

OEM Rplm for Trane CPT00977

Trane/American Standard OEM Capacitor CPT00977 Instruction Manual

Model: CPT00977 / CPT-0977-35/5 x 440 Round

1. INTRODUCTION

This manual provides essential information for the safe and effective installation, operation, and maintenance of your Trane/American Standard OEM Capacitor, model CPT00977. This capacitor is a dual-run capacitor designed for use in HVAC systems, specifically for starting and running both the compressor and fan motors.

Please read this manual thoroughly before attempting any installation or service. Keep this manual for future reference.

2. SAFETY INFORMATION

WARNING: Electrical shock hazard. Installation and servicing of this capacitor should only be performed by a qualified HVAC technician. Failure to follow these instructions can result in serious injury or death.

- **Disconnect Power:** Always ensure that the main power supply to the HVAC unit is completely disconnected and locked out before beginning any work on the capacitor or associated electrical components.
- **Discharge Capacitor:** Capacitors can store a dangerous electrical charge even after power is disconnected. Always discharge the capacitor using a properly insulated screwdriver or a resistor before handling. Touch the metal shaft of the screwdriver across the terminals to discharge.
- **Wear Personal Protective Equipment (PPE):** Use insulated gloves and safety glasses when working with electrical components.
- **Verify Ratings:** Ensure the replacement capacitor's voltage and microfarad (μF) ratings match the original capacitor's specifications. Using an incorrect capacitor can damage the HVAC system.
- **Proper Wiring:** Connect wires to the correct terminals as indicated on the capacitor and in the HVAC unit's wiring diagram.

3. PRODUCT OVERVIEW

The Trane/American Standard OEM Capacitor CPT00977 is a round, dual-run capacitor designed for reliable performance in HVAC systems. It features three terminals for connecting to the compressor (HERM), fan (FAN), and common (C) circuits.



Figure 1: Front view of the Trane/American Standard OEM Capacitor CPT00977. This image shows the capacitor's main body and terminal connections, along with its electrical ratings.



Figure 2: Top view of the capacitor showing the 'HERM', 'FAN', and 'C' terminals. These terminals are crucial for correct wiring to the compressor, fan, and common circuits respectively.

4. SPECIFICATIONS

Specification	Value
Model Number	CPT00977 (OEM CPT00977)
Capacitance	35/5 μ F (Microfarads)
Voltage Rating	440 VAC
Shape	Round
Mounting Type	Pole Mount
Package Dimensions	3 x 1 x 1 inches
Item Weight	1 pound



Figure 3: Diagram illustrating the approximate dimensions of the capacitor. The image shows a height of 2 7/8 inches and a diameter of 2 1/2 inches.

5. SETUP AND INSTALLATION

IMPORTANT: Installation must be performed by a qualified HVAC technician. Incorrect installation can lead to equipment damage, fire, or electrical shock.

- Power Disconnection:** Ensure all power to the HVAC unit is completely off at the breaker. Verify with a multimeter.
- Access Capacitor:** Locate and open the electrical panel of the outdoor HVAC unit to access the existing capacitor.
- Discharge Old Capacitor:** Carefully discharge the old capacitor using an insulated screwdriver across its terminals.

4. **Note Wiring:** Take a clear photograph or draw a diagram of the existing wiring connections to the old capacitor's terminals (HERM, FAN, C).
5. **Remove Old Capacitor:** Disconnect the wires and remove the old capacitor from its mounting bracket.
6. **Install New Capacitor:** Securely mount the new CPT00977 capacitor in the same location.
7. **Connect Wiring:** Connect the wires to the corresponding terminals on the new capacitor (HERM to compressor, FAN to fan motor, C to common). Double-check all connections against your diagram or photo.
8. **Secure Panel:** Close and secure the electrical panel.
9. **Restore Power:** Restore power to the HVAC unit at the breaker.
10. **Test System:** Test the HVAC system to ensure proper operation of both the compressor and fan.

6. OPERATING PRINCIPLES

The CPT00977 is a dual-run capacitor, meaning it provides two capacitance values within a single unit. It is essential for the efficient operation of your HVAC system's compressor and outdoor fan motor.

- **Starting Function:** Capacitors provide a temporary boost of electrical energy to help start the motors, overcoming initial inertia.
- **Running Function:** Once the motors are running, the capacitor helps maintain a phase shift in the motor windings, improving efficiency and reducing power consumption.
- **Dual-Run Design:** The 35/5 μF rating indicates 35 microfarads for the compressor (HERM terminal) and 5 microfarads for the fan motor (FAN terminal), with a common (C) terminal shared by both.

7. MAINTENANCE

Capacitors are critical components that can degrade over time. Regular inspection by a qualified technician is recommended as part of routine HVAC maintenance.

- **Visual Inspection:** During routine service, a technician should visually inspect the capacitor for signs of swelling, leaks, or corrosion, which indicate failure.
- **Capacitance Testing:** A technician can use a multimeter with a capacitance testing function to verify that the capacitor's actual microfarad ratings are within 5-10% of its stated values.
- **Cleanliness:** Ensure the area around the capacitor is free from debris and obstructions to prevent overheating.

8. TROUBLESHOOTING

If your HVAC system is experiencing issues related to motor starting or running, a failing capacitor may be the cause. Common symptoms include:

- **Outdoor Fan Not Spinning:** The fan motor hums but does not start, or spins slowly.
- **Compressor Not Starting:** The compressor hums loudly but does not engage, or the unit trips the breaker.
- **Reduced Cooling Performance:** The system runs but does not cool effectively, potentially due to the compressor or fan not operating at full capacity.

- **Unit Not Turning On:** In some cases, a completely failed capacitor can prevent the outdoor unit from starting at all.

If you suspect a capacitor failure, contact a qualified HVAC technician for diagnosis and replacement. Do not attempt to troubleshoot or replace the capacitor yourself unless you are a trained professional.

9. WARRANTY AND SUPPORT

For warranty information or technical support regarding your Trane/American Standard OEM Capacitor CPT00977, please refer to the documentation provided by your HVAC system manufacturer or contact the seller from whom you purchased this replacement part. Keep your purchase receipt as proof of purchase. As an OEM replacement part, warranty terms are typically governed by the original equipment manufacturer or the specific vendor providing the replacement.

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