Genteq C38075R / 27L522

Genteq Dual Capacitor Instruction Manual

Model: C38075R / 27L522
Brand: Genteq

1. Introduction

This manual provides essential information for the safe and effective use of the Genteq 80 + 7.5 uF MFD x 370 VAC Replacement Dual Capacitor, model C38075R / 27L522. This component is designed as a direct replacement part for various HVAC and motor applications. Please read this manual thoroughly before installation or operation to ensure proper function and safety.

2. Safety Information

WARNING: Electrical Shock Hazard

- Always disconnect power to the equipment before attempting any installation, removal, or maintenance of the capacitor.
- Capacitors can store a dangerous electrical charge even after power is disconnected. Always discharge the capacitor safely before handling. Use a properly insulated screwdriver with a resistive wire or a dedicated capacitor discharge tool to short the terminals.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Installation should only be performed by qualified and licensed personnel familiar with electrical systems and local electrical codes.
- Do not touch the terminals or any conductive parts of the capacitor while power is connected or before it has been discharged.
- Ensure the replacement capacitor's specifications (uF/MFD and VAC) match or exceed the original capacitor's ratings.

3. Product Description and Features

The Genteq 80 + 7.5 uF MFD x 370 VAC Dual Capacitor is a high-quality, round-shaped component designed for reliable performance in various electrical applications, particularly in HVAC systems. It features two capacitance values (80 microfarads and 7.5 microfarads) within a single unit, making it suitable for applications requiring both a run capacitor for a compressor and a fan motor.

Figure 3.1: Genteq Dual Capacitor with its packaging.

Figure 3.2: Front view of the Genteq Dual Capacitor, showing terminals and label.

Key Features:

- **Dual Capacitance:** Provides 80 microfarads and 7.5 microfarads in one unit.
- **Voltage Rating:** Rated for 370 VAC operation.
- **Direct Replacement:** Designed for easy drop-in replacement without requiring wiring changes or adapters.
- **Quality Construction:** Genteq capacitors are known for their reliability and performance.
- **Origin:** Manufactured in North America.
- **Material:** Constructed with copper.
- **Shape:** Round.

Figure 3.3: Official "Genuine Genteq Capacitor" seal.

4. Setup and Installation

This capacitor is intended as a direct replacement. Ensure the power to the unit is completely disconnected and the old capacitor is safely discharged before proceeding. Refer to the equipment's service manual for specific wiring diagrams and safety procedures.

Installation Steps:

1. **Power Disconnection:** Turn off the main power supply to the HVAC unit or motor. Verify power is off using a voltage meter.
2. **Discharge Old Capacitor:** Carefully discharge the old capacitor using a resistor or insulated tool. Confirm no residual charge with a multimeter.
3. **Note Wiring:** Before disconnecting, take a clear photo or draw a diagram of the existing wiring connections to the old capacitor terminals. Note which wires connect to the "Herm" (compressor), "Fan" (fan motor), and "C" (common) terminals.

4. **Remove Old Capacitor:** Disconnect the wires and carefully remove the old capacitor from its mounting bracket.
5. **Install New Capacitor:** Place the new Genteq capacitor into the mounting bracket.
6. **Connect Wiring:** Connect the wires to the corresponding terminals on the new capacitor, matching your diagram or photo. The terminals are typically labeled "Herm" (or "H"), "Fan" (or "F"), and "Common" (or "C").
7. **Secure Connections:** Ensure all connections are tight and secure.
8. **Restore Power:** Once installation is complete and verified, restore power to the unit.

Figure 4.1: Physical dimensions of the Genteq Dual Capacitor.

5. Operating Principles

A dual run capacitor, like the Genteq C38075R / 27L522, is essential for the efficient operation of HVAC systems and other motor-driven equipment. It provides a phase shift to the start winding of the compressor and fan motor, allowing them to start and run efficiently. The 80 uF section typically serves the compressor, while the 7.5 uF section serves the fan motor. The common terminal connects to the main power supply.
Proper capacitance ensures the motors receive the correct electrical characteristics for optimal performance, energy efficiency, and longevity. An improperly sized or failing capacitor can lead to motor overheating, reduced efficiency, or complete failure to start.

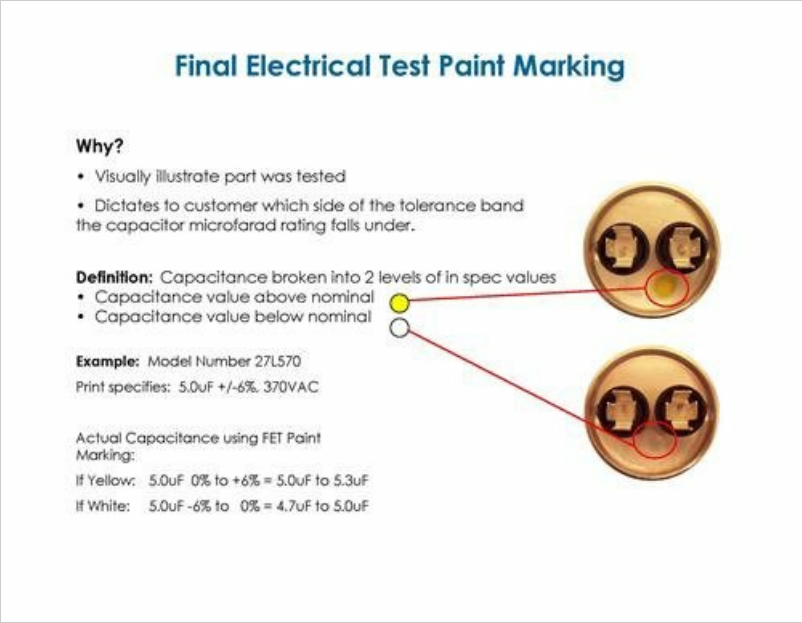


Figure 5.1: Explanation of Final Electrical Test (FET) Paint Marking, indicating capacitance value tolerance.

