BOJACK BJ-CAP

BOJACK CBB65 Round Run Start Capacitor

USER MANUAL

1. Introduction

The BOJACK CBB65 Round Run Start Capacitor is a high-quality component designed for the reliable start-up and continuous operation of AC motors. It is commonly used in central air-conditioners, heat pumps, condenser fan motors, and various compressor applications. This capacitor is engineered for durability, featuring a robust aluminum case and metallized polypropylene film dielectric, ensuring stable performance across a wide range of operating temperatures.

This manual provides essential information regarding the specifications, safe installation, proper operation, and maintenance of your BOJACK CBB65 capacitor to ensure optimal performance and longevity.

2. Safety Information

WARNING: Capacitors store electrical energy and can cause severe injury or death if not handled properly. Always follow these safety guidelines:

- **Professional Installation Recommended:** Installation and replacement should only be performed by a qualified electrician or HVAC technician.
- **Disconnect Power:** Before attempting any work on electrical systems, ensure that the main power supply to the equipment is completely disconnected and locked out. Verify zero voltage with a multimeter.
- **Discharge Capacitor:** Even after power is disconnected, capacitors can retain a dangerous charge. Always discharge the capacitor safely using a properly insulated resistor or a tool designed for capacitor discharge before touching its terminals.
- **Wear Personal Protective Equipment (PPE):** Use insulated gloves and safety glasses during handling and installation.
- **Verify Specifications:** Ensure the replacement capacitor's MFD (microfarad) and voltage ratings match or exceed the original capacitor's specifications. A 450V capacitor can replace a 370V, but a 370V cannot replace a 450V.
- **Avoid Physical Damage:** Do not drop, puncture, or otherwise physically damage the capacitor. Damaged capacitors can fail catastrophically.

3. Product Overview and Specifications

Image: Front view of the BOJACK CBB65 Round Run Start Capacitor, showing brand, capacitance, voltage, and safety ratings.

The BOJACK CBB65 capacitor is designed for reliable performance in demanding HVAC and motor applications. Its robust construction ensures longevity and safety.

Key Specifications

Feature	Specification
Model	CBB65 (Universal Model)
Capacity	50 uF
Tolerance	±5%
Rated Voltage	370V/450V AC
Frequency	50 / 60Hz

Feature	Specification
Shell Material	Aluminum Case, Steel Cover
Dielectric Material	Metallized Polypropylene Film
Safety Rated	10,000 AFC Anti-Explosion Pressure Switch
Operating Temperature	-40 ℃ to +70 ℃ (-104 ℉ to +158 ℉)
Shape	Round

4. Dimensions

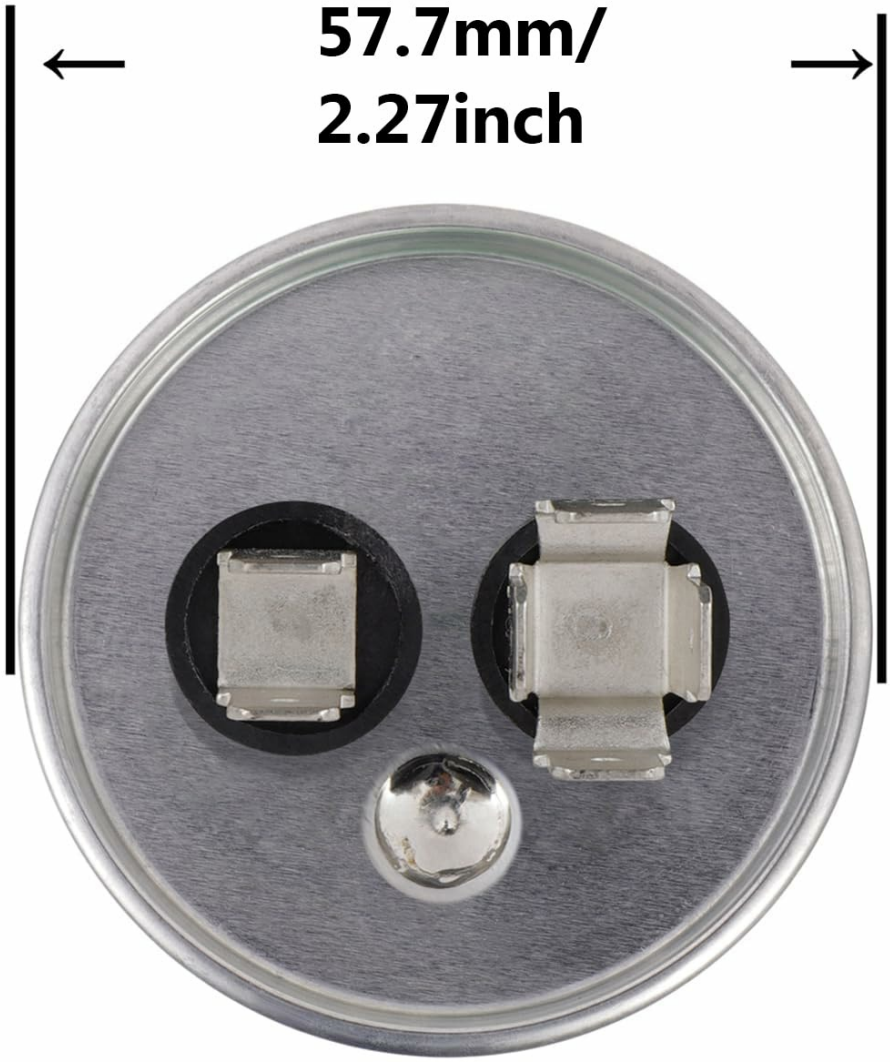

Image: Top view showing the diameter of the capacitor (57.7mm / 2.27 inches).

