Century 42Y OAO PSC Motor

Century PSC Motor User Manual

Model: 1/5 HP, 1075 RPM, 115V, 42Y, OAO

1. Introduction

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Century Permanent Split Capacitor (PSC) Motor. This motor is designed for direct drive blower applications, fans, and air circulators, featuring an open air-over enclosure and a 42Y frame.

Please read this manual thoroughly before installation or operation to ensure proper usage and to prevent potential hazards.

2. Product Overview

Figure 1: Century Permanent Split Capacitor (PSC) Motor. This image displays the motor's cylindrical body, featuring a black

casing with visible internal components through ventilation slots. A flat, metallic shaft extends from the front, indicating its direct drive design.

Key Features:

- Permanent Split Capacitor (PSC) Motor Type
- Open Air-Over (OAO) Enclosure for efficient cooling
- 1/5 HP (Horsepower) for various applications
- 1075 Nameplate RPM (Revolutions Per Minute)
- Voltage: 115V, 1 Phase, 60 Hz
- 3.2 Full Load Amps
- 42Y Frame for standard mounting
- Continuous Duty operation
- 3 Speeds for versatile performance
- Sleeve Bearings for smooth operation
- Automatic Thermal Protection
- CW/CCW (Clockwise/Counter-Clockwise) Rotation
- Includes Resilient Mounting Rings
- UL Recognized and CSA Certified

3. Setup and Installation

Proper installation is crucial for the motor's performance and longevity. Ensure all local and national electrical codes are followed.

Safety Precautions:

- Always disconnect power before installing or servicing the motor.
- Ensure proper grounding to prevent electrical shock.
- Wear appropriate personal protective equipment (PPE), such as safety glasses and gloves.
- Verify that the supply voltage matches the motor's voltage rating (115V).

Mounting:

The motor comes with resilient mounting rings. Ensure the motor is securely mounted to a stable, vibration-free surface. The mounting stud pattern is 3-1/8" x 3-1/8". The motor can be mounted in any angle.

Electrical Connection:

- Connect the motor to a 115V, single-phase, 60 Hz power supply.
- Refer to the motor's wiring diagram (usually found on the motor label or included documentation) for correct connections, especially for speed selection and capacitor wiring.
- A capacitor (e.g., 2MDV6) is required for operation. Ensure it is correctly wired according to the diagram.
- Ensure all connections are tight and insulated.

4. Operating Instructions

Once installed, the motor is ready for operation. This motor is designed for continuous duty.

Starting the Motor:

1. Ensure all mechanical connections (e.g., fan blades) are secure and free to rotate.
2. Verify that the power supply is stable and within the motor's rated voltage.
3. Apply power to the motor. The motor should start smoothly.

Speed Selection:

This motor features 3 speeds. Speed selection is typically achieved by connecting to different lead wires. Consult the motor's wiring diagram for specific instructions on how to select the desired speed.

Rotation:

The motor supports both Clockwise (CW) and Counter-Clockwise (CCW) rotation. The direction of rotation is usually determined by the wiring configuration. Refer to the motor's wiring diagram for instructions on changing the rotation direction if needed for your application.

5. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your motor.

General Maintenance:

- **Cleaning:** Periodically clean the motor's exterior, especially the ventilation openings, to prevent dust and debris buildup that can impede airflow and cause overheating. Ensure power is disconnected before cleaning.
- **Inspection:** Regularly inspect the motor for any signs of wear, damage, or loose connections. Check the mounting for stability.
- **Bearings:** This motor uses sleeve bearings. These are typically self-lubricating and do not require external lubrication. Avoid applying oil unless specifically instructed by the manufacturer's detailed documentation.
- **Operating Environment:** Ensure the motor operates within its specified maximum ambient temperature of 40°C. Adequate ventilation is essential.

If any issues are observed, refer to the troubleshooting section or consult a qualified technician.

6. Troubleshooting

This section provides solutions to common issues you might encounter with your motor.

Problem	Possible Cause	Solution
Motor does not start	No power supply; Incorrect wiring; Faulty capacitor; Overload/Thermal protection tripped	Check power connections and circuit breaker; Verify wiring against diagram; Test/replace capacitor; Allow motor to cool, check for obstructions.
Motor overheats	Insufficient ventilation; Overload; Low voltage; Bearing issues	Ensure clear airflow around motor; Reduce load; Check supply voltage; Inspect bearings for wear.
Excessive noise or vibration	Loose mounting; Unbalanced load; Worn bearings	Tighten mounting bolts; Balance fan/blower assembly; Inspect and replace bearings if necessary.

Problem	Possible Cause	Solution
Motor runs slowly or with reduced power	Low voltage; Faulty capacitor; Excessive load	Check supply voltage; Test/replace capacitor; Reduce mechanical load on the motor.

If the problem persists after attempting these solutions, contact a qualified electrician or the manufacturer's support.

7. Specifications

Attribute	Value
Brand	Century
Item	Direct Drive Blower Motor
Motor Type	Permanent Split Capacitor (PSC)
Enclosure	Open Air-Over (OAO)
Horsepower (HP)	1/5 HP
Nameplate RPM	1075 RPM
Voltage	115V
Full Load Amps	3.2 A
Frequency (Hz)	60 Hz
Phase	1
Frame	42Y
Service Factor	1.0
Max. Ambient Temp.	40°C (104°F)
Insulation Class	B
Duty	Continuous
Number of Speeds	3
Mounting	Ring, All Angle
Bearings	Sleeve
Thermal Protection	Auto
Rotation	CW/CCW
Body Diameter	5 Inches
Length Less Shaft	4-15/16 Inches

Attribute	Value
Shaft Diameter	1/2 Inch
Shaft Length	5 Inches
Shaft Type	Flat
Includes	Resilient Mounting Rings
Standards	UL Recognized, CSA Certified
Capacitor Required	2MDV6 (Example)
Material	Copper
Item Weight	10 Pounds

8. Warranty and Support

For specific warranty information and technical support, please refer to the official documentation provided with your Century PSC Motor or visit the Century manufacturer's website. Keep your purchase receipt as proof of purchase for warranty claims.

It is recommended to only have qualified personnel perform any repairs or complex troubleshooting.