

MARS 12905

MARS 12905 370V Oval 5 Micro-Farads Motor Run Capacitor User Manual

Model: 12905

1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of the MARS 12905 370V Oval 5 Micro-Farads Motor Run Capacitor. This capacitor is designed for use in air conditioning and heat pump systems to assist in starting and running electric motors.

2. IMPORTANT SAFETY INFORMATION

WARNING: Electrical Shock Hazard. Risk of serious injury or death.

- Installation and servicing of this product should only be performed by qualified and licensed HVAC technicians.
- Always disconnect all power to the unit before installing, servicing, or removing the capacitor.
- Capacitors can store a dangerous electrical charge even after power is disconnected. Always discharge the capacitor using a properly insulated screwdriver or resistor before handling. Touch the metal shaft of the screwdriver across the capacitor terminals to discharge.
- Wear appropriate personal protective equipment, including insulated gloves and safety glasses.
- Ensure all wiring connections are secure and correct according to the equipment manufacturer's specifications.
- Do not exceed the rated voltage or capacitance of the replacement capacitor.

3. PRODUCT FEATURES

- 5 Micro-Farads (μF) capacitance.
- 370 Volts (V) operating voltage.
- Oval shape for versatile mounting.
- Constructed from durable metal.
- Designed for air conditioning or heat pump duty.

4. SPECIFICATIONS

Specification	Value
Brand	MARS
Model Number	12905
Capacitance	5 Microfarad (μF)
Operating Voltage	370 Volts (V)
Shape	Oval
Material	Metal
Upper Temperature Rating	105 Degrees Celsius
Item Weight	2.4 ounces

5. INSTALLATION GUIDE

This section outlines the general steps for replacing a motor run capacitor. Always refer to the specific equipment manufacturer's service manual for detailed instructions and safety precautions.

- 1. Disconnect Power:** Turn off all electrical power to the HVAC unit at the circuit breaker or disconnect switch. Verify power is off using a voltage tester.
- 2. Locate Capacitor:** Open the access panel of the outdoor or indoor unit to locate the existing capacitor.
- 3. Discharge Old Capacitor:** Using an insulated screwdriver, carefully short the terminals of the old capacitor to discharge any stored electrical energy. You may hear a pop or see a small spark.
- 4. Note Wiring:** Take a clear photograph or draw a diagram of the existing wiring connections to the capacitor terminals. Note which wires connect to which terminals.
- 5. Remove Old Capacitor:** Disconnect the wires from the old capacitor and remove it from its mounting bracket.
- 6. Install New Capacitor:** Place the new MARS 12905 capacitor into the mounting bracket.
- 7. Connect Wiring:** Connect the wires to the new capacitor terminals exactly as they were connected to the old capacitor. Ensure connections are tight and secure.



Figure 1: Top view of the MARS 12905 capacitor, illustrating the two terminal connections for wiring.



Figure 2: Side and top view of the MARS 12905 capacitor, showing its physical dimensions: approximately 1.5 inches in height, 2.06 inches in length, and 1.21 inches in width.

8. **Secure Access Panel:** Close and secure the access panel.
9. **Restore Power:** Restore electrical power to the unit.
10. **Test Operation:** Test the HVAC unit to ensure proper operation.

6. OPERATION

The MARS 12905 motor run capacitor is a passive electrical component that stores electrical energy. In HVAC systems, it provides a phase shift to the motor windings, creating a rotating magnetic field necessary for the motor to start and run efficiently. It continuously operates while the motor is running, helping to maintain consistent motor speed and reduce energy consumption.

7. MAINTENANCE

Capacitors generally do not require routine maintenance. However, periodic visual inspection during HVAC system servicing is recommended:

- Check for signs of swelling, bulging, or leakage, which indicate failure.
- Ensure terminal connections are clean and free of corrosion.
- Verify the capacitor is securely mounted.

If any issues are observed, follow the safety procedures in Section 2 and consult a qualified technician for replacement.

8. TROUBLESHOOTING

A failing motor run capacitor can exhibit several symptoms:

- **Motor Hums but Does Not Start:** The motor may make a humming sound but fail to rotate, often requiring a manual push to start.

- **Motor Starts Slowly:** The motor takes longer than usual to reach full operating speed.
- **Reduced Performance:** The motor runs at a lower speed or with less power than normal.
- **Overheating:** The motor may overheat due to increased current draw.
- **Visible Damage:** The capacitor itself may appear swollen, bulging, or leaking.

If these symptoms occur, it is likely that the capacitor needs to be replaced. Always follow safety guidelines and consult a professional for diagnosis and replacement.

9. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided with your purchase or contact the seller or MARS - Motors & Armatures, Inc. directly. Support for this product can be obtained through the original point of purchase or by contacting the manufacturer.

Manufacturer: MARS - Motors & Armatures, Inc.