Mars 12739

Jard 12739 40/3 MFD 370V ROUND Motor Run Capacitor User Manual

Brand: Mars | **Model:** 12739

1. Introduction

This manual provides essential information for the safe and effective use of the Jard 12739 40/3 MFD 370V Round Motor Run Capacitor. This component is specifically designed for use in Appliances, Motors, HVAC Equipment, Compressors, Office Equipment, and other applications where run capacitors are employed with Permanent Split Capacitor (PSC) type motors and/or compressors.

The capacitor utilizes a specialized film technology, enabling a compact design while maintaining long-life performance and reliability. It is engineered to meet or exceed the reliability standards of previous designs, even with its smaller form factor.

Figure 1.1: Front view of the Jard 12739 40/3 MFD 370V Round Motor Run Capacitor, showing the label with specifications and model number.

2. Safety Information

WARNING: Electrical components can store dangerous charges. Always consult a qualified professional for installation and service. Failure to follow these safety guidelines may result in serious injury or death.

- **Disconnect Power:** Always ensure that the main power supply to the equipment is disconnected and locked out before attempting any installation, maintenance, or troubleshooting.
- **Discharge Capacitors:** Capacitors can retain a dangerous electrical charge even after power is disconnected. Always discharge the capacitor safely using a properly insulated tool before handling.
- **Proper Tools:** Use only insulated tools and personal protective equipment (PPE) suitable for electrical work.
- **Professional Installation:** Installation and replacement of motor run capacitors should only be performed by trained and qualified technicians.
- **Verify Specifications:** Ensure the replacement capacitor matches the original component's specifications (MFD, Voltage) to prevent damage to the motor or equipment.

- **Avoid Contact:** Do not touch the terminals or body of the capacitor while power is connected or before it has been safely discharged.

3. Product Features

- **Compact Design:** Features a new compact design with 0.250" x 0.031" Quick Connect Terminals for easy installation.
- **Quality Assurance:** Each capacitor is tested prior to shipping and individually boxed to ensure quality and reliability.
- **Industry Standard Compliance:** Conforms to EIA-456-A Industry Reliability Standard, meeting 60,000 hours of life performance.
- **Performance Consistency:** The physical size of the capacitor does not affect its electrical performance. Dimensions are subject to change without prior notice.
- **Broad Compatibility:** Compatible replacement for various models including Capcom Obsolete GE / Genteq C3403, C3403R, 97F9473, 97F9473BX, Mars SUPCO CD40+3X370R, and other 40/3, 40+3, 40 + 3 Capacitors with matching specifications.

Figure 3.1: Top view of the capacitor showing the three quick-connect terminals for electrical connections.

4. Setup and Installation

Installation of a motor run capacitor requires knowledge of electrical systems and safety procedures. It is strongly recommended that installation be performed by a certified HVAC technician or a qualified electrician.

1. **Power Disconnection:** Turn off and lock out the main power supply to the equipment where the capacitor is to be installed or replaced. Verify power is off using a multimeter.
2. **Access Capacitor:** Locate and access the existing capacitor within the equipment.
3. **Discharge Old Capacitor:** Carefully discharge the old capacitor using a screwdriver with an insulated handle by shorting the terminals. Listen for a pop or spark, indicating discharge. For dual capacitors, discharge each

terminal to common.

4. **Note Wiring:** Before disconnecting, take a clear photograph or draw a diagram of the existing wiring connections to the capacitor terminals. Note which wire goes to "Herm" (compressor), "Fan" (fan motor), and "C" (common).
5. **Remove Old Capacitor:** Disconnect the wires from the old capacitor and remove it from its mounting bracket.
6. **Install New Capacitor:** Secure the new Jard 12739 capacitor in the mounting bracket.
7. **Connect Wiring:** Reconnect the wires to the corresponding terminals on the new capacitor, following the diagram or photograph taken earlier. Ensure connections are secure.
8. **Verify Installation:** Double-check all connections for correctness and security.
9. **Restore Power:** Restore power to the equipment and test its operation.

Figure 4.1: Examples of capacitor dimensions. The actual dimensions may vary slightly, but performance remains consistent. Always verify physical fit before installation.

5. Operating Principles

A motor run capacitor, such as the Jard 12739, is an essential component in many AC motors, particularly Permanent Split Capacitor (PSC) motors found in HVAC systems, refrigerators, and other appliances. Its primary function is to create a phase shift in the current supplied to the motor's start winding, which generates a rotating magnetic field. This rotating field provides the necessary torque to start the motor and helps maintain its efficiency during operation.
Unlike start capacitors, run capacitors are designed for continuous duty. They remain in the circuit while the motor is running, improving the motor's power factor and overall efficiency by reducing the amount of reactive power drawn from the electrical supply. The 40/3 MFD rating indicates a dual capacitor: 40 microfarads for the compressor (Herm) and 3 microfarads for the fan motor (Fan), with a common (C) terminal.

6. Maintenance

Motor run capacitors are generally sealed units and require minimal maintenance. However, periodic inspection can help identify potential issues before they lead to component failure.

