

- › [Orion Motor Tech](#) /
- › [Orion Motor Tech Auto AC Vacuum Pump Kit and Digital Refrigerant Charging Scale User Manual](#)

Orion Motor Tech Auto AC Vacuum Pump Kit & 220 lb Digital Refrigerant Scale Bundle

Orion Motor Tech Auto AC Vacuum Pump Kit & Digital Refrigerant Charging Scale User Manual

Model: Auto AC Vacuum Pump Kit & 220 lb Digital Refrigerant Scale Bundle

1. INTRODUCTION

This manual provides detailed instructions for the safe and effective operation, setup, and maintenance of your Orion Motor Tech Auto AC Vacuum Pump Kit and 220 lb High Precision Electronic Digital Refrigerant Charging Weight Scale. Please read this manual thoroughly before use to ensure proper function and to prevent damage to the equipment or injury.



Image 1.1: The Orion Motor Tech Auto AC Vacuum Pump and Digital Refrigerant Charging Scale, shown together as a complete bundle.

2. SAFETY INFORMATION

Always observe the following safety precautions to reduce the risk of injury or damage to the equipment:

- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when handling refrigerants or operating the vacuum pump.
- Ensure the work area is well-ventilated to prevent the accumulation of refrigerant vapors.
- Do not operate the vacuum pump in wet conditions or expose it to rain.
- Disconnect power before performing any maintenance or cleaning.
- Handle refrigerants according to local and national regulations.
- Keep children and unauthorized personnel away from the equipment during operation.

3. PRODUCT OVERVIEW

3.1. Auto AC Vacuum Pump

The vacuum pump is designed for efficient evacuation of HVAC systems, compatible with various refrigerants including R12, R22, R134a, R410a, and R1234yf. It features a robust motor and durable construction.



Image 3.1: A detailed view of the Orion Motor Tech Auto AC Vacuum Pump, highlighting its compact design and connection ports.

Key Components:

- **Motor:** 1/3 hp all-copper motor for reliable performance.
- **Casing:** Reinforced aluminum alloy for heat dissipation and corrosion resistance.
- **Intake Filter & Trap:** Protects the pump from contaminants.
- **Sight Glass:** Allows monitoring of oil level and condition.
- **Oil Cap:** Multipurpose design with pores and filter to minimize noise and simplify oil charging.
- **Portable Handle:** For easy transport.

3.2. Digital Refrigerant Charging Weight Scale

The electronic digital scale provides high precision for refrigerant charging and recovery, ensuring accurate measurements for HVAC systems. It is designed for durability and portability.



Image 3.2: The Orion Motor Tech Digital Refrigerant Charging Weight Scale, shown within its protective carrying case.

Key Features:

- **High Accuracy:** Provides precise measurements for refrigerant charging.
- **Fast-Response Sensor:** Ensures quick and reliable readings.
- **Backlit LCD Controller:** For clear visibility in various lighting conditions.
- **Intuitive Controls:** Easy to operate with ON/OFF, Z/T (Zero/Tare), and UNIT buttons.
- **Durable Construction:** Built from aluminum alloy, waterproof, and suitable for various temperatures.

- **Portability:** Compact, lightweight design with an included carrying case.
- **Long Standby:** Up to 60 hours of standby time, retaining the last reading after power outage.

4. SPECIFICATIONS

4.1. Auto AC Vacuum Pump Specifications

Feature	Specification
Model	RS-1.5
Flow Rate (FAD)	4 cfm (6.8 m³/h)
Ultimate Vacuum	37.5 Microns (5 Pa)
Rated Power	1/3 hp (248W)
Voltage	110V/60Hz
Duty Cycle	30 min.
Oil Capacity	0.24 qt. (225 mL)
Weight	10.8 lb.
Dimensions (L x W x H)	10.8" x 4.3" x 8.5"



Image 4.1: Visual representation of the vacuum pump's key specifications and dimensions.

4.2. Digital Refrigerant Charging Weight Scale Specifications

Feature	Specification
---------	---------------

Feature	Specification
Range	100 kg / 220 lb
Accuracy	±0.05%
Resolution	5g / 0.01 lb
Scale Body Weight	4.32 lb
Power Supply	9V DC Battery (not included)
Working Temperature	0°C-50°C / 32°F-122°F
Standby Time	60 hours

EXACT ACCURACY

Quick Readings with Accuracy Down to Three Decimal Places

±0.05% Accuracy



REAL-TIME READINGS

Image 4.2: Illustration demonstrating the high accuracy of the digital refrigerant scale during an AC charging process.

5. SETUP

5.1. Vacuum Pump Setup

1. **Placement:** Place the vacuum pump on a stable, level surface in a well-ventilated area.
2. **Oil Filling:** Unscrew the oil cap. Carefully pour vacuum pump oil into the oil inlet until the oil level is between the MIN and MAX marks on the sight glass. Do not overfill.