Image: Side view showing the height of the capacitor (100.4mm / 3.953 inches).

The compact round design allows for versatile installation in various equipment. The approximate dimensions are 2.27 inches (57.7mm) in diameter and 3.953 inches (100.4mm) in height.

5. Installation / Setup

Note: Always refer to the equipment manufacturer's service manual for specific capacitor replacement procedures. The following are general guidelines.

1. **Power Disconnection:** Turn off and lock out the main power supply to the air conditioner, heat pump, or motor unit at the circuit breaker. Verify power is off using a multimeter.
2. **Access Capacitor:** Locate and carefully open the access panel to the electrical compartment where the capacitor is housed.
3. **Discharge Old Capacitor:** Using a properly insulated tool (e.g., a screwdriver with an insulated handle and a resistor across the terminals, or a dedicated capacitor discharge tool), safely discharge the old capacitor. Touch the metal shaft

of the tool to both terminals simultaneously. You may hear a pop or see a spark. Repeat several times to ensure full discharge.

4. **Note Wiring:** Carefully observe and note the wiring connections to the old capacitor. Take a photo if necessary. Capacitors typically have terminals for HERM (compressor), FAN (fan motor), and C (common).
5. **Remove Old Capacitor:** Disconnect the wires from the old capacitor's terminals. Remove any mounting clamps or straps securing the capacitor.
6. **Install New Capacitor:** Place the new BOJACK CBB65 capacitor in the mounting bracket. Secure it with clamps or straps if applicable.
7. **Connect Wiring:** Reconnect the wires to the corresponding terminals on the new capacitor. Ensure connections are tight and secure.
8. **Secure Access Panel:** Close and secure the electrical compartment access panel.
9. **Restore Power:** Restore power to the equipment at the circuit breaker.
10. **Test Operation:** Start the equipment and verify proper operation of the compressor and fan motor.

6. Operating Principles

The BOJACK CBB65 capacitor serves two primary functions in AC motor applications:

- **Start Function:** During motor start-up, the capacitor provides a phase shift to the auxiliary winding, creating a rotating magnetic field that gives the motor the necessary torque to begin spinning. This is crucial for overcoming the initial inertia of the motor and its connected load (e.g., compressor).
- **Run Function:** Once the motor is running, the capacitor continues to provide a continuous phase shift to maintain an efficient rotating magnetic field. This improves the motor's power factor, reduces current draw, and enhances overall efficiency and performance during continuous operation.

The CBB65 type is a dual-run capacitor, meaning it has separate sections for the compressor (HERM) and fan (FAN) motors, allowing both to operate efficiently from a single component.

7. Maintenance

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

- **Visual Inspection:** During routine HVAC system maintenance (typically annually), visually inspect the capacitor for signs of swelling, bulging, leaks, or discoloration. These are indicators of a failing capacitor.
- **Cleanliness:** Ensure the capacitor and its terminals are free from dust, dirt, and corrosion. Use a soft, dry brush or cloth for cleaning.
- **Terminal Connections:** Check that all wire connections to the capacitor terminals are secure and free from corrosion. Loose connections can lead to overheating and premature failure.
- **Capacitance Testing:** If a motor is experiencing starting issues or reduced performance, a qualified technician can test the capacitor's capacitance (MFD) using a multimeter with a capacitance function. Compare the measured value to the rated value on the capacitor label. A deviation of more than 10-20% typically indicates a need for replacement.

8. Troubleshooting

If your AC motor or HVAC unit is experiencing issues, a failing capacitor could be the cause. Here are common symptoms and potential solutions:

- **Symptom:** Motor (compressor or fan) hums but does not start.

Possible Cause: Failed start winding or run capacitor.
Solution: Disconnect power, discharge capacitor, and test capacitance. Replace if out of specification or visibly damaged.

- **Symptom:** Motor starts slowly or runs sluggishly.
  Possible Cause: Weak or failing run capacitor.
  Solution: Disconnect power, discharge capacitor, and test capacitance. Replace if out of specification.
- **Symptom:** Equipment trips circuit breaker frequently.
  Possible Cause: Shorted capacitor or motor.
  Solution: Disconnect power, discharge capacitor, and test for shorts. If capacitor is shorted, replace it. If not, further motor diagnostics may be needed.
- **Symptom:** Visible bulging, leaking, or burning smell from capacitor.
  Possible Cause: Catastrophic capacitor failure.
  Solution: Immediately disconnect power. The capacitor is unsafe and must be replaced.

If troubleshooting steps do not resolve the issue, it is recommended to contact a qualified technician for further diagnosis and repair.

9. Warranty and Support

For information regarding the warranty period and terms for your BOJACK CBB65 capacitor, please refer to the product packaging or contact BOJACK customer support directly. Keep your proof of purchase for warranty claims.

If you require technical assistance, have questions about installation, or need to report a product issue, please contact BOJACK customer service through their official website or the contact information provided with your purchase. When contacting support, please have your product model number (BJ-CAP) and purchase details ready.

10. Packaging

Image: Retail packaging for the BOJACK CBB65 capacitor.

The BOJACK CBB65 capacitor is supplied in a protective retail box, ensuring safe transit and storage. The packaging typically includes the capacitor itself and may contain minimal documentation.