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› [Century](#) /

› Century A.O. Smith CP1502L 5 HP Compressor Motor Instruction Manual

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Model: CP1502L

1. PRODUCT OVERVIEW

The Century A.O. Smith CP1502L is a robust 5 HP compressor motor designed for air compressor loads. It may also be suitable for other applications requiring similar loads. This motor features an energy-efficient capacitor start/run design, providing reliable performance for demanding tasks.

Key Features:

- 5 Horsepower (HP)
- 3600 Revolutions Per Minute (RPM)
- 230 Volts operating voltage
- 1 Service Factor
- Reversible Rotation
- 7/8-Inch x 2-1/4-Inch Keyed Shaft



Image: The A.O. Smith CP1502L 5 HP Compressor Motor, showing its robust construction and shaft.

2. SAFETY INFORMATION

Read and understand all safety instructions before installing, operating, or maintaining this motor. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

General Safety Precautions:

- **Electrical Hazard:** Always disconnect power before working on the motor or connected equipment. Ensure proper grounding.
- **Moving Parts:** Keep hands, hair, and clothing clear of rotating parts during operation.
- **Heat:** Motors can become hot during operation. Allow adequate cooling time before handling.
- **Qualified Personnel:** Installation and wiring should only be performed by qualified electricians in accordance with all local and national electrical codes.
- **Ventilation:** Ensure adequate ventilation around the motor to prevent overheating.
- **Environmental Conditions:** Do not operate the motor in explosive atmospheres or where flammable vapors or dust are present.

3. INSTALLATION GUIDE

Proper installation is crucial for the safe and efficient operation of your motor. Follow these steps carefully.

Installation Steps:

1. **Mounting:** Securely mount the motor to a stable, level surface using appropriate fasteners. Ensure the mounting surface can support the motor's weight and operational forces.
2. **Shaft Alignment:** When connecting the motor to a compressor or other equipment, ensure precise shaft alignment to prevent excessive vibration and premature bearing wear. Use a flexible coupling if necessary.
3. **Wiring:** Connect the motor to the power supply according to the wiring diagram provided on the motor's nameplate or in the manufacturer's documentation. Ensure the voltage matches the motor's requirements (230 Volts). Use appropriately sized wiring and circuit protection.
4. **Grounding:** Properly ground the motor frame to prevent electrical shock.
5. **Rotation Check:** Before connecting to the load, briefly energize the motor to verify the correct direction of rotation. This motor features reversible rotation; consult the wiring diagram for changing direction if needed.
6. **Final Connections:** Once rotation is confirmed, connect the motor to the compressor or load.

4. OPERATING INSTRUCTIONS

This motor is designed for continuous duty within its specified ratings. Observe the following guidelines for operation.

Startup and Operation:

- **Initial Startup:** After installation, perform a brief test run without load to check for unusual noises or vibrations.
- **Load Application:** Gradually apply the load to the motor. Avoid sudden heavy loads that can cause excessive current draw.
- **Monitoring:** Periodically check the motor for excessive heat, unusual noises, or vibrations during operation.
- **Overload Protection:** Ensure that appropriate overload protection is in place and correctly set to prevent motor damage from sustained overcurrent conditions.
- **Duty Cycle:** Operate the motor within its specified duty cycle and temperature limits.

5. MAINTENANCE

Regular maintenance helps ensure the longevity and optimal performance of your motor. Always disconnect power before performing any maintenance.

Maintenance Schedule:

- **Cleaning:** Keep the motor clean and free from dust, dirt, and debris. Ensure cooling fins are clear for proper heat dissipation. Use compressed air to blow out dust from vents.
- **Inspections (Monthly/Quarterly):**
 - Check for loose connections or fasteners.
 - Inspect wiring for signs of wear, fraying, or damage.
 - Listen for unusual noises from bearings.
 - Check for excessive vibration.
- **Lubrication:** This motor typically features sealed bearings that do not require periodic lubrication. Refer to the motor's nameplate or specific documentation for any lubrication requirements.
- **Shaft and Coupling:** Inspect the motor shaft and coupling for wear or damage. Ensure the coupling remains properly aligned.

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 Overload protection tripped Faulty capacitor	Check power source and circuit breaker Verify wiring against diagram Reset overload, check for cause Consult a qualified technician
Motor overheats	Excessive load Poor ventilation Low voltage Bearing failure	Reduce load Clear obstructions, ensure airflow Check power supply voltage Consult a qualified technician
Excessive vibration	Misalignment Loose mounting Unbalanced load Worn bearings	Check and correct shaft alignment Tighten mounting bolts Balance the connected load Consult a qualified technician
Unusual noise	Worn bearings Loose components Foreign object	Consult a qualified technician Inspect and tighten components Inspect motor for obstructions

If you cannot resolve the issue using this guide, contact a qualified service technician.

7. TECHNICAL SPECIFICATIONS

Detailed specifications for the Century A.O. Smith CP1502L motor.

Specification	Value
Brand	Century
Model Number	CP1502L
Motor Horsepower	5 HP
RPM	3600 RPM
Voltage	230 Volts
Service Factor	1
Shaft Dimensions	7/8-Inch x 2-1/4-Inch Keyed
Rotation	Reversible
Power Source	Corded Electric
Material Type	Copper
Item Weight	41.89 Pounds
GTIN (UPC)	786674017222

8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the documentation included with your purchase or contact Century Electric/A.O. Smith Motors Co. directly. Keep your purchase receipt as proof of purchase for warranty claims.

Manufacturer: Century Electric/A.O. Smith Motors Co.

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question