Leeson 110142

Leeson Electric Motor Instruction Manual

Model: **110142** | Brand: **Leeson**

Introduction

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Leeson 1 hp 3450 RPM 56 Frame TEFC Electric Motor, Model #110142. This general-purpose motor features a capacitor-start design, 1 hp, 3,450 RPM, and operates on 115/230V AC. It is designed for continuous duty with manual thermal protection and a Totally Enclosed Fan Cooled (TEFC) enclosure, ensuring durability and reliability.

Figure 1: Front view of the Leeson 1 hp Electric Motor, Model 110142. This image shows the motor's main body, shaft, and electrical connection box.

Technical Specifications

Attribute	Value
Brand	Leeson
Model Number	110142
Horsepower (HP)	1 hp
Rated RPM	3450 RPM
Voltage	115/230V AC
Full Load Amps	12.0/6.2-6.0 A
Frame Size	56 Frame
Frequency	60 Hz
Motor Service Factor	1.15
Thermal Protection	Manual

Duty Cycle	Continuous
Insulation Class	B
NEMA Design	L
Enclosure Design	Totally Enclosed Fan Cooled (TEFC)
Shaft Rotation	CW/CCW (Clockwise/Counter-Clockwise)
Material	Copper
Item Weight	30 Pounds
Product Dimensions (L x W x H)	14 x 10 x 11 inches

Figure 2: Side view of the Leeson Electric Motor, showing the nameplate with detailed electrical specifications. Always refer to the motor's physical nameplate for precise data.

Setup and Installation

Proper installation is crucial for the safe and efficient operation of your electric motor. Always ensure power is disconnected before beginning any installation work.

1. Safety Precautions

- Ensure the power source is disconnected and locked out before installation or maintenance.
- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves.
- Verify that the motor's voltage rating (115/230V) matches your power supply. The motor is usable at 200V but not at

208V.

- Consult local electrical codes and regulations for proper wiring and grounding procedures.

2. Mounting

The motor should be mounted on a stable, level surface capable of supporting its weight (approximately 30 pounds) and the forces generated during operation. Ensure adequate ventilation around the motor, especially for the fan-cooled enclosure, to prevent overheating.

- Secure the motor using appropriate bolts through the mounting feet.
- Ensure proper alignment with the driven equipment to minimize vibration and wear.

3. Electrical Connections

Refer to the wiring diagram located on the motor's nameplate or inside the terminal box cover for correct electrical connections. This motor is designed for 115V or 230V operation.

- Connect the power supply wires to the appropriate terminals.
- Ensure all connections are tight and secure to prevent arcing and overheating.
- Properly ground the motor frame to prevent electrical shock.
- The motor has manual thermal protection. Ensure it is accessible for resetting if an overload occurs.

