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Wipcool 2F3R

Wipcool Double Stage Vacuum Pump 2F3R User Manual

Model: 2F3R

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, maintenance, and troubleshooting of your Wipcool Double Stage Vacuum Pump Model 2F3R. Please read this manual thoroughly before operating the pump and retain it for future reference.

The Wipcool 2F3R vacuum pump is specifically designed for use with various refrigerants, including next-generation A2L refrigerants like R32 and R1234YF, as well as traditional refrigerants such as R410A and R22. Its design incorporates features for enhanced safety and performance in HVAC applications.

2. SAFETY INSTRUCTIONS

Always adhere to the following safety precautions to prevent injury and damage to the equipment.

- Electrical Safety:** Ensure the power supply matches the pump's voltage (230 Volts). Do not operate with damaged cords or plugs. Always disconnect power before servicing.
- Refrigerant Compatibility:** This pump is suitable for A2L refrigerants (R32, R1234YF) and other common refrigerants (R410A, R22). When working with flammable refrigerants (A2L), ensure proper ventilation and eliminate all potential ignition sources.
- Oil Level:** Regularly check the oil level using the sight glass. Do not operate the pump without oil or when the oil level is low. Use only recommended vacuum pump oil.
- Ventilation:** Operate the pump in a well-ventilated area to prevent the accumulation of refrigerant vapors.
- Personal Protective Equipment (PPE):** Wear appropriate PPE, including safety glasses and gloves, when handling refrigerants and operating the pump.
- Handling:** The pump weighs approximately 9.8 kg. Lift with care to avoid injury.
- Environmental Conditions:** Avoid operating the pump in wet or excessively dusty environments.

3. PACKAGE CONTENTS

Upon unpacking, verify that all items are present and undamaged:

- Wipcool Double Stage Vacuum Pump 2F3R

- User Manual (this document)
- Power Cord
- Vacuum Pump Oil (may be included separately or pre-filled)

4. PRODUCT FEATURES

The Wipcool 2F3R vacuum pump incorporates several advanced features for reliable performance:

- **Non-Sparking Design:** Suitable for use with A2L refrigerants (R32, R1234YF) and other refrigerants (R410A, R22).
- **Brushless Motor Technology:** Offers a lighter design (over 25% lighter than similar products) and extended service life.
- **Built-in Solenoid Valve:** Prevents oil backflow into the system during power outages or shutdown.
- **Overhead Vacuum Gauge:** Provides a compact and easy-to-read display of vacuum levels.
- **Integral Cylinder Structure:** Enhances reliability and durability.
- **Reinforced Aluminum Alloy Oil Tank:** Designed for effective heat dissipation and resistance to chemical corrosion.
- **Oversized Sight Glass:** Allows for easy monitoring of oil color and level.



Figure 1: Front view of the Wipcool 2F3R Double Stage Vacuum Pump, highlighting its compact design and integrated handle.

5. SETUP

1. **Unpacking:** Carefully remove the vacuum pump from its packaging. Inspect for any shipping damage.
2. **Placement:** Place the pump on a stable, level surface in a well-ventilated area. Ensure adequate space around the pump for air circulation and heat dissipation.
3. **Oil Filling:**

- Remove the oil fill cap.
- Pour appropriate 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 oil fill cap securely.

4. **Power Connection:** Connect the power cord to the pump and then to a grounded electrical outlet matching the specified voltage (230V).

5. **Initial Check:** Before connecting to a system, briefly turn on the pump to ensure it operates smoothly and the oil circulates. Turn off immediately.



Figure 2: Side view of the Wipcool 2F3R vacuum pump, showing the oil sight glass for monitoring oil levels and the robust casing.

6. OPERATING INSTRUCTIONS

Follow these steps for proper operation of the vacuum pump:

1. **Connect to System:** Connect the vacuum pump to the system requiring evacuation using appropriate vacuum hoses. Ensure all connections are tight to prevent leaks.
2. **Open System Valves:** Open all valves on the manifold gauge set and the system to be evacuated.
3. **Start Pump:** Turn on the power switch of the vacuum pump. The pump will begin to draw a vacuum.
4. **Monitor Vacuum:** Observe the overhead vacuum gauge to monitor the vacuum level. Continue operation until the desired vacuum level is achieved, typically indicated by a stable reading.
5. **Isolate Pump:** Once the desired vacuum is reached, close the manifold gauge set valves to isolate the system from the pump.
6. **Turn Off Pump:** Switch off the vacuum pump.
7. **Disconnect:** Carefully disconnect the vacuum hoses from the pump and the system.



Figure 3: The Wipcool 2F3R vacuum pump in operation, connected to an HVAC system for evacuation. This image demonstrates a typical setup during use.

7. MAINTENANCE

Regular maintenance ensures optimal performance and extends the life of your vacuum pump.

- **Oil Change:** Change the vacuum pump oil regularly, especially after each use with contaminated systems or when the oil appears discolored or cloudy.
 - Ensure the pump is off and cool.
 - Place a suitable container under the oil drain plug.
 - Remove the oil drain plug and the oil fill cap to allow oil to drain completely.
 - Replace the drain plug and refill with new, clean vacuum pump oil to the correct level.
- **Cleaning:** Keep the exterior of the pump clean and free of dust and debris. Ensure cooling fins are not obstructed.
- **Storage:** When not in use, store the pump in a dry, clean environment. Ensure the oil level is correct before storage.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Pump does not start	No power, faulty power cord, motor issue.	Check power connection and outlet. Inspect power cord for damage. If issues persist, contact support.
Poor vacuum performance	Low oil level, contaminated oil, system leak, clogged intake filter.	Check and refill/change oil. Check all system connections for leaks. Inspect and clean intake filter.

Problem	Possible Cause	Solution
Excessive noise/vibration	Low oil level, worn components, pump not on a level surface.	Check and refill oil. Ensure pump is on a stable, level surface. If noise persists, contact support.
Oil mist from exhaust	Overfilled oil, contaminated oil, normal operation with some oil types.	Check oil level and adjust if overfilled. Change oil if contaminated. Ensure proper ventilation.

9. SPECIFICATIONS

Attribute	Value
Model	2F3R
Brand	Wipcool
Type	Double Stage Vacuum Pump
Voltage	230 Volts
Maximum Flow Rate	198 Liters Per Minute (97 CFM)
Horsepower	3/4 HP
Item Weight	9.8 Kilograms
Product Dimensions (LxWxH)	43.18 x 22.86 x 33.02 cm
Material	Acrylic (for certain components)
Power Source	AC
Refrigerant Compatibility	A2L refrigerants (R32, R1234YF) and other refrigerants (R410A, R22, R12)

10. WARRANTY AND SUPPORT

This Wipcool 2F3R Double Stage Vacuum Pump comes with a **1 Year Warranty** from the date of purchase. For warranty claims, technical support, or service inquiries, please contact your authorized Wipcool dealer or the manufacturer's customer service department. Please have your model number (2F3R) and proof of purchase available when contacting support.