB	8 x 7 ft; 9 x 7 ft
0857898	130 LB	16 x 7 ft
0857899	140 LB	16 x 7 ft

How to Weigh Garage Door Extension Springs Safely

Follow this step-by-step guide to safely weigh your garage door's extension springs. Includes a helpful spring selection chart for common door weights and sizes. Essential for proper garage door maintenance and repair.