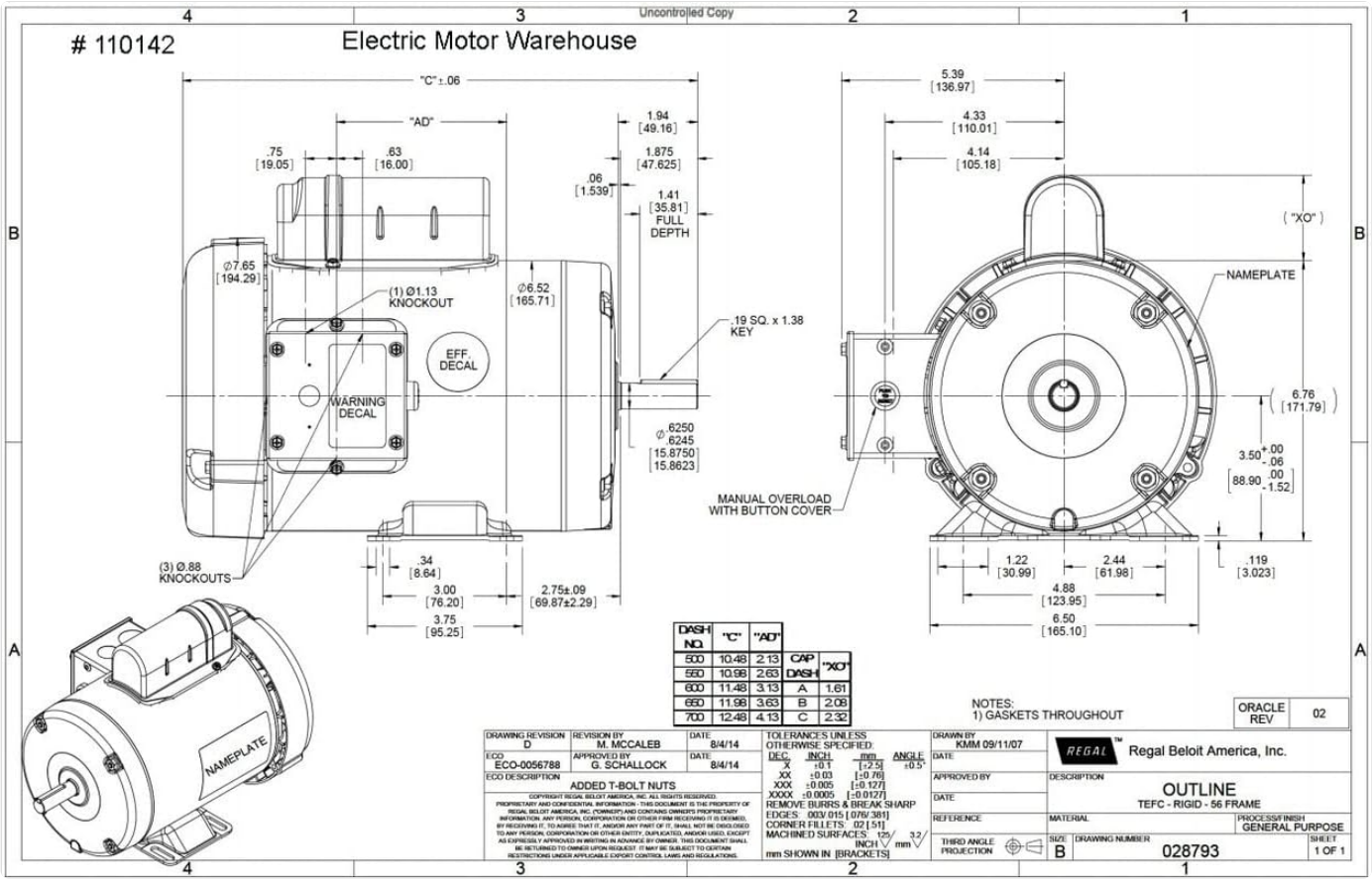

Figure 3: Technical drawing providing detailed dimensions and mounting specifications for the Leeson Electric Motor. This diagram is essential for planning installation and ensuring proper fit.

Operating Instructions

Once installed, the motor is ready for operation. Follow these guidelines for optimal performance and longevity.

1. Initial Start-Up

- Before applying power, double-check all electrical connections and ensure the motor is securely mounted.
- Ensure the driven equipment is free to rotate and not obstructed.
- Apply power to the motor. The motor should start smoothly and reach its rated speed of 3450 RPM.

2. Direction of Rotation

This motor supports both Clockwise (CW) and Counter-Clockwise (CCW) rotation. The direction of rotation can typically be changed by altering the internal wiring connections within the terminal box. Refer to the motor's wiring diagram for specific instructions on reversing rotation.

3. Continuous Duty Operation

The motor is designed for continuous duty, meaning it can operate indefinitely at its rated load without exceeding its temperature limits, provided it is installed in an environment within its maximum ambient temperature rating (40 Degrees C).

4. Overload Protection

The motor is equipped with manual thermal protection. In the event of an overload or overheating, the thermal protector will trip, shutting down the motor. Allow the motor to cool down before manually resetting the protector. Investigate the cause of the overload before restarting.

Maintenance

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

1. Cleaning

- Periodically clean the exterior of the motor, especially the fan cover and cooling fins, to prevent dust and debris buildup. The Totally Enclosed Fan Cooled (TEFC) design helps protect internal components, but external cleanliness is still important for heat dissipation.
- Use a soft brush or compressed air to remove dirt. Avoid using water or solvents that could damage the motor.

2. Inspection

- Regularly inspect the motor for any signs of wear, damage, or loose connections.
- Check mounting bolts for tightness.
- Listen for unusual noises or vibrations during operation, which could indicate a problem.
- Inspect the motor shaft for any signs of corrosion or damage.

3. Lubrication

This motor is typically equipped with sealed bearings that are lubricated for life and do not require periodic re-lubrication. Refer to the motor's specific documentation or nameplate for bearing type and lubrication requirements if unsure.

Troubleshooting

This section provides guidance for common issues you might encounter with your electric motor. Always disconnect power before attempting any troubleshooting or repairs.

Problem	Possible Cause	Solution
Motor does not start	No power supply Tripped thermal protector Incorrect wiring Seized bearings/shaft	Check power source and circuit breaker Allow motor to cool, then manually reset thermal protector Verify wiring against diagram Inspect shaft and bearings for obstruction or damage
Motor overheats	Overload condition Insufficient ventilation Low voltage Bearing failure	Reduce load on motor Clear obstructions around motor, ensure proper airflow Verify supply voltage matches motor rating Inspect and replace bearings if necessary
Excessive noise or vibration	Loose mounting bolts Misalignment with driven equipment Worn bearings Fan obstruction	Tighten all mounting hardware Re-align motor and driven equipment Inspect and replace bearings Clear any debris from fan area
Motor trips thermal protector frequently	Persistent overload High ambient temperature Motor winding issue	Evaluate and reduce motor load Ensure motor operates within specified ambient temperature Consult a qualified technician for inspection

Warranty and Support

For specific warranty information regarding your Leeson Electric Motor, Model 110142, please refer to the documentation provided at the time of purchase or contact Leeson directly. Warranty terms typically cover defects in materials and workmanship under normal use.

Customer Support

If you encounter issues that cannot be resolved using the troubleshooting guide, or require technical assistance, please contact Leeson customer support or a qualified electric motor technician.

- **Manufacturer Website:** www.leeson.com (for general information and contact details)
- **Product Model:** Leeson 110142
- **Serial Number:** (Refer to the motor's nameplate)

Extended protection plans may be available from your retailer. For example, 3-Year and 4-Year Protection Plans were offered for this product. Please check with your point of purchase for details on such plans.