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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

SPECIFICATIONS



Light
10.8 lb. Body



Ultimate Vacuum
37.5 Microns (5 Pa)



Rated Power
1/4 hp (186W)



Flow Rate (FAD)
3.5 cfm (5.9 m³/h)



Duty Cycle
30 min.



Oil Capacity
0.24 qt. (225 mL)



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.



MULTIPURPOSE OIL CAP

The Oil Cap with Pores & Filter
Minimizes Noise and Simplifies Oil Charging



AIR OUTLET

Keeps the Gases Out and Noise Down



OIL INLET

Unscrew the Cap and Easily Refill Oil

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.



TRANSPARENT WINDOW

Displays the Oil Level for Timely Refills

NONSLIP HANDLE

Securely and Easily Carry from Job to Job

BUILT-IN FAN & VENTS

Dissipate Heat Quickly for Safe & Smooth Operation

SHOCKPROOF BASE

Runs Stably and Quietly in Any Environment

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.

POWERFUL ALL-COPPER MOTOR

Provides Superior Conductivity &
Efficient Heat Dissipation for Dependable
and Smooth Service for Years to Come



Minimal
Noise



High
Efficiency



Fast
Cooling



Excellent
Durability

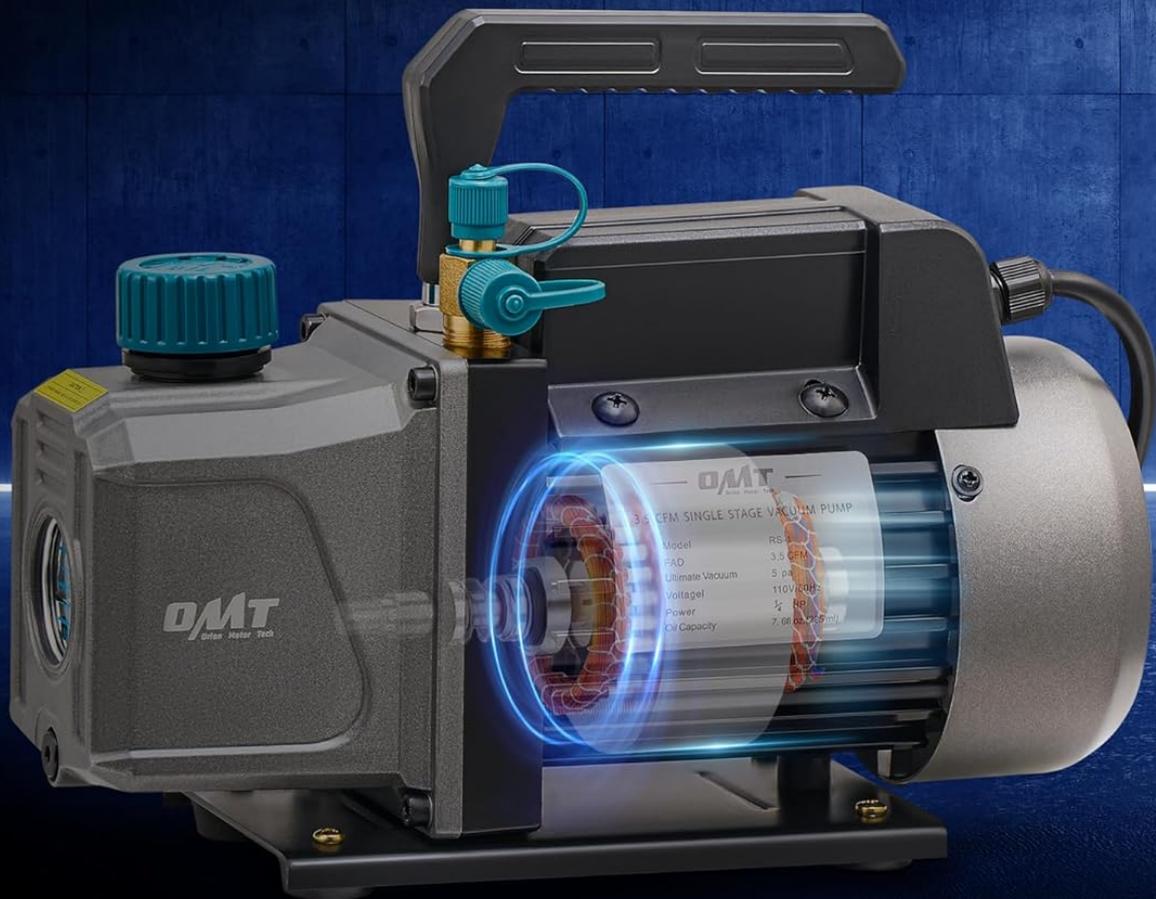


Image: Internal view highlighting the powerful all-copper motor, designed for efficient and dependable service.

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.