- **Visual Inspection:** During routine equipment maintenance, visually inspect the capacitor for signs of swelling, bulging, leaks, or corrosion around the terminals. These are indicators of a failing capacitor.

- **Cleanliness:** Ensure the area around the capacitor is free from dust, dirt, and debris, which can hinder heat dissipation.
- **Temperature:** Operate the equipment within its specified temperature range. Excessive heat can shorten the lifespan of the capacitor.
- **Professional Check:** It is advisable to have a qualified technician periodically check the capacitance value using a multimeter with a capacitance function. A deviation of more than 10-20% from the rated MFD value typically indicates a need for replacement.

7. Troubleshooting

A failing motor run capacitor can cause various symptoms in the equipment it serves. If you suspect a capacitor issue, always consult a qualified technician for diagnosis and replacement.

Common Symptoms of a Failing Capacitor:

- **Motor Fails to Start:** The motor hums but does not start, or starts slowly and then stops.
- **Reduced Efficiency:** The motor runs but draws excessive current, leading to higher energy consumption or overheating.
- **Weak Airflow (HVAC):** In air conditioning units, a weak fan motor capacitor can lead to reduced airflow from the outdoor unit.
- **Audible Clicks/Buzzes:** Unusual noises coming from the motor or capacitor area.
- **Physical Damage:** Visible signs of damage on the capacitor itself, such as bulging, leaking fluid, or a burnt smell.

Note: Do not attempt to test or replace a capacitor without proper training and safety precautions. Capacitors can store lethal electrical charges.

8. Specifications

Attribute	Value
Brand	Mars
Model Number	12739
Capacitance	40/3 MFD (Microfarads)
Operating Voltage	370 Volts AC
Maximum Voltage	370 Volts AC
Shape	Round
Material	Copper (Terminals/Internal Wiring)
Terminals	0.250" x 0.031" Quick Connect
Industry Standard	EIA-456-A (60,000 hours life)
Package Dimensions	Approx. 6 x 3 x 3 inches (Product dimensions may vary)
Weight	Approx. 12 ounces

Attribute	Value
First Available Date	January 25, 2012
Manufacturer	MARS

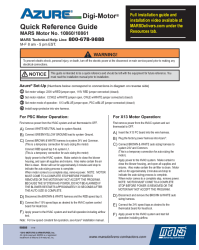
9. Warranty and Support

Specific warranty terms for the Jard 12739 40/3 MFD 370V Round Motor Run Capacitor are typically provided by the manufacturer (Mars) or the authorized seller at the time of purchase. Please refer to your purchase documentation or contact the seller directly for detailed warranty information.
For technical support, installation guidance, or troubleshooting assistance, it is recommended to contact a qualified HVAC technician or the manufacturer's customer service department. Always ensure that any service or repair is performed by a certified professional to maintain safety and product integrity.

Figure 9.1: A quality assurance stamp, indicating adherence to component standards.

Related Documents - 12739

	[MARS Motors, Components, Service & Installation, Parts & Accessories Catalog] Comprehensive catalog from MARS featuring a wide range of motors, components, service and installation parts, and accessories for the HVAC/R industry. Includes detailed specifications and product information.
	[MARS Motors Catalog - High-Quality HVAC and Refrigeration Motors] Explore the comprehensive MARS Motors catalog, featuring a wide range of high-efficiency ECM and PSC motors for HVAC, refrigeration, and various industrial applications. Find detailed specifications, model numbers, and cross-references for easy selection.
	[MARS Getting Into Parts: HVAC/R Replacement Components Guide] A comprehensive guide from MARS presenting a suggested start-up inventory for wholesalers entering the HVAC/R replacement components, motors, and service/installation products market. Includes product categories, part numbers, and descriptions.
	[MARS 2025 Featured Products Guide: Motors, Components, Service & Installation] Explore the comprehensive MARS 2025 Featured Products Guide, showcasing a wide array of motors, components, and service & installation products for the HVAC/R market. Discover leading brands and innovative solutions.
	[2025 Guía de Productos Destacados: Motores, Componentes, Servicio e Instalación] Explore la Guía de Productos Destacados 2025 de MARS, que abarca motores, componentes, y servicios de instalación para HVAC/R. Descubra productos de alta calidad como protectores contra sobretensiones, bombas de condensado, desconectores y más.



AZURE Digi-Motor®

Quick Reference Guide

MARS Motor No. 10860/10301

MARS Technical Help Line: 800-676-9888

M-F 8 a.m. - 5 p.m. (CST)

Full installation guide and installation video available at MARSmotors.com under the resources tab.

WARNING!

NOTICE

Azure® Set-Up

For PSC Motor Operation

For X13 Motor Operation

[MARS Azure Digi-Motor 10860/10861 Quick Reference Guide]

Quick reference guide for installing and setting up the MARS Azure Digi-Motor models 10860 and 10861. Provides instructions for PSC and X13 motor operation, wiring, voltage and rotation setup, and auto-sizing procedures.