Noise Specification Checklist for Electric Motors and Gear Motors

1. Noise Specification

1.1 Test Conditions

- **Load Conditions:**
  - ☐ No Load
  - ☐ Other _____
- **Speed:**
  - ☐ Constant Speed: _____ RPM
  - ☐ Variable Speeds _____ TO _____ RPM
- **Environmental Conditions:**
  - ☐ Ambient Temperature: _____
  - ☐ Humidity: _____
  - ☐ Background Noise Levels: _____

1.2 Measurement Instruments

- Sound Level Meter Model: _____
- Microphone Model: _____
- Calibration Date: _____

1.3 Measurement Locations

☐ Distance from Motor: _____ in

☐ Required Measurement Locations:

- ☐ Front _____
- ☐ Back _____
- ☐ Left Side _____
- ☐ Right Side _____
- ☐ Top _____
- ☐ Bottom _____

1.4 Noise Limits

☐ Overall Noise Level: _____ dB

☐ Frequency Range:

- Low Frequency (20-200 Hz): _____ dB
- Mid Frequency (200-2000 Hz): _____ dB
- High Frequency (2000-20000 Hz): _____ dB

Noise Test Checklist for Electric Motors and Gear Motors

2. Noise Test Checklist

2.1 Prepare the Test Environment

- ☐ Test area is free from extraneous noise
- ☐ Controlled environmental conditions
- ☐ Anechoic chamber (if available)

2.2 Calibrate Instruments

- ☐ Sound level meter calibrated
- ☐ Microphones calibrated

2.3 Baseline Measurements

- ☐ Measure background noise level without the motor running
- Background Noise Level: _____ dB

2.4 Run the Motor

- ☐ Operate the motor under defined test conditions
- Load Condition: _____
- Speed:_____ RPM

2.5 Noise Measurements

- Distance From Motor: _____ in
- Front: _____ dB
- Back: _____ dB
- Left Side: _____ dB
- Right Side: _____ dB
- Top: _____ dB
- Bottom: _____ dB

2.6 Analyze Noise Data

- ☐ Compare measured noise levels with specified limits
- Specify any frequencies or conditions where noise exceeds acceptable levels: _____ Hz

2.7 Implement Mitigations

- ☐ Identify noise sources
- ☐ Suggested Improvements
- ☐ Implement mitigation strategies
  - ☐ Redesign motor components
  - ☐ Improve assembly processes
  - ☐ Add noise-dampening materials

2.8 Document and Report

- **Test Conditions**
  - Operating Conditions: _____
  - Environmental Settings: _____
  - Measurement Locations: _____
- **Measurement Data**
  - Recorded Noise Levels: _____
- **Analysis**
  - Comparison with Noise Limits: _____
  - Frequency Analysis: _____
- **Recommendations**
  - Suggested Improvements: _____