The advertisement features a central image of an OMT 3.5 CFM Single Stage Vacuum Pump. The pump is black and grey with a blue cap and a blue hose. A white label on the front provides technical specifications:

3.5 CFM SINGLE STAGE VACUUM PUMP	
Model	RS-1
FAD	3.5 CFM
Ultimate Vacuum	5 pa
Voltage	110V/60Hz
Power	1/2 HP
Oil Capacity	7.68 oz. (225 ml)

Below the pump, the text reads: **WIDE APPLICATION**
Perform Deep Vacuums in Laboratory Settings, Automotive Services, & Industrial Applications

The advertisement also includes six hexagonal inset images illustrating various applications:

- HVAC Servicing:** Two technicians in blue uniforms working on an outdoor HVAC unit.
- Vacuum Drying:** A hand pouring wood shavings into a stainless steel vacuum chamber.
- Vacuum Oven:** A close-up of a vacuum oven's control panel and door.
- Vacuum Hold-Down Table:** A blue industrial table with a vacuum hold-down mechanism.
- Vacuum Packaging:** A vacuum sealer packaging fresh produce like carrots and bell peppers.
- Wine Degassing:** A vacuum degasser being used on a wine bottle.

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.

CAUSES OF SMOKE FROM AIR OUTLET

- Oil Vaporization
- Oil Volatilization
- Oil Insufficiency
- Exhaust Gas Release
- Increased Oil Viscosity

A **small** amount of smoke during operation is **normal** and not a sign of a problem. Cold conditions can make it appear more prominent



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

 <p>Vacuum Pump User Manual</p>	<p>Orion Motor Tech Vacuum Pump User Manual - VPH-E001-00</p> <p>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.</p>
 <p>Blütezeit</p> <p>SLIDING GATE OPENER USER MANUAL 1800/2700/4000/5300 LB</p>	<p>Blütezeit Sliding Gate Opener User Manual</p> <p>Comprehensive user manual for Blütezeit Sliding Gate Openers (1800/2700/4000/5300 LB models). Covers installation, operation, maintenance, and troubleshooting.</p>
 <p>Husqvarna</p> <p>KLIPPO LB 448S, KLIPPO LB 453S, KLIPPO LB 448SQ, KLIPPO LB 453SQ, KLIPPO LB 548SQe</p>	<p>Husqvarna KLIPPO LB Series Lawn Mower Operator's Manual</p> <p>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.</p>
 <p>LU@POWER™</p> <p>HYBRID SERIES</p> <p>GEN-LB-EU 3-6K (Single-Phase)</p>	<p>Luxpowertek GEN-LB-EU 3-6K Single-Phase Hybrid Inverter Datasheet</p> <p>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.</p>
 <p>LAVAZZA</p> <p>BLUE</p> <p>LB 2300-2301-2302-2311-2312</p> <p>MAINTENANCE MANUAL FOR TECHNICAL ASSISTANCE</p>	<p>Lavazza Blue LB 2300-2312 Series Espresso Machine Maintenance Manual</p> <p>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.</p>

HOW TO WEIGH A GARAGE DOOR WITH EXTENSION SPRINGS

When you are purchasing replacement extension springs for your garage door, it is important to know the weight of your door. This information is necessary to select the correct spring for your door. The weight of your door is determined by the weight of the door panels, the weight of the door hardware, and the weight of the door springs.

1. Measure the weight of your door.

Remove the door from the tracks and place it on a scale. The scale should be able to measure up to 1000 pounds. If you do not have a scale, you can use a spring scale to measure the weight of the door. The spring scale should be able to measure up to 100 pounds. Weigh the door in several places to get an average weight.

2. Measure the weight of the door hardware.

Remove the door from the tracks and place it on a scale. The scale should be able to measure up to 1000 pounds. If you do not have a scale, you can use a spring scale to measure the weight of the door hardware. The spring scale should be able to measure up to 100 pounds. Weigh the door hardware in several places to get an average weight.

3. Measure the weight of the door springs.

Remove the door from the tracks and place it on a scale. The scale should be able to measure up to 1000 pounds. If you do not have a scale, you can use a spring scale to measure the weight of the door springs. The spring scale should be able to measure up to 100 pounds. Weigh the door springs in several places to get an average weight.

4. Add the weights together to get the total weight of the door.

The total weight of the door is the sum of the weight of the door panels, the weight of the door hardware, and the weight of the door springs.

5. Use the total weight to select the correct spring.

Use the total weight of the door to select the correct spring. The spring should be able to support the total weight of the door.

WEIGH SELECTION GUIDE

WEIGHT	SPRING	LENGTH	THICKNESS
100-150	1/2" Dia.	18"	0.1875"
150-200	3/4" Dia.	24"	0.2500"
200-250	1" Dia.	30"	0.3125"
250-300	1 1/4" Dia.	36"	0.3750"
300-350	1 1/2" Dia.	42"	0.4375"
350-400	1 3/4" Dia.	48"	0.5000"
400-450	2" Dia.	54"	0.5625"
450-500	2 1/4" Dia.	60"	0.6250"
500-550	2 1/2" Dia.	66"	0.6875"
550-600	2 3/4" Dia.	72"	0.7500"
600-650	3" Dia.	78"	0.8125"
650-700	3 1/4" Dia.	84"	0.8750"
700-750	3 1/2" Dia.	90"	0.9375"
750-800	3 3/4" Dia.	96"	1.0000"
800-850	4" Dia.	102"	1.0625"
850-900	4 1/4" Dia.	108"	1.1250"
900-950	4 1/2" Dia.	114"	1.1875"
950-1000	4 3/4" Dia.	120"	1.2500"

[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.