6. Maintenance

Capacitors are generally maintenance-free components. However, periodic inspection can help identify potential issues before they lead to system failure.

Inspection Guidelines:

- **Visual Inspection:** With power disconnected and capacitor discharged, visually inspect the capacitor for signs of swelling, bulging, leaks, or corrosion around the terminals. These are indicators of a failing capacitor.
- **Terminal Connections:** Ensure all wire connections to the capacitor terminals are clean and secure. Loose connections can cause overheating and poor performance.
- **Capacitance Measurement:** If you suspect a capacitor is failing, a qualified technician can measure its capacitance using a multimeter with a capacitance function. Compare the measured value to the rated value (80 uF and 7.5 uF) to determine if it's within acceptable tolerance.

It is recommended to have HVAC systems and their components, including capacitors, inspected by a professional technician annually.

7. Troubleshooting

A failing capacitor is a common cause of HVAC system malfunctions. Below are common symptoms and potential solutions related to capacitor issues.

Symptom	Possible Cause (Capacitor Related)	Action

Symptom	Possible Cause (Capacitor Related)	Action
Compressor or fan motor hums but does not start.	Failed or weak run capacitor.	Disconnect power, discharge capacitor, and inspect for physical damage (bulging, leaks). Test capacitance with a multimeter. Replace if faulty.
Motor starts slowly or struggles to reach full speed.	Weak or degraded capacitor.	Disconnect power, discharge capacitor, and test capacitance. Replace if capacitance is significantly lower than rated.
Unit trips circuit breaker frequently.	Shorted capacitor.	Disconnect power, discharge capacitor, and test for continuity between terminals. A shorted capacitor will show continuity. Replace immediately.
Visible swelling or bulging on the capacitor casing.	Internal failure, overheating.	This is a clear sign of failure. Disconnect power, discharge capacitor, and replace.

Note: Always prioritize safety. If you are unsure about any troubleshooting step, contact a qualified HVAC technician or electrician.

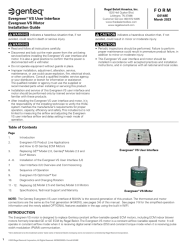
8. Specifications

Attribute	Detail
Model Number	C38075R / 27L522
Capacitance	80 + 7.5 uF (Microfarads)
Voltage Rating	370 VAC (Volts Alternating Current)
Shape	Round
Material	Copper
Manufacturer	Genteq
Item Weight	0.01 ounces (Note: This weight seems unusually low for a capacitor of this size, likely a data entry error in source. Actual weight would be higher.)
Date First Available	January 13, 2015

9. Warranty and Support

For information regarding warranty coverage or technical support for your Genteq capacitor, please refer to the documentation provided with your specific HVAC unit or contact the original equipment manufacturer (OEM) or the authorized Genteq distributor from whom the product was purchased. Keep your purchase receipt as proof of purchase.

Related Documents - C38075R / 27L522

	MARS Motors Catalog - High-Efficiency HVAC and Refrigeration Motors Explore the comprehensive MARS Motors catalog featuring a wide range of high-efficiency ECM and PSC motors for HVAC and refrigeration applications. Find detailed specifications, features, and replacement information for various motor types, including condenser fan motors, blower motors, and more.
	Genteq Evergreen VS Motor and User Interface Installation Guide Comprehensive installation guide for the Genteq Evergreen VS motor and user interface, covering replacement of older ECM motors, wiring diagrams, setup, commissioning, diagnostics, and specifications for HVAC systems. Features advanced capabilities via the Evergreen VS Optimizer tool.
	Genteq Evergreen EM Indoor Blower Motor Installation Guide Comprehensive installation guide for Genteq Evergreen EM Indoor Blower Motors (models 6103E, 6203E, 6105E, 6205E, 6107E, 6207E, 6110E, 6210E), covering wiring, startup, diagnostics, mechanical installation, and specifications.
	RTC FSC-1 Digital EC Motor Control Manual This manual provides detailed information on the RTC FSC-1 Digital EC Motor Control, including its features, operation, programming, installation, and wiring diagrams for various motor types.
	Azure Constant Torque ECM Blower Motor Replacement Guide Information on the Azure Bluetooth-enabled drop-in replacement for OEM constant torque ECM blower motors, featuring autosizing technology for customized motor torque to ductwork.

[Nailor EPIC Fan Card Volume Controller Operation Manual with Genteq EON ECM Motor]

Comprehensive operation manual for the Nailor EPIC Fan Card Volume Controller, featuring Genteq EON ECM Motor. Includes setup, troubleshooting, and indicator explanations for models H1-2272, H1-2272A1, and H1-2273A1.