Teco DTP1/54

Teco-Westinghouse DTP1/54 AC Induction Motor User Manual

Model: DTP1/54

1. Introduction

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Teco-Westinghouse DTP1/54 Rolled Steel AC Induction Motor. Please read this manual thoroughly before installation or operation to ensure proper use and to prevent damage or injury.
The Teco-Westinghouse DTP1/54 is a 1.5 HP, 1800 RPM, 3-phase AC induction motor designed for various industrial applications.

2. Safety Information

WARNING: Always disconnect power before performing any installation, maintenance, or troubleshooting procedures.
Observe all local and national electrical codes. Only qualified personnel should install, operate, and maintain this equipment.

- Ensure proper grounding to prevent electrical shock.
- Protect against rotating parts. Keep hands, tools, and clothing clear of the motor shaft and coupling.
- Do not operate the motor in hazardous or explosive atmospheres unless it is specifically designed and certified for such environments.
- Verify correct voltage and frequency supply before connecting the motor.
- Allow the motor to cool down before handling after operation.

3. Product Overview

The Teco-Westinghouse DTP1/54 motor is an Open Drip Proof (ODP) AC induction motor featuring a rolled steel frame. It is designed for applications such as fans, blowers, compressors, pumps, and HVAC equipment.

Figure 3.1: Teco-Westinghouse DTP1/54 AC Induction Motors. These motors feature a robust rolled steel frame and are designed for various industrial applications, including fans, pumps, and compressors.

Key Features:

- 1.5 HP, 1800 RPM, AC, 3 phase, 60Hz, 230/460V, 1.15 SF
- Usable on 200V and 208V, 60 Hz
- Rolled steel frame and conduit box for light weight
- Open Drip Proof (IP22) Enclosure
- NEMA 145T Frame, Horizontal foot mounted
- NEMA Premium Efficiency
- Suitable for Inverter Duty per NEMA MG1-31.4.4.2 - speed ranges 20:1 variable torque, 10:1 constant torque
- UL Recognized, CSA Approved, and CE Marked

4. Setup and Installation

4.1 Unpacking and Inspection

Carefully unpack the motor and inspect it for any signs of shipping damage. Report any damage to the carrier immediately. Verify that the motor nameplate data matches your order specifications.

4.2 Mounting

The motor is designed for horizontal foot mounting. Ensure the mounting surface is flat, rigid, and capable of supporting the motor's weight (approximately 47 lbs) and any connected equipment. Use appropriate bolts and washers to secure the motor firmly to prevent vibration and misalignment.

4.3 Electrical Connections

All electrical connections must be made by a qualified electrician in accordance with local and national electrical codes.

1. Ensure the power supply is disconnected and locked out before making any connections.
2. Refer to the motor's nameplate and wiring diagram (typically inside the conduit box cover) for correct voltage and phase connections.
3. Connect the motor to a suitable power source (200V, 208V, 230V, or 460V, 3-phase, 60Hz).
4. Properly ground the motor frame to prevent electrical shock.
5. Ensure all connections are tight and insulated.

4.4 Alignment

Proper alignment between the motor and the driven equipment is critical for long motor life and efficient operation. Misalignment can lead to excessive vibration, bearing failure, and premature wear. Use precision alignment tools for best results.

5. Operating Instructions

5.1 Pre-Operation Checks

- Verify all electrical connections are secure and correct.
- Ensure the motor is properly mounted and aligned with the driven load.
- Check that the motor shaft rotates freely by hand (if possible and safe).
- Confirm that all safety guards are in place.

5.2 Starting the Motor

Once all pre-operation checks are complete, apply power to the motor. Observe the motor during its initial startup for any unusual noises, vibrations, or excessive heating. If any abnormalities are detected, immediately shut down the motor and investigate the cause.

5.3 Continuous Operation

During continuous operation, periodically monitor the motor's temperature, current draw, and vibration levels. The motor is designed for continuous duty within its specified ratings. Avoid operating the motor beyond its nameplate ratings to prevent overheating and damage.

6. Maintenance

Regular maintenance is essential for extending the life and ensuring the reliable operation of your Teco-Westinghouse motor.

6.1 Routine Inspection

- **Monthly:** Check for excessive noise or vibration. Inspect the motor's exterior for dirt, dust, or obstructions to ventilation.
- **Quarterly:** Inspect electrical connections for tightness and signs of overheating. Check mounting bolts for tightness.
- **Annually:** Perform a thorough cleaning of the motor's exterior, ensuring ventilation openings are clear. Inspect bearings for wear (if accessible and applicable).

6.2 Lubrication

This motor typically uses sealed bearings that are lubricated for life and do not require re-lubrication under normal operating conditions. Refer to the motor's specific documentation or nameplate for bearing type and lubrication requirements if different.

6.3 Cleaning

Keep the motor clean and free of dust, dirt, and debris, especially around the ventilation openings. Use compressed air (with caution and appropriate PPE) or a soft brush to remove accumulated dirt. Do not use water or solvents that could damage insulation or bearings.

7. Troubleshooting

This section provides guidance for common issues. For problems not listed or if issues persist, contact qualified service personnel.

Problem	Possible Cause	Solution
Motor does not start	No power supply Incorrect wiring Overload protection tripped Seized bearings	Check power source and circuit breaker Verify wiring against diagram Reset overload, check for cause Inspect and replace bearings if necessary
Motor runs hot	Overload Insufficient ventilation Low voltage Bearing failure	Reduce load Clear obstructions, ensure proper airflow Check supply voltage Inspect and replace bearings
Excessive noise or vibration	Misalignment Loose mounting bolts Worn bearings Unbalanced load	Re-align motor and load Tighten all mounting bolts Inspect and replace bearings Balance the driven equipment

8. Specifications

Detailed technical specifications for the Teco-Westinghouse DTP1/54 AC Induction Motor:

- **Model:** DTP1/54
- **Horsepower (HP):** 1.5 hp
- **Speed:** 1800 RPM
- **Phase:** 3 Phase
- **Frequency:** 60 Hz
- **Voltage:** 208/230/460 Volts (Usable on 200V and 208V)
- **Service Factor (SF):** 1.15
- **Enclosure Type:** Open Drip Proof (ODP), IP22
- **Frame Size:** NEMA 145T Frame
- **Mounting:** Horizontal Foot Mounted
- **Efficiency:** NEMA Premium Efficiency
- **Inverter Duty:** Suitable per NEMA MG1-31.4.4.2 (20:1 variable torque, 10:1 constant torque)
- **Material:** Rolled Steel (Frame), Alloy Steel (General)
- **Product Dimensions:** 12.22 x 9.42 x 6.7 inches
- **Item Weight:** 47 Pounds
- **Certifications:** UL Recognized, CSA Approved, CE Marked

9. Warranty and Support

9.1 Manufacturer's Warranty

This Teco-Westinghouse motor comes with a**Three year manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service. Please retain your proof of purchase for warranty claims.
For detailed warranty terms and conditions, please refer to the official Teco-Westinghouse warranty statement or contact the manufacturer directly.

9.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Teco-Westinghouse customer support. Contact information can typically be found on the manufacturer's official website or on the product packaging.
When contacting support, please have your motor's model number (DTP1/54) and serial number (if applicable) ready.