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 5.1: Close-up view of the vacuum pump's multipurpose oil cap and oil inlet, showing the process of refilling oil.

3. **Power Connection:** Connect the power cord to a grounded electrical outlet (110V/60Hz).
4. **Initial Check:** Briefly turn on the pump to ensure it operates smoothly, then turn it off.

5.2. Digital Refrigerant Charging Weight Scale Setup

1. **Battery Installation:** Open the battery compartment on the back of the LCD controller and insert a 9V DC battery (not included), observing polarity.
2. **Placement:** Place the scale platform on a firm, level surface.
3. **Controller Connection:** Ensure the coiled cable from the scale platform is securely connected to the LCD controller.
4. **Power On:** Press the 'ON/OFF' button on the LCD controller to power on the scale.
5. **Zero/Tare:** Press the 'Z/T' button to zero the scale before placing any refrigerant tanks on it.

6. **Unit Selection:** Press the 'UNIT' button to cycle through available units (kg, oz, lb).

6. OPERATING INSTRUCTIONS

6.1. Vacuum Pump Operation (System Evacuation)

1. **Connect Hoses:** Connect the appropriate manifold gauge set hoses to the vacuum pump and the HVAC system service ports. Ensure all connections are tight.
2. **Open Valves:** Open the high and low side valves on the manifold gauge set.
3. **Start Pump:** Turn on the vacuum pump. Monitor the manifold gauges to observe the vacuum level.
4. **Evacuation Time:** Allow the pump to run until the desired vacuum level (e.g., 500 microns or lower) is achieved and held steady for a specified period (consult HVAC system manufacturer specifications). The pump has a 30-minute duty cycle.
5. **Close Valves:** Once evacuation is complete, close the manifold gauge set valves before turning off the vacuum pump.
6. **Disconnect:** Turn off the vacuum pump and disconnect the hoses.

6.2. Digital Refrigerant Charging Operation

1. **Prepare Scale:** Power on the scale and ensure it is zeroed ('Z/T' button). Select the desired unit ('UNIT' button).
2. **Place Tank:** Carefully place the refrigerant tank onto the center of the scale platform.



Image 6.1: The digital refrigerant scale in operation, accurately measuring the weight of a refrigerant tank connected to an AC system.

3. **Tare Weight:** If the tank is not empty, press the 'Z/T' button to tare the weight of the tank, so the display shows 0.000. This allows you to measure the amount of refrigerant added or removed.
4. **Connect Hoses:** Connect the appropriate manifold gauge set hose from the refrigerant tank to the HVAC system.
5. **Charge/Recover:** Open the tank valve and the manifold gauge valve to begin charging or recovering refrigerant. Monitor the weight displayed on the scale.
6. **Monitor:** Stop the process once the desired amount of refrigerant has been transferred, as indicated by the scale reading.
7. **Close Valves & Disconnect:** Close all valves and disconnect hoses.

7. MAINTENANCE

7.1. Vacuum Pump Maintenance

- **Oil Change:** Regularly check the oil level and condition via the sight glass. Change the vacuum pump oil after every 10-20 hours of operation or if it appears cloudy or discolored. To change oil, drain the old oil from the drain plug and refill with new vacuum pump oil to the correct level.
- **Cleaning:** Keep the pump exterior clean and free of debris.
- **Storage:** Store the pump in a dry, clean environment when not in use.

7.2. Digital Refrigerant Charging Weight Scale Maintenance

- **Cleaning:** Wipe the scale platform and controller with a damp cloth. Do not use abrasive cleaners.
- **Battery Replacement:** Replace the 9V battery when the low battery indicator appears on the LCD. Remove the battery if the scale will not be used for an extended period.
- **Storage:** Store the scale in its protective carrying case in a dry place to prevent damage.

8. TROUBLESHOOTING

8.1. Vacuum Pump Troubleshooting

Problem	Possible Cause	Solution
Pump not starting	No power; Motor issue	Check power connection; Consult qualified technician
Poor vacuum level	Low/dirty oil; Leaks in system/hoses; Clogged intake filter	Change oil; Check all connections for leaks; Clean/replace filter
Excessive noise	Low oil level; Worn components	Check and refill oil; Consult qualified technician

8.2. Digital Refrigerant Charging Weight Scale Troubleshooting

Problem	Possible Cause	Solution
Scale not turning on	Dead battery; Loose battery connection	Replace 9V battery; Ensure battery is properly seated
Inaccurate readings	Not zeroed; Uneven surface; Overload	Press 'Z/T' button; Place on level surface; Do not exceed 220 lb capacity
Display error	Sensor issue; Controller malfunction	Restart scale; Contact customer support

9. WARRANTY AND SUPPORT

Orion Motor Tech products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the contact information provided with your product packaging or visit the official Orion Motor Tech website.

Please retain your proof of purchase for warranty claims.

