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› BOJACK CBB65 Dual Run Circular Start Capacitor User Manual

BOJACK BJ-CAP370-455

BOJACK CBB65 Dual Run Circular Start Capacitor

Model: BJ-CAP370-455

INTRODUCTION

This manual provides essential information for the safe and effective use of the BOJACK 45+5 μ F 370V CBB65 Dual Run Circular Start Capacitor. This component is designed for use in AC motor applications, specifically for starting and running compressor and fan motors in central air conditioners, heat pumps, and similar systems. Please read this manual thoroughly before installation and operation.

SAFETY INFORMATION

WARNING: Electrical Shock Hazard

- Always disconnect power to the equipment before installing, servicing, or removing 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 load or a specialized capacitor discharge tool to short the terminals.
- Installation should only be performed by qualified personnel with experience in electrical systems.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and safety glasses.
- Ensure the replacement capacitor matches the original specifications (capacitance, voltage, and frequency) to prevent damage to the equipment.

PRODUCT OVERVIEW

The BOJACK CBB65 Dual Run Capacitor combines two capacitors into a single unit, designed to power both a compressor motor and a fan motor in HVAC systems. It features three terminals for connection:

- **"Herm"** / **"H"**: Connects to the compressor motor.
- **"Fan"** / **"F"**: Connects to the fan motor.
- **"C"**: Common line connection.



Figure 1: Front view of the BOJACK CBB65 Dual Run Capacitor, showing the terminals and product label.



Figure 2: Top view of the capacitor, illustrating the "Herm", "Fan", and "C" terminals for wiring connections. Dimensions are also indicated.

SPECIFICATIONS

Parameter	Value
Model	CBB65 (Universal model)
Capacitance	45+5uF
Tolerance	±6%
Rated Voltage	370V AC
Frequency	50 / 60Hz
Safety Rated	10,000 AFC
Shell Material	Metal
Dielectric Material	Metallized polypropylene film
Operating Temperature	-40 °C to +70 °C
Dimensions (Diameter)	50 mm (1.97 inch)
Dimensions (Height)	95 mm (3.74 inch)
Item Model Number	BJ-CAP370-455
Country of Origin	China
Mounting Type	Through-Hole Mount



Figure 3: Side view of the capacitor, showing its height of 95 mm (3.74 inches).

INSTALLATION AND SETUP

1. **Power Disconnection:** Before beginning any work, ensure the main power supply to the HVAC unit or appliance is completely disconnected at the circuit breaker. Verify with a voltage tester.
2. **Capacitor Discharge:** Safely discharge the old capacitor before handling. Use a resistor or insulated tool to short the terminals. A loud pop or spark may occur, which is normal.
3. **Identify Terminals:** Note the wiring connections on the old capacitor. The BOJACK CBB65 has three terminals: "C" (Common), "Herm" (Hermetic/Compressor), and "Fan". Take a photo of the existing wiring for reference.
4. **Remove Old Capacitor:** Carefully disconnect the wires from the old capacitor and remove it from its mounting bracket.
5. **Install New Capacitor:** Place the new BOJACK CBB65 capacitor into the mounting bracket. Ensure it is securely fastened.
6. **Wire Connections:** Connect the wires to the corresponding terminals on the new capacitor: common wire to "C",

compressor wire to "Herm", and fan wire to "Fan". Ensure all connections are tight and secure.

7. **Verify Installation:** Double-check all wiring connections against your reference photo or diagram to ensure correctness.
8. **Restore Power:** Once installation is complete and verified, restore power to the unit at the circuit breaker.
9. **Test Operation:** Turn on the HVAC unit and observe its operation to ensure the compressor and fan motors start and run correctly.

Note: If you are unsure about any step, consult a qualified HVAC technician.

OPERATING PRINCIPLES

The CBB65 dual run capacitor is essential for the efficient operation of single-phase AC motors, particularly those found in air conditioning and heat pump systems. It serves two primary functions:

- **Start Function:** Provides a phase shift to the start winding of the motor, creating a rotating magnetic field that gives the motor the initial torque needed to begin rotation.
- **Run Function:** Continues to provide a phase shift to the run winding, improving the motor's efficiency and power factor during continuous operation.

The "45+5uF" rating indicates that the capacitor provides 45 microfarads (uF) for the compressor (Herm) and 5 microfarads (uF) for the fan motor. The common terminal "C" acts as the shared connection point for both capacitor sections.

MAINTENANCE

Capacitors are generally sealed units and require minimal maintenance. However, periodic inspection can help identify potential issues before they lead to failure:

- **Visual Inspection:** Annually inspect the capacitor for signs of swelling, bulging, leaks, or corrosion around the terminals. These are indicators of a failing capacitor.
- **Cleanliness:** Ensure the capacitor and its terminals are free from dust, dirt, and debris, which can impede heat dissipation.
- **Connection Integrity:** Check that all wire connections to the terminals are secure and free from looseness or signs of arcing.
- **Temperature:** Ensure the operating environment temperature remains within the specified range (-40 °C to +70 °C) to prolong capacitor life.

Note: Do not attempt to open or repair a capacitor. If a capacitor shows signs of failure, it must be replaced.

TROUBLESHOOTING

A failing capacitor is a common cause of HVAC system malfunctions. Here are some symptoms and potential solutions:

Symptom	Possible Cause	Solution
Compressor or fan motor hums but does not start.	Failed start winding or run winding section of the capacitor.	Replace the capacitor.
Motor starts slowly or runs inefficiently.	Weak or degraded capacitor.	Replace the capacitor.
Capacitor is visibly swollen, bulging, or leaking.	Internal failure of the capacitor.	Immediately replace the capacitor.
Unit trips circuit breaker upon startup.	Shorted capacitor or other electrical fault.	Test capacitor for shorts; replace if faulty. Consult an electrician if problem persists.

Always ensure power is disconnected and the capacitor is discharged before performing any troubleshooting or replacement.

WARRANTY AND SUPPORT

BOJACK products are manufactured to high-quality standards. For specific warranty information, please refer to the product packaging or contact BOJACK customer support directly. If you encounter any issues or have questions regarding the installation or operation of your CBB65 capacitor, please reach out to the manufacturer's support channels. For further assistance, you may visit the official BOJACK website or contact their customer service department. Keep your purchase receipt as proof of purchase.

