Explosion-Proof Vacuum Pump Safety Instructions

Please read, understand and follow the entire manual carefully before use, paying special attention to danger, warning and caution statements. When the working medium is applicable Class A3 refrigerant, the following safety instructions must be known and complied with.

I. Safety Operation Specifications

1. Do not use the device near spilled gasoline or other flammable substances or open containers;
2. When servicing this device, always disconnect the power supply; do not expose to rain, and store the pump indoors to reduce the risk of electric shock;
3. Avoid inhaling refrigerant vapor and lubricating oil vapor or mist. Inhalation of high concentrations may cause arrhythmia, loss of consciousness, or even suffocation; leaks may cause eye, nose, throat, and skin injuries. Read the manufacturer's Material Safety Data Sheet for further safety information regarding refrigerants and lubricants;
4. To reduce fire risk: Avoid using extension cords; excessively long or thin extension cords may cause voltage drops, power interruptions, or overheating. If an extension cord must be used, ensure:
   1). A 3-wire grounded extension cord with a grounded 3-prong plug;
   2). The cord and outlet are in good condition;
   3). The cord length does not exceed 15.2 meters (50');
   4). The wire gauge is no less than 1.0mm² (16AWG).

Warning

As the pump surface becomes hot during operation, do not touch the oil tank or motor housing while in use. Before connecting the Vacuum Pump to the A/C-R system, evacuate the refrigerant from the system using a reliable method. Note: Extracting refrigerant under high pressure may damage the pump. Dedicated equipment is recommended.

Applicable / Not applicable Refrigerants:

A3 Refrigerant							
Applicable	R50	R170	R290	R600	R600a	R601	R601a
	R1270	R430A	R431A	R433A	R433B	R433C	R436A
	R436B	R441a	R443A	R511A	Re170	R1150	R429A
	R432A	R435A	R510A	R610			
Non-applicable	R702	R717					

Operating temperature range for the pump: -1°C to 40°C

II. Safety Warnings

1. This device must not be used as a transfer pump for liquids or any other medium; doing so will damage the product;
2. Never connect the Vacuum Pump to a pressurized system. Regularly check to ensure system and pipeline pressure does not exceed atmospheric pressure;
3. When handling refrigerants, wear safety goggles and gloves. Avoid direct contact with refrigerants to prevent frostbite or other injuries. Always disconnect the power supply before detaching any hoses;
4. When connecting to power, all devices must be grounded to prevent electrical hazards. The power outlet must be properly grounded;
5. When the pump starts running, its surface will become hot; do not touch the oil tank or motor housing; ensure sufficient ventilation space around it for heat dissipation;
6. Always keep the pump dry and away from water, mud, and dirt;
7. Before connecting the Vacuum Pump to the air conditioning system, use appropriate methods to fully evacuate refrigerant from the pressurized system. Note: Extracting refrigerant under high pressure will damage the pump. Refrigerants must be recovered using a dedicated Recovery Unit;
8. Do not operate this device with low or no oil. Running the device without oil will cause premature failure.

Additional safety instructions for systems containing A2L, A2 or A3 class refrigerants. These instructions do not replace existing occupational hazard procedures or other regulations that may be required by local, state or federal agencies.

Technicians working on A2L, A2 and A3 class systems should have detailed knowledge and skills in handling flammable refrigerants, personal protective equipment, refrigerant leak prevention, cylinder handling, charging, leak detection and proper disposal. Knowledge of legislation, regulations and standards regarding flammable refrigerants may also be required. Special certification or permits may be required for A2L, A2 and A3 class refrigerant handling. Please check local occupational safety regulations

1. The service area should be marked as a temporary flammable zone. A circular area with a radius of 3 meters centered on the refrigeration equipment should be posted with no smoking and other hazard signs; local authorities should be notified of the existence of this area;
2. Ensure the power supply to the refrigeration equipment has been disconnected;
3. When connecting service equipment (such as Vacuum Pump, Refrigerant Scale, Recovery Unit) to power supply, this connection must be made outside the temporary flammable hazard area;
4. The air in the temporary flammable zone should be monitored using a combustible gas detector;
5. A dry powder or CO2 fire extinguisher must be available at the service location;
6. Vacuum Pump exhaust may contain harmful vapors; provide adequate ventilation; use appropriate ventilation fans to maintain at least 5 air changes per hour in the work space;
7. All potential ignition sources within the temporary flammable zone must be disabled. When connecting service equipment (such as Vacuum Pump, Scale, Recovery Unit) to power supply, the connection must be made outside the temporary hazard area;
8. Check the system to ensure refrigerant has been properly evacuated from the refrigeration system being serviced;
9. Before evacuating an A2 or A3 class system, the system should be purged with 100% nitrogen; do not use air.

III. Maintenance

To maintain ATEX compliance, VA3-P7-EX requires oil seal maintenance service every 500 hours of operation and bearing maintenance service every 30,000 hours of operation. Contact VALUE for assistance if you have any questions.

IV. Disclaimer

1. This device is only suitable for its designated usage scope and environment. Users must strictly follow the operation procedures and precautions in the manual when using this device; The company shall not be liable for any damage, misuse or accidents caused by usage beyond the device's scope or failure to follow the manual;
2. All warranty services should be performed within the warranty period; For repairs, please replace components according to the forms specified in our company's maintenance manual; The user shall bear full responsibility for accidents or device damage caused by using non-original parts, self-modifications or usage beyond scope;
3. The manufacturer shall not bear any additional costs beyond product faults, including: loss of working time, loss of refrigerant, contaminated refrigerant, and unapproved transportation or labor costs;
4. Waste disposal must strictly comply with local laws and regulations;
5. Under normal maintenance conditions, the maximum service life of this device is 8 years - use beyond this period may pose safety hazards;
6. Our company reserves the final right of interpretation of this manual's content. For any questions or need for further explanation, please contact VALUE.